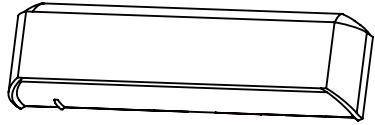


OT INC

Manuals Master Index



OA-FLEX T

5924580 NOV 2015

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

	WARNING	Disregard of warning may cause the improper operation causing death or serious injury of a person.
	CAUTION	Disregard of caution may cause the improper operation causing injury of a person or damage to objects.
	NOTE	Special attention is required to the section of this symbol.
		It is required to check the operation manual if this symbol is shown on the product.

NOTE

- This product is a non-contact switch intended for header mount or wall mount for use on an automatic sliding door. Do not use for any other applications.
- When setting the sensor's detection area, make sure that there is no traffic around the installation site.
- Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
- Only use the product as specified in the operation manual provided.
- Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
- Before leaving the installation site make sure that the product is operating properly and instruct the building owner/operator on proper operation of the door and the product.
- The product settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock.		

NOTE

The following conditions are not suitable for sensor installation :

- Fog or exhaust emission around the door.
- Moving objects or objects that emit light near the detection field.
- Highly reflecting floor or highly reflecting objects around the door.
- Wet floor.
- Grating floor.



SPECIFICATIONS

Model	: OA-FLEX T	Operating temperature	: -31 to 131°F (-35 to +55°C)
Cover color	: Black	Operating humidity	: < 80%
Mounting height	: 6'7" (2.0m) to 9'10" (3.0m)	Noise level	: < 70dBA
Detection area	: See DETECTION AREA	Output hold time	: Approx. 0.5 sec.
Detection method	: Active infrared reflection(*1)	Response time	: < 0.3 sec.
Area angle adjustment	: Depth : -8° to +8° Width : ±7° (2 clicks with 3.5° every click-Left/Right)	IP rate	: IP54
Power supply (*2)	: 12 to 24VAC ±10% (50 / 60Hz) 12 to 30VDC ±10%	Weight	: 7.8oz (220g)
Power consumption	: < 2.0W (< 5VA at AC)	Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Cable 9'10"(3m) (8 x 0.22mm ² AWG24) (*3)
Operation indicator	: See Operation indicator table		
Test input	: Opto coupler Voltage / 5 to 30VDC Current / 6mA Max. (30VDC)		
Activation output	: Form A relay 50V 0.3A Max. (Resistance load)		
Safety output	: Form A relay 50V 0.3A Max. (Resistance load)		

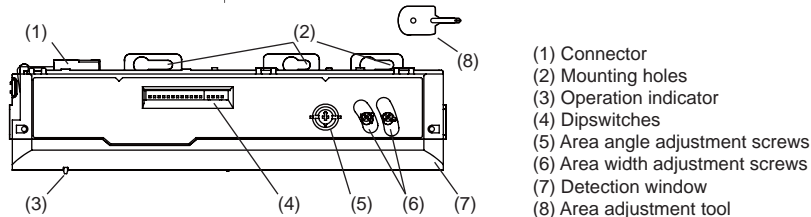
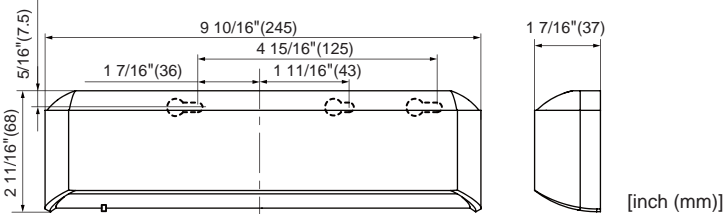
Operation indicator table

Status	Operation indicator color	Indicator Pattern
Set-up	Yellow Blinking	[Blinking Yellow]
Stand-by (Installation mode)	Yellow	[Solid Yellow]
Stand-by (Operation mode)	Green	[Solid Green]
BLUEZONE (1st row) detection (*4)	Blue	[Solid Blue]
2nd row detection	Red Blinking	[Blinking Red]
3rd row detection	Red	[Solid Red]
4th-6th row detection	Orange	[Solid Orange]
Signal saturation	Slow Green Blinking	[Blinking Green]
Sensor failure	Fast Green Blinking	[Blinking Green]

NOTE

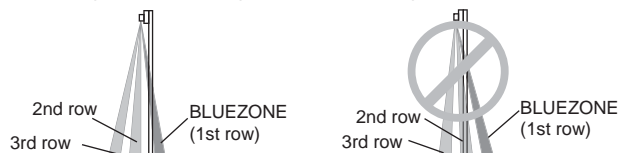
- The specifications herein are subject to change without prior notice due to improvements.
- *1 : BLUEZONE (1st row), 2nd and 3rd rows have a presence detection function.
 - *2 : When using this sensor, the sensor has to be connected to a door system which has the SELV circuit.
 - *3 : Overcurrent protection with less than 2A. *4 : See **BLUEZONE AREA**

OUTER DIMENSIONS AND PART NAMES

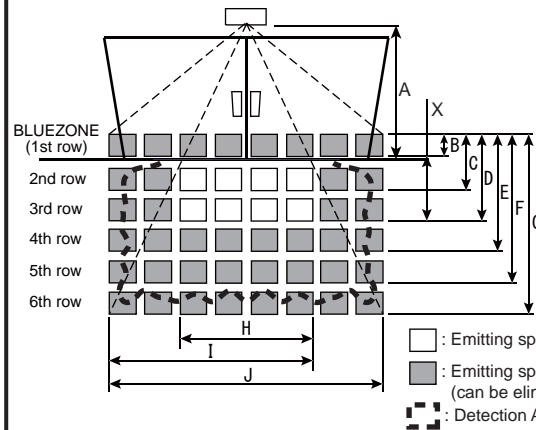


BLUEZONE AREA

When dipswitch 15 is set to "ON", the BLUEZONE area, that provides extra safety over the threshold, is activated. In case the BLUEZONE function is not required, set dipswitch 15 to "OFF". Do not set the 2nd row overlapping the threshold regardless of the setting of dipswitch 15.



DETECTION AREA



Emitting area		[feet,inch (m)]			
A	6'7" (2.00)	7'7" (2.30)	8'2" (2.50)	9'10" (3.00)	
B	5" (0.13)	6" (0.16)	7" (0.17)	8" (0.21)	
C	1'3" (0.38)	1'6" (0.46)	1'8" (0.50)	1'12" (0.60)	
D	2'4" (0.71)	2'10" (0.86)	3'1" (0.94)	3'8" (1.13)	
E	2'9" (0.84)	3'4" (1.01)	3'7" (1.09)	4'4" (1.31)	
F	4'5" (1.34)	5'4" (1.62)	5'9" (1.76)	6'11" (2.11)	
G	5'9" (1.75)	6'11" (2.11)	7'6" (2.29)	9" (2.75)	
H	3' (0.92)	3'8" (1.11)	3'11" (1.20)	4'9" (1.45)	
I	4'11" (1.49)	5'11" (1.80)	6'5" (1.95)	7'8" (2.34)	
J	6'9" (2.06)	8'2" (2.48)	8'10" (2.69)	10'7" (3.23)	

Charts show the values in the following area angle adjustment settings ; Depth : 0° Width : 0°

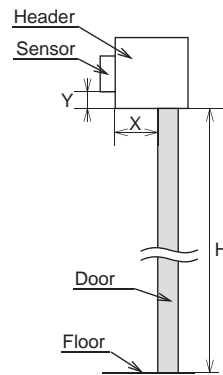
NOTE

The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object. The sensor may not be activated when the entering speed of the object or a person is slower than 50mm / sec. or faster than 1500mm / sec.

INSTALLATION

1

- Affix the mounting template at the desired mounting position. (When setting the detection area close to the door, mount the sensor according to the chart below.)
- Drill two mounting holes of $\phi 1/8"$ ($\phi 3.4\text{mm}$).
- To pass the cable through the header, drill a wiring hole of $\phi 3/8"$ ($\phi 10\text{mm}$).
- Remove the mounting template.
- Remove the housing cover. Fix the sensor to the mounting surface with the two mounting screws.



Maximum mounting distance (Y)		[feet,inch (m)]			
X	H	6'7" (2.00)	7'7" (2.30)	8'2" (2.50)	9'10" (3.0)
0		No limit			
2" (0.05)		8" (0.20)	8" (0.20)	8" (0.20)	0
4" (0.10)		8" (0.20)	8" (0.20)	8" (0.20)	0
6" (0.15)		5" (0.13)	6" (0.15)	7" (0.19)	0
8" (0.20)		-	5" (0.12)	6" (0.14)	0
10" (0.25)		-	-	4" (0.11)	0
12" (0.30)		-	-	-	0

NOTE Make sure not to mount the sensor lower than the bottom of header.

	CAUTION	Make sure to affix the mounting template as described in the above chart , otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible on the header.
Risk of getting caught.		

2

Power supply 1	1. Grey 2. Grey	12 to 24VAC±10% / 12 to 30VDC±10%
Activation output 2	3. White 4. Yellow	Form A relay 50V 0.3A Max.
Safety output 3	5. White stripe 6. Yellow stripe	Form A relay 50V 0.3A Max.
Test input 4	7. Red (+) 8. Black (-)	Opto coupler / Voltage: 5 to 30VDC

	WARNING	Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield. otherwise it may cause electric shock or breakdown of the sensor.
Danger of electric shock.		

3

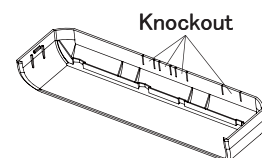
- Plug the connector.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **ADJUSTMENTS 3. Dipswitch settings**)

NOTE

Make sure to connect the cable correctly to the door controller before turning the power ON. When turning the power ON or after adjusting the settings, do not enter the detection area for more than 10 seconds in order to enable the presence detection. Do not touch the dipswitches before turning the power ON, otherwise an error occurs. When changing the settings of dipswitch, see **ADJUSTMENTS 3. Dipswitch settings**

4

- Place the housing cover. If wiring is to be exposed, break the knockout.



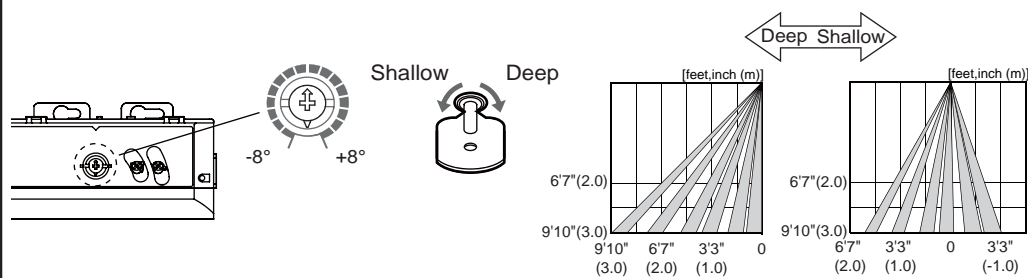
	WARNING	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock.		

ADJUSTMENTS

1 Area angle adjustment

1-1. Area depth angle adjustment

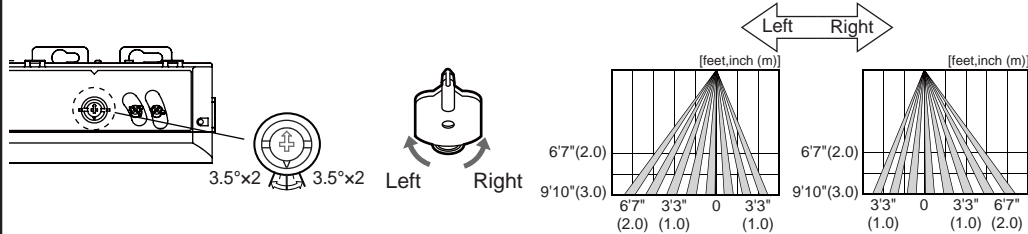
When adjusting the 2nd row close to the door, see dipswitch 16 in **Dipswitch settings table** for the easier adjustment.



NOTE Make sure that the detection area does not overlap with the door / header, and there is no highly reflecting object near the detection area otherwise ghosting / signal saturation may occur.

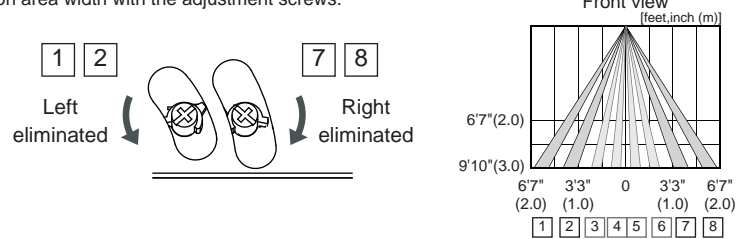
1-2. Area width angle adjustment

The angle of the detection area can both be moved 7° either left or right in 2 steps.



2 Area width adjustment

Adjust the detection area width with the adjustment screws.



NOTE When setting the detection area width, make sure to turn the adjustment screws until it clicks. ①② cannot be eliminated separately, neither can ⑦⑧

3 Dipswitch settings

Dipswitch settings table

Dipswitch	Function	Setting				Comment
		Low	High			
Dipswitch 1	Sensitivity	Low 1	High 1			Set the sensitivity according to the mounting height.
Dipswitch 2	Presence timer	30sec. 2 3	60sec. 2 3	180sec. 2 3	600sec. 2 3	The presence timer is applied to BLUEZONE(1st row), 2nd row and 3rd row. The presence timer can be selected from 4 settings.
Dipswitch 3						
Dipswitch 4	Frequency	A 4 5	B 4 5	C 4 5	D 4 5	When using more than one sensor close to each other, set the frequency different for each sensor.
Dipswitch 5						
Dipswitch 6	Row adjustment	6rows 6 7	5rows 6 7	4rows 6 7	3rows 6 7	Set the depth rows with dipswitches 6 and 7.
Dipswitch 7						
Dipswitch 8	Immunity	OFF 8	ON 8			Set dipswitch 8 to "ON" when the sensor operates by itself (Ghosting).
Dipswitch 9	Activation output	N.O. 9	N.C. 9			Dipswitch 9 is for the Activation output to door controller.
Dipswitch 10	Safety output	N.O. 10	N.C. 10			Dipswitch 10 is for the Safety output (to door controller).
Dipswitch 11	Safety input	High 11	Low 11			Dipswitch 11 is for the Safety input (from door controller).
Dipswitch 12	Presence area	1st to 3rd row 12	All areas 12			Set dipswitch 12 to "ON" when the presence timer is applied to all areas.
Dipswitch 13		N/A				
Dipswitch 14	Simultaneous output	OFF 14	ON 14			When Dipswitch 14 is set to "ON", both Activation & Safety output will operate simultaneously regardless of detection area. But only Safety output will respond back with Safety output when it receives Safety input.
Dipswitch 15	BLUEZONE (1st row)	OFF 15	ON 15			When dipswitch 15 is set to "ON", the BLUEZONE (1st row) is active and looks through the threshold.
Dipswitch 16	Installation mode	OFF 16	ON 16			Set dipswitch 16 to "ON" to adjust the 2nd row. During the installation mode only the 2nd row remains active and the operation indicator shows yellow. After setting the row switch dipswitch 16 "OFF".

CHECKING

Check the operation according to the chart below.

	Entry	Power off	Outside of detection area	Entry to 4th to 6th row	Entry to 3rd row	Entry to 2nd row	Entry to BLUEZONE (*)
Image							
Operation indicator	None	Green	Orange	Red	Red Blinking	Blue	
Activation output	9 ↓ N.O.	14 ↓ OFF	OFF	ON	OFF		
	9 ↑ N.C.	OFF	ON	OFF	ON		
	9 ↓ N.O.	14 ↑ ON	OFF	ON	ON		
	9 ↑ N.C.	OFF	ON	OFF	OFF		
Safety output	10 ↓ High	14 ↓ OFF	OFF	OFF	ON		
	10 ↑ Low	OFF	ON	ON	OFF		
	10 ↓ High	14 ↑ ON	OFF	OFF	ON		
	10 ↑ Low	OFF	ON	ON	OFF		

NOTE *: When dipswitch 15 is set to "ON".

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. (Do not use any cleaner / solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- When the operation indicator blinks Green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE 1. When turning the power ON, always walk-test the detection area to ensure the proper operation.
2. Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

TROUBLESHOOTING

Door operation	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Wrong power supply voltage.	Set to the stated voltage.
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.
		Wrong detection area positioning.	Check ADJUSTMENTS 1, 2 .
Door opens when no one is in the detection area. (Ghosting)	Proper	Sensitivity is too low.	Set the sensitivity higher.
		Short presence timer.	Set the presence timer longer.
		Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
		Wrong wiring or connection failure.	Check the wires and connector.
Door remains open	Unstable	Objects that move or emit light in the detection area.	Remove the objects.
		The detection area overlaps with that of another sensor.	Check ADJUSTMENTS 3 dipswitch 4,5.
		Waterdrops on the detection window.	Use the rain-cover. (Separately available) Wipe the detection window with a damp cloth. Do not use any cleaner or solvent. Install in a place keeping the waterdrops off.
	Proper	The detection area overlaps with the door/header.	Adjust the detection area to "Deep" (Outside).
		Sensitivity is too high.	Set the sensitivity lower.
		Others	Set dipswitch 8 to "ON".
Proper operation	Fast Green Blinking	Wrong setting of dipswitches.	Check ADJUSTMENTS 3 dipswitch 9,10,11.
		Sudden change in the detection area.	Check ADJUSTMENTS 3 dipswitch 1 to 3. If the problem still persists, hard-reset the sensor. (Turn the power OFF and ON again.)
	Slow Green Blinking	Wrong wiring or connection failure.	Check the wires and connector.
		Sensitivity is too low.	Set the sensitivity higher.
Proper operation	Slow Green Blinking	Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
		Sensor failure.	Contact your installer or service engineer.
Proper operation	Slow Green Blinking	Signal saturation. (2nd and/or 3rd row)	Remove highly reflecting objects from the detection area. Lower the sensitivity. Change the area depth angle.
		The detection area overlaps with the door/header.	Adjust the detection area to "Deep" (Outside).
Proper operation	Slow Green Blinking	Installation mode is set to "ON".	Set dipswitch 16 to "OFF".
		Signal saturation. (4th, 5th, 6th row and/or BLUEZONE)	Remove highly reflecting objects from the detection area. Lower the sensitivity. Change the area depth angle.

FCC WARNING(For USA)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

-NOTICE-

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

-NOTICE-

- The antennas cannot be exchanged.
- To comply with FCC RF exposure compliance requirements, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.

IC(For CANADA)

Operation is subject to the following two conditions:

- this device may not cause interference, and
- this device must accept any interference received, including interference that may cause undesired operation of the device.

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MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this operation manual.

	WARNING	Disregard of warning may cause improper operation causing death or serious injury of a person.
	CAUTION	Disregard of caution may cause improper operation causing injury of a person or damage to objects.
	NOTE	Special attention is required to the section of this symbol.

NOTE

- This sensor is a non-contact switch intended for door mounting and to use on automatic swing doors.
- When setting the sensor's detection area, make sure that there is no traffic around the installation site.
- Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the sensor.
- Only use the sensor as specified in the operation manual provided.
- Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
- Before leaving the installation site make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
- The sensor settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock		

NOTE

- The following conditions are not suitable for sensor installation :
- Fog or exhaust emission around the door.
 - Moving objects or objects that emit light near the detection area.
 - Highly reflecting floor or highly reflecting objects around the door.
 - Wet floor.
 - Grating floor.

SPECIFICATIONS

Model *	: OA-EDGE1 T / OA-EDGE2 T	Accessories	
Extrusion color	: Silver / Black	Silver self tap screw for extrusion	2pcs
Mounting height	: 4'11"(1.5m) to 9'10" (3.0m)	Silver wood screw for extrusion	2pcs
Detection area	: See DETECTION AREA	Black small screw for endcap	4pcs
Detection method	: Triangulation	Black large screw for wire shroud cover	2pcs
Min. configuration	: 1 master module +1 LED module	Wire shroud	1pcs
Max. configuration	: 4 sensor modules +2 LED modules	Wire shroud cover	1pcs
Depth angle adjustment:	: 0° to +25°	Power supply cable	1pcs
Power supply	: 12 to 24VAC ±10% (50 / 60Hz) 12 to 30VDC ±10%	Communication cable	Refer to matrix Manual
Power consumption	: < 1.3W (< 2VA at AC) at Min. configuration < 3.5W (< 4.5VA at AC) at Max. configuration		
LED indicator	: See chart below		
Test input	: Opto coupler 5 to 30VDC Current / 6mA Max.		
Safety output 1**	: Form C relay		
Safety output 2**	: Voltage / 42VDC Current / 0.3A Max (Resistance load) output : see INSTALLATION chapter 3. Wiring		
output hold time	: Approx. 0.5sec.		
Response time	: <75msec.		
Operating temperature	: -4 to 131°F (-20 to +55°C)		
Operating humidity	: <80%		
IP rate	: IP54		

Model	Sensor length	Cable length			
		4" (105)	10" (250)	19" (480)	35" (900)
OA-EDGE1 T	34.5	-	1pcs	1pcs	-
	40	-	1pcs	-	1pcs
	44	-	1pcs	-	1pcs
OA-EDGE2 T	34.5	1pcs	1pcs	1pcs	-
	40	1pcs	1pcs	1pcs	-
	44	1pcs	1pcs	1pcs	-

*: OA-EDGE1 T have 1 sensor module (Master only).
OA-EDGE2 T have 2 sensor modules (Master + Slave).
**: There are two types of output. (Reactivate & Stall)

LED indicator

Status	Sensor module indicator
Stand-by	Solid Green
Swing side detection (output 1)	Solid Red
Approach side detection (output 2)	Solid Orange
Incomplete Initialization	Red & Green Blinking
Learning	Blinking Yellow
Incomplete learning	Yellow & Red Blinking
Saturation	Slow Red Blinking
Sensor failure	Fast Red Blinking
Communication error	Twice Orange Blinking

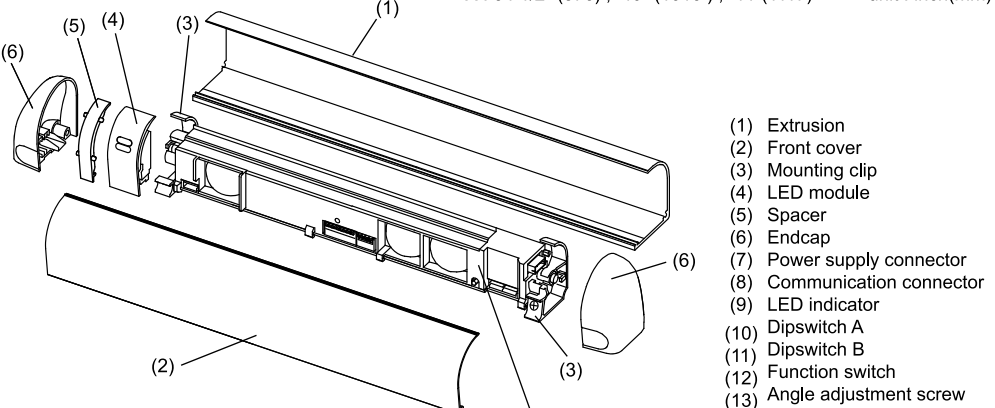
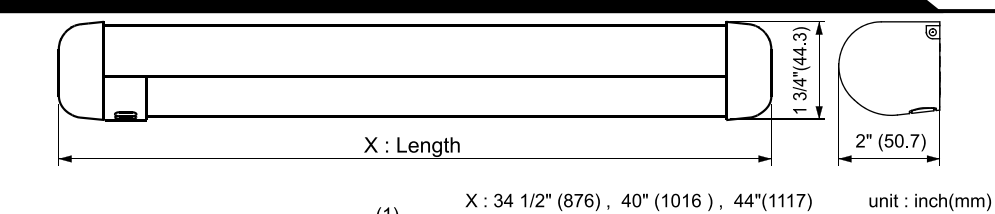
LED module indicator

The color depends on the state of the output.

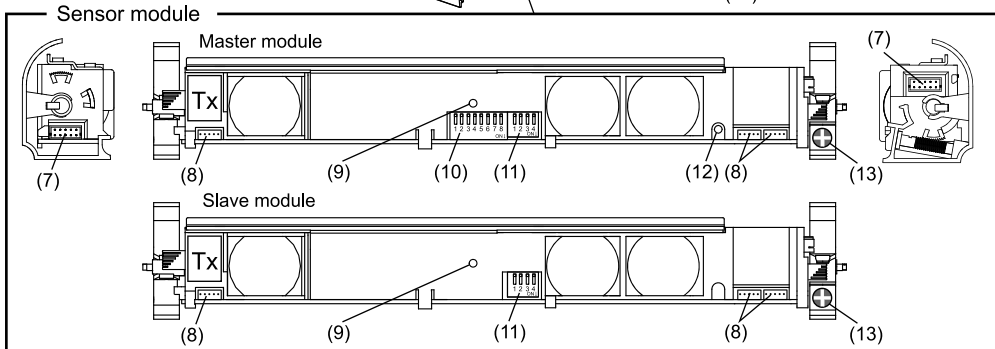
Safety output 1 Swing side(Stall)	OFF : Solid Green
ON : Solid Red	
Safety output 2 Approach side(Reactivate)	OFF : Solid Green
ON : Solid Orange	

NOTE The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES

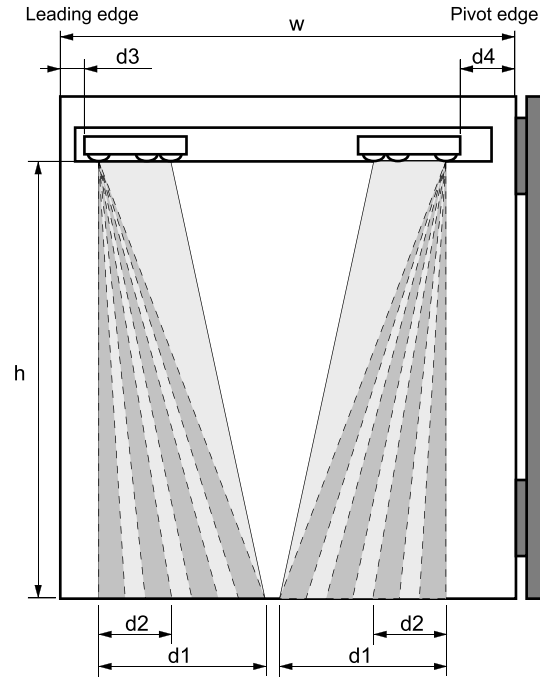


- Extrusion
- Front cover
- Mounting clip
- LED module
- Spacer
- Endcap
- Power supply connector
- Communication connector
- LED indicator
- Dipswitch A
- Dipswitch B
- Function switch
- Angle adjustment screw



DETECTION AREA

Recommended installation position



- W = Door width
- h = Mounting height
- d1 / d2 = Detection area width
- d3 = Distance from the leading edge to the sensor module
- d4 = Distance from the pivot edge to the sensor module
- n = Number of sensor modules

				unit : inch (mm)					
				36" (914)		42" (1067)		48" (1219)	
h	d1	d2	d3	n	d4	n	d4	n	d4
5'11" (1800)	1'7" (480)	11" (280)							
6'3" (1900)	1'8" (510)	11 7/16" (290)							
6'7" (2000)	1'9" (525)	11 13/16" (300)							
6'11" (2100)	1'10" (545)	12 3/16" (310)							
7'3" (2200)	1'10" (560)	12 5/8" (320)	4" * (102)	2	4" (102)	2	6" (152)	2	9" (229)
7'7" (2300)	1'11" (590)	13" (330)							
7'10" (2400)	1'12" (605)	13 3/8" (340)							
8'2" (2500)	2'1" (625)	13 3/4" (350)							

NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object and selection of inactive area.

For ANSI A156.10 applications you must walk-test the door using AAADM-recommended testing procedures. Adjustments may need to be performed. If unsure contact OPTEX Technical Support.
* Note: For ANSI A156.10 Swing Side applications we recommend locating no further than 4" from latch edge of panel. For secondary activation (NON ANSI A156.10) module can be located for desired detection area.

INSTALLATION

1 Mounting the extrusion

- Take the sensor modules out of the extrusion.
- If the extrusion is too long for installation cut it down.

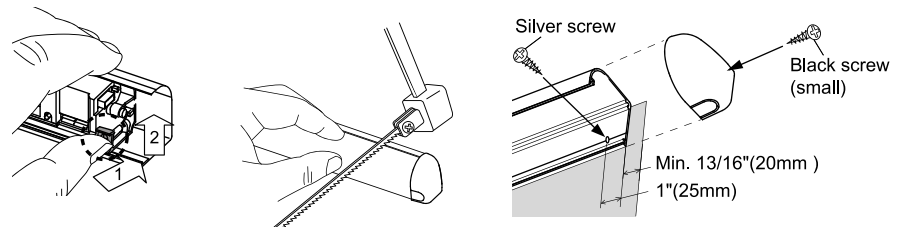
NOTE When cutting the extrusion it is recommended to assemble to the extrusion one end cap. Place the LED module and spacer against the end cap and install the lens cover tight to the LED module. Cut the assembled unit using a miter saw or similar device to ensure proper 90 degree angle. Cut the end opposite the LED module. Ensure the overall length will clear items such as door stops or finger guards.

- Affix the extrusion on the intended mounting position leaving more than 13/16" (20mm) from door edge to attach the endcap.
- If necessary, drill two mounting holes of $\phi 1/8"$ ($\phi 3.4\text{mm}$) and fix the extrusion.

NOTE Recommended location for mounting screws is 1" from edge of aluminum extrusion. This will allow proper positioning of LED Module and Sensor modules without obstruction.

- When mounting a sensor on each side of the door, it is necessary to drill a wiring hole of $\phi 1/2"$ ($\phi 12\text{mm}$) to connect the sensor modules. (See chapter 3. Wiring)

NOTE Make sure there is some space between the mounting clips and the mounting screws. Make sure not to scratch the extrusion when making a hole.



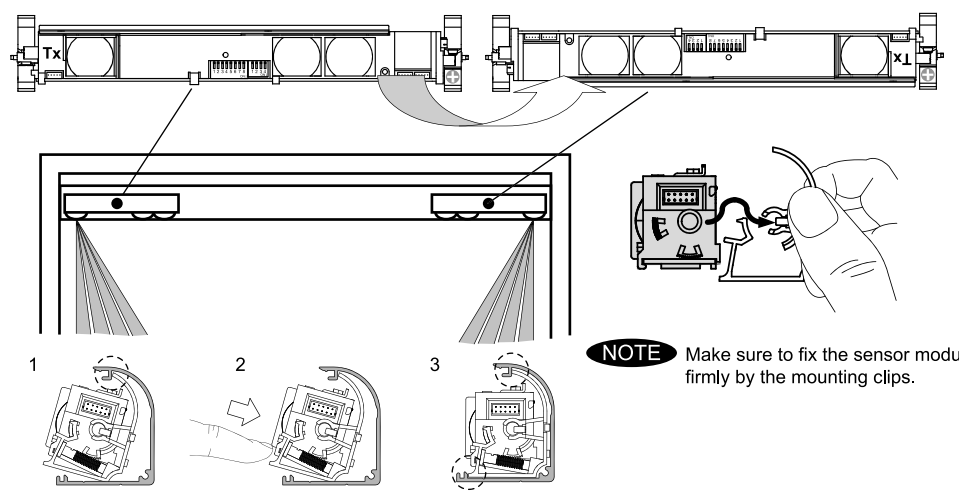
2 Inserting the sensor module

1. Approach side

When installing on approach side (reactivate) refer to values d2 & d3 in chart **DETECTION AREA** as an initial starting point for location of module. Sensor modules can be moved left or right and angle in or out to achieve desired detection area determined by walk testing door operation.

2. Swing side

When installing on swing side in conjunction with an Overhead Presence Sensor see separate included chart for starting location. Requires two modules for this application to ensure conformance to ANSI/BHMA A156.10, Section 8. Must be walk tested and adjusted if necessary to confirm compliance with the standard.

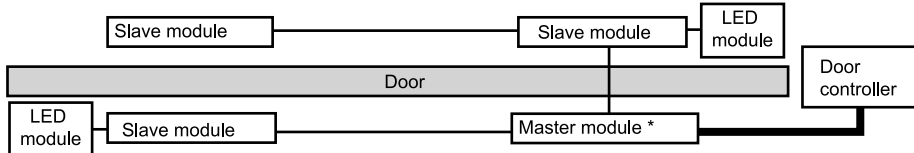


NOTE Make sure to fix the sensor modules firmly by the mounting clips.

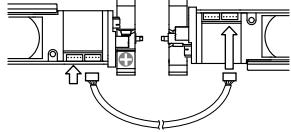
INSTALLATION

3 Wiring

Wire the cable to the door controller as shown below. Power supply cable — Communication cable

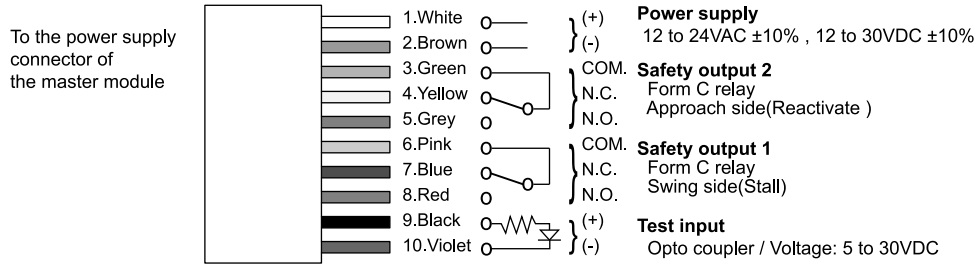


NOTE * When more than 1 master module is installed on the door leaf, make sure that only one power supply cable is connected to the operator otherwise initialization can not be completed. All other master units will automatically function as a slave unit.



Each module has three communication connectors. Use the most convenient connector for the installation site.

NOTE Maximum of three sensor modules can be connected to one master module.



NOTE When the test input is not required, set the dipswitch A7 to OFF.

Prehole 1/8"

The wiring harness can be routed thru jamb or direct to header . Once routing is decided determine appropriate length of wire shroud and trim if necessary. Place wire shroud over harness before routing harness thru jamb or to header. Remove knock out in end cap and attach wire shroud to profile. Attach other end of wire shroud at jamb or header using wire shroud cover if necessary. When installing wire shroud cover mark and predrill two 1/8 inch holes (see picture).

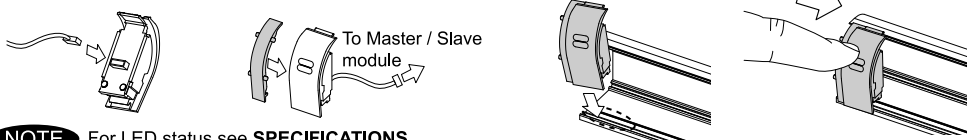
WARNING

Danger of electric shock

Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield otherwise it may cause electric shock or breakdown of the sensor.

4 Inserting LED module

Connect the communication cable to the LED module then to the sensor module and install LED module and spacer. Select the length of communication cable appropriate for your application (4", 10", 19" or 35") Attach the spacer on the endcap side. Insert the LED module to the extrusion. The LED module can be inserted to both side of the extrusion.



NOTE For LED status see SPECIFICATIONS

5 Placing the front cover

After ADJUSTMENTS are completed, place the front cover and endcaps.

NOTE When the front cover is installed inactive height will increase slightly.

ADJUSTMENTS

1 Dipswitch settings

Each Master module is equipped with Dipswitch A and Dipswitch B and each Slave module is equipped with only Dipswitch B. Only dipswitch A of the master module connected to the door controller is applicable and will reflect the settings to all connected master and slave units automatically.

Dipswitch A	
1	A1 Non detection zone (A)
2	A2 Frequency
3	A3 Immunity
4	A4 Presence timer
5	A5
6	A6 For future use
7	A7 Test input
8	A8 Test input delay

Dipswitch B	
1	B1 Non detection zone (B)
2	B2 Area width
3	B3 Self monitoring mode
4	B4 Sensor side (output select)

NOTE Make sure to finish initialization properly to reflect the dipswitch settings otherwise the setting can not be changed. (see chapter 2. Function switch)

1-1.Setting the Non detection zone

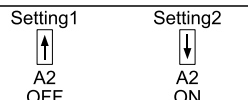
The Non detection zone is the height measured from the floor up to the position where the sensor starts to detect. The zone can be set by a combination with Dipswitch A1 & B1.
[Non detection zone value] = [Dipswitch A1 value] + [Dipswitch B1 value]

Side view	Dipswitch A1	Dipswitch B1	Total Non detection zone
	OFF : 5 7/8" (15cm)	OFF : +0" (+0cm)	5 7/8" (15cm)
	OFF : 5 7/8" (15cm)	ON : +3 15/16" (+25cm)	9 13/16" (25cm)
	ON : 13 3/4" (+35cm)	OFF : +0" (+0cm)	13 3/4" (35cm)
	ON : 13 3/4" (+35cm)	ON : +3 15/16" (+25cm)	17 11/16" (45cm)

NOTE The value is approximate for mounting height of 5' 11" to 9' 10" (1.8 to 3.0m).

1-2.Setting the frequency

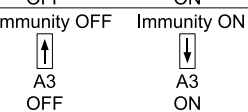
When installing the sensors on a double swing door make sure that the frequency on each sensor is set differently.



1-3.Setting the immunity

Set Dipswitch A3 to ON when the sensor operates by itself (ghosting).

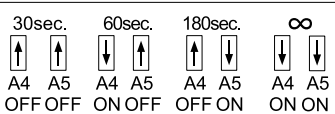
NOTE When Dipswitch A3 is set to ON ,the actual detection area may become smaller than Immunity OFF.



1-4.Setting the presence timer

The presence timer can be set by Dipswitch A4 & A5.

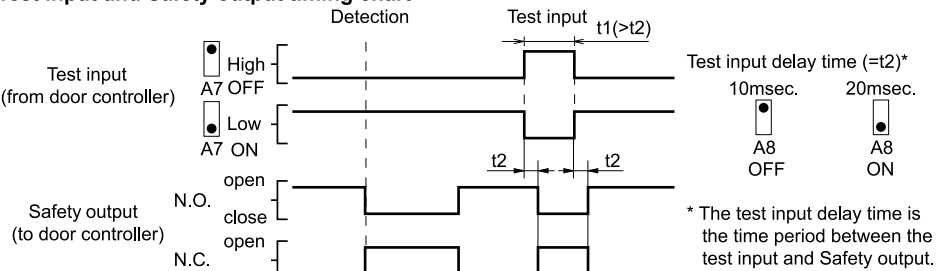
NOTE If an object remains in the detection area longer than the setting, LED indicator may blink fast Red. In this case, it is not Sensor failure.After an object is removed, LED indicator will show Solid Green.



1-5.Setting the test input and test input delay time

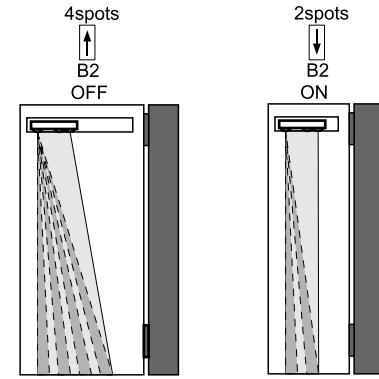
Set dipswitches A7 & A8 according to the instructions from the door controller.

Test input and Safety output timing chart



1-6.Setting the area width

Set dipswitch B2 to "2 spots" when a narrow detection area is required.



1-7.Self monitoring mode

Set dipswitch B3 to A mode,when you install in USA



1-8.Setting the mounting side (output select)

By selecting the sensor position the outputs & LED indicator will function as shown below :

Dipswitch B4	output	LED indicator
OFF : Swing side	Stall (Safety output1)	Solid Red (Detection)
ON : Approach side	Reactivate (Safety output2)	Solid Orange (Detection)

2 Function switch

Only the master module is equipped with a function switch. The function switch of the master module that is connected to the door controller is only applicable to reflect settings to all sensor modules connected.

NOTE Make sure to use the function switch when the door is in the fully closed position.

2-1.Initialization & Learning

Initialization:

Initialization is necessary when power is supplied for the first time or when there is a change in dipswitch settings. Push the function switch for **MORE THAN 2 SEC.** to initialize the complete sensor configuration.

Learning:

After an initialization or a change in the settings always make a learning cycle by pushing the function switch for **LESS THAN 2 SEC.**

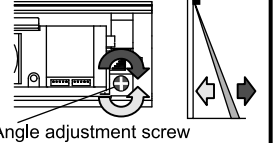
Action	First power supply	Dipswitch setting change	LED indicator
Initialization Push the function switch for more than 2sec.	—	—	Red & Green Blinking
—	—	—	Turn off and then, start to blink Green to indicate the number of connected sensor modules
Learning Push the function switch for less than 2sec.	—	—	Yellow and Red Blinking
—	—	—	Yellow Blinking
—	—	—	Solid Green

NOTE Do not enter the detection area when the sensor is performing a learning cycle.

3 Area depth angle adjustment

The angle of each sensor module must be adjusted so that the door stops before it comes into contact with an obstacle. After area angle adjustments, start the learning as described in chapter 2.Function switch.

Adjustable angle : 0° to +25°



CHECKING

Check the operation according to the chart below.

NOTE The door movement might become unstable right after the learning. The movement becomes stabilized after several openings and closings. Always walk-test the detection area to ensure the proper operation.

Entry	Power OFF	Outside of detection area	Entry into opening side detection area	Entry into closing side detection area
Status	-	Stand-by	Detection active	Detection active
LED indicator	None	Solid Green	Solid Red	Solid Orange
Safety output1 Swing side(Stall)	COM. ○ N.O. ○ N.C. ○	COM. ○ N.O. ○ N.C. ○	COM. ○ N.O. ○ N.C. ○	COM. ○ N.O. ○ N.C. ○
Safety output2 Approach side(Reactivate)	COM. ○ N.O. ○ N.C. ○	COM. ○ N.O. ○ N.C. ○	COM. ○ N.O. ○ N.C. ○	COM. ○ N.O. ○ N.C. ○

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the front cover clean. If dirty, wipe it with a damp cloth. (Do not use any cleaner / solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- When LED indicator blinks Fast Red without any object in the detection area, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the front cover.

NOTE 1. After applying power, wait 10 seconds then walk test detection area to ensure proper operation.
2. Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

TROUBLESHOOTING

Problem	Possible cause	Possible countermeasures
The sensor has no function	Wrong power supply voltage Wrong wiring or connection failure	Set to the stated voltage. Check the wiring and connectors.
Incomplete initialization (Red & Green Blinking)	Initialization has not been conducted. Dipswitch setting is changed.	Push the function switch for more than 2 sec. for initialization.
Initialization is not finished (Red & Green Blinking continuous)	More than 2 master modules are connected with power supply cable.	Connect the power supply cable to only one master module.
Incomplete learning (Yellow & Red Blinking)	Initialization has not been conducted.	Push the function switch for less than 2 sec. for learning.
Learning does not start (Twice Orange Blinking)	Communication error	Check the communication wires or change wires.
Sensor operates by itself. (Ghosting) or learning is not finished. (Yellow & Red Blinking continuous)	Objects that move or emit light in the detection area. (Ex.Plant, illumination, etc.) Same frequency setting on double swing door application. The modules are affecting each other. Signal saturation.	Remove the objects. Set the different frequencies. (Dipswitch A2) Change the module positions or adjust angles or adjust the area width (Dipswitch B2).
Sensor operates by itself. (Ghosting)	The floor pattern is not plain or , the door movement is irregular.	Set the immunity (Dipswitch A3) to "ON". Extend the non detection zone.
The sensor functions without the front cover but not with it.	Waterdrops on the front cover	Install in a place keeping the waterdrops off.
Sensor operation is not linked to door movement.	The module angle is changed. The front cover is dirty. The front cover is scratched	Check the module angles. Wipe the front cover with a damp cloth. (Do not use any cleaner or solvent.) Replace the front cover.
Door remains open or closed without any object in the detection area.	Connection error or wrong mounting side setting. Presence timer set to infinity and sudden change in the detection area.	Check the wiring or mounting side setting. (Dipswitch B4) Push the function switch for less than 2 sec. for learning. Or change presence timer setting. (Dipswitch A4)
	Signal saturation. (Slow Red Blinking)	Change the module positions or adjust angles or adjust the area width (Dipswitch B2).
	The sensor is affected by the floor color.	Push the function switch for less than 2 sec. for learning. Or extend the non detection zone.
	Communication error. (Twice Orange Blinking)	Check the communication wires.
	The front cover on inner or outer side is dirty.	Wipe the front cover with a damp cloth. (Do not use any cleaner or solvent.)
	Sensor failure. (Fast Red Blinking)	Contact your installer or service engineer.

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MANUFACTURER'S STATEMENT

Read this manual carefully before use to ensure proper operation of this product. Failure to read this manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this manual.

	WARNING	Disregard of warning may cause improper operation causing death or serious injury of a person.
	CAUTION	Disregard of caution may cause improper operation causing injury of a person or damage to objects.
	NOTE	Special attention is required to the section of this symbol.

- NOTE**
- PREMIER T version Sensor Heads (OA-613 T) & Controller (OC-913C T) are not compatible with old PREMIER version Sensor Heads (OA-603, OA-613) and controller (OC-903C, OC-913C). Do not intermix Old & New versions.
 - This sensor is a non-contact switch intended header mount or wall mount for use on automatic swing doors. Do not use for any other application.
 - When setting the sensor's detection area, make sure that there is no traffic around the installation site.
 - Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the sensor.
 - Only use the sensor as specified in the operation manual provided.
 - Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
 - Before leaving the installation site, make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
 - The sensor settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock		

- NOTE**
- The following conditions may not be suitable for sensor installation.
 - Fog or exhaust emission around the door.
 - Moving objects or objects that emit light near the detection area.
 - Highly reflecting floor or highly reflecting objects around the door.
 - Wet floor.

SPECIFICATIONS

Model (System name) : PREMIER T	Model (Sensor head) : OA-613 T
Power supply : 12 to 24VAC ±10% (50 / 60Hz) 12 to 30VDC	Cover color : Black
Power consumption : < 2.2W (< 4VA at AC) at 1 OA-613 T & 1 OC-913C T	Mounting height : 6'7" (2.0m) to 8'2" (2.5m)
Output * : CMOS. Relay voltage / 5VDC	Detection area : See DETECTION AREA
Test input : Opto coupler	Detection method : Active infrared reflection **
Output hold time : 0.5sec. fixed (Activate output) 0.5sec. to 10sec. (Safety output)	Depth angle adjustment : 1st row area ±5° 2nd & 3rd row area ±5°
Response time : < 0.3sec.	IP rate : IP44
Operating temperature : -4 to 131°F (-20 to +55°C) without dew condensation	Weight : 8.1oz (230g)
Operating humidity : < 80%	Model (Controller) : OC-913C T
Accessories : 1 Spec manual 1 Installation manual 2 Mounting screws 1 Mounting templates for OA-613 T 1 Communication cable 3'3" (1m) 1 Wiring cable 2' (0.6m) 1 Velcro tape 2 Wiring shells	Weight : 2.3oz (65g)

* : Two type of outputs (Activate , Safety)
** : All rows have the presence detection.

NOTE The specifications herein are subject to change without prior notice due to improvements.

Operation indicator : OA-613 T

Status	Color	Indicator Pattern
Stand-by	Solid Green	[Solid Green Bar]
1st row area detection	Blinking Red	[Blinking Red Bar]
2nd or 3rd row area detection	Solid Red	[Solid Red Bar]
Waiting for next learning	Solid Yellow	[Solid Yellow Bar]
During learning	Blinking Yellow	[Blinking Yellow Bar]
During opening or closing	Solid Orange	[Solid Orange Bar]
Signal saturation	Slow Green blinking	[Slow Green Blinking Bar]
Sensor failure	Fast Green blinking	[Fast Green Blinking Bar]
Setting error	Slow Orange blinking	[Slow Orange Blinking Bar]
Communication error	Twice Orange blinking	[Twice Orange Blinking Bar]
Mixed version error	Red & Green blinking	[Red & Green Blinking Bar]

Operation indicator : OC-913C T

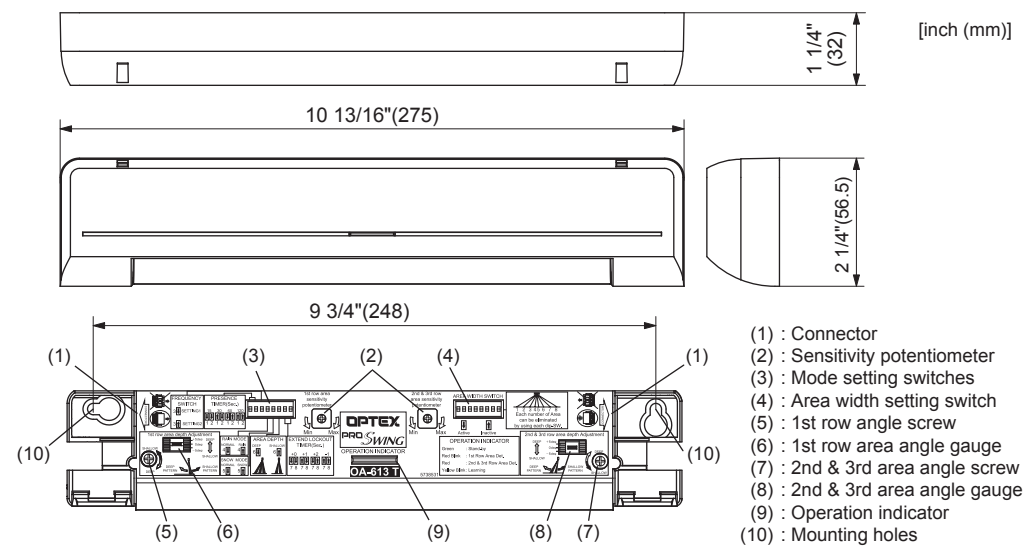
Status	Color	Indicator Pattern
Door fully closed	Solid Green	[Solid Green Bar]
Door closing	Solid Orange	[Solid Orange Bar]
Door fully opened	Solid Red	[Solid Red Bar]
Door opening	Blinking Red	[Blinking Red Bar]
During learning	Slow Green blinking	[Slow Green Blinking Bar]
Communication error	Twice Orange blinking	[Twice Orange Blinking Bar]
Mixed version error	Red & Green blinking	[Red & Green Blinking Bar]

Interface LED : OC-913C T

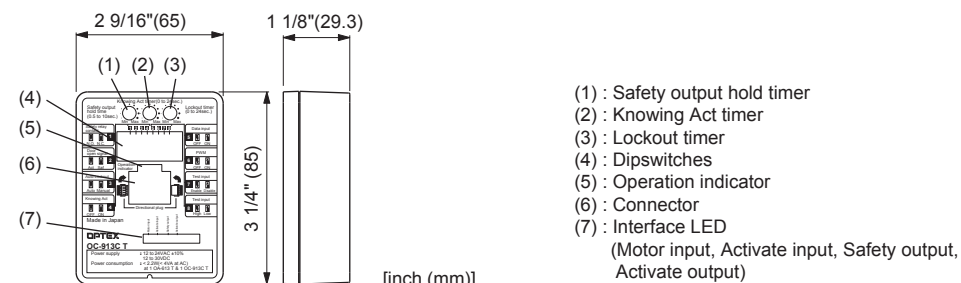
LED indication	Operation
Safety output	Solid Green : When not outputting
	OFF : When outputting
Activate output	Solid Orange : When outputting
	OFF : When not outputting
Activate input	Solid Orange : When receiving input
	OFF : When not receiving input
Motor input	Solid Green : When not receiving Motor positive
	Solid Red : When not receiving Motor negative
	OFF : When not receiving input

OUTER DIMENSIONS AND PART NAMES

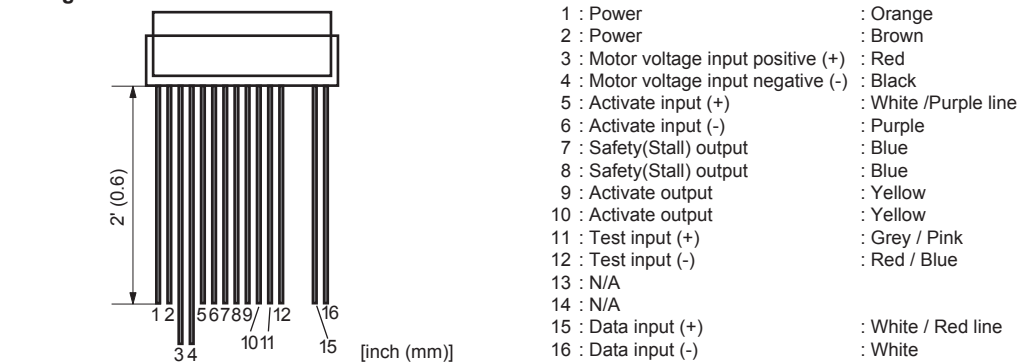
Sensor head: OA-613 T



Controller: OC-913C T



Wiring cable



CAUTION When using Test input (dipswitch 7) is Enable, Signal lines of Safety input should not be connected to the same port.

DETECTION AREA

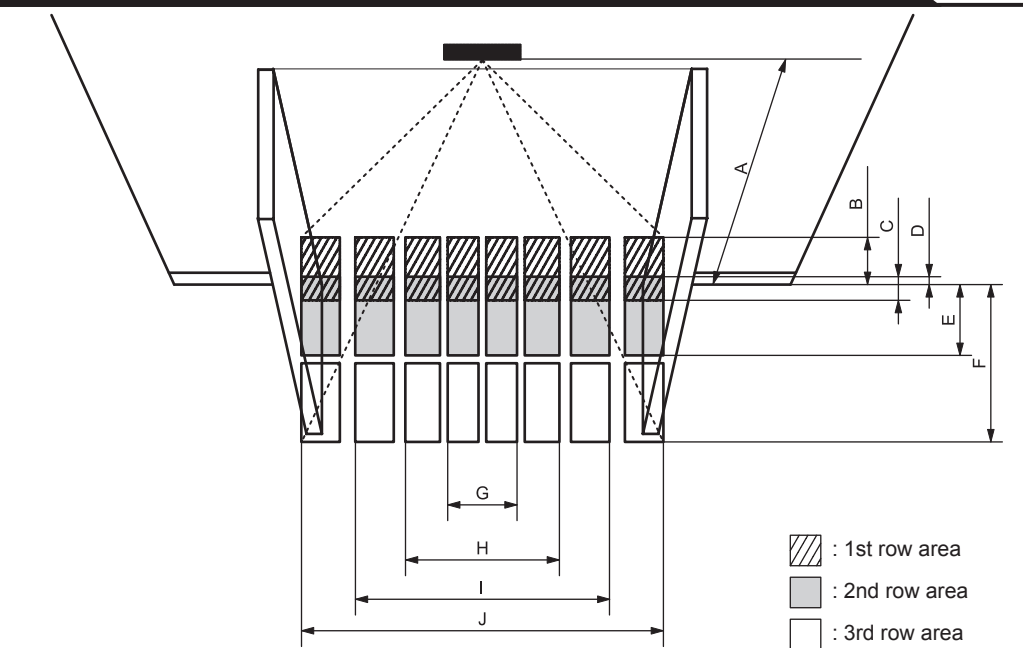


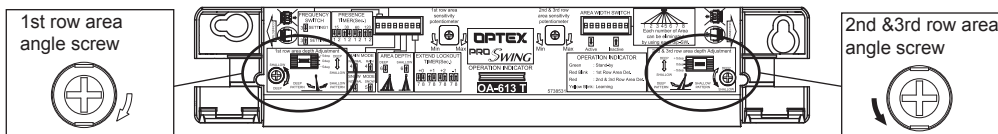
Chart shows figures if all angles are set at 0degree.

	[ft,inch (mm)]		
A	6'7"(2000)	7'3"(2200)	8'2"(2500)
B	1'2"(364)	1'4"(400)	1'6"(455)
C	7"(182)	8"(200)	9"(227)
D	1'(23)	1'(25)	1'(28)
E	2'2"(664)	2'5"(730)	2'9"(830)
F	4'7"(1391)	5'1"(1530)	5'9"(1739)
G	2'3"(682)	2'6"(750)	2'10"(852)
H	4'4"(1318)	4'9"(1450)	5'5"(1648)
I	6'9"(2045)	7'5"(2250)	8'5"(2557)
J	9'5"(2864)	10'4"(3150)	11'9"(3580)

NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object.

ADJUSTMENTS for OA-613 T

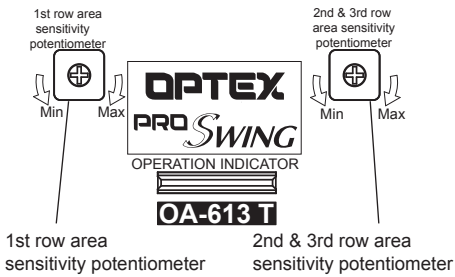
1 Area depth angle adjustment



Start with 1st row area depth angle at -5 degrees (shallow).
If after walk test the pattern is too shallow, adjust towards deep as necessary.

Start with 2nd & 3rd row area depth angle at +5 degrees (deep).
If after walk test the pattern is too deep, adjust towards shallow as necessary.

2 Adjusting the Sensitivity

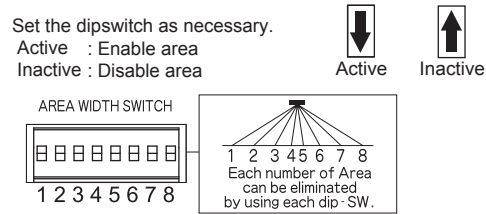


3 Initial setup

This sensor has the function to fit floor condition changes automatically. Therefore, even if objects are put in the detection area, sensor will learn the changes gradually and set back to normal operations automatically after presence timer has expired. To enable a Learn process only, flip any dipswitch on OA-613 T sensor head and wait 1 second, then flip it back to the original position.

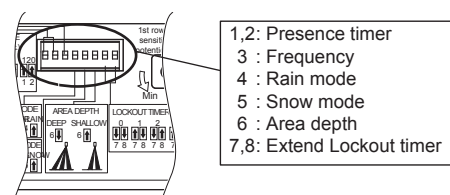
NOTE See PREMIER T installation manual step 6 (PREMIER Learn process).

4 Area width setting switch (Right bank)



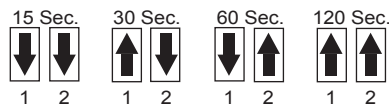
NOTE Whenever a dipswitch is moved a PREMIER Learn process is enabled, ensure proper completion of process (See step 3).

5 Mode setting switch (Left bank)



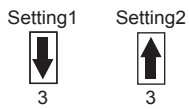
5-1. Setting the Presence timer

To comply with ANSI standard, set to "30sec." or longer.



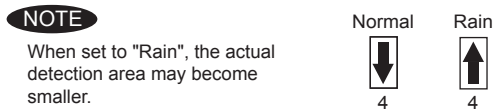
5-2. Setting the Frequency

When using more than one sensor close to each other, set the different frequency for each sensor by dipswitch 3.



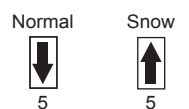
5-3. Setting the Rain mode

Set dipswitch 4 to "Rain" if the sensor is used in a region with a lot of rain.

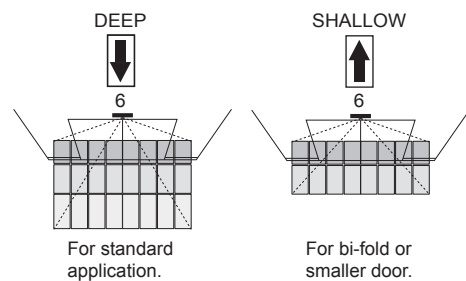


5-4. Setting the Snow mode

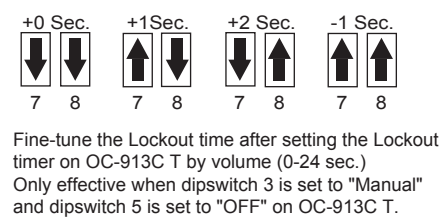
Set dipswitch 5 to "Snow" if the sensor is used in a region with snow or a lot of insects.



5-5. Setting the Area depth



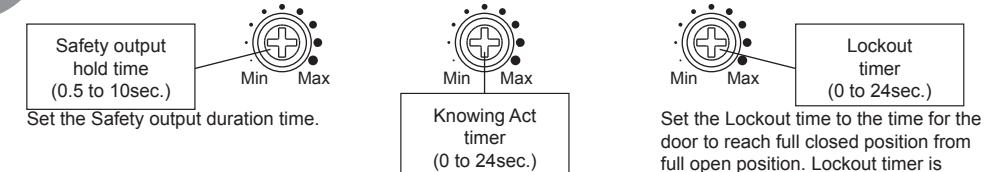
5-6. Setting the Extend Lockout timer



NOTE See ADJUSTMENTS for OC-913C T

ADJUSTMENTS for OC-913C T

1 Timer adjustment



Set the time required for door to close from fully open position to within 10 degrees when uses for Knowing Act application (dipswitch 4:ON).

2 Setting the dipswitches

- Safety relay contact : Choose the Relay contact.
- Door open signal switch : Determines safety output when door is open.
- Auto Lockout : Set the Lockout method
ON : Manual (by volume setting on OC-913C T)
OFF : Auto (by motor voltage)
- Knowing Act : If uses Knowing Act Function, set to "ON".

Set the dipswitches as shown below.

Dipswitch setting	OFF	ON
1 Safety relay contact	NO	NC
2 Door open signal switch	Act	Saf
3 Auto Lockout	Auto	Manual
4 Knowing Act	OFF	ON
5 Data input	OFF	ON
6 PWM	OFF	ON
7 Test input	Enable	Disable
8 Test input	High	Low

- Data input : If using data output from door control for Lockout, set to "ON".
When Data input is "ON", setting of Auto Lockout (dipswitch 3) is ignored.

- PWM : If using PWM from door control for Lockout, set to "ON".
When using PWM, dipswitch 5 also needs to be set to "ON" and setting of Auto Lockout (dipswitch 3) is ignored.

- Test input : If not using Test input from door control for Lockout, set to "ON". When not using Test input, dipswitch 7 also needs to be set to "ON", and setting of Test input (dipswitch 8) is ignored.

- Test input : If using Test input of "Active Low" for Lockout, set to "ON".

Knowing Act Function

Use this function when Primary Activation is Knowing Act (i.e. Push Plate, Card reader, etc.) and a secondary activation sensor (door mount or header mount) is desired.

See WIRING in the installation manual when Knowing Act Function is required.

Secondary activation sensor status in Knowing Act Function:

- Full Closed position
Secondary activation sensor is inactive until the Knowing Act device is initiated.
Door can be used manually without activation or reactivation from sensor.
- Door opening & Full open
When door is activated by Knowing Act, the secondary activation sensor is active and the door will remain open when the sensor is in detection.
- Door closing
Secondary activation sensor is active and will reactivate the door upon detection until the Knowing Act timer expires. Set the Knowing Act timer on OC-913C T control to stay active to within 10 degrees from full closed.

NOTE When using the Knowing Act Function, Push/Pull activation MUST be disabled at the door controller.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. (Do not use any cleaner / solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- When the operation indicator blinks Green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE 1. After applying power, wait 10 seconds then walk test detection area to ensure proper operation.
2. Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

TROUBLESHOOTING

Symptom	Operation indicator		Possible cause	Possible countermeasures
	OA-613 T	OC-913C T		
Initial setup can not start.	None	None	Power supply voltage. Wrong wiring cable (Brown & Orangewires) of OC-913C T.	Set to the stated voltage. Check the wiring cable.
	Twice Orange blinking or None	Twice Orange blinking	Connection failure from OA-613 T to OC-913C T.	Check the connector.
	Slow Orange blinking		Defective communication cable. When all the area are inactive. (Right bank dipswitches on OA-613 T)	Replace as necessary. Verify proper settings. See installation manual step 5.
Incomplete initial setup	Blinking Yellow	Blinking Green	OC-913C T dipswitches set wrong.	Check the dipswitch settings.
Sensor detects when no one is in the detection area. (Ghosting)	Solid Green or Solid Red or Blinking Red	Proper	Improper 1st row or 2nd & 3rd row area angle adjustment.	Set 1st row area angle at -5 degrees (shallow) or 2nd & 3rd row area angle at +5 degrees (deep).
			Stalling caused by traffic just outside of swing path.	Set dipswitch 6 on left bank dipswitch of OA-613 T on/up (shallow).
			Moving objects near guide rails.	Remove the objects.
			Area width dipswitches set wrong. (Right bank dipswitches on OA-613 T)	Verify proper settings. See installation manual step 5.
			Wet floor. The exhaust emission or fog penetrate into the detection area.	Check the installation condition referring to MANUFACTURER'S STATEMENT.
			Reflecting objects in the detection area.	Remove the objects.
			Objects that move or emit light (Ex. Plant, illumination, etc.)	
Water drops on the detection window.	Use the rain-cover (Separately available). Or install in a place keeping the water drops off.			
Sensitivity is too high.	Adjust the sensitivity lower.			
Snow drifting.	Set the snow mode to "Snow".			
Other than above.	Set the rain mode to "Rain".			
Door does not operate properly when a person enters the detection area. (Sensor does not detect.)	Solid Green	Proper	Sensitivity is too low. Area width dipswitches set wrong. (Right bank dipswitches on OA-613 T)	Adjust the sensitivity higher. Verify proper settings. See installation manual step 5.
	Slow Green blinking	Proper	Improper 1st row or 2nd & 3rd row area angle adjustment.	Set 1st row area angle at -5 degrees (shallow) or 2nd & 3rd row area angle at +5 degrees (deep).
			Signal saturation.	Remove highly reflecting objects from the detection area. Or lower the sensitivity.
Fast Green blinking	Proper	Dirty detection window.	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)	
		Sensor failure.	Contact your installer or service engineer.	
OA-613 T detects but door operate.	Red or Blinking Red	Proper	OC-913C T dipswitches set wrong.	Check the dipswitch settings. See installation manual step 2.
Door remains open.	Solid Green	Proper	Improper wiring of door equipment on / off / hold switch.	Verify proper wiring of on / off / hold switch.

Manufacturer

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ELITE T

Swing Door Door Mounting Sensor



5924381 2016.1

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product.

Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

WARNING	Disregard of the warning symbol can cause improper operation which may cause death or serious injury.
CAUTION	Disregard of the caution symbol can cause improper operation which may cause injury of a person or damage the object.
NOTE	Special attention is required to the section of this symbol.

1. Set door speeds and verify proper operation of door manufacturer's equipment prior to applying power to the sensor system.
2. Do not install the sensor where it might be directly sprayed with rainwater.
3. Verify proper wiring prior to applying power to the sensor system to prevent damage to equipment.
4. When setting the sensor's area pattern, make sure there is no traffic around the installation site.
5. Do not attempt to rebuild or repair sensor heads or control unit. Contact an address in this manual for replacement products.
6. Only use the sensor as specified in the supplied instructions.
7. Walk test the installation to verify operation is in compliance with all local laws, codes and standards of your country.
8. Upon completion of installation and adjustments, instruct the owner/operator on proper operation of the door and sensor system. Identify any switches/breakers that will place the door out of service when unsafe or improper operation is identified.

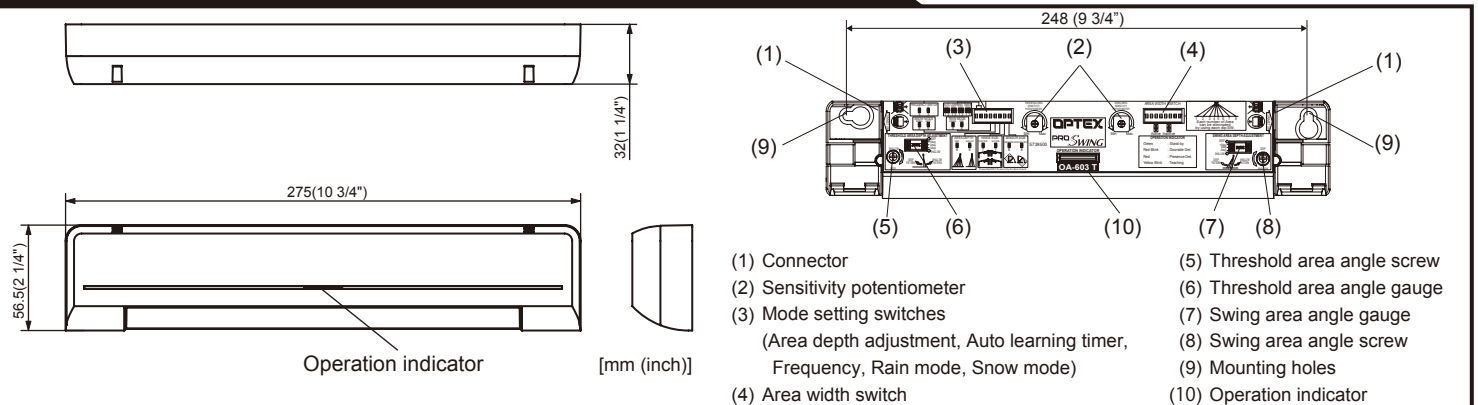
SPECIFICATIONS

Model	: OA-603 T	Current draw	: 120mA Max
Cover color type	: Black / Silver	Response time	: < 0.3sec.
Mounting height	: 2.0m (6'7") to 2.5m (8'2")	Operating temperature	: -20°C to +55°C (-4°F to +131°F)
Detection area	: See the chart in " ADJUSTMENTS "	Weight	: 230g (8.2oz.)
Detection method	: Active infrared reflection (Presence detection type)	Accessories	: 1 Sensor cable 0.2m(7") 9 Mounting screws 1 Operation manual 3 Mounting template
Detection angle adjustments	: Threshold area ±5° (Inside & outside) : Swing area ±5° (Inside & Outside)		
Operation indicator	: Green / Stand-by Blinking Red / Threshold area detection active Red / Swing area detection active Blinking Yellow / Learning		

Insure proper setting of Mode switch #8 indicating approach side or swing side sensor.

NOTE The specifications herein are subject to change without prior notice due to improvements.

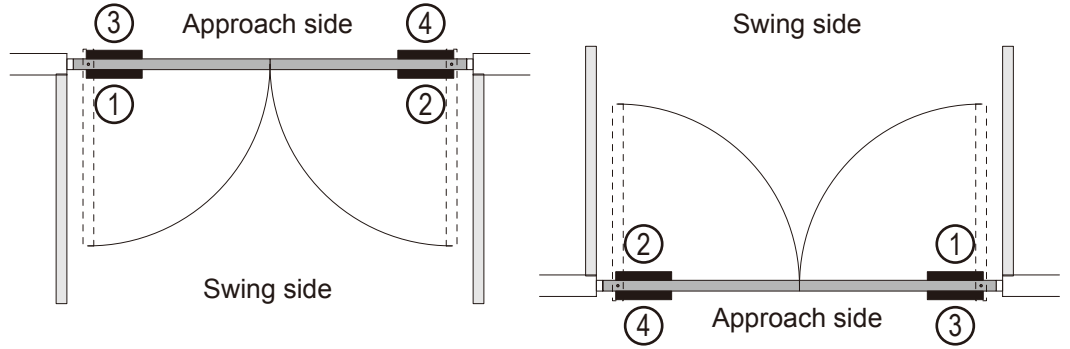
OUTER DIMENSIONS AND PART NAMES



INSTALLATION

Top view

Please start the "Dipswitch setting 1 to 4" by reference the right pictures.



Sensor setting

Please refer to the following for the setting of the Dipswitch.

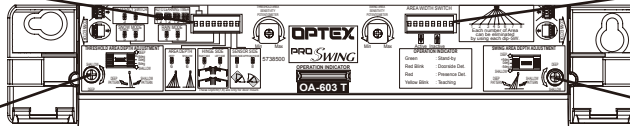
MODE SETTING SW
(LEFT DIPSWITCH)

AREA WIDTH SW
(RIGHT DIPSWITCH)

Set +5degrees



Threshold area
angle screw



Set +5degrees

Swing area
angle screw



Adjust both angle screws (threshold and swing) CLOCKWISE to achieve **maximum angle for all door mount sensor**.
The screws will continue to turn even though maximum angle is reached as indicated by the angle gauges.

! WARNING

Insure proper setting of mode switch #8 indicating approach side or swing side sensor.

Dipswitch setting 1

①

MODE SETTING SW (LEFT DIPSWITCH)	AREA WIDTH SW (RIGHT DIPSWITCH)	DOOR SIZE
		36 inch
		42 inch
		48 inch

Dipswitch setting 2

②

MODE SETTING SW (LEFT DIPSWITCH)	AREA WIDTH SW (RIGHT DIPSWITCH)	DOOR SIZE
		36 inch
		42 inch
		48 inch

Dipswitch setting 3

③

MODE SETTING SW (LEFT DIPSWITCH)	AREA WIDTH SW (RIGHT DIPSWITCH)	DOOR SIZE
		36 inch
		42 inch
		48 inch

Dipswitch setting 4

④

MODE SETTING SW (LEFT DIPSWITCH)	AREA WIDTH SW (RIGHT DIPSWITCH)	DOOR SIZE
		36 inch
		42 inch
		48 inch

Step 1

1. Determine which side of door (swing or approach) Position sensor is to be installed. Align template to pivot edge of door accordingly. Affix template. Template height can be between 6'-7" to 8'-2" from floor to top of template.

NOTE When templates are aligned properly the 3/8" pass thru hole ("A" on template) will be aligned with each other on both sides of door.



RH



LH

2. On the side of the door where the Position sensor is to be installed, drill two 1/8" (3.2mm) holes for Position sensor mounting plate as indicated by template. (one side of door leaf only)



3. Drill four sensor mounting holes (two on each side of door leaf, 1/8" or 3.2mm) as indicated by templates.
4. Drill 3/8" holes for pass thru cable as indicated on templates.

NOTE Hole "A" on approach side template should be perfectly in line with hole "A" on swing side template.



Step 2

1. On the side of the door where the Position sensor is to be installed take a OA-603 T sensor head and adjust the left and right dipswitch settings as indicated by the corresponding template. Verify threshold and swing angle adjustments are set to deep (+5 degrees).

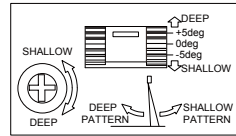
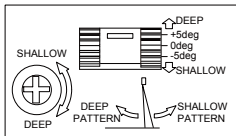
NOTE Each template location will have different dipswitch settings.

2. Remove the template and attach the sensor head loosely to the door leaf with two of the nine supplied screws.
3. Align the Position sensor mounting plate with the appropriate mounting holes and securely fasten to the door leaf with two mounting screws.
4. Go back and tighten the screws securing the OA-603 T sensor head to the door.
5. On the opposite side of the door leaf, take a OA-603 T sensor head and set the left and right Dipswitch settings as indicated by the corresponding template. Verify threshold and swing angle adjustments are set to deep (+5 degrees).

6. Remove the template and securely fasten the sensor head to the door using two mounting screws.
7. Repeat this process for each door leaf.

NOTE

These settings are optimal for most applications. However, operating conditions, environmental conditions and traffic flow may require changes to these settings. For in depth explanations of adjustments and dipswitch settings refer to the adjustment section (page 1-5) of this manual.



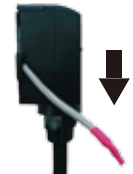
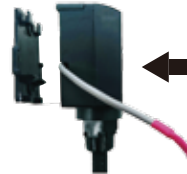
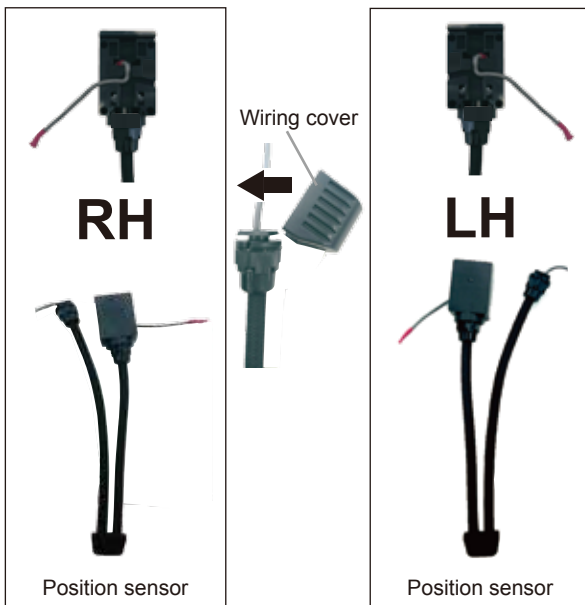
Step 3

1. To attach the Position sensor to the base plate, route the sensor connector wire and change the direction of the Wiring cover based on hinge location when facing the door. (LH or RH see pictures below)

2. To attach to base plate locate the Position sensor slightly high and to the side of the plate. Slide in horizontally and then down vertically.

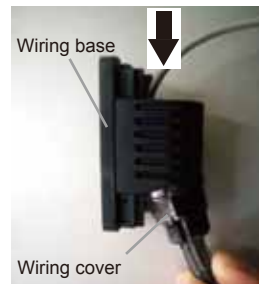
Push it from the upper part a little.

Slide it from the upper part downward.



Step 4

1. To properly locate the door jamb Wiring base, slide the Wiring cover on to the Wiring base and center it from top to bottom.
2. Hold Wiring base on jamb rotate door from closed to full open. Ensure no excessive stretching or binding of the loop occurs (may need to move base up or down to achieve.) Mark top of Wiring base to align mounting template later. (See Pre-and Post-Installation Checklist.)



Marking top of Wiring base



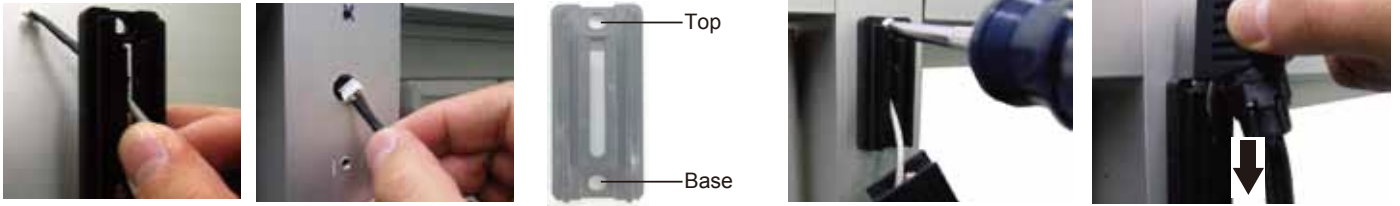
Step 5

1. Align and affix top of template with mark achieved in step 4.
2. Drill two 1/8" (3.2mm) mounting holes. Drill 3/8" (10mm) hole if routing cable thru jamb for concealed wiring (3/8" hole not required for surface wiring applications).



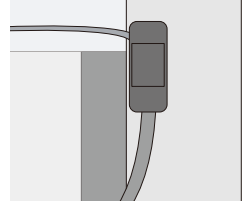
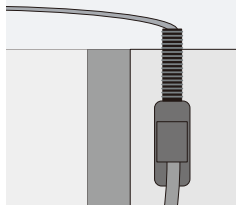
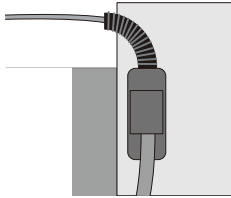
Step 6

1. For concealed wiring feed the connector thru the Wiring base and then the 3/8" cable hole and into the header.
For surface wiring (see examples of surface wiring below) do not route wire thru the Wiring base.
2. Properly position and securely fasten the Wiring base to the jamb (small screw located on side of Wiring base indicates bottom of base).
3. Feed the remainder of the cable thru the base and into the header then slide the Wiring cover onto the Wiring base from the top down.



NOTE Pinching caution

Examples of surface wiring. Supplied flexible wire shroud is cut to fit on site.



Step 7

1. Temporarily position the Wiring cover on the center of the base vertically.



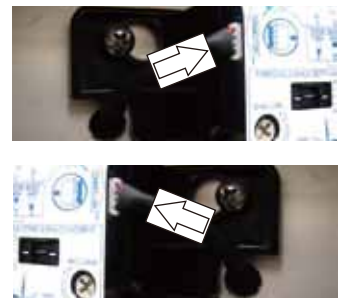
Step 8

1. Open and close the door leaf to determine the best location for the Wiring cover on the base plate.
On applications where the loop is mounted on the swing side, make sure the loop does not touch the door panel throughout the door travel.
2. Once the ideal position is determined, turn the screw in the back of the cover clockwise to secure the cover in place.



Step 9

1. Remove knockouts for OA-603 T sensor cover on loop side only!
2. Connect the cable from Position sensor to the OA-603 T.
3. Connect and pass thru cable to both OA-603 T sensor heads.



Step 10

Complete wiring of OC-904C T and perform initial setup. Refer to OC-904C T instruction manual and Wiring matrix for wiring details. Refer to ELITE manual (page 1-6) for initial setup details. Once complete return to step 11.

Step 11

Place the cover on the top then fit it on.



How to remove the cover



Insert the flathead screw driver and push it down as shown in the picture.

Hold the top and remove the cover.

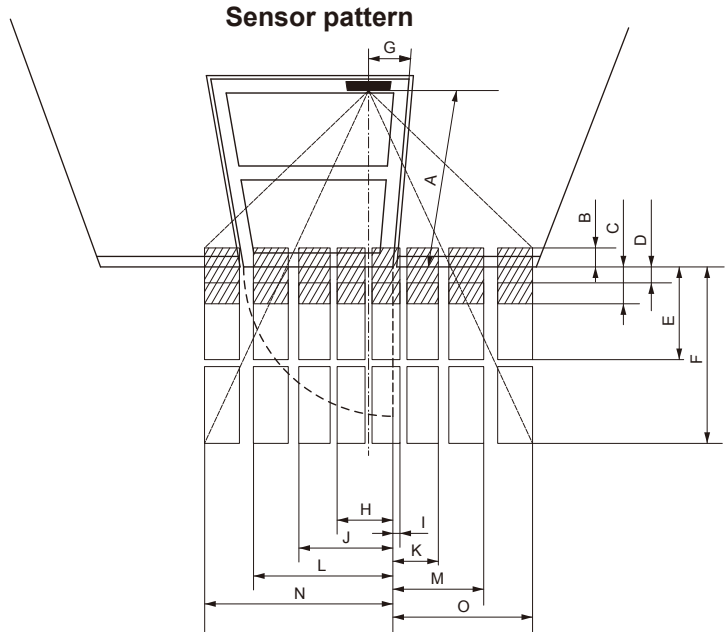


NOTE If desired, sensor covers can be left off until initial setup and final adjustments are performed.

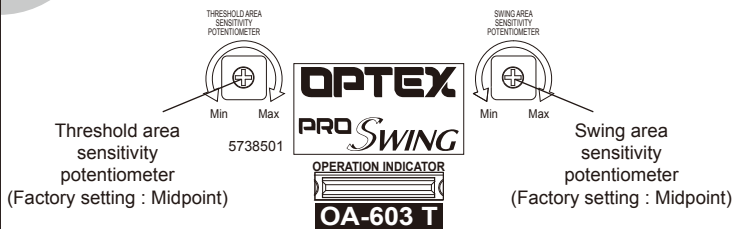
ADJUSTMENTS

The sensor pattern shown is when the swing & threshold area depth adjustments are set to 5 degrees. When the sensor system performs an initial setup to its operating environment detection areas may vary slightly from this chart.

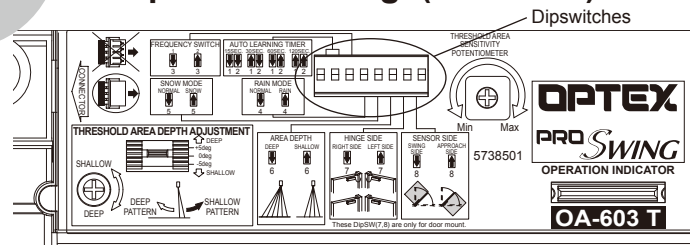
	[mm (feet)]	
A	2000 (6'7")	2300 (7'6")
B	186 (7")	214 (8")
C	360 (1'2")	414 (1'4")
D	152 (6")	175 (7")
E	840 (2'9")	966 (3'2")
F	1650 (5'5")	1898 (6'2")
G	252 (10")	
H	593 (1'11")	645 (2'1")
I	89 (3")	141 (6")
J	911 (3')	1010 (3'4")
K	407 (1'4")	506 (1'8")
L	1275 (4'2")	1428 (4'8")
M	770 (2'6")	924 (3')
N	1684 (5'6")	1900 (6'3")
O	1180 (3'10")	1395 (4'7")



1. Adjusting the Sensitivity



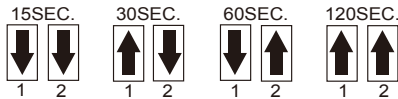
2. Mode Dipswitch settings (Left bank)



- 1,2: Auto learning timer
- 3: Frequency
- 4: Rain mode
- 5: Snow mode

2-1 Setting the Auto learning timer

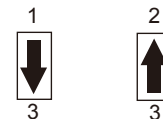
- (1) Select the Auto learning time.
- (2) Turn the power ON.
- (3) Wait for 15 seconds to complete the initial setting.
(Factory setting : 30sec)
- (4) If the initial setting is complete, LED flashing Yellow then solid Green.



NOTE Testing the set up can be done with the 15sec setting. Once adjustments are complete set timer to at least 30sec.

2-2 Setting the Frequency function (Interference prevention)

Two different frequencies can be set by adjusting Dipswitch 3. When two or more sensors are mounted close to each other, they may interfere. When that happens, change Frequency.



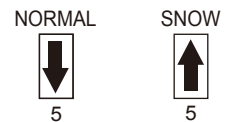
2-3 Setting the Rain mode

Set this switch to rain if the sensor is used in a region with a lot of rain.



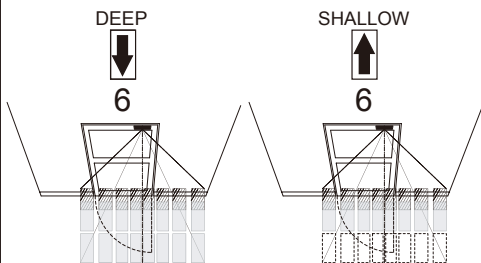
2-4 Setting the Snow mode

Set this switch to snow if the sensor is used in a region with snow or a lot of insects.



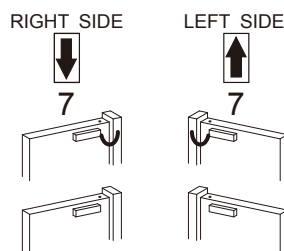
2-5 Setting the Area depth

Change this switch to SHALLOW if false detections occur from cross traffic / side traffic / or close by objects. In SHALLOW mode the shallow pattern is applied only during the closed position.



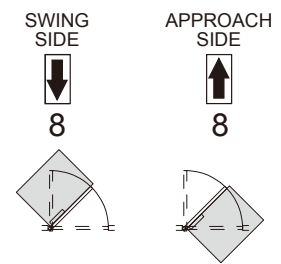
2-6 Setting the Hinge side

When facing the OA-603 T sensor head, if the hinge is to the right of the sensor set Dipswitch to "RIGHT SIDE". If hinge is to the left of the sensor set the dipswitch to "LEFT SIDE".



2-7 Setting the Sensor side

If you install the OA-603 T sensor head on swing side, choose "SWING SIDE", if non-swing side, choose "APPROACH SIDE".



CAUTION Sensor system does not operate when these Dipswitches are set the same on both sides of door.

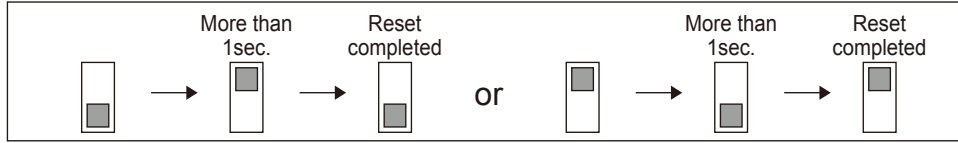
Auto learning function

This sensor has the function to fit floor condition changes **automatically**.

Therefore, even if objects are put in the detection area, sensor will learn the changes gradually and set back to normal operations automatically after several detections.

How to initiate a setup

When changing sensor settings, put any OA-603 T DipSwitch to ON / OFF for more than 1 second.



CHECKING

Setup process

This sequence must occur when power is applied for the first time or when initiating setup.

Door status	Sensor status	Operation indicator		OC-904C T Operation indicator
		Swing side	Approach side	
	Initial setup door closed	Yellow Blinking ↓ Solid Yellow	Yellow Blinking	Blinking Green ↓ Solid Green
Do not enter the detection area, until indicator turn to solid Yellow.	Waiting for next learning (Door closed)	Solid Yellow	Solid Yellow	Solid Green
	Activate door to learn opening cycle	Blinking Yellow	Solid Orange	Solid Red
	Learning full opened cycle	Blinking Yellow	Solid Orange ↓ Blinking Red ↓ Blinking Yellow	Solid Red
	Learning closing cycle	Blinking Yellow	Blinking Yellow	Solid Orange
	Setup complete approximately 3sec. after full closed	Solid Green (See NOTE)	Solid Green (See NOTE)	Solid Green

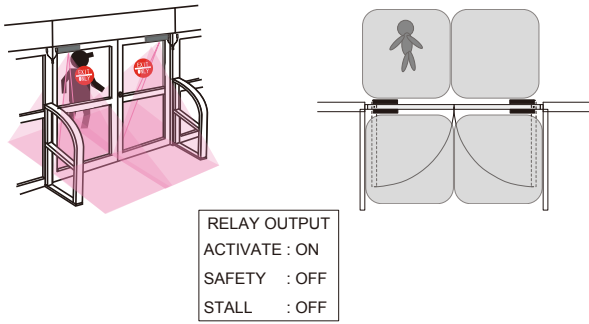
NOTE At full closed if setup does not complete in less than 5 seconds initiate setup again.

CHECKING

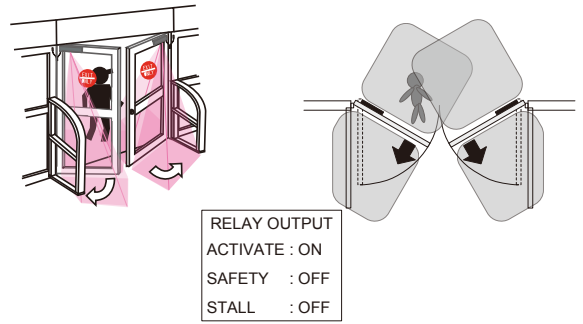
Operation check

Before leaving the site, check five items in the right table.

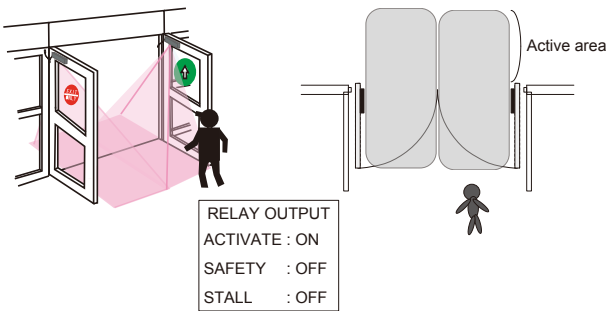
Entering to approach side at full closed position.



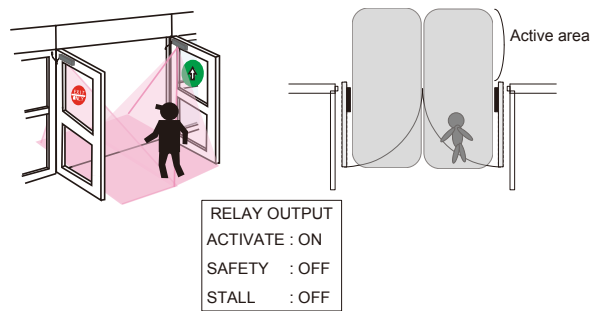
Doors open.



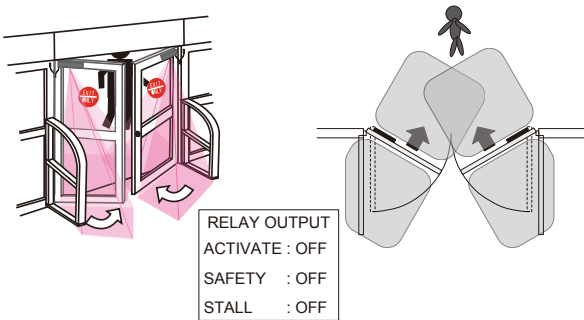
Entering to the door at full open position.



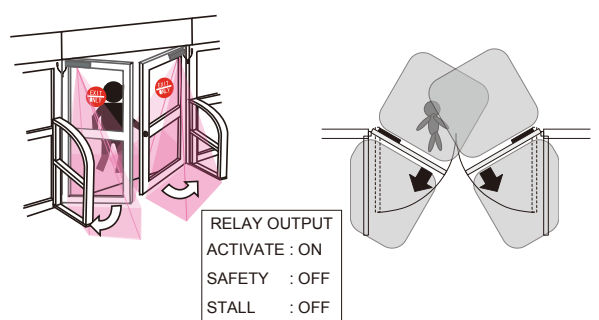
Doors stay opened.



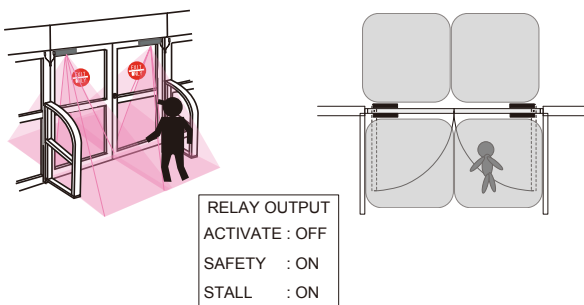
Entering to approach side during closing cycle.



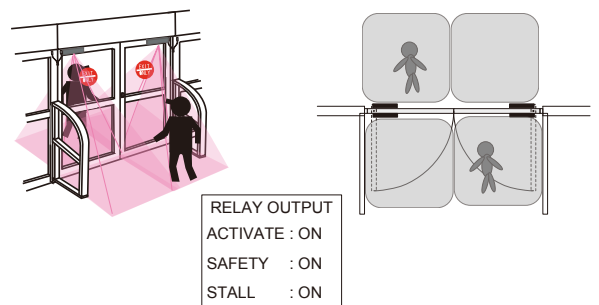
Doors start re-opening.



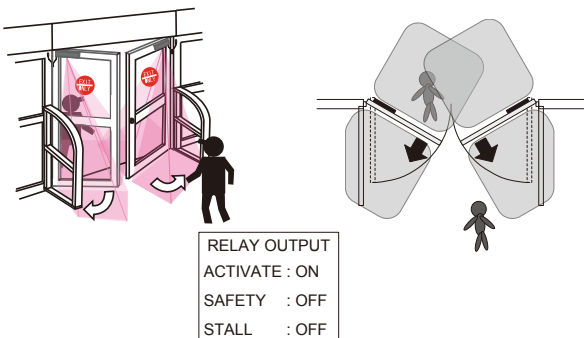
Entering to swing side at full closed position.



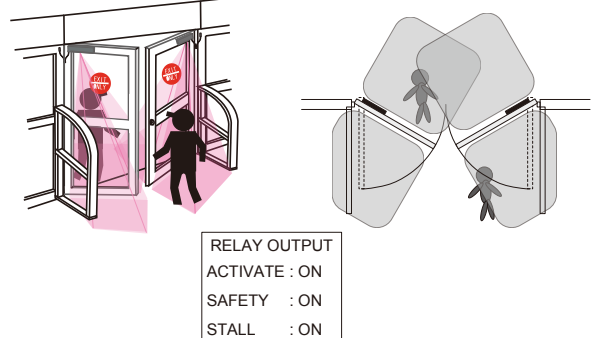
Doors do not open.



Entering to swing side during opening cycle.



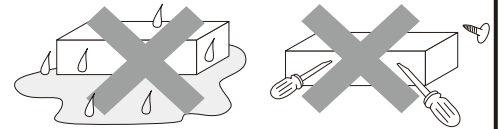
Doors stall.



NOTE Once the door reverses, swing side door will be active again.

INFORM BUILDING OWNER/OPERATOR OF THE FOLLOWING ITEMS

1. When turning the power ON, stay clear of detection area for a minimum of 10 seconds then walk test detection area to ensure proper operation.
2. Always keep the detection window clean. If dirty, wipe the window with a damp cloth (Do not use any cleaner or solvent).
3. Do not wash the sensor with water.
4. Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
5. Contact your installer or the sales engineer if you want to change the settings.
6. Do not place an object that moves or emits light in the detection area.(ex. Plant, illumination etc..)
7. Do not paint the detection window.



TROUBLE SHOOTING

Symptom		Possible cause	Possible countermeasures
Cannot initiate setup Moving Dipswitch on OA-603 T does not result in OA-603 T LED fast flash Yellow.	OC-904C T no LED indication	Improper power supply	Correct power problem
	OC-904C T LED double Orange flashing & no LED indication on OA-603 T	Bad connection on Orange and Brown wires of OC-904C T	Repair bad connection
		Bad connection at OC-904C T	Reseat 4 pin connector from Position sensor to OC-904C T
		Bad connection from Position sensor to OA-603 T sensor head	Reseat 4 pin connector from Position sensor to OA- 603 T sensor head
OC-904C T LED double Orange flashing & erratic LED on OA-603 T sensors	Bad connection with 7" pass thru cable	Reseat connection of 7" cable to both OA-603 T sensor heads	
	Bad 7" cable	Replace as necessary	
Will not complete initial setup	Switches 7 & 8 of left dipswitches on OA-603 T sensors set wrong	Correct dipswitch settings see page 1-2	
	OC-904C T dipswitches set wrong	Verify proper settings (Page 1-2)	
	Poor or improper connection of Yellow wires from OC-904C T to door control	Verify good and proper connection (see OC-904C T install manual)	
Intermittent recycle (Ghosting) or intermittent stalling	Improper voltage on Red & Black wire of OC-904C T	Ensure positive voltage on Red wire at hold open and 0 voltage at closed position	
	After initial setup door ghosts several times on first activation	Happens on 15% of installations If stops after first activation, system is OK	
	OA-603 T sensor head not mounted flush on door	Head may be resting on top of loop mounting bracket Reposition head flush on panel	
	Improper threshold or swing area angle adjustment	Set threshold and swing area angles at +5 degrees (Deep)	
	Improper voltage on Red & Black wire of OC-904C T	Ensure positive voltage on Red wire at hold open and 0 voltage at closed position	
	Stalling caused by traffic just outside of swing path or objects near guide rails	Set switch 6 on left bank dipswitch of OA-603 T ON / UP (Shallow) Note: moving the dipswitch will initiate a setup	
	Area width dipswitches set wrong (Right bank dipswitches on OA-603 T)	Verify proper settings (Page 1-2)	
No activation and / or no reactivation on closing cycle	Inconsistent data from Position sensor	Position the Position sensor so loop center coupler does not rest on door at any point of door travel	
	OC-904C T Yellow wires poor or improper connection to door control or ON / OFF / hold switch	Verify proper connection and output of Yellow wires.	
	OC-904C T dipswitches set improperly	Verify proper settings.(see OC-904C T install manual)	
No safety on swing side at full closed	On Knowing Act applications poor or improper connection of Purple wire from OC-904C T to activation device	Verify good and proper connection (see OC-904C T install manual)	
	OA -603 T sensor detects (Solid or flashing Red LED) but door opens anyway	Poor or improper connection of Blue wires from OC-904C T to door control	
	OC-904C T dipswitches set improperly	Verify proper settings.(see OC-904C T install manual)	
No stall on swing side while door is opening	OA-603 T no detection (Solid Green LED)	Area width dipswitches set wrong (Right bank dipswitches on OA-603 T)	
	OA -603 T sensor detects (Solid or flashing Red LED) but door does not slow or stop	Poor or improper connection of Green wires from OC-904C T to door control	
	OC-904C T dipswitches set improperly	Verify proper settings.(see OC-904C T install manual)	
Door remains open	OA-603 T no detection (Solid Green LED)	Area width dipswitches set wrong (Right bank dipswitches on OA-603 T)	
	OC-904C T dipswitches set improperly	Verify proper settings.(see OC-904C T install manual)	
	On Knowing Act applications poor or improper connection of Purple wire from OC-904C T to activation device	Verify good and proper connection (see OC-904C T install manual)	
	Improper wiring of door equipment ON / OFF/ hold switch	Verify proper wiring of ON /OFF / hold switch	

Warning indication (OA-603 T Sensor head)

Mode	Self monitoring function	Life cycle notification	Signal saturation	Communication error	Setting error
Operation indicator	Fast Green Blinking 	Twice Green Blinking 	Slow Green Blinking 	Twice Orange Blinking 	Fast Orange Blinking
Explanation	The sensor is reaching the end of its life cycle.	The relay is reaching the end of its life cycle.	Either the mounting position is too low or the detection area includes the wall or another object. OA-603 T threshold angle may be set to less than +5 degrees deep. Refer to "ADJUSTMENTS".	The sensor cable is connected, but unstable communication. A sensor cable may be disconnected or OA-603 T mode switches 7 & 8 may be set wrong. Refer to "ADJUSTMENTS"	When all the area width switches are inactive. Refer to "ADJUSTMENTS".

Contact your installer or the sales engineer if:
 - you need to change the settings or replace the sensor.
 - the trouble still persists after checking and remedying as described above.

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MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product.

Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

WARNING	Disregard of the warning symbol can cause improper operation which may cause death or serious injury.
CAUTION	Disregard of the caution symbol can cause improper operation which may cause injury of a person or damage the object.
NOTE	Special attention is required to the section of this symbol.

1. Set door speeds and verify proper operation of door manufacturer's equipment prior to applying power to the sensor system.
2. Do not install the sensor where it might be directly sprayed with rainwater.
3. Verify proper wiring prior to applying power to the sensor system to prevent damage to equipment.
4. When setting the sensor's area pattern, make sure there is no traffic around the installation site.
5. Do not attempt to rebuild or repair sensor heads or control unit. Contact an address in this manual for replacement products.
6. Only use the sensor as specified in the supplied instructions.
7. Walk test the installation to verify operation is in compliance with all local laws, codes and standards of your country.
8. Upon completion of installation and adjustments, instruct the owner/operator on proper operation of the door and sensor system.
Identify any switches/breakers that will place the door out of service when unsafe or improper operation is identified.

SPECIFICATIONS

Power supply	: 12-24VAC, 12-30VDC	Weight	: 62g (2.2oz.)
Current draw	: 500mA max.*	Accessories	: 1 Two sided tape 2 T-tap connector
Output	: Activate output / Form A relay 50V, 0.3A (Resistance load) Safety output / Form B relay 50V, 0.3A (Resistance load) Stall output / Form B relay 50V, 0.3A (Resistance load)		
Test input	: Opto coupler Voltage 5 to 30VDC Current 6mA Max. (30VDC)		
Relay hold time (Safety & Stall output only)	: 0.5 to 10sec.		
Response time	: < 0.3sec.		
Operation indicator	: Green / Stand-by Red / Door opening Orange / Lockout		
Operating temperature	: -20°C to +55°C (-4°F to +131°F)		

Interface LED : OC-904C T

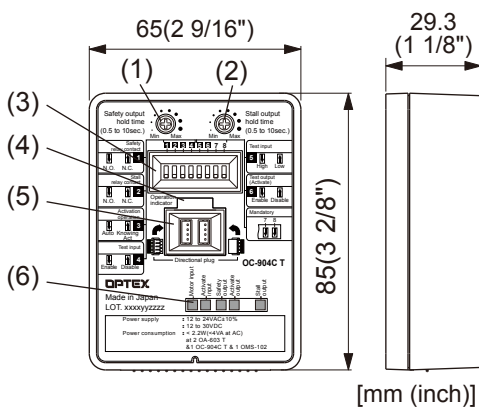
	LED indication	Operation
Stall output	Solid Green	When outputting (N.C. setting)
	OFF	N.O. setting
Safety output	Solid Green	When outputting (N.C. setting)
	OFF	N.O. setting
Activate output	Solid Orange	When outputting
Activate input	Solid Orange	When being input
Motor input	Sold Green	Positive
	Sold Red	Negative

*When a unit of the 2 OA-603 T and 1 OC-904C T used.

NOTE The specifications herein are subject to change without prior notice due to improvements.

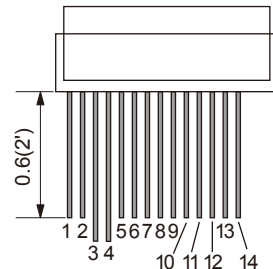
OUTER DIMENSIONS AND PART NAMES

Controller: OC-904C T



- 1 : Safety output hold timer
- 2 : Stall output hold timer
- 3 : Dipswitches
- 4 : Operation indicator
- 5 : Connector
- 6 : Interface LED
(Activate input, Safety output,
Activate output, Stall output, Motor input)

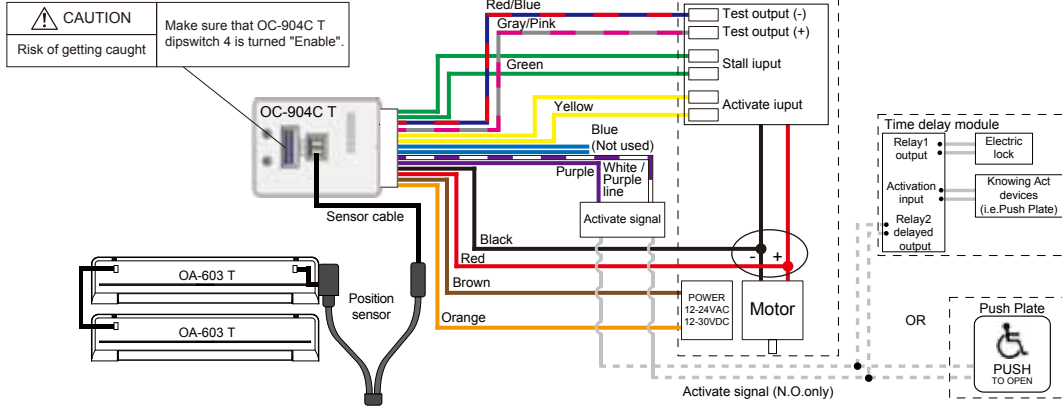
Wiring cable



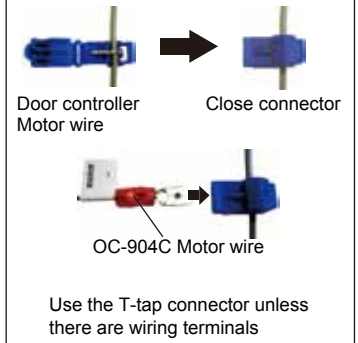
- 1: Power Orange
- 2: Power Brown
- 3: Motor voltage input positive (+) Red
- 4: Motor voltage input negative (-) Black
- 5: Knowing Act input (+) White/Purple line
- 6: Knowing Act input (-) Purple
- 7: Safety output Blue
- 8: Safety output Blue
- 9: Activate output Yellow
- 10: Activate output Yellow
- 11: Test input (+) Gray/Pink
- 12: Test input (-) Red/Blue
- 13: Stall output Green
- 14: Stall output Green

INSTALLATION

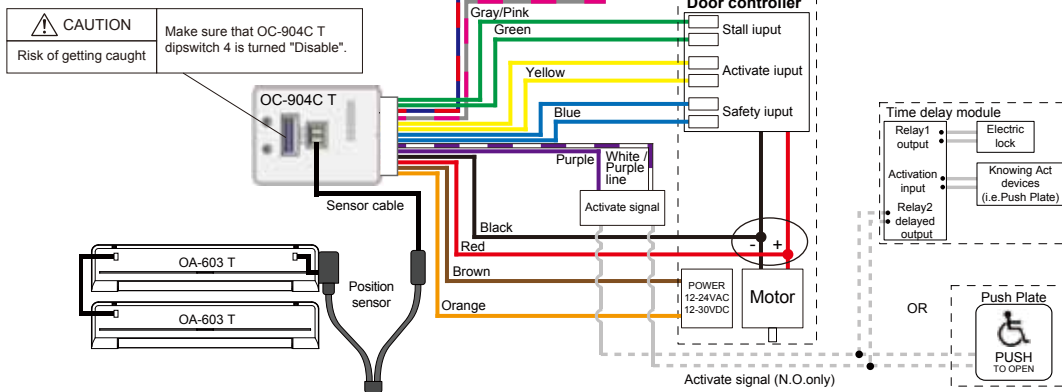
Wiring (Monitored door)



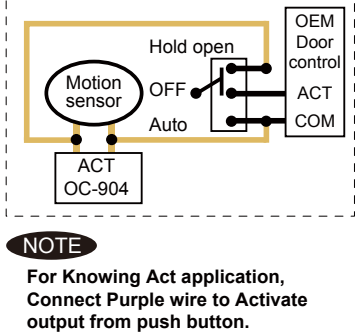
How to use T-tap connector



Wiring (Not monitored door)

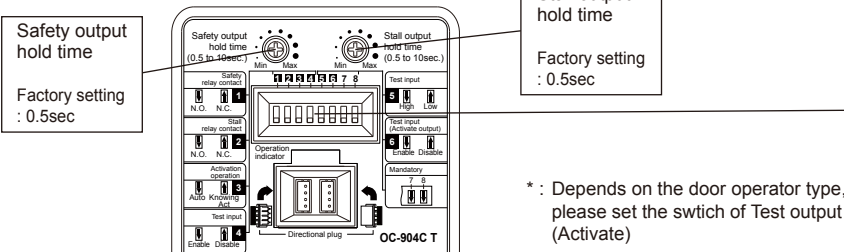


Standard optional ON / OFF / Hold switch



ADJUSTMENTS

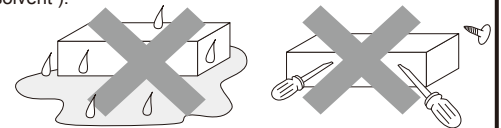
Dipswitch Settings



Dipswitch setting	OFF ↓	ON ↑
1 Safety relay contact	N.O.	N.C.
2 Stall relay contact	N.O.	N.C.
3 Activation operation	Auto.	Knowing Act
4 Test input	Enable	Disable
5 Test input	High	Low
6 Test output (Activate) *	Enable	Disable
7 Mandatory	All "OFF"	
8		

INFORM BUILDING OWNER/OPERATOR OF THE FOLLOWING ITEMS

- When turning the power ON, stay clear of detection area for a minimum of 10 seconds then walk test detection area to ensure proper operation.
- Always keep the detection window clean. If dirty, wipe the window with a damp cloth (Do not use any cleaner or solvent).
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- Contact your installer or the sales engineer if you want to change the settings.
- Do not place an object that moves or emits light in the detection area.(ex. Plant, illumination etc..)
- Do not paint the detection window.



Warning Indication (OC-904C T Controller)

Mode	Life cycle notification	Communication error
Operation indicator	Twice Green Blinking ■ ■ ■ ■ ■ ■ ■ ■	Twice Orange Blinking ■ ■ ■ ■ ■ ■ ■ ■
Explanation	The relay is reaching the end of its life cycle.	The sensor cable is connected, but unstable communication. A sensor cable may be disconnected or OA-603 T mode switches 7 & 8 may be set wrong. Refer to "ADJUSTMENTS"

Contact your installer or the sales engineer if:
- you need to change the settings or replace the sensor.
- the trouble still persists after checking and remedying as described above.

Manufacturer

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Beam Switch OS-12C T

Single / Double Beams

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product.

- WARNING: Disregard of warning may cause the improper operation causing death or serious injury of a person.
CAUTION: Disregard of caution may cause the improper operation causing injury of a person or damage to objects.

NOTE

- 1. When the equipment is in failure, the door is held open. (This is the function to secure the safety of traffic.)
2. Only use the sensor as specified in the supplied instructions.
3. Be sure to install the sensor in accordance with the local laws and standards of your country.
4. Before leaving the jobsite, be sure that this sensor is operating properly and instruct the building owner/operator on proper operation of this sensor.

WARNING Danger of electric shock.

Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.

WARNING Danger of getting caught between the door.

Even when someone stops on the threshold, the door closes unless the light beam is cut off (The beam switch outputs the signal only when the light beam is cut off). The beam switch is not designed as an apparatus to prevent accidents. It should be used strictly for the purpose of an auxiliary apparatus for safety.

SPECIFICATIONS

Table with 2 columns: Model (OS-12C T) and various specifications including Installation Distance, Detection Method, Power Supply, Current Draw, Operation Indicator, Test input, Safety Output, Response Time, Relay Hold Time, Operating Temperature, Weight, and Component.

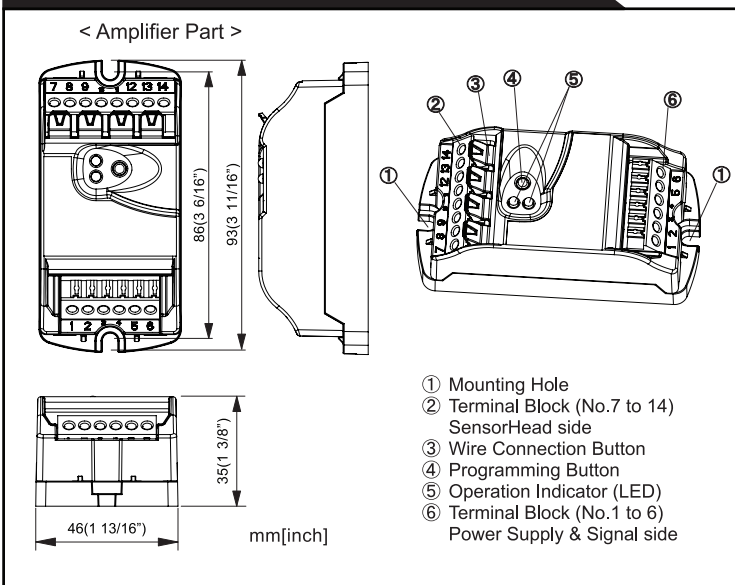
NOTE

It is possible to use OS-12C T as an amplifier for 1 or 2 beam use by attaching a separately sold SensorHead.

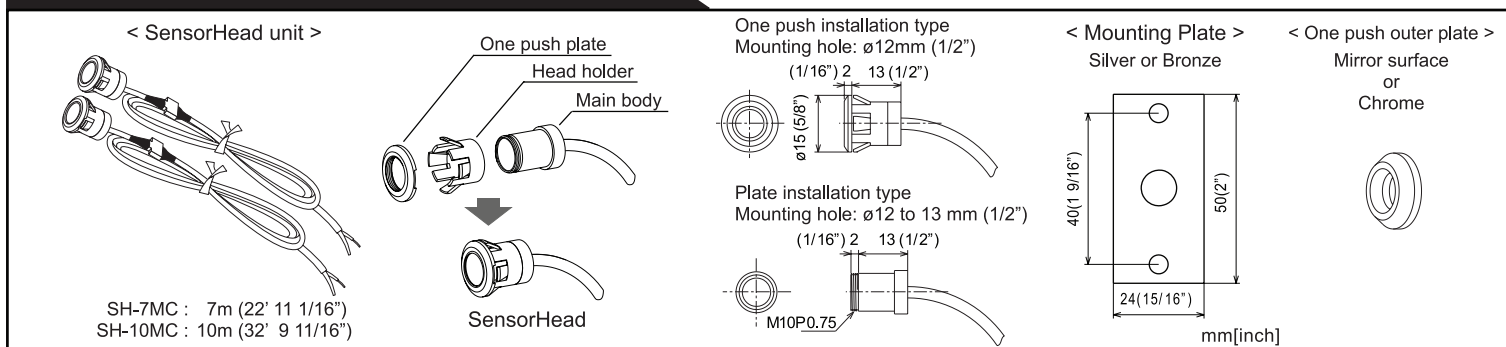
NOTE

The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES



SEPARATELY SOLD OPTIONAL ITEMS



INSTALLATION

1 Mounting the SensorHeads (Option)

One push installation type: Drill a mounting hole ø12mm (1/2") on the door jamb. Put the sensor heads into the mounting hole.

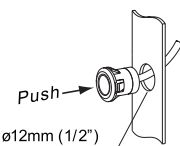
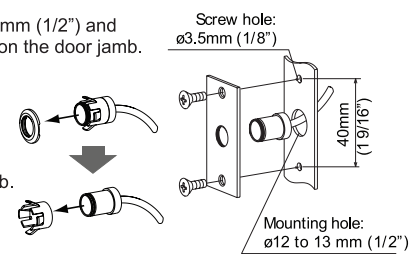
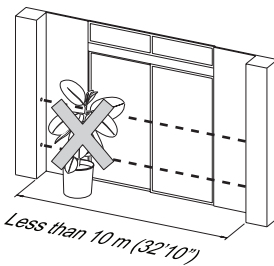


Plate installation type: Drill a mounting hole ø12 to 13 mm (1/2") and two screw hole ø3.5 mm (1/8") on the door jamb.



- On drilling the mounting holes: 1. Be sure to drill holes so that the SensorHeads faces each other. 2. After drilling the holes, remove the flashes around the holes. Otherwise, the apparatus may not operate properly as the SensorHead rides on the flashes causing tilts.

- Installation Site Environment: Do not place any swaying object which cuts off the beam path. Otherwise the door may be held open.



- On setting of one push plate: Be sure to push the SensorHeads in securely. If the SensorHeads are not secured, it may cause an unnecessary activation signal.

- Distance between the SensorHeads: Be sure to set the distance to less than 10m (32' 10"). If the distance is more than 10m (32' 10"), the door may be held open.

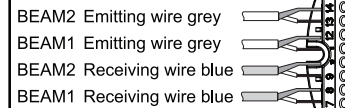
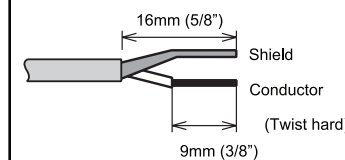
2 Installing the amplifier

Use the provided screws (2 pieces). *The size of the hole is ø3.5 mm (1/8")

INSTALLATION (CONTINUED)

3 Wiring SensorHeads

- Cutting the wires: When cutting the wires, prepare the tip of the wires as follows:



- Prohibition of extending wires: Do not extend the wires. Otherwise, the apparatus may be influenced by noises causing malfunction.

WARNING Danger of electric shock. Before starting the procedure, be sure to turn off the power supply.

CAUTION Risk of breaking the apparatus. When cutting the wires, be sure to prepare the tip of the wires as shown on the left: If the covers of the shielding wires are peeled off too long, the adjacent tips can easily contact each other causing breakdown of the apparatus.

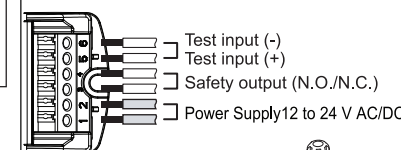
Insert the wires to Terminal Block as shown on the left.

Insert the wire as you press the Wire Connection Button. Then, release the finger. Be sure to insert both the shield and the conductor.



4 Connecting power supply wires and output signal wires

Insert the wires to Terminal Block as shown below.



Press the Wire Connection Button of the power supply signal side and insert the wires. Be sure that the wires are securely connected.

CAUTION Risk of breaking down the apparatus. Be sure to connect the power supply wires to terminal 1 and 2. If wired wrongly, the apparatus may break down.

- Stated connection capacity: Solid (Rigid) ø0.4-ø1.2mm (AWG26-18); Stranded (Flexible) ø0.3mm²-0.75mm² (AWG22-20); Strand diameter shall be more than 0.18mm.
Warning about wiring: Do not connect more than 2 wires to one terminal.

ADJUSTMENT & CHECKING

1 Sensitivity Adjustment

- 1. Press Programming Button for more than one second. When the green and red LED blinking becomes green and red (no blinking), the setting is completed. The proper sensitivity is adjusted automatically.
2. Check the auto-set adjustment with the table below.

Table with 2 columns: LED and State. States include Green/Red ON, Green ON, Green/Red Blink alternately, and Simultaneous twice Blinking (Red&Green).

Checking Item: If there is no person or object in the detection area. If the lens surface is clean. If the wire connections are done properly. If the emitting/receiving SensorHeads are mounted straight. (They should not be tilted.)

- Sensitivity Adjustment: Set the sensitivity in the environment same as the actual regular use. Also, be sure that there is no swaying object in the area.
When changing the number of SensorHead: Be sure to press the Programming Button. All SensorHeads can be adjusted at once. The apparatus does not operate properly if Programming Button is not pressed.
Re-setup of sensitivity: For the maintenance, press Programming Button to readjust. The sensitivity is set automatically.

2 Select N.O./N.C. and Active Low/Active High

OS-12C T needs to be adjusted according to Test input and Output from operators. OS-12C T has 4 amplifier modes (A to D). When safety output of operator is N.O. and Active Low, proceed to 3. Checking the operation. (No need for adjustment on amplifier mode) If not, follow procedures below to adjust properly.

- 1. Press and hold Programming Button until red LED starts to blink, it becomes amplifier mode.
2. Press Programming Button to select appropriate setting out of 4 amplifier modes (A to D) within 10 seconds, referring to chart below.

Table for Amplifier Mode selection with 4 modes (A, B, C, D) and their corresponding LED states (Green/Red).

- 3. Press Programming Button until green and red LED blinking goes off to finalize setting.
Amplifire will not work right if the adjustment is not completed.
*When it exceeds 10 seconds without any operation, follow procedure again from start.

- NOTE: Select B mode to work with operators without Test input function.
NOTE: Select amplifier mode according to operators, otherwise OS-12C T does not work properly.

3 Checking the operation

Check the operation of the apparatus according to the following chart.

Chart showing operation indicator and status for different entry motions and output types (N.O., N.C.).

INFORM THE FOLLOWING ITEMS TO THE BUILDING OWNER/OPERATOR

- 1. When turning the power on, always walk-test the sensor to ensure proper operation.
2. Always keep the Lens surface clean. If dirty, wipe the lens with a damp cloth. (Do not use any cleaner or solvent)
3. Do not wash the sensor with water.
4. Do not disassemble, rebuild or repair the sensor yourself; otherwise electric shock may occur. Contact your installer or the sales engineer if you want to change the settings.
5. Do not place an object that moves or emits light in the detection area.
6. (Ex. Plant, illumination etc.)
7. Do not paint the Lens surface.

TROUBLESHOOTING

Troubleshooting table with columns: Trouble, Possible Cause, and Solution.

Contact your installer or the sales engineer if: - you need to change the settings or replace the sensor. - the trouble still persists after checking and remedying as described above.

Manufacturer: OPTEX Co., LTD. 5-8-12 Ogoto Otsu 520-0101, Japan.
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East coast office: 8510 McAlpines Park Drive, Suite 108 Charlotte, NC 28211 U.S.A.

REACTION ONE / REACTION TWO



MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this operation manual.

WARNING	Disregard of warning may cause the improper operation causing death or serious injury of a person.
CAUTION	Disregard of caution may cause the improper operation causing injury of person or damage to objects.
NOTE	Special attention is required to the section of this symbol.

NOTE

- This sensor is a non-contact switch intended for header mount / ceiling mount of an automatic door. Do not use for any other applications.
- When setting the sensor's detection area, make sure there is no traffic around the installation site.
- Before turning the power on, check the wiring to prevent damage or malfunction of equipments that are connected to the sensor.
- Only use the sensor as specified in the operation manual provided.
- Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
- Before leaving the job site make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
- The sensor setting can only be changed by an installer or service engineer. When changed, register the changed setting and dates in the maintenance logbook accompanying the door.

WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of equipments.
Danger of electric shock.	

NOTE The following conditions are not suitable for the sensor installation.
 -Vibrating header or mounting surface, -Waterdrops or snow on the sensor,
 -Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity.

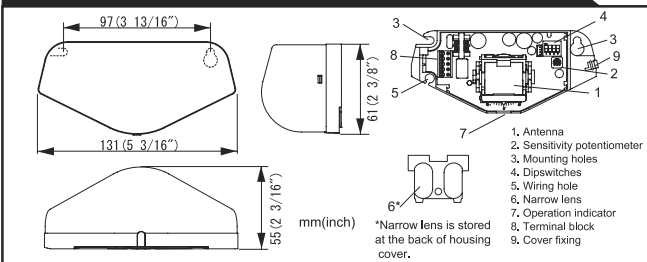
SPECIFICATIONS

Model	: REACTION ONE / REACTION TWO	Output	: Form C relay
Cover color	: Silver / Black		: 50V 0.3A Max.(Resistance load)
Mounting height	: 2.0 (6'7") to 3.5m (11'5")	Output hold time	: 2.0sec. / 4.0sec.
Detection method	: Microwave doppler effect	Response time	: <0.3 sec.
Power frequency	: 24.125GHz	Operating humidity	: <80%
Power density	: <2000m	Operating temperature	: -20°C to +55°C(-4°F to 131°F)
Detection area	: See Detection area	IP rate	: IP54
Vertical adjustment	: +10° to +70° (Header mount) +20° to +80° (Ceiling mount)	Weight	: 140g (4.9oz)
Horizontal adjustment	: 30° to left or right	Accessories	: 1 Cable 3m (9'10") 1 Operation manual 2 Mounting screws 1 Mounting template 1 Narrow lens*
Power supply	: 12 to 24VAC(±10%) 12 to 30VDC(±10%)		
Power consumption	: <1.5W(±2VA at AC)		
Minimum speed	: 5cm(1'15'16'')/sec.		
Operation indicator	: Green / Stand-by Red / Detection Green blinking / Set-up		

* At the back of housing cover

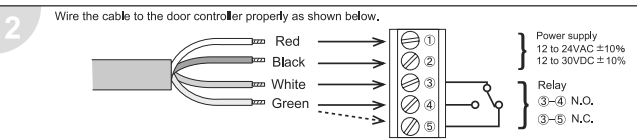
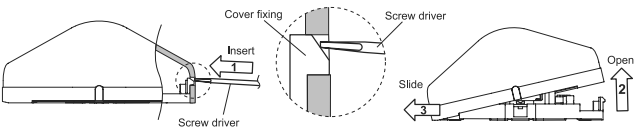
NOTE The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES



INSTALLATION

- Affix the Mounting template at the desired mounting position.
- Drill 2 Mounting holes of ø3.4mm (ø1/8").
- To pass the cable through to the header, drill a Wiring hole of ø8mm (ø5/16").
- Remove the Mounting template.
- Remove the Housing cover with screw driver as shown below. Attach the sensor to the mounting surface with 2 Mounting screws.



WARNING	Before starting the procedure, ensure that the power is turned OFF. When passing through the cable to the hole, make sure not to tear the shield, otherwise it may cause electric shock or breakdown of the sensor.
Danger of electric shock.	

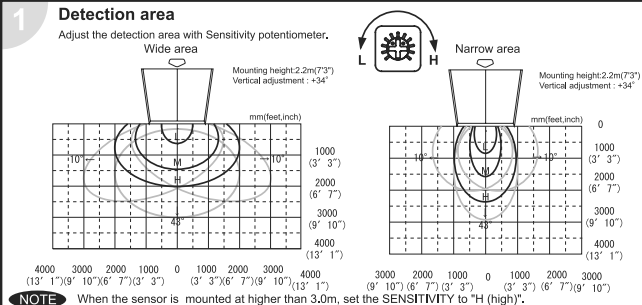
- Plug the connector of the sensor.
- Supply power to the sensor and the sensor will automatically start the set-up mode with blinking Green.
- Adjust the detection area and set the Dipswitches. (See ADJUSTMENTS)

NOTE Make sure to connect the cable correctly to the door controller before turning the power ON. The sensor does not detect objects for 10 seconds after supplying power.

- Hook the Housing cover on the left side of main body to place the Housing cover. If wiring is to be exposed, break the knockout.

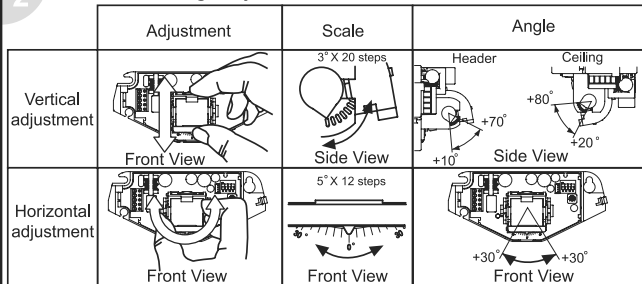
WARNING	Do not use the sensor without the Housing cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock.	

ADJUSTMENTS



NOTE When the sensor is mounted at higher than 3.0m, set the SENSITIVITY to "H (high)".

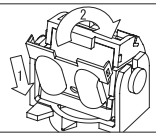
Detection area angle adjustment



CAUTION Do not touch electric part of the sensor to avoid possible breakdown of the sensor.

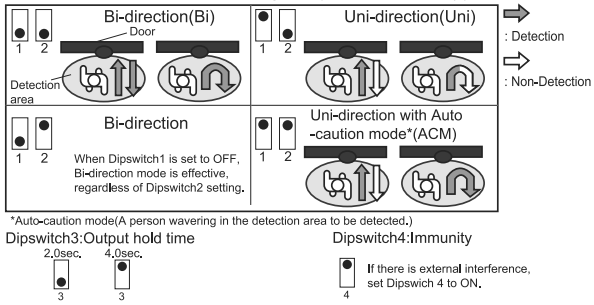
Narrow area

To obtain Narrow area, place Narrow lens attached at the back of housing cover. To place Narrow lens, follow step 1&2 as shown on the right.



Dipswitches settings

Set Dipswitch 1&2 to enable the direction recognition. (REACTION TWO Only.)



INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the housing cover clean. If dirty, wipe the housing cover lightly with a cloth. (Do not use any cleaner or solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the housing cover.

NOTE

- After applying power, wait 10 seconds then walk test detection area to ensure proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

CHECKING

Check the operation according to the chart below.

Sensor Status	Power OFF	Set-up (Approx. 10sec.)	Stand-by	Detection
Operation indicator	OFF	Green blinking	Green	Red
Output Contact	③-④ ⑤	③-④ ⑤	③-④ ⑤	③-④ ⑤

TROUBLESHOOTING

Problem	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Wrong power supply voltage.	Set to the stated voltage.
	Unstable	Wrong wiring or connection failure.	Check the wiring and Terminal block.
	Green	Sensitivity is too low. Wrong detection area positioning.	Set the sensitivity higher. Check ADJUSTMENTS.
Door opens when no one is in the detection area. (Ghosting)	Green blinking	The sensor is being set up.	Wait for the set-up to complete.
	Red	Water drops on the housing cover. The detection area is overlapping with the door. Sensitivity is too high. Raining or snowing.	Wipe the housing cover with a cloth. Adjust the detection area away from the door. Or set Dipswitch 4 to ON. Set the sensitivity lower. Set Dipswitch 1 to ON.(REACTION TWO Only) Or Dipswitch 4 to ON.
Door remains open	Green	Wrong wiring or connection failure.	Check the wiring and Terminal block.

FCC WARNING(For USA)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

-NOTICE-

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

-NOTICE-

1. The antennas cannot be exchanged.
2. To comply with FCC RF exposure compliance requirements, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.

IC(For CANADA)

Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation of the device.



i-oneX T

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

	WARNING	Disregard of the warning symbol can cause improper operation which may cause death or serious injury.
	CAUTION	Disregard of the caution symbol can cause improper operation which may cause injury of a person or damage the object.
	NOTE	Special attention is required to the section of this symbol.

NOTE

- This product is a non-contact switch intended for header mount or wall mount for use on an automatic sliding door. Do not use for any other applications.
- When setting the sensor's detection area, make sure that there is no traffic around the installation site.
- Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
- Only use the product as specified in the operation manual provided.
- Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
- Before leaving the installation site make sure that the product is operating properly and instruct the building owner/operator on proper operation of the door and the product.
- The product settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock		

NOTE

- The following conditions are not suitable for sensor installation.
- Fog or exhaust emission around the door
 - Wet floor
 - Vibrating header or mounting surface
 - Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity
 - Highly reflecting floor or highly reflecting objects around the door

SPECIFICATIONS

Model	: i-oneX T	Safety output	: Form A relay 50V 0.3A Max. (Resistance load)
Cover color	: Black	Output hold time	: 0.5 to 1.5sec.
Mounting height	: 6'7" to 9'10" (2.0m to 3.0m)	Response time	: < 0.3sec.
Detection area	: See DETECTION AREA	Operating temperature	: -31°F to 131°F (-35°C to +55°C)
Detection method	: Active infrared reflection	Operating humidity	: < 80%
Depth angle adjustment	: Approach area -15° to +10° Presence/Motion area -10° to +8°	IP rate	: IP54
Power supply	: 12 to 24VAC ±10% (50 / 60 Hz) 12 to 30VDC ±10%	Weight	: 14.6oz (420g)
Power consumption	: < 2.5W (< 4VA at AC)	Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Cable 9'10" (3m)
Operation indicator	: See Operation indicator table		
Activation output	: Form A relay 50V 0.3A Max. (Resistance load)		
Test input	: Opto coupler Voltage 5 to 30VDC Current 6mA Max. (30VDC)		

Operation indicator table

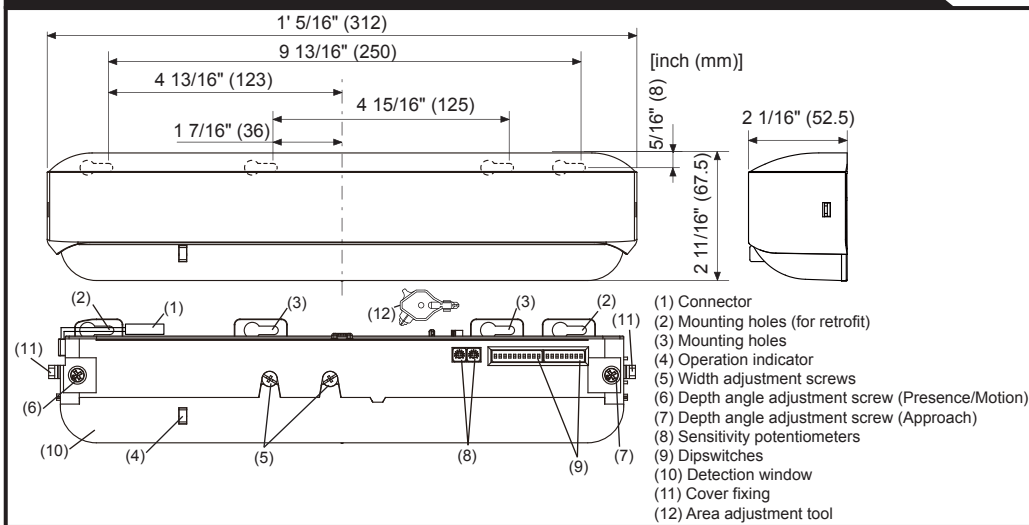
Status	Operation indicator color	1sec.	1sec.
Stand-by (installation mode)	Yellow	[Solid bar]	
Stand-by (operation mode)	Green	[Solid bar]	
BLUEZONE (1st row) detection(*1)	Blue	[Solid bar]	
2nd row detection	Red blinking	[Blinking bar]	
3rd/4th row detection	Red	[Solid bar]	
5th row detection	Orange	[Solid bar]	
Approach (6th row) detection	Orange blinking	[Blinking bar]	
Signal saturation	Slow Green blinking	[Blinking bar]	
Sensor failure	Fast Green blinking	[Blinking bar]	

NOTE

The specifications herein are subject to change without prior notice due to improvements.

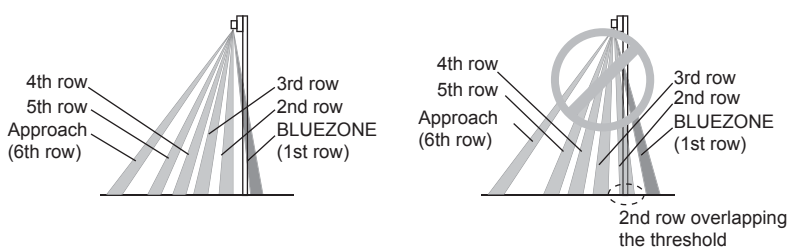
*1 : See **BLUEZONE AREA**

OUTER DIMENSIONS AND PART NAMES



BLUEZONE AREA

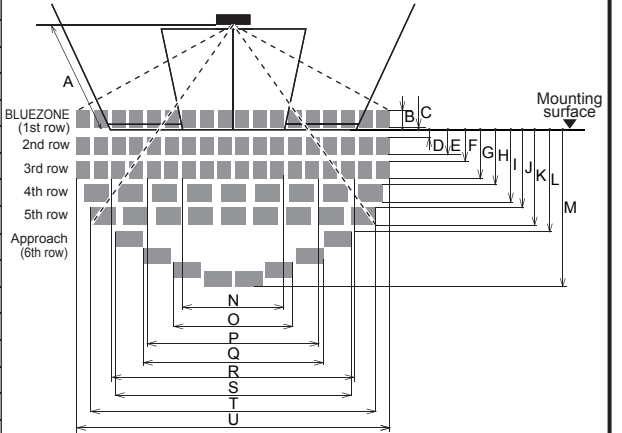
When dipswitch 5 is set to "ON", the BLUEZONE area, that provides extra safety over the threshold, is activated. In case the BLUEZONE function is not required, set dipswitch 5 to "OFF". Do not set the 2nd row overlapping the threshold regardless of the setting of dipswitch 5.



DETECTION AREA

The chart shows the values at depth angle 0°

	[feet,inch(m)]		
A	7'3" (2.20)	8'2" (2.50)	9'10" (3.00)
B	9" (0.22)	10" (0.25)	1' (0.31)
C	6" (0.16)	7" (0.18)	8" (0.21)
D	2" (0.06)	3" (0.07)	3" (0.08)
E	7" (0.17)	8" (0.20)	9" (0.24)
F	1'7" (0.49)	1'10" (0.55)	2'2" (0.65)
G	1'8" (0.50)	1'11" (0.58)	2'4" (0.70)
H	2'8" (0.82)	3'1" (0.93)	3'8" (1.11)
I	2'10" (0.86)	3'3" (0.99)	3'11" (1.19)
J	3'5" (1.04)	3'10" (1.18)	4'8" (1.41)
K	3'7" (1.09)	4'1" (1.24)	4'11" (1.49)
L	4'9" (1.45)	5'5" (1.65)	6'6" (1.98)
M	8'1" (2.46)	9'2" (2.79)	11' (3.35)
N	4'6" (1.38)	5'2" (1.57)	6'2" (1.89)
O	7'1" (2.15)	8" (2.45)	9'8" (2.95)
P	8'4" (2.53)	9'5" (2.88)	11'4" (3.45)
Q	10'6" (3.20)	12' (3.65)	14'4" (4.38)
R	12'1" (3.68)	13'9" (4.18)	16'6" (5.02)
S	14' (4.27)	15'11" (4.86)	19'2" (5.84)
T	13'5" (4.10)	15'4" (4.67)	18'4" (5.60)
U	16'9" (5.10)	19' (5.79)	22'10" (6.95)



Presence area :1st-4th row
Motion area :5th row
Approach area :6th row

Approach area

*Mounting Height = 7'3" (2.2m) [feet,inch(m)]

	-15°	0°	+10°
L	2'2" (0.67)	4'9" (1.45)	6'9" (2.06)
M	5'1" (1.54)	8'1" (2.46)	12' (3.65)
O	5'7" (1.69)	7'1" (2.15)	8'2" (2.50)
Q	8'3" (2.52)	10'6" (3.20)	11'8" (3.56)
S	12' (3.66)	14' (4.27)	15'7" (4.76)

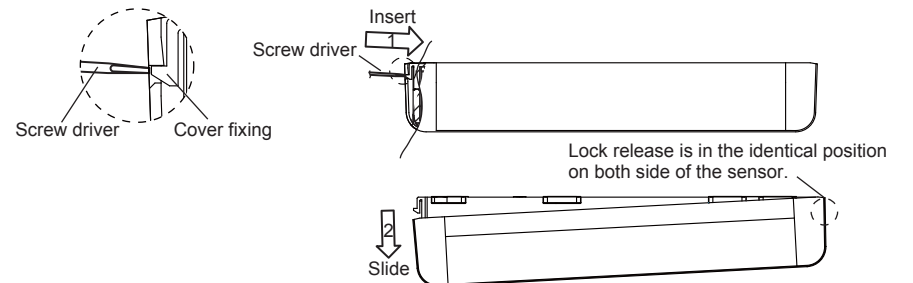
NOTE

The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object. The sensor may not be activated when the entering speed of the object or a person is slower than 2"(50mm) / sec. or faster than 4'11"(1500mm) / sec.

INSTALLATION

1

- Affix the mounting template at the desired mounting position. Refer to the chart in below.
- Drill two mounting holes of $\phi 1/8"$ ($\phi 3.4\text{mm}$).
- To pass the cable through the header, drill a wiring hole of $\phi 5/16"$ ($\phi 8\text{mm}$).
- Remove the mounting template.
- Remove the housing cover with screw driver as shown below. Fix the sensor to the mounting surface with the two mounting screws.



H : Height from the floor to the bottom of the header (The mounting height is "H + Y".)
Y : Distance between the bottom of the header and the sensor
X : Distance between the door and the mounting surface

X	H	Maximum distance (Y) [feet,inch(m)]				
		6'7" (2.00)	7'7" (2.30)	8'2" (2.50)	9'2" (2.80)	9'10" (3.00)
0		No limit				
2" (0.05)		4" (0.10)	4" (0.10)	4" (0.11)	5" (0.12)	5" (0.12)
4" (0.10)		3" (0.08)	4" (0.09)	4" (0.10)	4" (0.11)	4" (0.11)
6" (0.15)		2" (0.06)	3" (0.08)	3" (0.08)	4" (0.09)	4" (0.10)
8" (0.20)		2" (0.05)	3" (0.07)	3" (0.08)	4" (0.09)	4" (0.09)
10" (0.25)		2" (0.05)	2" (0.06)	3" (0.07)	3" (0.08)	3" (0.08)
12" (0.30)		-	-	-	-	-

NOTE Make sure not to mount the bottom of the sensor lower than the bottom of the header.

	CAUTION	Make sure to affix the mounting template as described in the above chart, otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible on the header.
Risk of getting caught		

2

Wire the cable to the door controller as shown below.

Power supply	1	1. Grey 2. Grey	1	12 to 24VAC±10% / 12 to 30VDC±10%
Activation output	2	3. White 4. Yellow	2	Form A relay 50V 0.3A Max.
Safety output	3	5. White stripe 6. Yellow stripe	3	Form A relay 50V 0.3A Max.
Test input	4	7. Red (+) 8. Black (-)	4	Opto coupler / Voltage: 5 to 30VDC

	WARNING	Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield otherwise it may cause electric shock or breakdown of the sensor.
Danger of electric shock		

3

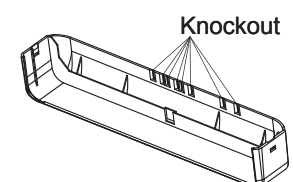
- Plug the connector.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **ADJUSTMENTS 5. Dipswitch settings, Table 1**)

NOTE

Make sure to connect the cable correctly to the door controller before turning the power ON. When turning the power ON or after adjusting the settings, do not enter the detection area for more than 10 seconds in order to enable the presence detection. Do not touch the dipswitches before turning the power ON, otherwise an error occurs.

4

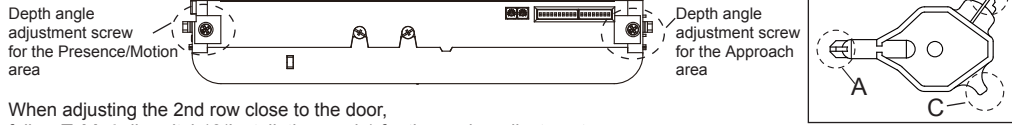
Place the housing cover. If wiring is to be exposed, break the knockout.



	WARNING	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock		

ADJUSTMENTS

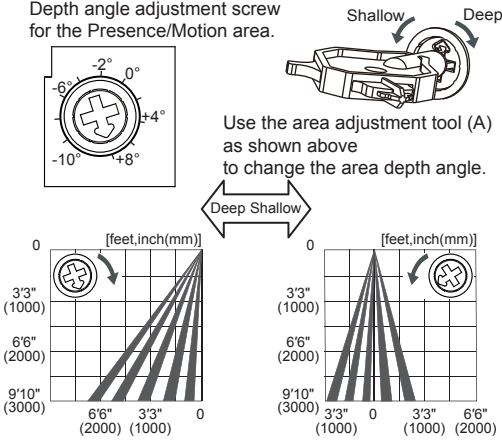
1 Area depth angle adjustment



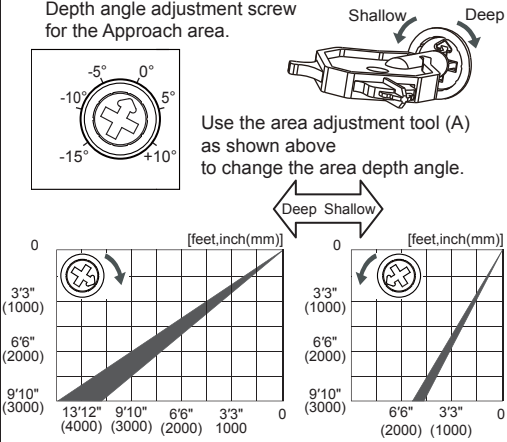
When adjusting the 2nd row close to the door, follow **Table 1** dipswitch 18 (Installation mode) for the easier adjustment. When dipswitch 18 is set to "ON", sensor automatically set back to the operation mode after 5 minutes. If the installation mode is required again, set dipswitch 18 to "OFF", then set to "ON".

NOTE Make sure that the detection area does not overlap with the door / header, and there is no highly reflecting object near the detection area otherwise ghosting / signal saturation may occur.

1-1 Presence/Motion area



1-2 Approach area

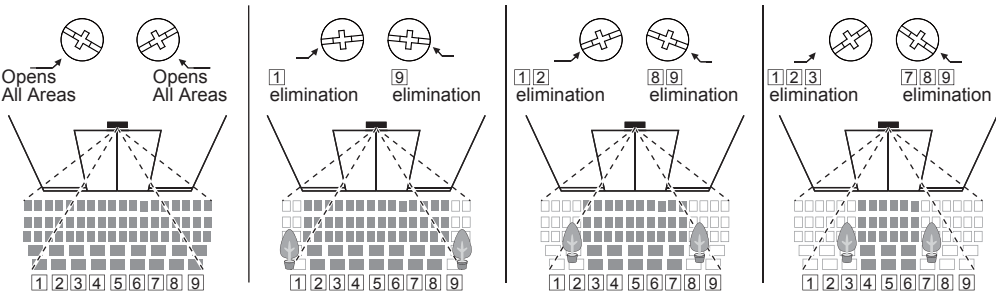


2 Area width adjustment

2-1 Presence/Motion area

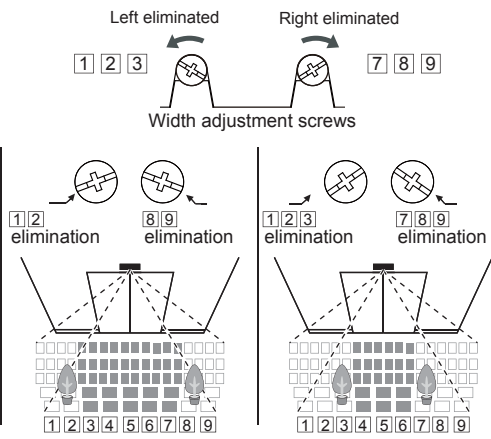
Adjust the Presence/Motion area width with the Width adjustment screws. Each side can be adjusted independently, allowing for asymmetrical settings. Use the area adjustment tool (A) to adjust area width.

NOTE When setting the Presence/Motion area width, make sure to turn the width adjustment screws until it clicks.



2-2 Approach area

Approach area width can be adjusted by changing the Dipswitches 8, 9, 10. See 5. Dipswitch settings, Table 1.



3 Presence/Motion area rows adjustment

Presence/Motion area rows can be adjusted by changing the Dipswitches 6 & 7. See 5. Dipswitch settings, Table 1.

4 Sensitivity adjustment

Adjust the Approach area and Motion/Presence area with potentiometer. Turning it clockwise increases the sensitivity and turning counterclockwise lowers the sensitivity.

Presence/Motion sensitivity: Low to High

Approach sensitivity: Low to High

Use the area adjustment tool (B) to change sensitivity.

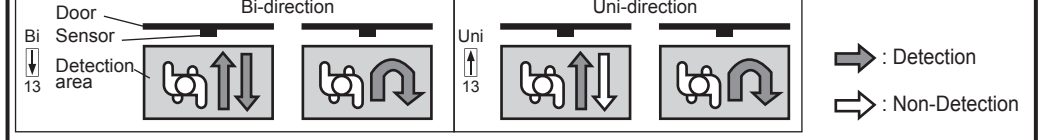
5 Dipswitch settings

The area adjustment tool (C) can be used to change Dipswitch.

Table 1	Function	Setting	Comment
Dipswitch 1	Presence timer	30sec. (Down 1, 2)	To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.
Dipswitch 2		60sec. (Down 1, 2)	
Dipswitch 3	Frequency	Setting 1 (Down 3, 4)	When using more than one sensor close to each other, set the frequency different for each sensor.
Dipswitch 4		Setting 2 (Up 3, 4)	
Dipswitch 5	BLUEZONE	OFF (Down 5) / ON (Up 5)	When dipswitch 5 is set to "ON", the BLUEZONE (1st row) is active and looks through the threshold.
Dipswitch 6	Presence/Motion area row adjustment	5rows (Down 6, 7)	Rows can be eliminated as shown below. 5rows, 4rows, 3rows, 2rows.
Dipswitch 7		4rows (Up 6, 7)	
Dipswitch 8	Approach area width adjustment	8 9 10 (Down 8, 9, 10)	The width of Approach area can be adjusted by changing the Dipswitches as shown the left.
Dipswitch 9		1 2 3 4 5 6 7 8 (Up 1, 2, 3, 4, 5, 6, 7, 8)	
Dipswitch 10		Active area (Shaded) / Inactive area (White)	
Dipswitch 11	Rain mode	Normal (Down 11) / Rain (Up 11)	Set this switch to "Rain" if the sensor is used in a region with a lot of rain.
Dipswitch 12	Snow mode	Normal (Down 12) / Snow (Up 12)	Set this switch to "Snow" if the sensor is used in a region with snow or a lot of insects.
Dipswitch 13	Direction	Bi (Down 13) / Uni (Up 13)	*Please refer to Table 2 for the details.
Dipswitch 14	Simultaneous output	OFF (Down 14) / ON (Up 14)	When Dipswitch 14 is set to "ON", both the activation & safety relay outputs will operate simultaneously regardless of detection area. But only the Safety output relay will respond back with a Safety output when it receives a Test input.

Dipswitch	Function	N.O. / High / OFF	N.C. / Low / ON	Comment
15	Safety output (to door controller)	Down 15	Up 15	Select "N.O." / "N.C." for Safety output.
16	Test input (from the door controller)	High (Down 16)	Low (Up 16)	The delay time between Test input and Safety output is 10msec..
17	Future use			
18	Installation mode	OFF (Down 18)	ON (Up 18)	Set dipswitch 18 to "ON" to adjust the 2nd row. During the installation mode only the 2nd row remains active and the operation indicator shows yellow. After setting the row, switch dipswitch 18 "OFF".

Table 2



CHECKING

Check the operation in the operation mode according to the chart below.

Entry	Power OFF	Outside of detection area	Entry into Approach area (6th row)	Entry into 5th row	Entry into 4th row	Entry into 3rd row	Entry into 2nd row	Entry into BLUEZONE (1st row)
Image	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]
Status	-	Stand-by	Approach detection active	Motion detection active	Presence detection active			
Operation indicator	None	Green	Orange Blinking	Orange	Red	Red Blinking	Blue	
Activation output	OFF (Down 14) / ON (Up 14)	[Switch]	[Switch]	[Switch]	[Switch]	[Switch]	[Switch]	[Switch]
Safety output	OFF (Down 14) / ON (Up 14)	N.O. (Down 15) / N.C. (Up 15)	[Switch]	[Switch]	[Switch]	[Switch]	[Switch]	[Switch]

NOTE The response time may differ according to the color of the objects and the color/material of the floor.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. Do not use any cleaner / solvent.
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise an electric shock may occur.
- When the operation indicator blinks green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE

- When turning the power ON, always walk-test the detection area to ensure the proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. plant, illumination, etc.)

TROUBLESHOOTING

Door operation	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Wrong power supply voltage.	Set to the stated voltage.
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.
		Wrong detection area positioning.	Check ADJUSTMENTS 1, 2, 3, 4, 5 .
		Sensitivity is too low.	Set the sensitivity higher.
Door opens when no one is in the detection area. (ghosting)	Proper	Short presence timer.	Set the presence timer longer.
		Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.
		Objects that move or emit light in the detection area.	Remove the objects.
Door remains open	Proper	The detection area overlaps with that of another sensor.	Check Table 1 dipswitch 3 & 4.
		Waterdrops on the detection window.	Use the rain-cover. (Separately available) Or wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
		Detection area overlaps with door / header.	Adjust the detection area to "Deep"(Outside).
	Fast Green blinking	Sensitivity is too high.	Set the sensitivity lower.
		Raining or snowing	Set dipswitch 11, 12 to "Rain"/"Snow".
		Wrong setting of dipswitches	Check Table 1 dipswitch 11, 12, 15.
Slow Green blinking	Sudden change in the detection area.	Check ADJUSTMENTS 4 & Table 1 dipswitch 1, 2. If the problem still persists, hard-reset the sensor. (Turn the power OFF and ON again)	
	Wrong wiring or connection failure.	Check the wires and connector.	
	Dirty detection window	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.	
Proper operation	Slow Green blinking	Sensor failure	Contact your installer or service engineer.
		Signal saturation	Remove highly reflecting objects from the detection area. Or change the area depth angle.
Proper operation	Slow Green blinking	The detection area overlaps with the door / header.	Adjust the detection area to "Deep"(Outside).
		Signal saturation (BLUEZONE)	Remove highly reflecting objects from the detection area. Or change the area depth angle.

Manufacturer

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X-ZONE T

5923702 JUL 2016

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

	WARNING	Disregard of the warning symbol can cause improper operation which may cause death or serious injury.
	CAUTION	Disregard of the caution symbol can cause improper operation which may cause injury of a person or damage the object.
	NOTE	Special attention is required to the section of this symbol.

NOTE

- This product is a non-contact switch intended for header mount or wall mount for use on an automatic sliding door. Do not use for any other applications.
- When setting the sensor's detection area, make sure that there is no traffic around the installation site.
- Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
- Only use the product as specified in the operation manual provided.
- Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
- Before leaving the installation site make sure that the product is operating properly and instruct the building owner/operator on proper operation of the door and the product.
- The product settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock		

NOTE

- The following conditions are not suitable for sensor installation.
- Fog or exhaust emission around the door
 - Wet floor
 - Vibrating header or mounting surface
 - Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity
 - Highly reflecting floor or highly reflecting objects around the door

SPECIFICATIONS

Model	: X-ZONE T	Activation output	: Form A relay
Cover color	: Black		50V 0.3A Max.(Resistance load)
Mounting height	: 6'7" to 11'6" (2.0 to 3.5m)	Test input	: Opto coupler
Detection area	: See DETECTION AREA		Voltage 5 to 30VDC
Detection method	: Active infrared reflection (*1)		Current 6mA Max. (30VDC)
	Microwave doppler effect	Safety output	: Form A relay
Depth angle adjustment	: AIR area -6° to +6°		50V 0.3A Max.(Resistance load)
	Microwave area +25° to +45°	IP rate	: IP54
Power supply	: 12 to 24VAC ±10% (50 / 60Hz)	Weight	: 9.5oz (270g)
	12 to 30VDC ±10%	Accessories	: 1 Operation manual
Power consumption	: < 2.5W (< 4VA at AC)		2 Mounting screws
Operation indicator	: See Operation indicator table		1 Mounting template
Output hold time	: < 0.5sec.		1 Area adjustment tool
Response time	: < 0.3sec.		1 Cable 9'10" (3m)
Operating temperature	: -31 to 131°F (-35 to +55°C)		
Operating humidity	: < 80%		

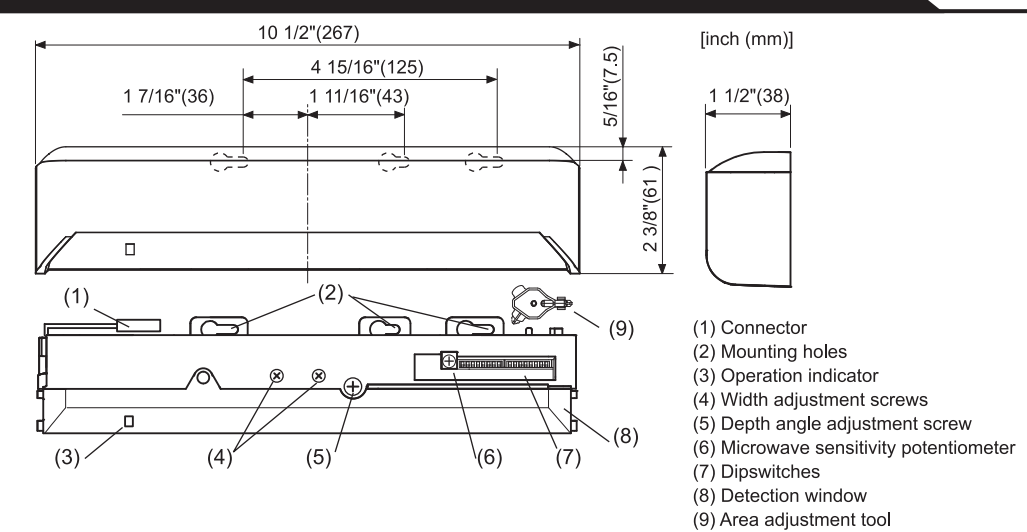
Operation indicator table

Status	Operation indicator color	Indicator Pattern
Set-up	Yellow Blinking	[Blinking Yellow]
Stand-by (Installation mode)	Yellow	[Solid Yellow]
Stand-by (Operation mode)	Green	[Solid Green]
BLUEZONE (1st row) detection(*2)	Blue	[Solid Blue]
2nd row detection	Red Blinking	[Blinking Red]
3rd row detection	Red	[Solid Red]
Microwave detection	Orange	[Solid Orange]
Signal saturation	Slow Green Blinking	[Blinking Green]
Sensor failure	Fast Green Blinking	[Blinking Green]

NOTE The specifications herein are subject to change without prior notice due to improvements.

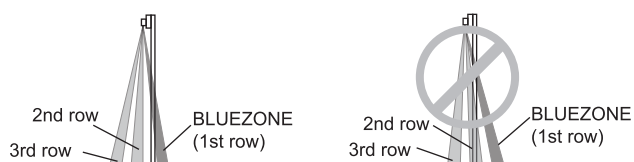
- *1 : Active infrared reflection has a presence detection function.
- *2 : See **BLUEZONE AREA**

OUTER DIMENSIONS AND PART NAMES

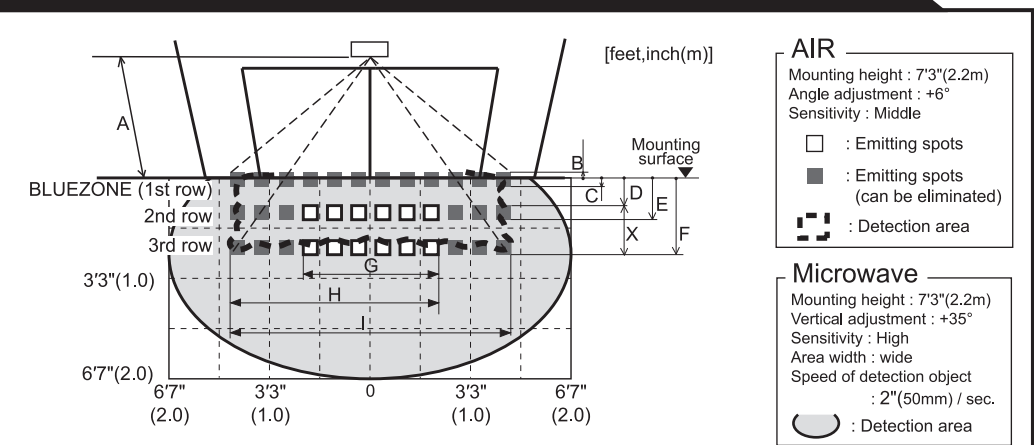


BLUEZONE AREA

When dipswitch 15 is set to "ON", the BLUEZONE area, that provides extra safety over the threshold, is activated. In case the BLUEZONE function is not required, set dipswitch 15 to "OFF". Do not set the 2nd row overlapping the threshold regardless of the setting of dipswitch 15.



DETECTION AREA



NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object. The sensor may not be activated when the entering speed of the object or a person is slower than 2" (50mm) / sec. or faster than 4'11" (1500mm) / sec.

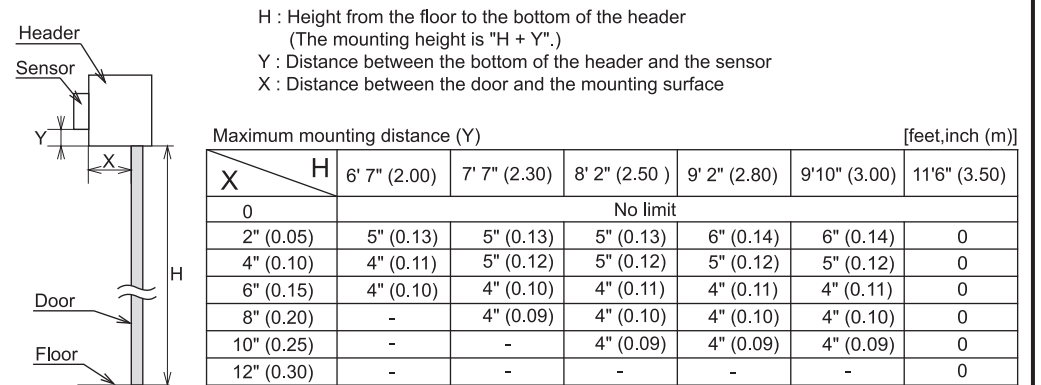
AIR emitting area

The chart shows the values at depth angle +6°

	[feet,inch(m)]					
A	6' 7" (2.00)	7' 3" (2.20)	8' 2" (2.50)	8' 10" (2.70)	9' 10" (3.00)	11' 6" (3.50)
B	2" (0.05)	2" (0.06)	3" (0.07)	3" (0.07)	3" (0.08)	4" (0.09)
C	3" (0.07)	3" (0.08)	4" (0.09)	4" (0.10)	4" (0.11)	5" (0.12)
D	9" (0.23)	10" (0.25)	11" (0.28)	1' (0.31)	1' 1" (0.34)	1' 3" (0.39)
E	1' 2" (0.35)	1' 3" (0.39)	1' 5" (0.44)	1' 7" (0.48)	1' 9" (0.53)	2' (0.61)
F	1' 11" (0.59)	2' 2" (0.65)	2' 5" (0.74)	2' 7" (0.80)	2' 11" (0.89)	3' 5" (1.03)
G	3' 12" (1.21)	4' 4" (1.33)	4' 11" (1.51)	5' 4" (1.63)	5' 11" (1.81)	6' 11" (2.11)
H	6' 1" (1.86)	6' 9" (2.05)	7' 7" (2.32)	8' 3" (2.51)	9' 2" (2.79)	10' 8" (3.25)
I	8' 3" (2.52)	9' 1" (2.78)	10' 4" (3.15)	11' 2" (3.40)	12' 5" (3.79)	14' 6" (4.42)

INSTALLATION

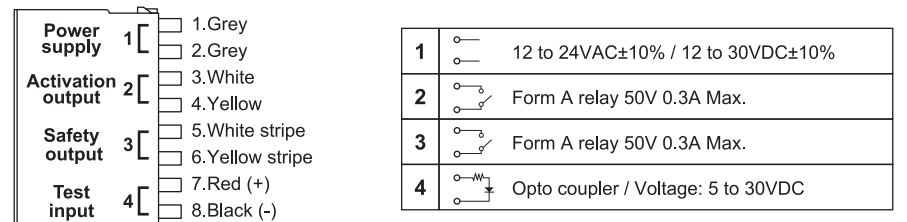
- Affix the mounting template at the desired mounting position. (When setting the detection area close to the door, mount the sensor according to the chart below.)
- Drill two mounting holes of $\phi 1/8"$ ($\phi 3.4$ mm).
- To pass the cable through the header, drill a wiring hole of $\phi 5/16"$ ($\phi 8$ mm).
- Remove the mounting template.
- Remove the housing cover. Fix the sensor to the mounting surface with the two mounting screws.



NOTE Make sure not to mount the sensor lower than the bottom of header.

	CAUTION	Make sure to affix the mounting template as described in the above chart, otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible on the header.
Risk of getting caught		

- Wire the cable to the door controller as shown below.



	WARNING	Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield otherwise it may cause electric shock or breakdown of the sensor.
Danger of electric shock		

- Plug the connector.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **ADJUSTMENTS 4. Dipswitch settings**)

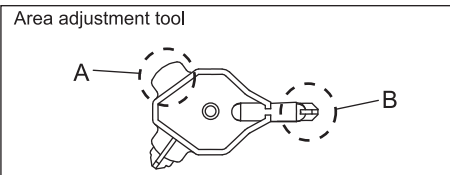
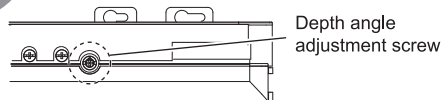
NOTE Make sure to connect the cable correctly to the door controller before turning the power ON. When turning the power ON or after adjusting the settings, do not enter the detection area for more than 10 seconds in order to enable the presence detection. Do not touch the dipswitches before turning the power ON, otherwise an error occurs.

- Place the housing cover. If wiring is to be exposed, break the knockout.

	WARNING	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock		

ADJUSTMENTS

1 Area depth angle adjustment

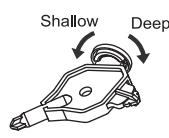


When adjusting the 2nd row close to the door, see **Table 2** dipswitch 16 for the easier adjustment.

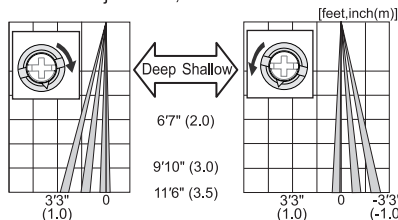
NOTE Make sure that the detection area does not overlap with the door/header, and there is no highly reflecting object near the detection area otherwise ghosting/signal saturation may occur.

1-1 AIR adjustment

Depth angle adjustment screw for the AIR area

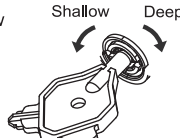


Use the area adjustment tool (A) as shown above to change the area depth angle. For the easier adjustment, see **REFERENCE**.

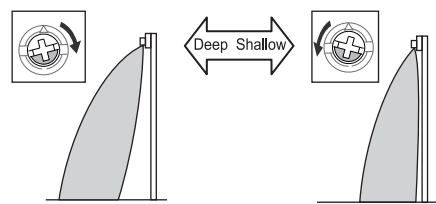


1-2 Microwave adjustment

Depth angle adjustment screw for the microwave area



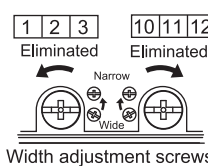
Use the area adjustment tool (B) as shown above to change the area depth angle.



2 Area width adjustment

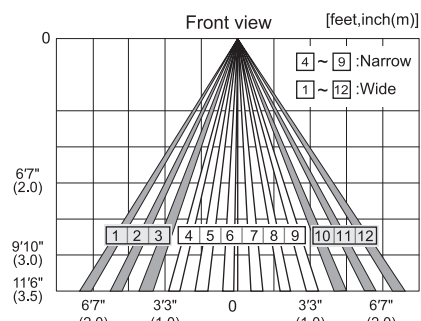
2-1 AIR adjustment

To adjust the AIR detection area width, use the adjustment screws as shown in the picture below.



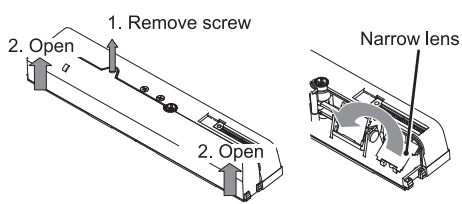
Please adjust by using the tool (B)

NOTE When setting the detection area width, make sure to turn the adjustment screws until it clicks. [1][2][3] cannot be eliminated separately, neither can [10][11][12]



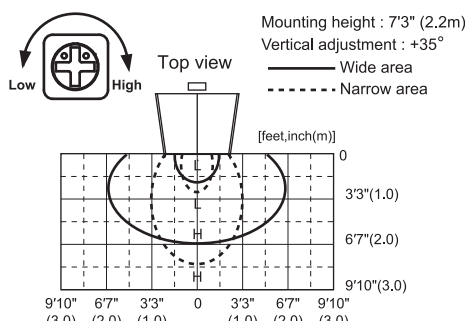
2-2 Microwave adjustment

To adjust the microwave detection area width, use the narrow lens as shown in the picture below.



3 Microwave sensitivity

Adjust the microwave detection area with potentiometer.



4 Dipswitch settings

Table 2

■ AIR settings ■ Microwave settings □ Other settings

Dipswitch	Function	Setting				Comment
		Low	Middle	High	S-High	
Dipswitch 1	Sensitivity	Low 1 2	Middle 1 2	High 1 2	S-High 1 2	Set the sensitivity according to the mounting height. Values below dipswitches are reference only. Adjust the sensitivity according to your risk assessment.
Dipswitch 2		2.0 to 3.0m	2.0 to 3.0m	2.5 to 3.2m	3.0 to 3.5m	
Dipswitch 3	Presence timer	30sec. 3 4	60sec. 3 4	180sec. 3 4	600sec. 3 4	To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.
Dipswitch 4						
Dipswitch 5	Frequency	Setting1 5 6	Setting2 5 6	Setting3 5 6	Setting4 5 6	When using more than one sensor close to each other, set the frequency different for each sensor.
Dipswitch 6						
Dipswitch 7	Rain mode	Normal 7	Rain 7			Set this switch to Rain if the sensor is used in a region with a lot of rain.
Dipswitch 8	Snow mode	Normal 8	Snow 8			Set this switch to Snow if the sensor is used in a region with snow or a lot of insects.
Dipswitch 9	Direction	Bi 9	Uni 9			When dipswitch 9 is set to "Uni", this setting enables the door to close faster when a person walks away from the door.
Dipswitch 10	Immunity	OFF 10	ON 10			Set dipswitch 10 to "ON" when the sensor operates by itself (Ghosting). When dipswitch 10 is set to "ON" the actual detection area may occur smaller.
Dipswitch 11	Activation output (to door controller)	N.O. 11	N.C. 11			Select "N.O."/"N.C." for Activation output.
Dipswitch 12	Safety output (to door controller)	N.O. 12	N.C. 12			Select "N.O."/"N.C." for Safety output. The delay time between Test input and Safety output is 10msec..
Dipswitch 13	Test input (from door controller)	High 13	Low 13			
Dipswitch 14	Simultaneous output	OFF 14	ON 14			When Dipswitch 14 is set to ON, both the activation & safety relay outputs will operate simultaneously regardless of detection area. But only the Safety output relay, will respond back with a Safety output when it receives a Test input.
Dipswitch 15	BLUEZONE (1st row)	OFF 15	ON 15			When dipswitch 15 is set to "ON", the BLUEZONE(1st row) is active and looks through the threshold.
Dipswitch 16	Installation mode	OFF 16	ON 16			Set dipswitch 16 to "ON" to adjust the 2nd row. During the installation mode only the 2nd row remains active and the operation indicator shows yellow. After setting the row set dipswitch 16 "OFF".

CHECKING

Check the operation in the operation mode according to the chart below.

Entry	Power OFF	Outside of detection area	Entry into microwave area	Entry into 3rd row	Entry into 2nd row	Entry into BLUEZONE (1st row)	
							Status
Operation indicator		None	Green	Orange	Red	Red Blinking	Blue
Activation output	11	N.O. 11	N.C. 11	OFF	OFF	OFF	OFF
	12	N.O. 12	N.C. 12	OFF	OFF	OFF	OFF

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. Do not use any cleaner / solvent.
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise an electric shock may occur.
- When the operation indicator blinks green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE 1. When turning the power ON, always walk-test the detection area to ensure the proper operation.
2. Do not place any objects that move or emit light in the detection area. (e.g. plant, illumination, etc.)

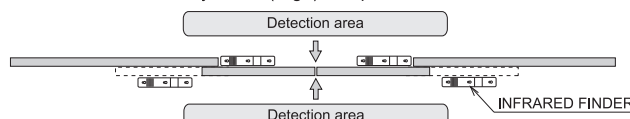
TROUBLESHOOTING

Door operation	Operation indicator	Possible cause	Possible countermeasures	
Door does not open when a person enters the detection area.	None	Wrong power supply voltage.	Set to the stated voltage.	
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.	
		Wrong detection area positioning.	Check ADJUSTMENTS 1, 2, 3 .	
		Sensitivity is too low.	Set the sensitivity higher.	
Door opens when no one is in the detection area. (Ghosting)	Proper	Short presence timer.	Set the presence timer longer.	
		Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.	
		Wrong wiring or connection failure.	Check the wires and connector.	
		Objects that move or emit light in the detection area.	Remove the objects.	
Door remains open	Unstable	The detection area overlaps with that of another sensor.	Check Table 2 dipswitch 5, 6.	
		Waterdrops on the detection window.	Use the rain-cover. (Separately available) Or wipe the detection window with a damp cloth. Do not use any cleaner or solvent. Or install in a place keeping the waterdrops off.	
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside). Or set dipswitch 10 to "ON".	
		Sensitivity is too high.	Set the sensitivity lower.	
	Proper	Raining or snowing.	Set dipswitch "7", "8", "9", "10" to "Rain", "Snow", "Uni", "ON".	
		Others	Set dipswitch 11 to "ON".	
	Fast Green Blinking	Proper	Wrong setting of dipswitches.	Check Table 2 dipswitch 7, 8, 12.
			Sudden change in the detection area.	Check Table 2 dipswitch 1 to 4. If the problem still persists, hard-reset the sensor. (Turn the power OFF and ON again)
			Wrong wiring or connection failure.	Check the wires and connector.
			Sensitivity is too low.	Set the sensitivity higher.
Slow Green Blinking	Proper operation	Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.	
		Sensor failure	Contact your installer or service engineer.	
Yellow	Proper operation	Installation mode is set to "ON".	Set dipswitch 16 to "OFF".	
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside).	
Signal saturation	Proper operation	Signal saturation.	Remove highly reflecting objects from the detection area. Or lower the sensitivity. Or change the area depth angle for AIR area.	

REFERENCE

Area depth adjustment with INFRARED FINDER (Separately available)

- Turn the depth angle adjustment screw to the right (Deep) to place the detection area most away from the door.
- Set INFRARED FINDER sensitivity to "H" (High) and place it on the floor as shown below.



- Turn the depth angle adjustment screw to the left (Shallow) until the emitting area is placed at the position where INFRARED FINDER is in the low detection status (Slow Red Blinking).

FCC WARNING (For USA)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

-NOTICE-

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

-NOTICE-

- The antennas cannot be exchanged.
- To comply with FCC RF exposure compliance requirements, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.

IC (For CANADA)

Operation is subject to the following two conditions:

- this device may not cause interference, and
- this device must accept any interference received, including interference that may cause undesired operation of the device.

Manufacturer

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FAX.: +81(0)77-579-7030
WEBSITE:
www.optex.co.jp/as/eng/index.html

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5919371 JUNE 2012

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

WARNING	Disregard of the warning symbol can cause improper operation which may cause death or serious injury.
CAUTION	Disregard of the caution symbol can cause improper operation which may cause injury of a person or damage the object.
NOTE	Special attention is required to the section of this symbol.

- NOTE**
- This product is a non-contact switch intended for ceiling mount for use on automatic sliding doors. Do not use for any other applications.
 - When setting the sensors detection area, make sure that there is no traffic around the installation site.
 - Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
 - Only use the product as specified in the operation manual provided.
 - Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
 - Before leaving the installation site make sure that the product is operating properly and instruct the building owner/operator on proper operation of the door and the product.
 - The product settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock	

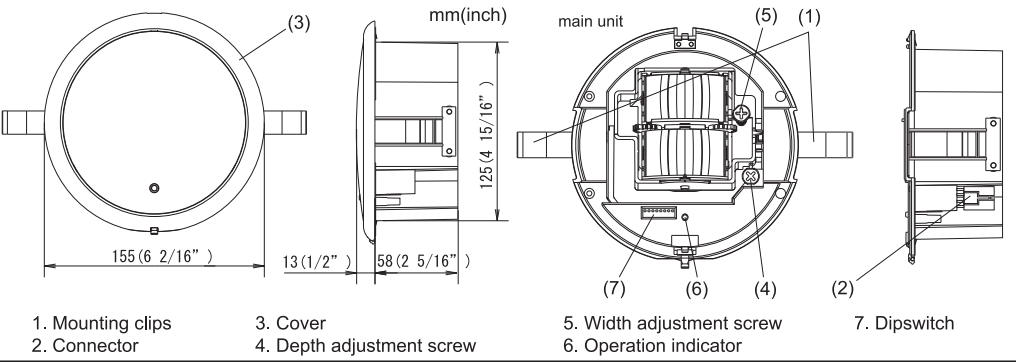
- NOTE** The following conditions are not suitable for sensor installation.
- Fog or exhaust emission around the door
 - Wet floor
 - Vibrating header or mounting surface
 - Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity
 - Highly reflecting floor or highly reflecting objects around the door

SPECIFICATIONS

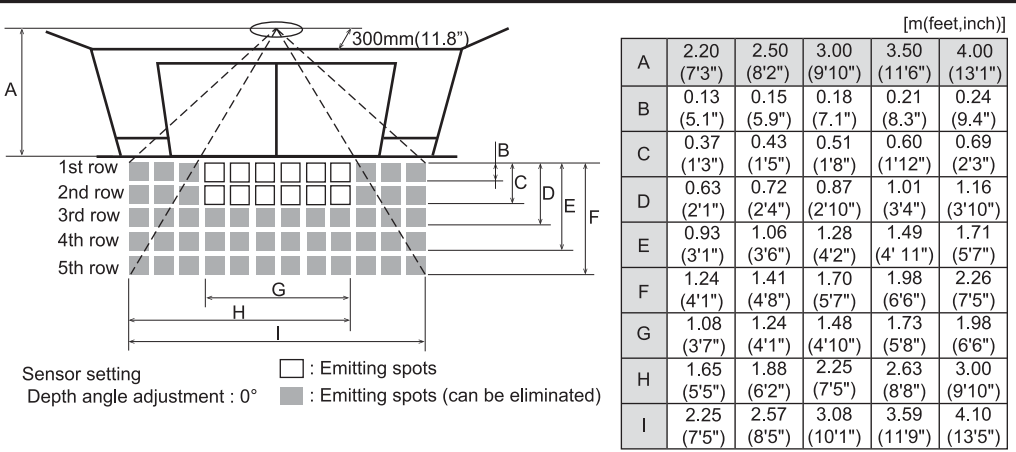
Model	: OA-72C	Output	: Form C relay
Cover color	: Silver		: 50V 0.3A max.(resistance load)
Mounting height	: 2.0 (6'7") to 4.0m (13'1")	Output hold time	: Approx. 0.5 sec.
Detection area	: See DETECTION AREA	Response time	: <0.3 sec.
Detection method	: Active Infrared Reflection	Operating temperature	: -20°C to +55°C (-4°F to 131°F)
Depth angle adjustment	: -15° to +10°	Weight	: 320g (11.2oz)
Width angle adjustment	: -10° to +10°	Accessories	: 1 Cable 3m (9'10")
Power supply	: 12 to 24 VAC (±10%)		: 1 Operation manual
	: 12 to 30 VDC (±10%)		: 1 Mounting template
Power consumption	: < 1.5W (< 5 VA at AC)		
Operation LED	: Green / stand-by		
	: Red / 1st row detection		
	: Orange / 2nd to 5th rows detection		

NOTE The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES



DETECTION AREA



NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object.

*The values of the chart above is of the emitting spots, but not of the detection area.

INSTALLATION

- Affix the mounting template at the desired mounting position. Drill a mounting hole. (recommended diameter : ϕ 130mm (5")) Remove the mounting template.

CAUTION : Risk of getting caught.

Make sure to affix the mounting template as described in the above chart, otherwise it can be dangerous since there may be no presence detection area around the threshold.
- Remove the cover from the sensor. Plug the connector of the cable to the connector of the sensor.

Gray : Power supply
White : COM.
Yellow : N.O.
Green : N.C.

WARNING : Danger of electric shock.

Before starting the procedure, ensure that the power is turned OFF. When passing through the cable to the hole, make sure not to tear the shield, otherwise it may cause electric shock or breakdown of the sensor.
- Install the sensor with cover, keeping the direction of operation indicator towards the door. Press the mounting clips against the sensor to place the sensor into the mounting hole.

NOTE To enable the presence detection, do not enter the detection area for 10 seconds after supplying the power.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See ADJUSTMENTS)
- Mount the cover on the sensor. Mount the cover by making a small gap between sensor and ceiling.

ADJUSTMENTS

- Area depth angle adjustment**
- Width detection area adjustment**
- Dipswitch setting**

Function	Setting				Comment
Sensitivity	Low 1	High 1			Set the sensitivity according to the mounting height. Adjust the sensitivity according to your risk assessment.
Mounting height	2 to 3m 2	2.7 to 4m 2			Set the sensitivity according to the mounting height. Adjust the sensitivity according to your risk assessment.
Presence timer	30sec 3 4	60sec 3 4	180sec 3 4	600sec 3 4	All rows include presence detection function.
Frequency	Setting1 5	Setting2 5			When using more than two sensors close to each other, set the frequency different for each sensor.
Snow mode	OFF 6	ON 6			Set this switch to ON if the sensor is used in a region with snow or a lot of insects.
Area adjustment	5 rows 7 8	4 rows 7 8	3 rows 7 8	2 rows 7 8	Adjust the area detection depth by selecting the dipswitches.

CHECKING

Check the operation according to the chart below.

Entry	Power off	Outside of detection area	Entry into 3rd, 4th or 5th row	Entry into 2nd row	Entry into 1st row	Outside of detection area
Status	-	Stand-by	Motion detection active	Motion/Presence detection active	Presence detection	Stand-by
Operation LED	None	Green	Orange		Red	Green
Output	COM N.O. N.C.	COM N.O. N.C.	COM N.O. N.C.		COM N.O. N.C.	COM N.O. N.C.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

- WARNING**
- Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
 - Do not wash the sensor with water.
 - Do not disassemble, rebuild or repair the sensor yourself, otherwise an electric shock may occur.
 - When an operation LED blinks green, contact your installer or service engineer.
 - Always contact your installer or service engineer when changing the settings.
 - Do not paint the detection window.
- NOTE**
- When turning the power on, always walk-test the detection area to ensure proper operation.
 - Do not place any objects that move or emit light in the detection area. (e.g. plant, illumination, etc.)

TROUBLESHOOTING

Problem	Operation LED	Possible cause	Possible countermeasures	
Door does not open when a person enters the detection area.	None	Power supply voltage. Wrong wiring or connection failure.	Set to the stated voltage. Check the wires and connector.	
	Unstable	Wrong detection area positioning. Sensitivity is too low. Short presence detection timer. Dirty detection window.	Check ADJUSTMENTS 1 & 2 . Set the sensitivity higher. Set the presence detection timer longer. Wipe the detection window with a damp cloth.	
		Door opens when no one is in the detection area. (Ghosting)	The detection area overlaps with that of another sensor. The detection area overlaps with the door / header. Reflecting objects in the detection area. Or reflecting light on the floor.	Check ADJUSTMENTS 3 . Adjust the detection area to "deep" (outside). Remove the objects.
			Sensitivity is too high. It snows. Objects that move or emit light in the detection area. Wet floor. The exhaust emission or fog penetrate into the detection area.	Set the sensitivity lower. Set the snow mode to ON. Remove the objects. Check the installation condition referring to MANUFACTURER'S STATEMENT on the reverse side.
Door remains open	Red or orange	Sudden change in the detection area.	Check ADJUSTMENTS 3 . If the problem still persists, hard-reset the sensor. (turn the power OFF and ON again.)	
	Proper	Wrong wiring or connection failure. Sensitivity is too low. Sensor failure	Check the wires and connector. Set AIR area width to "wide". Wipe the detection window with a damp cloth. Contact your installer or service engineer.	
		Fast green blinking	Signal saturation	Remove highly reflecting objects from the detection area or lower the sensitivity or change the area angle.
			Slow green blinking	The detection area overlaps with the door / header.
Door remains closed	Proper	Wrong wiring or connection failure.	Check the wires and connector.	

INSTRUCTION MANUAL
OP-08CS (SILVER)
OP-08CW (WHITE)
OP-08CBL (BLACK)
Before using, read this instruction manual thoroughly for proper installation procedures.

BEDIENUNGSANLEITUNG
OP-08CS (SILBER)
OP-08CW (WEISS)
OP-08CBL (SCHWARZ)
Vor Montagebeginn lesen Sie bitte diese Bedienungsanleitung aufmerksam durch um einen einwandfreien Betrieb zu gewährleisten.

MODE D'EMPLOI
OP-08CS (ARGENT)
OP-08CW (BLANC)
OP-08CBL (NOIR)
Avant d'utiliser cet équipement, lire ce mode d'emploi à fond pour exécuter les procédures d'installation appropriées.

ENGLISH

DEUTSCH

FRANCAIS

READ FIRST.

BITTE ZUERST LESEN

LIRE TOUT D'ABORD CE MODE D'EMPLOI

CAUTION

BE CAREFUL NOT TO BE STRUCK BY THE DOOR

- Do not install the OP-08C beyond a distance of 4 m. It may not be able to detect a human body at distances greater than 4 meters.
- Be sure to use a beam switch in combination with the OP-08C to provide a back-up safety device. Even if there is a person standing near the door, it may start closing.
- Affix the accessory area masking seal properly. If it is not affixed properly, sensitivity will be reduced dramatically and an entering person may be struck by the door.

ACHTUNG

EINKLEMMEN DURCH DIE TÜR VERHINDERN

- Das Gerät nicht über eine Maximalhöhe von 4 m montieren, da ansonsten die Empfindlichkeit herabgesetzt ist und ggf. Personen nicht erkannt werden können.
- Als zusätzliche Sicherheitskombination wird empfohlen, eine Lichtschranke (z.B. OPTEX OS 1-C, OS 2-C) einzubauen.
- Aufkleber zur Bereichsabdeckung richtig anbringen.
- Bringen Sie den beigefügten Aufkleber zur Bereichsabdeckung bei Bedarf exakt an. Der Aufkleber muß exakt am Fenster positioniert werden. Wenn der Aufkleber nicht richtig angebracht ist, wird die Empfindlichkeit erheblich beeinträchtigt und eine eintretende Person kann mit der Tür kollidieren.

PRECAUTION

VEILLER À DE NE PAS ÊTRE FRAPPÉ PAR LA PORTE

- Ne pas installer l'OP-08C au-delà d'une distance de 4 m. Il pourrait ne pas pouvoir détecter un corps humain aux distances supérieures à 4 mètres.
- S'assurer d'utiliser un interrupteur à rayon en combinaison avec l'OP-08C pour fournir un dispositif de sécurité de secours. Même si une personne se trouve près de la porte, celle-ci pourrait se refermer.
- Fixer le joint de masquage de la zone accessoire de manière appropriée. Si celui-ci n'est pas collé de manière appropriée, la sensibilité sera réduite remarquablement et une personne entrant pourrait être frappée par la porte.

CAUTION

WATCH OUT FOR THE DOOR

- Do not use the OP-08C to detect the objects (push cart, etc.) other than human bodies. The OP-08C must recognize a temperature change to activate. A push cart may or may not have the required temperature change to activate the sensor.
- This product is a door activating non-contact sensor which is to be mounted to/into the transom of an automatic door or to the ceiling. Do not use it for other applications.

ACHTUNG

AUF DIE TÜR AUFFASSEN

- Der Sensor OP-08C darf nur zur Detektion von Personen eingesetzt werden. Das Gerät muß eine Temperaturänderung feststellen können um den Antrieb zu steuern. Andere Gegenstände wie z.B. Einkaufswagen können nicht die erforderliche Temperaturänderung zur Ansteuerung verursachen
- Dieses Produkt ist ein berührungsloser Sensor zur Türantriebssteuerung. Es wird am Rahmen über einer automatischen Tür befestigt und darf nur für diesen vorgesehenen Einsatz verwendet werden.

PRECAUTION

FAIRE ATTENTION À LA PORTE

- Ne pas utiliser l'OP-08C pour détecter les objets (voiture à bras, etc) autres que les corps humains. L'OP-08C doit reconnaître un changement de température pour s'activer. Une voiture à bras pourrait ou ne pourrait pas présenter de changement de température requis pour activer le senseur.
- Cet équipement est un senseur sans contact pour activer les portes, lequel doit être installé sur/dans la traverse d'une porte automatique ou au plafond. Par conséquent, ne pas l'utiliser pour d'autres applications.

Detection Area

The detection area refers to the space where the sensor body is receiving infrared rays.

Detection Method of OP-08C

This product outputs a signal when there is a difference in temperature between the floor surface of the detection area and an entering person.

Actual Detection

Detection may be difficult in the following cases:

- When the floor temperature has increased to a point where there is little difference between the person and floor surface.
- When someone approaches the door from a direction other than the front.

<Note>

This product detects only changes in temperature and will not detect a motionless object.

Detektionsbereich

Unter dem Detektionsbereich versteht sich die Fläche, aus der das Gerät Infrarotstrahlen empfängt.

Funktionsprinzip OP-08 C

Dieses Produkt sendet ein Signal aus, wenn ein Temperaturunterschied innerhalb des Detektionsbereiches zwischen Boden und einer sich nähernden Person entsteht.

Detektionsvermögen

Das Detektionsvermögen kann in folgenden Fällen herabgesetzt sein:

- Wenn die Bodentemperatur so stark angestiegen ist, daß zwischen Boden und eintretender Person kaum noch ein Temperaturunterschied besteht.
- Wenn sich eine Person der Tür nicht direkt von vorne nähert.

<Hinweis>

Dieses Gerät erkennt nur Temperaturänderungen und nimmt keine bewegungslosen Objekte wahr.

Zone de détection

La zone de détection se réfère à l'espace où le corps du senseur reçoit les rayons infrarouges.

Méthode de détection de l'OP-08C

Cet équipement émet un signal lorsqu'il y a une différence de température entre la surface du plancher de la zone de détection et une personne entrant.

Détection effective

La détection pourrait être difficile dans les cas suivants :

- Lorsque la température du plancher a augmenté à une valeur où il y a peu de différence entre la personne et la surface du plancher.
- Lorsque quelqu'un s'approche de la porte à partir d'une direction autre que la partie avant.

<Note>

Cet équipement détecte seulement les changements de température et ne détectera pas les objets immobiles.

① SPECIFICATION

Model	OP - 08 C
Mounting height	Within 4 m
Detecting method	Passive infrared detection
Current consumption	50 mA MAX. (at 24V DC)
Power source	12 to 24 V AC/DC
Detection area	See drawing on page 3.
Output contact	Relay contact 1c, 24 V DC, within 1 A (Resistance load)
Power/operation indicator lamp	At power-on: The green indicator lamp is turned on When operating: The green indicator lamp is turned off
Output Hold	Approx. 1.5 second
Operating temperature	-20°C ~ +55°C (-4°F ~ +131°F)
Weight	90g
Component parts	Wiring cord (2 m, 1 pc.), Mounting screws (2 pc.), Mounting template (1 pc.), Area masking seal (1 sh.)

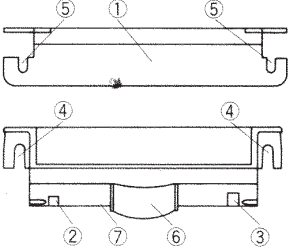
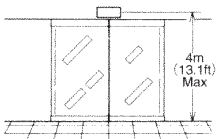
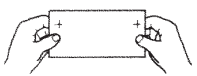
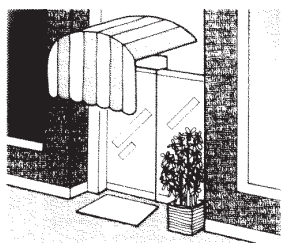

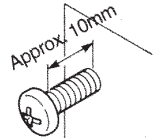
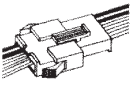
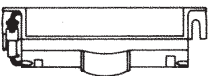
Specification subject to change without prior notice.

① TECHNISCHE DATEN

Modell	OP - 08 C
Montagehöhe	max. 4m
Detektionsmethode	Passiv Infrarot- Erkennung
Stromaufnahme	50 mA MAX. (auf 24 V DC)
Betriebsspannung normal	12 bis 24 V AC/DC
Detektionsbereich	siehe Seite 3
Ausgangskontakt	Relaiskontakt 1c, 24 V DC, max. 1 A (Widerstandslast)
Strom/ Betriebsanzeige	Eingeschaltet: Die grüne LED leuchtet Betrieb: Die grüne LED ist erloschen
Dauer des Ausgangssignales	Ca. 1.5 sec
Temperaturbereich	-20°C bis +55°C
Gewicht	90g
Lieferumfang	Anschlußkabel (2m, 1 St.), Befestigungsschrauben (2 St.), Montageschablone (1 St.), Aufkleber zur Bereichsabdeckung (1 Blatt)

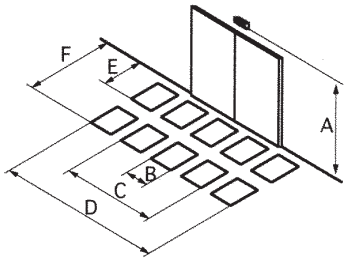
① CARACTÉRISTIQUES TECHNIQUES

Modèle	OP - 08 C
Hauteur de montage	Dans les limites de 4 m
Méthode de détection	Détection infrarouge passive
Consommation de courant	50 mA MAX. (à 24V CC)
Source d'alimentation	De 12 à 24 V c.a./c.c.
Zone de détection	Voir l'illustration de la page 3
Contact de sortie	Relais à contact 1c, 24 V c.c. dans les limites de 1 A (charge de résistance)
Témoin d'opération/alimentation	Avec l'alimentation connectée. Le témoin vert est allumé. Lorsque l'on opère l'équipement: Le témoin vert est éteint.
Maintien de sortie	Environ 1.5 seconde
Température de service	-20°C ~ +55°C (-4°F ~ +131°F)
Poids	90g
Pièces de composante	Cordon de câblage (2m, 1 pièce), vis de montage (2 pièces), gabarit de montage (1 pièce), joint de masquage de la zone (1 unité)

	ENGLISH	DEUTSCH	FRANCAIS
	<p>② CONSTRUCTION</p>  <p>① Main body ② Relay inversion switch ③ Sensitivity selector switch ④ Transom mounting hole ⑤ Overhead mounting hole ⑥ Lens ⑦ Power/operation indicator lamp (Green indicator lamp)</p>	<p>② AUFBAU</p> <p>① Gehäuse ② Relais-Inversionsschalter ③ Sensor-Empfindlichkeitsschalter ④ Befestigungsbohrungen (Rahmenmontage) ⑤ Befestigungsbohrungen (Deckenmontage) ⑥ Linse ⑦ Betriebsanzeige (grün)</p>	<p>② CONSTRUCTION</p> <p>① Corps principal ② Interrupteur d'inversion à relais ③ Sélecteur de sensibilité ④ Trou de montage de la traverse ⑤ Trou de montage suspendu ⑥ Objectif ⑦ Témoin d'opération/alimentation (témoin vert)</p>
	<p>③ INSTALLATION</p>    <p>① Installing the Main Body (1) Affix the mounting template to your desired position on the transom or ceiling (mounting height within 4 m). (2) Drill mounting holes (ϕ 3.4 mm) as indicated on the mounting template. If concealed wiring is preferred, drill a wiring hole (ϕ 8 mm). After drilling holes, remove the mounting template.</p> <p><Precautions for Mounting> <ul style="list-style-type: none"> Do not place swaying objects, such as a potted plant, flag or banner in the detection area. The sensor may not function properly. When using wiring knockout, be sure to install the OP-08C in a location protected from rain. If exposed to rain, water may enter the housing and damage the device. </p> <p>(3) Connect a wiring cord to the door controller.</p> <p>Note that the wiring method differs depending on setting of the relay inversion switch.</p> <p><When the relay inversion switch is "FAIL-SAFE"></p> <ul style="list-style-type: none"> Grey : Power source 12 to 24 V Grey : Power source AC/DC White : COM Yellow : N. O Green : N. C. <p><When the relay inversion switch is "FAIL-SECURE"></p> <ul style="list-style-type: none"> Grey : Power source 12 to 24 V Grey : Power source AC/DC White : COM Yellow : N. C. Green : N. O <p>Install the main body in such a manner that the connector can be connected easily.</p> <p>(4) As shown in the left figure, remove the housing cover. Using the accessory mounting template, affix the main body. Attach the main body to the transom, leaving about 10 mm of the screw's threads exposed.</p>   <p>(5) Connect the connector for the main body to that of the wiring cord. To disconnect them, press both knobs and pull them apart.</p> <p><Connecting the Connectors> Insert the connectors deeply into each other. Otherwise, the OP-08C may malfunction due to a contact failure.</p>  	<p>③ EINBAU</p> <p>① Gehäuseeinbau (1) Die beigefügte Befestigungsschablone an der festgelegten Montageposition am Türrahmen anbringen (Montagehöhe innerhalb von 4 m) (2) Montagelöcher bohren (Durchmesser 3,4 mm) wie in der Montageschablone angegeben. Wird die Verdrahtung unter Putz durchgeführt, muß ein zusätzliches Loch für die Anschlußleitung gebohrt werden. (Durchmesser 8 mm). Nach dem Bohren der Löcher die Montageschablone abnehmen.</p> <p><Gestaltung des Erfassungsbereiches> <ul style="list-style-type: none"> Gegenstände wie Topfpflanzen, Flaggen oder Spruchbänder etc. dürfen nicht im Detektionsbereich platziert werden. Die Funktion des Sensors kann sonst beeinträchtigt werden. </p> <p><Platzierung> <ul style="list-style-type: none"> Das Gerät so anbringen, daß es nicht direkt der Witterung ausgesetzt ist. Wenn die vorgesehenen Kabeldurchbrüche zur Kabeleinführung verwendet werden sollen, muß das Gerät immer so befestigt werden, daß es gegen Spritzwasser geschützt ist und sichergestellt ist, daß kein Wasser ins Gehäuse eindringen kann. </p> <p>(3) Anschluß des Verbindungskabels zum Tür-Steuergerät.</p> <p>Beachten Sie, daß die Verdrahtung je nach Einstellung des Relais-Inversionsschalter unterschiedlich ist</p> <p><Wenn der Inversionsschalter auf "Fail-Safe" steht></p> <ul style="list-style-type: none"> Grau : Betriebsspannung 12 bis 24 V Grau : Betriebsspannung AC/DC Weiß : COM Gelb : N. O Grün : N. C. <p><Wenn der Inversionsschalter auf "Fail-Secure" steht ></p> <ul style="list-style-type: none"> Grau : Betriebsspannung 12 bis 24 V Grau : Betriebsspannung AC/DC Weiß : COM Gelb : N. C. Grün : N. O <p>Das Gehäuse muß so angebracht sein, daß der Stecker problemlos angeschlossen werden kann.</p> <p>(4) Wie in der Abbildung links dargestellt, die Gehäuseabdeckung entfernen. Die beiden Befestigungsschrauben in die Montagelöcher eindrehen und ca. 10mm herausstehen lassen. Das Gehäuse dann auf die Schrauben aufsetzen und die Schrauben entsprechend vorsichtig festziehen.</p> <p>(5) Den am Gehäuse befindlichen Stecker in das Verbindungskabel einstecken. Zum Abstecken die beiden seitlichen Knöpfe zusammendrücken und die Stecker auseinanderziehen. Es ist darauf zu achten, daß die Verbindungsstecker exakt miteinander verbunden sind, da es sonst möglicherweise zu Fehlfunktionen des Detektors kommen kann.</p>	<p>③ INSTALLATION</p> <p>① Installation du corps principal (1) Fixer le gabarit de montage à la position désirée sur la traverse ou au plafond (hauteur de montage dans les limites de 4 m). (2) Percer les trous de montage (ϕ 3,4 mm) comme indiqué sur le gabarit de montage. Si le câblage dissimulé est préférable, percer un trou de câblage (ϕ 8 mm). Après avoir percé les trous, enlever le gabarit de montage.</p> <p><Précautions pour le montage> <ul style="list-style-type: none"> Ne pas placer d'objets oscillants, tel que plante en pot, drapeau ou étendard dans la zone de détection. Le senseur pourrait ne pas opérer de manière appropriée. Lorsque l'on utilise la débouchure de câblage, s'assurer de bien installer l'OP-08C dans un emplacement protégé contre la pluie. En cas d'exposition à la pluie, l'eau pourrait pénétrer dans le logement et endommager le dispositif. </p> <p>(3) Brancher un cordon de câblage au contrôleur de la porte.</p> <p>Il faut prendre note que la méthode de câblage diffère selon le réglage de l'interrupteur de reversion à relais</p> <p><Lorsque l'interrupteur d'inversion à relais est réglé sur "FAIL-SAFE"></p> <ul style="list-style-type: none"> Gris : Source d'alimentation 12 à 24 V Gris : Source d'alimentation c.a./c.c. Blanc : COM Jaune : N. O Vert : N. C. <p><Lorsque l'interrupteur d'inversion à relais est réglé sur "FAIL-SECURE"></p> <ul style="list-style-type: none"> Gris : Source d'alimentation 12 à 24 V Gris : Source d'alimentation c.a./c.c. Blanc : COM Jaune : N. C. Vert : N. O <p>Installer le corps principal de telle manière que le connecteur puisse être branché facilement.</p> <p>(4) Comme montré dans la figure à gauche, enlever le couvercle du logement. En utilisant le gabarit de montage accessoire, fixer le corps principal. Fixer le corps principal à la traverse, en laissant environ 10 mm de filetages de vis exposé.</p> <p>(5) Brancher le connecteur pour le corps principal à celui du cordon de câblage. Pour les débrancher, presser les deux boutons et les tirer de côté.</p> <p><Connexion des connecteurs> Insérer les connecteurs profondément l'un dans l'autre, sinon l'OP-08 pourrait mal fonctionner en raison d'un défaut de contact.</p>

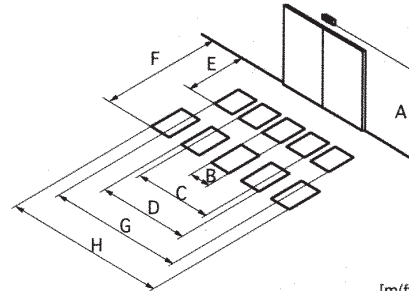
	ENGLISH	DEUTSCH	FRANCAIS
	④ Adjustment (Turn on the power)	④ Einstellung (Einschalten)	④ Réglage (activer l'alimentation)

	ENGLISH	DEUTSCH	FRANCAIS
	Standard Detection Area	Normaldetectionsbereich	Aire de Detection Standard
A	Mounting Height	Montagehöhe	Hauteur de fixation
B	Area Width	Bereichsweite	Largeur de zone
C	Area Width	Bereichsweite	Largeur de zone
D	Area Width	Bereichsweite	Largeur de zone
E	Area Depth	Bereichstiefe	Profondeur de zone
F	Area Depth	Bereichstiefe	Profondeur de zone



		B	C	D	E	F
A	2.5 (8.2)	0.3 (1)	1.8 (5.9)	3.6 (11.8)	0.8 (2.6)	2.3 (7.5)
	3 (9.8)	0.4 (1.3)	2.1 (6.9)	4.3 (14.1)	1.0 (3.3)	2.8 (9.2)
	4 (13.1)	0.5 (1.6)	2.9 (9.5)	5.7 (18.7)	1.3 (4.3)	3.7 (12.1)

	ENGLISH	DEUTSCH	FRANCAIS
	Wide & Deep Detection Area	Gross Und Tief-Normaldetectionsbereich	Aire de detection large et profonde
A	Mounting Height	Montagehöhe	Hauteur de fixation
B	Area Width	Bereichsweite	Largeur de zone
C	Area Width	Bereichsweite	Largeur de zone
D	Area Width	Bereichsweite	Largeur de zone
E	Area Depth	Bereichstiefe	Profondeur de zone
F	Area Depth	Bereichstiefe	Profondeur de zone
G	Area Width	Bereichsweite	Largeur de zone
H	Area Width	Bereichsweite	Largeur de zone



		B	C	D	E	F	G	H
A	2.5 (8.2)	0.5 (1.6)	1.5 (4.9)	2.5 (8.2)	1.4 (4.6)	3.3 (10.8)	3.0 (9.8)	5.0 (16.4)
	3 (9.8)	0.6 (2.0)	1.8 (5.9)	2.9 (8.5)	1.6 (5.2)	3.9 (12.8)	3.7 (12.1)	6.0 (19.7)
	4 (13.1)	0.8 (2.6)	2.5 (8.2)	3.9 (12.8)	2.2 (7.2)	5.2 (17.1)	4.9 (16.1)	8.1 (26.6)

	ENGLISH	DEUTSCH	FRANCAIS
	④ Adjustment (Turn on the power)	④ Einstellung (Einschalten)	④ Réglage (activer l'alimentation)

① Confirmation of the detection area
This product is made up of the detection areas shown in the diagrams above.

< Caution >

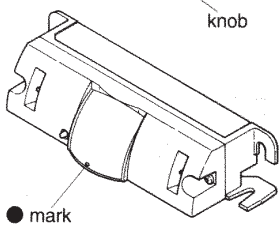
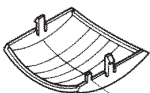
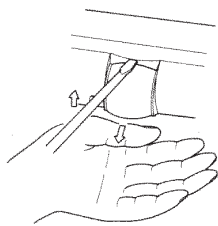
- This product uses a method of detecting the change in temperature when a person enters the detection area. According to the background temperature, the detection sensitivity may become higher or lower.
- Further, because only changes in temperature are detected, a person who is not moving will not be detected.

② Selection of the wide & deep detection area and standard detection area

In this product, it is possible to change between the wide & deep detection area and standard detection area by inserting the lens. When shipped from the factory, the product is set to the standard detection area.

< To set to the wide & deep detection area >

- (1) Remove the panel cover.
- (2) Using a slotted screwdriver, remove the lens from the main unit.
- (3) The lens has a rib (knob) to prevent being inserted in a different way. In order to set to the wide & deep detection area, cut off this knob using nippers.
- (4) Mount the lens, making sure that the ● mark on the lens surface lies on the mounting surface side.



① Bestätigung des Detektionsbereiches
Dieses Produkt enthält die Detektionsbereiche, wie in den Abbildungen oben gezeigt.

< Achtung >

- Dieses Gerät erkennt den Temperaturunterschied, der entsteht, wenn eine Person den Detektionsbereich betritt. Je nach Umgebungstemperatur kann die Detektionsempfindlichkeit höher oder niedriger sein.
- Außerdem wird eine Person, die sich nicht bewegt, nicht erkannt, denn das Gerät reagiert nur auf Änderungen in der Temperatur.

② Wahl von Gross Und Tief-Normaldetectionsbereich und Normaldetectionsbereich

Durch Aufsetzen der Linse kann dieses Gerät Zwischen Gross Und Tief-Normaldetectionsbereich- und Normaldetectionsbereich umgestellt werden. Bei Versand ab Werk ist das Gerät auf Normaldetectionsbereich eingestellt.

< Einstellen auf Gross Und Tief-Normaldetectionsbereich >

- (1) Die Abdeckung abnehmen.
- (2) Mit einem Schlitzschraubenzieher die Linse vom Hauptgerät abnehmen.
- (3) Die Linse hat eine Rippe (einen Knopf), um Einsetzen in falscher Stellung zu verhindern. Um den Gross Und Tief-Normaldetectionsbereich einzustellen, diesen Knopf mit einer Kneifzange abschneiden.
- (4) Die Linse anbringen und sicherstellen daß die markierung ● auf der Linsenoberfläche auf der Anbringseite liegt.

① Confirmation de l'aire de détection
Ce produit est constitué des aires de détection comme illustré dans les diagrammes ci-dessus.

< Précaution >

- Ce produit utilise une méthode de détection des changements de température lorsqu'une personne entre dans l'aire de détection. Selon la température de l'arrière-plan, la sensibilité de détection pourrait devenir plus élevée ou plus basse.
- D'autre part, du fait que seuls les changements de température sont détectés, une personne qui ne se déplace pas ne sera pas détectée.

② Sélection des aire de détection standard et aire de détection large et profonde

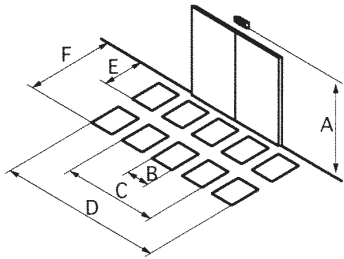
Dans le cas de produit, il est possible de commuter entre les aire de détection standard et aire de détection large et profonde en introduisant une lentille. Lors de son expédition à partir de la fabrique, ce produit est ajusté sur les aire de détection standard.

< Pour régler les aire de détection large et profonde >

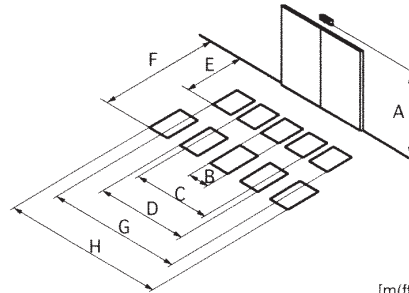
- (1) Enlever le couvercle du panneau.
- (2) En utilisant un tournevis (-), enlever la lentille de l'unité principale.
- (3) La lentille présente une nervure (bouton) pour l'empêcher d'être introduite de manière différente. Pour régler l'aire de détection large et profonde, découper ce bouton en utilisant des pinces.
- (4) Monter la lentille, en s'assurant que la marque ● sur la surface de la lentille soit placée sur le côté de la surface de montage.

	ENGLISH	DEUTSCH	FRANCAIS
	④ Adjustment (Turn on the power)	④ Einstellung (Einschalten)	④ Réglage (activer l'alimentation)

	ENGLISH	DEUTSCH	FRANCAIS		ENGLISH	DEUTSCH	FRANCAIS
	Standard Detection Area	Normaldetektionsbereich	Aire de Détection Standard		Wide & Deep Detection Area	Gross Und Tief-Normaldetektionsbereich	Aire de détection large et profonde
A	Mounting Height	Montagehöhe	Hauteur de fixation	A	Mounting Height	Montagehöhe	Hauteur de fixation
B	Area Width	Bereichsweite	Largeur de zone	B	Area Width	Bereichsweite	Largeur de zone
C	Area Width	Bereichsweite	Largeur de zone	C	Area Width	Bereichsweite	Largeur de zone
D	Area Width	Bereichsweite	Largeur de zone	D	Area Width	Bereichsweite	Largeur de zone
E	Area Depth	Bereichstiefe	Profondeur de zone	E	Area Depth	Bereichstiefe	Profondeur de zone
F	Area Depth	Bereichstiefe	Profondeur de zone	F	Area Depth	Bereichstiefe	Profondeur de zone
				G	Area Width	Bereichsweite	Largeur de zone
				H	Area Width	Bereichsweite	Largeur de zone



		[m(ft)]				
		B	C	D	E	F
A	2.5 (8.2)	0.3 (1.1)	1.6 (5.9)	3.6 (11.8)	0.8 (2.6)	2.3 (7.5)
	3 (9.8)	0.4 (1.3)	2.1 (6.9)	4.3 (14.1)	1.0 (3.3)	2.8 (9.2)
	4 (13.1)	0.5 (1.6)	2.9 (9.5)	5.7 (18.7)	1.3 (4.3)	3.7 (12.1)



		[m(ft)]							
		B	C	D	E	F	G	H	
A	2.5 (8.2)	0.5 (1.6)	1.5 (4.9)	2.5 (8.2)	1.4 (4.6)	3.3 (10.8)	3.0 (9.8)	5.0 (16.4)	
	3 (9.8)	0.6 (2.0)	1.8 (5.9)	2.9 (8.5)	1.6 (5.2)	3.9 (12.8)	3.7 (12.1)	6.0 (19.7)	
	4 (13.1)	0.8 (2.6)	2.5 (8.2)	3.9 (12.8)	2.2 (7.2)	5.2 (17.1)	4.9 (16.1)	8.1 (26.6)	

	ENGLISH	DEUTSCH	FRANCAIS
	④ Adjustment (Turn on the power)	④ Einstellung (Einschalten)	④ Réglage (activer l'alimentation)

① Confirmation of the detection area
This product is made up of the detection areas shown in the diagrams above.

< Caution >

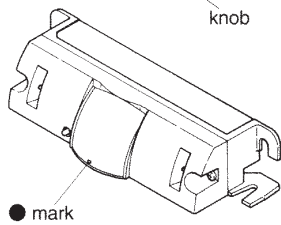
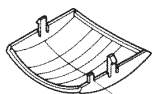
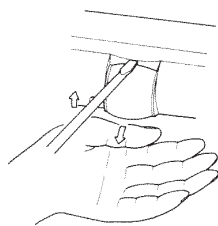
- This product uses a method of detecting the change in temperature when a person enters the detection area. According to the background temperature, the detection sensitivity may become higher or lower.
- Further, because only changes in temperature are detected, a person who is not moving will not be detected.

② Selection of the wide & deep detection area and standard detection area

In this product, it is possible to change between the wide & deep detection area and standard detection area by inserting the lens. When shipped from the factory, the product is set to the standard detection area.

< To set to the wide & deep detection area >

- (1) Remove the panel cover.
- (2) Using a slotted screwdriver, remove the lens from the main unit.
- (3) The lens has a rib (knob) to prevent being inserted in a different way. In order to set to the wide & deep detection area, cut off this knob using nippers.
- (4) Mount the lens, making sure that the ● mark on the lens surface lies on the mounting surface side.



① Bestätigung des Detektionsbereiches
Dieses Produkt enthält die Detektionsbereiche, wie in den Abbildungen oben gezeigt.

< Achtung >

- Dieses Gerät erkennt den Temperaturunterschied, der entsteht, wenn eine Person den Detektionsbereich betritt. Je nach Umgebungstemperatur kann die Detektionsempfindlichkeit höher oder niedriger sein.
- Außerdem wird eine Person, die sich nicht bewegt, nicht erkannt, denn das Gerät reagiert nur auf Änderungen in der Temperatur.

② Wahl von Gross Und Tief-Normaldetektionsbereich und Normaldetektionsbereich

Durch Aufsetzen der Linse kann dieses Gerät Zwischen Gross Und Tief-Normaldetektionsbereich- und Normaldetektionsbereich umgestellt werden. Bei Versand ab Werk ist das Gerät auf Normaldetektionsbereich eingestellt.

< Einstellen auf Gross Und Tief-Normaldetektionsbereich >

- (1) Die Abdeckung abnehmen.
- (2) Mit einem Schlitzschraubenzieher die Linse vom Hauptgerät abnehmen.
- (3) Die Linse hat eine Rippe (einen Knopf), um Einsetzen in falscher Stellung zu verhindern. Um den Gross Und Tief-Normaldetektionsbereich einzustellen, diesen Knopf mit einer Kneifzange abschneiden.
- (4) Die Linse anbringen und sicherstellen daß die markierung ● auf der Linsenoberfläche auf der Anbringseite liegt.

① Confirmation de l'aire de détection
Ce produit est constitué des aires de détection comme illustré dans les diagrammes ci-dessus.

< Précaution >













- Ce produit utilise une méthode de détection des changements de température lorsqu'une personne entre dans l'aire de détection. Selon la température de l'arrière-plan, la sensibilité de détection pourrait devenir plus élevée ou plus basse.
- D'autre part, du fait que seuls les changements de température sont détectés, une personne qui ne se déplace pas ne sera pas détectée.

② Sélection des aire de détection standard et aire de détection large et profonde

Dans le cas de produit, il est possible de commuter entre les aire de détection standard et aire de détection large et profonde en introduisant une lentille. Lors de son expédition à partir de la fabrique, ce produit est ajusté sur les aire de détection standard.

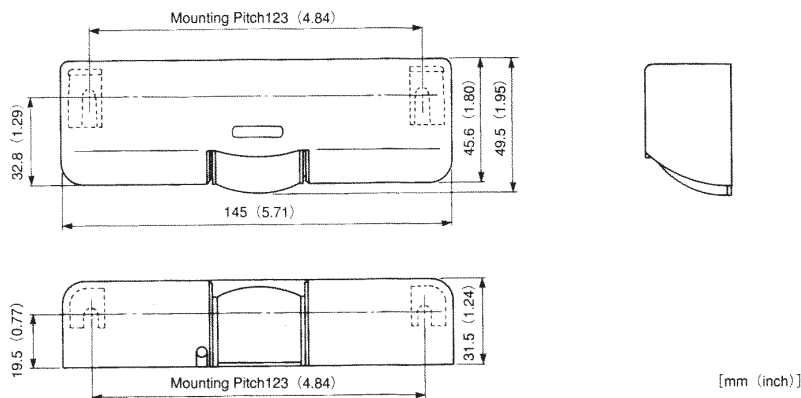
< Pour régler les aire de détection large et profonde >

- (1) Enlever le couvercle du panneau.
- (2) En utilisant un tournevis (-), enlever la lentille de l'unité principale.
- (3) La lentille présente une nervure (bouton) pour l'empêcher d'être introduite de manière différente. Pour régler l'aire de détection large et profonde, découper ce bouton en utilisant des pinces.
- (4) Monter la lentille, en s'assurant que la marque ● sur la surface de la lentille soit placée sur le côté de la surface de montage.

	ENGLISH	DEUTSCH	FRANCAIS										
	④ Adjustment (Turn on the power)	④ Einstellung (Einschalten)	④ Réglage (activer l'alimentation)										
	⑦ OPERATION CHECK Check the operations in the following order. (1) Make sure that the power is turned on. (The power/operation indicator lamp is illuminated.) (2) After turning on the power, this product will not be activated for about 20 seconds due to the required warm up time. (The power/operation indicator lamp is illuminated.) (3) After the warm up time, enter the detection area to make sure that the sensor functions properly. (When it functions, the power/operation indicator lamp is turned off.)	⑦ FUNKTIONSPRÜFUNG Die Funktionen müssen in der folgenden Reihenfolge geprüft werden: (1) Stromversorgung sicherstellen (die Betriebsanzeige - LED leuchtet) (2) Nach dem Einschalten der Stromversorgung ist das Gerät noch einige Sekunden lang ohne Funktion, weil sich der Sensor in der Aufwärmzeit befindet. (Die Betriebsanzeige - LED leuchtet weiterhin.) (3) Nach Ablauf der Aufwärmzeit den Detektionsbereich betreten um die einwandfreie Funktion des Sensors zu prüfen. (Bei Betriebszustand ist die Betriebsanzeige - LED erloschen.)	⑦ VÉRIFICATION DU FONCTIONNEMENT Vérifier les opérations selon la séquence suivante : (1) S'assurer que l'alimentation est connectée. (Le témoin d'opération/alimentation est illuminé dans ce cas). (2) Après avoir connecté l'alimentation, cet équipement ne pourra pas être activé pendant environ 20 secondes en raison du temps de réchauffement requis. (Le témoin d'opération/alimentation est illuminé dans ce cas). (3) Après le temps de réchauffement, entrer dans la zone de détection pour s'assurer que le senseur fonctionne de manière appropriée. (Lorsqu'il fonctionne, le témoin d'opération/alimentation est éteint).										
	<table border="1"> <tr> <td>Entry Motion (Image)</td> <td>Power/Operation Indicator Lamp (Green Indicator Lamp)</td> </tr> <tr> <td></td> <td>ON </td> </tr> <tr> <td>Outside the Detection Area (Standby)</td> <td></td> </tr> <tr> <td></td> <td>OFF </td> </tr> <tr> <td>Inside the Detection Area (Detected)</td> <td></td> </tr> </table>	Entry Motion (Image)	Power/Operation Indicator Lamp (Green Indicator Lamp)		ON 	Outside the Detection Area (Standby)			OFF 	Inside the Detection Area (Detected)			
Entry Motion (Image)	Power/Operation Indicator Lamp (Green Indicator Lamp)												
	ON 												
Outside the Detection Area (Standby)													
	OFF 												
Inside the Detection Area (Detected)													

ENGLISH	DEUTSCH	FRANCAIS
⑧ Maintenance • When the OP-08C becomes dirty, dip a cloth in neutral detergent and wipe it lightly. Do not use any organic solvents such as thinner, benzine, because they may damage the surface of the product. Do not directly wash the sensor with water. Water may enter inside and damage the device. • Never disassemble or repair the equipment. There are no user serviceable parts. • Handle carefully so that you do not damage the lens. If the lens is damaged, the sensor may not function properly.	⑧ Wartung • Ist das Gerät verschmutzt, mit einem Lappen der vorher mit neutralem Reinigungsmittel befeuchtet wurde, das Gehäuse leicht abwischen. Keine organischen Lösungsmittel (Farbverdünner, Benzol, etc.) verwenden. Diese könnten das Detektionsfenster anlösen und Betriebsstörungen verursachen. Den Sensor nicht direkt mit Wasser abwaschen. Es könnte sonst Wasser ins Innere des Gehäuses eindringen und Schäden hervorrufen. • Das Gerät nicht zerlegen oder versuchen zu reparieren. Im Inneren befinden sich keine vom Anwender zu wartenden Teile. • Vorsicht im Umgang mit der Linse. Die Linse darf nicht beschädigt werden, da es sonst zu Betriebsstörungen kommen kann.	⑧ Entretien • Lorsque l'OP-08C est souillé, immerger un chiffon dans un détergent neutre et nettoyer celui-ci légèrement. Ne pas utiliser des solvants organiques tel que diluant, benzine, car ils pourraient endommager la surface de cet équipement. Ne pas laver directement le senseur avec de l'eau. Celle-ci pourrait pénétrer dans le senseur et endommager les dispositifs. • Ne jamais démonter ou réparer l'équipement. Il n'a aucune pièce prévue pour le service de l'utilisateur. • Manipuler avec soin de telle manière que l'on n'endommage pas l'objectif. Si l'objectif est endommagé, le senseur pourrait ne pas fonctionner de manière appropriée.
⑤ TROUBLESHOOTING Does not function Disconnected or defective connection → • Check the wiring and connector, and correct the defect, if any. Does not operate from time to time Insufficient sensitivity → • Set the sensitivity selector switch to a higher level. Passing of a push cart, etc. → • The OP-08C may have difficulty detecting objects other than human bodies. Operates by itself There is a moving object such as flag, banner, potted plant in the detection area. → • Move the object outside the detection area. Passing of a dog or cat → • The OP-08C detects its passage because there is a change in temperature with respect to the floor surface.	⑤ FEHLERSUCHE Arbeitet nicht Spannungsversorgung unterbrochen oder falsch angeschlossen → • Verdrahtung und Stecker prüfen und vorhandene Fehler beheben. Arbeitet zeitweise nicht Unzureichende Empfindlichkeit → • Den Empfindlichkeitsschalter auf den nächst höheren Pegel einstellen Gegenstände wie z.B. Einkaufswagen werden nicht erkannt. → • Der OP - 08 C kann andere Objekte außer Personen nur schwer erkennen. Arbeitet von alleine Prüfen, ob sich bewegliche Gegenstände wie Topfpflanzen, Flaggen, Spruchbänder, etc. im Detektionsbereich befinden. → • Derartige Gegenstände aus dem Detektionsbereich entfernen. Spricht auf Hunde oder Katzen an → • Der OP - 08 C erkennt derartige Tiere, weil eine Temperaturänderung gegenüber der Bodentemperatur vorliegt.	⑤ RECHERCHE DES PANNES Ne fonctionne pas. Déconnecté ou branché incorrectement → • Vérifier le câblage et le connecteur, et corriger le défaut, si nécessaire. Ne fonctionne pas de temps en temps. Sensibilité insuffisante → • Régler le sélecteur de sensibilité à un niveau plus haut. Passage d'une voiture à bras, etc. → • L'OP-08C pourrait présenter une difficulté à détecter des objets autres que le corps humain. Fonctionne tout seul Il y un objet se déplaçant tel que drapeau, étendard, plante en pot dans la zone de détection. → • Déplacer l'objet en dehors de la zone de détection. Passage d'un chien ou d'un chat. → • L'OP-08C détecte son passage car il y a changement de température par rapport à la surface du plancher.

ENGLISH	DEUTSCH	FRANCAIS
⑥ OUTER DIMENSIONS DRAWING	⑥ GEHÄUSEDARSTELLUNG/ABMESSUNG	⑥ PLANCHE DES DIMENSIONS EXTERNES





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Air-Wave TX

INDOOR/ OUTDOOR SENSOR TRANSMITTER (TD-21U)

Air-Wave TX INSTALLATION INSTRUCTIONS

Please read this manual carefully before installation.

FEATURES

- Can be installed on the wall.
- Weatherproof structure(IP54) for indoor and outdoor applications.
- Over 8 million codes possible, eliminates interference from neighbors.
- Powered by a 9V alkaline battery(not included).
- Supervised low battery.
- LED indicator for verifying detection and low battery status.

① CAUTION

- 1. Harsh environments**
When using the Air-Wave TX outdoors in severe conditions such as extreme temperatures, rapid temperature change, high humidity, steam or smog malfunction may occur.
- 2. Impact/Shock**
Impact or Shock can cause severe damage or break the Air-Wave TX.
- 3. Light/Moving object**
Direct light or moving objects in front of the Air-Wave TX can cause false alarms.
- 4. Electric Devices**
Mounting the Air-Wave TX less than 3ft(1m) away from electronic devices such as TV's Radios, PC's or Microwaves may result in malfunction.
- 5. Tampering**
Any changes or modifications not expressly approved by OPTEX could void the users authority to operate the equipment (See FCC note under section 13 COMPLIANCE in this manual).

6. Transmission range

- Transmission range may decrease under the following conditions:
- Either Air-Wave TX or receiving unit installed on a metal surface.
 - Presence of a steel door, reinforced concrete or other metal obstructions between Air-Wave TX and receiving units.
 - Places near strong radio sources such as broadcast stations or substation.

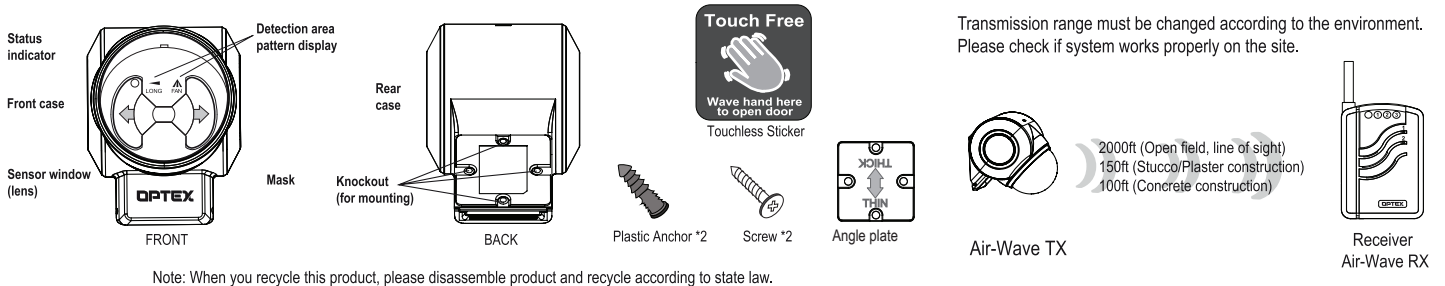
7. Battery replacement

Replace battery every 2 years. Use only 9V alkaline battery.

8. Cleaning

Harsh cleaners such as paint removers or benzene may ruin the surface. Use a soft wet cloth and mild soap to clean.

② PARTS IDENTIFICATION



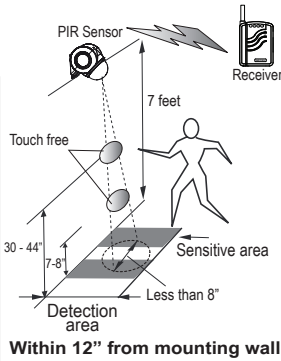
Note: When you recycle this product, please disassemble product and recycle according to state law.

④ DETECTION AREA PATTERN

See Chart Below for approximate detection area dimensions based on mounting height.

Area Pattern

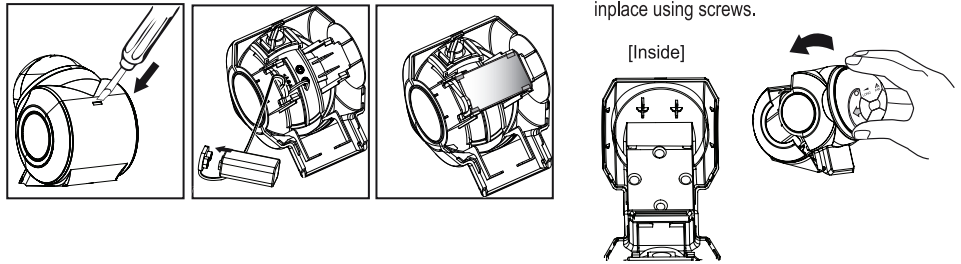
Height	Area Width X Depth
6' (1.8m)	10" X 7" (0.26m) (0.18m)
7' (2.1m)	12" X 8" (0.30m) (0.20m)
8' (2.4m)	14" X 9" (0.35m) (0.23m)



⑤ INSERT THE BATTERY

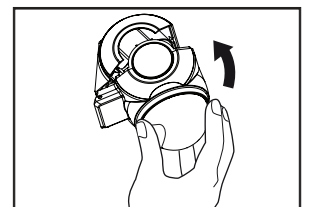
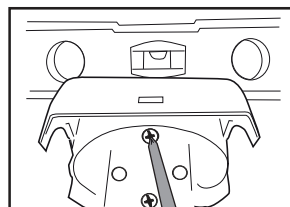
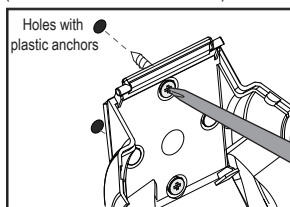
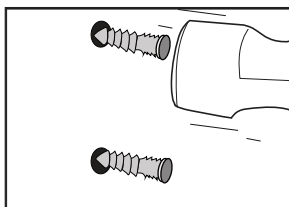
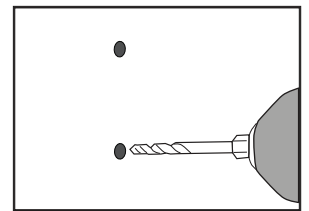
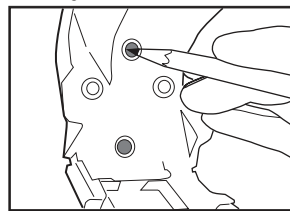
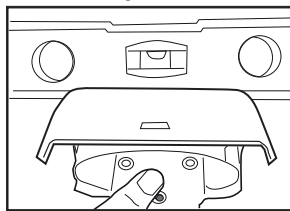
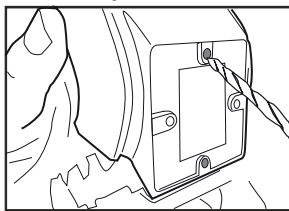
How to set the battery inside the sensor

1. Use a screwdriver to open the casing.
2. Attach the connector to the battery.
3. Fasten the battery with the battery clamp hook.
4. Remove the knock outs of the rear cover and fix the rear cover in place using screws.
5. Close the casing.

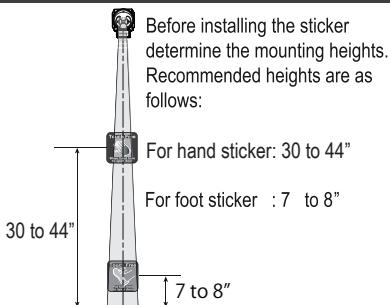


⑥ INSTALLATION

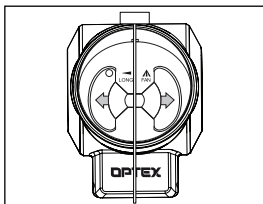
1. Drill two 1/8" mounting holes on back of housing.
2. Hold housing at desired mounting location ensuring it is level.
3. Mark the center of the two mounting holes.
4. Drill holes at the 2 marks using a 3/16" drill bit.
5. Knock in the two plastic anchors.
6. Install housing with supplied screws. (DO NOT FULLY TIGHTEN)
7. Ensure housing is level and tighten screws.
8. Close the sensor casing.



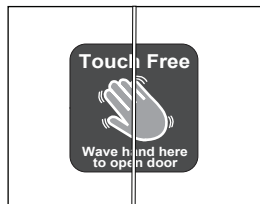
6 INSTALLATION



9. Hang a plum bob in line with the center of the sensor housing to identify center line of detection area.



10. Affix the Touch Free sticker at desired height & centered on the plumb line.

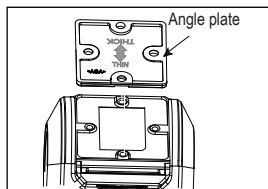


11. Make sure the sensor is detecting when you wave your hand in front of the sticker.

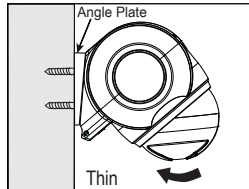
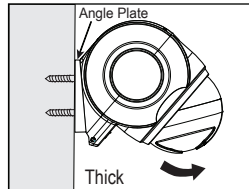


7 ADJUSTMENT FOR AREA DEPTH

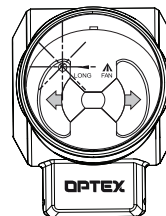
If the detection area is too deep or too shallow, install the included Angle plate at the back side of the housing as necessary.



When installing Angle plate, thick portion at top decrease depth. Thin portion at the bottom increase depth.



8 LOW BATTERY



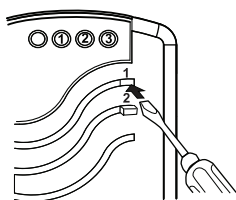
- When the Battery is low, the status indicator starts to flash. When this occurs replace the battery.
- Low Battery can cause false activations.
- There is no need to readjust the Air-Wave TX or the receiver after replacing batteries.

9 TEACH TRANSMITTER CODES TO RECEIVER "TEACH MODE"

Follow these steps to program the transmitter to the receiver. Refer to Receiver Manual for Zone Options-

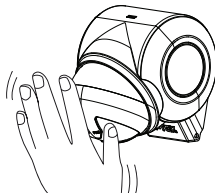
1. Preparation

- Press switch 1 of the receiver until the power indicator starts flashing.
- Press switch 2 to select the zone you wish to assign to the sensor.



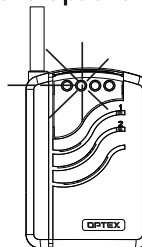
2. Activation

- Wave your hand in front of the Air-Wave TX to trigger it.
- Verify that the receiver has learned successfully by observing the zone indicators of the receiver. Zone indicators should have stopped flashing and remain continuously on.



3. Verification

- After teaching all the transmitter codes (if you have multiple transmitters), return the receiver to normal operating status.
- Make sure that the receiver operates correctly with all the transmitters.



Note:

Cover the Air-Wave TX until you are ready to teach the receiver. Unwanted detection can cause the Air-Wave TX to be assigned to the wrong zone and override the data of other transmitters.

10 TROUBLESHOOTING

1. The system is not operating.

Check the transmitter.

Does the status indicator light up when you wave your hand in the detection area of the Air-Wave TX?	→	If not, check to see whether the battery is inserted correctly. Otherwise try a new battery.
Is the status indicator flashing?	→	Is the detection area setting appropriate? If not, fix the setup.
Is the status indicator flashing?	→	The battery is old. Replace the battery.

Check the receiver.

Is the power indicator of the receiver lit?	→	Is the receiver on? Check the wiring, power switch and connection.
The receiver does not respond to the Air-Wave TX.	→	The Air-Wave TX is not properly recognized by the receiver. Teach the receiver correctly.
The zone indicator of the receiver is on, but nothing happens.	→	The receiver has not been properly setup. Refer to the receiver's manual and verify the setting.
Is there anything blocking the transmission?	→	Relocate the receiver and/or the Air-Wave TX. Metal objects can shorten the effective transmission range.

2. The system is not operating correctly.

A particular zone is malfunctioning.	→	This is probably the transmitter's problem. Check the Air-Wave TX using this zone.
Does direct sunlight or light from automobiles enter the sensor window?	→	Reorient the Air-Wave TX to avoid such light sources.
Is the Air-Wave TX installed on a stable platform?	→	Relocate the Air-Wave TX to a stable platform.
Is there anything that may cause rapid temperature change in the detection area? (e.g. stove)	→	Remove any objects that may cause rapid temperature change from the detection area.
Is there anything that may cause rapid temperature change of the Air-Wave TX? (e.g. air conditioner)	→	Relocate the Air-Wave TX elsewhere.
Before contacting the supplier!	→	Remove the battery, then reinsert the same batteries and verify the Air-Wave TX's operation again.

- If the above solutions do not work, please contact your supplier for services.

13 COMPLIANCE

FCC ID : DC9TD-20U

The changes or modifications not expressly approved by the OPTEX could void the user's authority to operate the equipment. To comply with the FCC RF exposure compliance requirements, this device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter. Note: This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures. (1) Reorient or relocate the receiving antenna. (2) Increase the separation between the equipment and receiver. (3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. (4) Consult the dealer or an experienced radio/TV technician for help.

IC : 4012A-00000TD20U

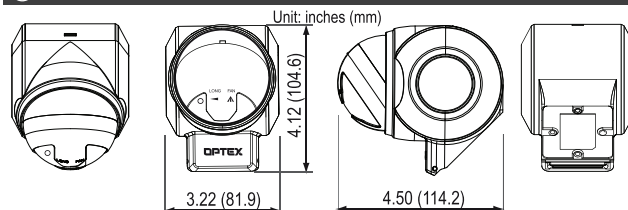
Operation is subject to the following two conditions. (1) This device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

11 SPECIFICATIONS

Product Series	Prowave Air-Wave TX
Product Name	Indoor/ Outdoor Sensor Transmitter
Model Number	TD-21U
Detection Method	Passive Infrared
Detection Range	6 - 8 feet (1.8 - 2.4m)
Status Indicator	Red LED
Power Source	9V Alkaline Battery (Not Included)
Battery Life	Approx. 2 years [250 times per day at 70°F (20°C)]
Frequency	418MHz
Operating Temperature	15°F ~ 120°F (-10°C ~ +50°C)
Installation Location	Outdoor / Indoor
Weight	6.3 oz (180g)
Accessories	Mounting Screw x 2 Plastic Anchor x 2, Angle Plate x 1 Touchless Sticker for hand

Specifications may change without notice

12 DIMENSIONS



14 WARRANTY

1. This product is warranted under normal use for 2 years from the Lot. number. The Lot. number is printed on the sticker on back side of sensor. The first 2 digits stands for year and the second 2 digits are week of manufacturing. If you have questions, call to your sales representative.
2. The warranty is not applicable when below circumstances will be found:
 - Mechanical or electrical modification(s) are made to the product or it is otherwise altered manually.
 - The product is already been serviced at place(s) other than the manufacturer.
 - It is determined that the product malfunction has resulted from improper use or from an accident. Physical damage will not be covered.
 - No copy of the dated sales receipt has been submitted together with the product to be serviced.



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REACTION ONE / REACTION TWO



MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this operation manual.

WARNING	Disregard of warning may cause the improper operation causing death or serious injury of a person.
CAUTION	Disregard of caution may cause the improper operation causing injury of person or damage to objects.
NOTE	Special attention is required to the section of this symbol.

NOTE

- This sensor is a non-contact switch intended for header mount / ceiling mount of an automatic door. Do not use for any other applications.
- When setting the sensor's detection area, make sure there is no traffic around the installation site.
- Before turning the power on, check the wiring to prevent damage or malfunction of equipments that are connected to the sensor.
- Only use the sensor as specified in the operation manual provided.
- Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
- Before leaving the job site make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
- The sensor setting can only be changed by an installer or service engineer. When changed, register the changed setting and dates in the maintenance logbook accompanying the door.

WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of equipments.
Danger of electric shock.	

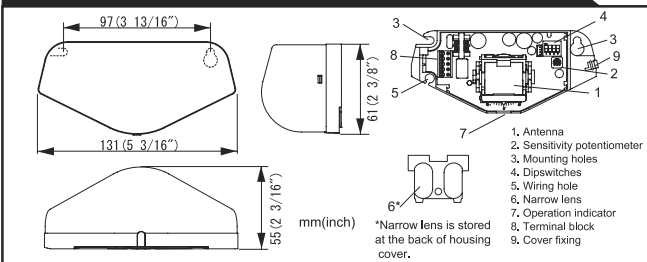
NOTE The following conditions are not suitable for the sensor installation.
 -Vibrating header or mounting surface, -Waterdrops or snow on the sensor,
 -Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity.

SPECIFICATIONS

Model	: REACTION ONE / REACTION TWO	Output	: Form C relay
Cover color	: Silver / Black		: 50V 0.3A Max.(Resistance load)
Mounting height	: 2.0 (6'7") to 3.5m (11'5")	Output hold time	: 2.0sec. / 4.0sec.
Detection method	: Microwave doppler effect	Response time	: <0.3 sec.
Power frequency	: 24.125GHz	Operating humidity	: <80%
Power density	: <2000m	Operating temperature	: -20°C to +55°C(-4°F to 133°F)
Detection area	: See Detection area	IP rate	: IP54
Vertical adjustment	: +10° to +70° (Header mount) +20° to +80° (Ceiling mount)	Weight	: 140g (4.9oz)
Horizontal adjustment	: 30° to left or right	Accessories	: 1 Cable 3m (9'10") 1 Operation manual 2 Mounting screws 1 Mounting template 1 Narrow lens*
Power supply	: 12 to 24VAC(±10%) 12 to 30VDC(±10%)		
Power consumption	: <1.5W(±2VA at AC)		
Minimum speed	: 5cm(1'15'16'')/sec.		
Operation indicator	: Green / Stand-by Red / Detection Green blinking / Set-up		

NOTE The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES



INSTALLATION

- Affix the Mounting template at the desired mounting position.
 2. Drill 2 Mounting holes of ø3.4mm (ø1/8").
 3. To pass the cable through to the header, drill a Wiring hole of ø8mm (ø5/16").
 4. Remove the Mounting template.
 5. Remove the Housing cover with screw driver as shown below.
 Attach the sensor to the mounting surface with 2 Mounting screws.

- Wire the cable to the door controller properly as shown below.

WARNING	Before starting the procedure, ensure that the power is turned OFF. When passing through the cable to the hole, make sure not to tear the shield, otherwise it may cause electric shock or breakdown of the sensor.
Danger of electric shock.	

- Plug the connector of the sensor.
 2. Supply power to the sensor and the sensor will automatically start the set-up mode with blinking Green.
 3. Adjust the detection area and set the Dipswitches. (See ADJUSTMENTS)

NOTE Make sure to connect the cable correctly to the door controller before turning the power ON. The sensor does not detect objects for 10 seconds after supplying power.

- Hook the Housing cover on the left side of main body to place the Housing cover. If wiring is to be exposed, break the knockout.

WARNING	Do not use the sensor without the Housing cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock.	

ADJUSTMENTS

- Detection area**
Adjust the detection area with Sensitivity potentiometer.

NOTE When the sensor is mounted at higher than 3.0m, set the SENSITIVITY to "H (high)".

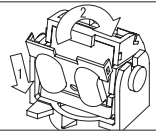
Detection area angle adjustment

	Adjustment	Scale	Angle
Vertical adjustment		3° X 20 steps	Header: +80°, +70°, +10° Ceiling: +20°
Horizontal adjustment		5° X 12 steps	+30°, +30°

CAUTION Do not touch electric part of the sensor to avoid possible breakdown of the sensor.

Narrow area

To obtain Narrow area, place Narrow lens attached at the back of housing cover. To place Narrow lens, follow step 1&2 as shown on the right.



Dipswitches settings

Set Dipswitch 1&2 to enable the direction recognition. (REACTION TWO Only.)

Auto-caution mode (A person waving in the detection area to be detected.)
 Dipswitch 3: Output hold time (2.0sec, 4.0sec)
 Dipswitch 4: Immunity (If there is external interference, set Dipswitch 4 to ON.)

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the housing cover clean. If dirty, wipe the housing cover lightly with a cloth. (Do not use any cleaner or solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the housing cover.

NOTE

- After applying power, wait 10 seconds then walk test detection area to ensure proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

CHECKING

Check the operation according to the chart below.

Sensor Status	Power OFF	Set-up (Approx. 10sec.)	Stand-by	Detection
Operation indicator	OFF	Green blinking	Green	Red
Output Contact				

TROUBLESHOOTING

Problem	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Wrong power supply voltage.	Set to the stated voltage.
	Unstable	Wrong wiring or connection failure.	Check the wiring and Terminal block.
	Green	Sensitivity is too low. Wrong detection area positioning.	Set the sensitivity higher. Check ADJUSTMENTS.
Door opens when no one is in the detection area. (Ghosting)	Green blinking	The sensor is being set up.	Wait for the set-up to complete.
	Red	Water drops on the housing cover. The detection area is overlapping with the door. Sensitivity is too high. Raining or snowing.	Wipe the housing cover with a cloth. Adjust the detection area away from the door. Or set Dipswitch 4 to ON. Set the sensitivity lower. Set Dipswitch 1 to ON. (REACTION TWO Only) Or Dipswitch 4 to ON.
Door remains open	Green	Wrong wiring or connection failure.	Check the wiring and Terminal block.

FCC WARNING(For USA)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

-NOTICE-

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

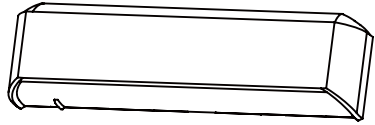
-NOTICE-

1. The antennas cannot be exchanged.
2. To comply with FCC RF exposure compliance requirements, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.

IC(For CANADA)

Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation of the device.



OA-FLEX T

5924580 NOV 2015

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

	WARNING	Disregard of warning may cause the improper operation causing death or serious injury of a person.
	CAUTION	Disregard of caution may cause the improper operation causing injury of a person or damage to objects.
	NOTE	Special attention is required to the section of this symbol.
		It is required to check the operation manual if this symbol is shown on the product.

NOTE

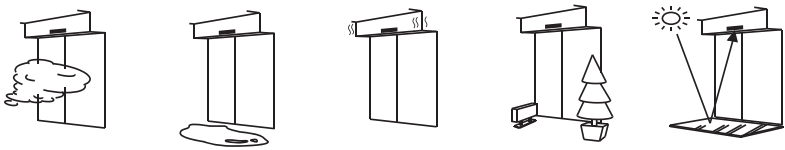
- This product is a non-contact switch intended for header mount or wall mount for use on an automatic sliding door. Do not use for any other applications.
- When setting the sensor's detection area, make sure that there is no traffic around the installation site.
- Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
- Only use the product as specified in the operation manual provided.
- Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
- Before leaving the installation site make sure that the product is operating properly and instruct the building owner/operator on proper operation of the door and the product.
- The product settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock.		

NOTE

The following conditions are not suitable for sensor installation :

- Fog or exhaust emission around the door.
- Moving objects or objects that emit light near the detection field.
- Highly reflecting floor or highly reflecting objects around the door.
- Wet floor.
- Grating floor.



SPECIFICATIONS

Model	: OA-FLEX T	Operating temperature	: -31 to 131°F (-35 to +55°C)
Cover color	: Black	Operating humidity	: < 80%
Mounting height	: 6'7" (2.0m) to 9'10" (3.0m)	Noise level	: < 70dBA
Detection area	: See DETECTION AREA	Output hold time	: Approx. 0.5 sec.
Detection method	: Active infrared reflection(*1)	Response time	: < 0.3 sec.
Area angle adjustment	: Depth : -8° to +8° Width : ±7° (2 clicks with 3.5° every click-Left/Right)	IP rate	: IP54
Power supply (*2)	: 12 to 24VAC ±10% (50 / 60Hz) 12 to 30VDC ±10%	Weight	: 7.8oz (220g)
Power consumption	: < 2.0W (< 5VA at AC)	Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Cable 9'10"(3m) (8 x 0.22mm² AWG24) (*3)
Operation indicator	: See Operation indicator table		
Test input	: Opto coupler Voltage / 5 to 30VDC Current / 6mA Max. (30VDC)		
Activation output	: Form A relay 50V 0.3A Max. (Resistance load)		
Safety output	: Form A relay 50V 0.3A Max. (Resistance load)		

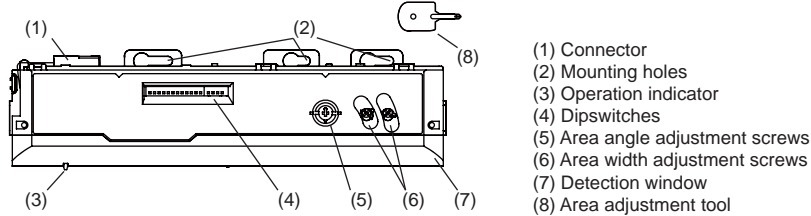
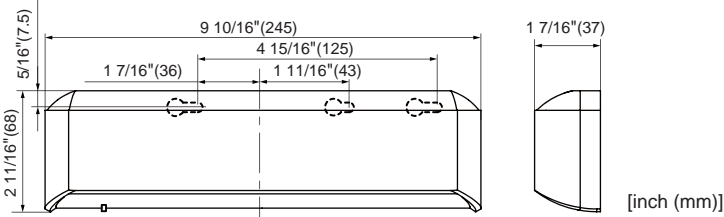
Operation indicator table

Status	Operation indicator color	Indicator Pattern
Set-up	Yellow Blinking	[Blinking Yellow]
Stand-by (Installation mode)	Yellow	[Solid Yellow]
Stand-by (Operation mode)	Green	[Solid Green]
BLUEZONE (1st row) detection (*4)	Blue	[Solid Blue]
2nd row detection	Red Blinking	[Blinking Red]
3rd row detection	Red	[Solid Red]
4th-6th row detection	Orange	[Solid Orange]
Signal saturation	Slow Green Blinking	[Blinking Green]
Sensor failure	Fast Green Blinking	[Blinking Green]

NOTE

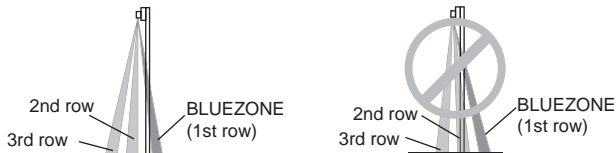
- The specifications herein are subject to change without prior notice due to improvements.
 *1 : BLUEZONE (1st row), 2nd and 3rd rows have a presence detection function.
 *2 : When using this sensor, the sensor has to be connected to a door system which has the SELV circuit.
 *3 : Overcurrent protection with less than 2A. *4 : See **BLUEZONE AREA**

OUTER DIMENSIONS AND PART NAMES

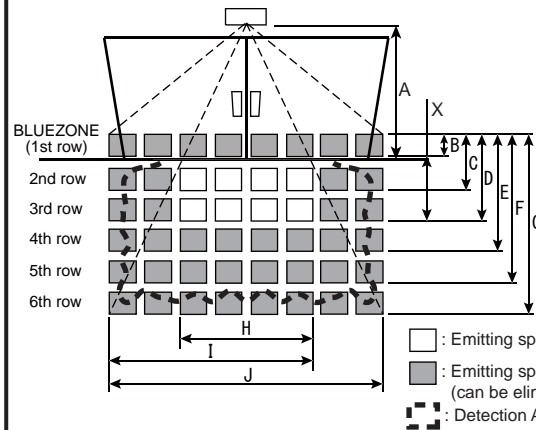


BLUEZONE AREA

When dipswitch 15 is set to "ON", the BLUEZONE area, that provides extra safety over the threshold, is activated. In case the BLUEZONE function is not required, set dipswitch 15 to "OFF". Do not set the 2nd row overlapping the threshold regardless of the setting of dipswitch 15.



DETECTION AREA



Emitting area		[feet,inch (m)]			
A	6'7" (2.00)	7'7" (2.30)	8'2" (2.50)	9'10" (3.00)	
B	5" (0.13)	6" (0.16)	7" (0.17)	8" (0.21)	
C	1'3" (0.38)	1'6" (0.46)	1'8" (0.50)	1'12" (0.60)	
D	2'4" (0.71)	2'10" (0.86)	3'1" (0.94)	3'8" (1.13)	
E	2'9" (0.84)	3'4" (1.01)	3'7" (1.09)	4'4" (1.31)	
F	4'5" (1.34)	5'4" (1.62)	5'9" (1.76)	6'11" (2.11)	
G	5'9" (1.75)	6'11" (2.11)	7'6" (2.29)	9" (2.75)	
H	3' (0.92)	3'8" (1.11)	3'11" (1.20)	4'9" (1.45)	
I	4'11" (1.49)	5'11" (1.80)	6'5" (1.95)	7'8" (2.34)	
J	6'9" (2.06)	8'2" (2.48)	8'10" (2.69)	10'7" (3.23)	

Charts show the values in the following area angle adjustment settings ; Depth : 0° Width : 0°

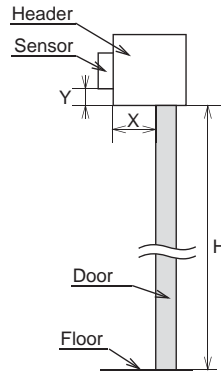
NOTE

The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object. The sensor may not be activated when the entering speed of the object or a person is slower than 50mm / sec. or faster than 1500mm / sec.

INSTALLATION

1

- Affix the mounting template at the desired mounting position. (When setting the detection area close to the door, mount the sensor according to the chart below.)
- Drill two mounting holes of $\phi 1/8"$ ($\phi 3.4\text{mm}$).
- To pass the cable through the header, drill a wiring hole of $\phi 3/8"$ ($\phi 10\text{mm}$).
- Remove the mounting template.
- Remove the housing cover. Fix the sensor to the mounting surface with the two mounting screws.



H : Height from the floor to the bottom of the header
 (The mounting height is "H + Y".)
 Y : Distance between the bottom of the header and the sensor
 X : Distance between the door and the mounting surface

Maximum mounting distance (Y)		[feet,inch (m)]			
X \ H	H	6'7" (2.00)	7'7" (2.30)	8'2" (2.50)	9'10" (3.0)
0	0	No limit			
2" (0.05)	2"	8" (0.20)	8" (0.20)	8" (0.20)	0
4" (0.10)	4"	8" (0.20)	8" (0.20)	8" (0.20)	0
6" (0.15)	6"	5" (0.13)	6" (0.15)	7" (0.19)	0
8" (0.20)	8"	-	5" (0.12)	6" (0.14)	0
10" (0.25)	10"	-	-	4" (0.11)	0
12" (0.30)	12"	-	-	-	0

NOTE Make sure not to mount the sensor lower than the bottom of header.

	CAUTION	Make sure to affix the mounting template as described in the above chart , otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible on the header.
Risk of getting caught.		

2

Power supply 1	1. Grey 2. Grey	12 to 24VAC±10% / 12 to 30VDC±10%
Activation output 2	3. White 4. Yellow	Form A relay 50V 0.3A Max.
Safety output 3	5. White stripe 6. Yellow stripe	Form A relay 50V 0.3A Max.
Test input 4	7. Red (+) 8. Black (-)	Opto coupler / Voltage: 5 to 30VDC

	WARNING	Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield. otherwise it may cause electric shock or breakdown of the sensor.
Danger of electric shock.		

3

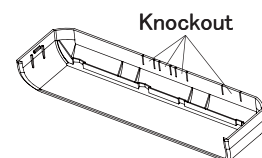
- Plug the connector.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **ADJUSTMENTS 3. Dipswitch settings**)

NOTE

Make sure to connect the cable correctly to the door controller before turning the power ON. When turning the power ON or after adjusting the settings, do not enter the detection area for more than 10 seconds in order to enable the presence detection. Do not touch the dipswitches before turning the power ON, otherwise an error occurs. When changing the settings of dipswitch, see **ADJUSTMENTS 3. Dipswitch settings**

4

- Place the housing cover. If wiring is to be exposed, break the knockout.



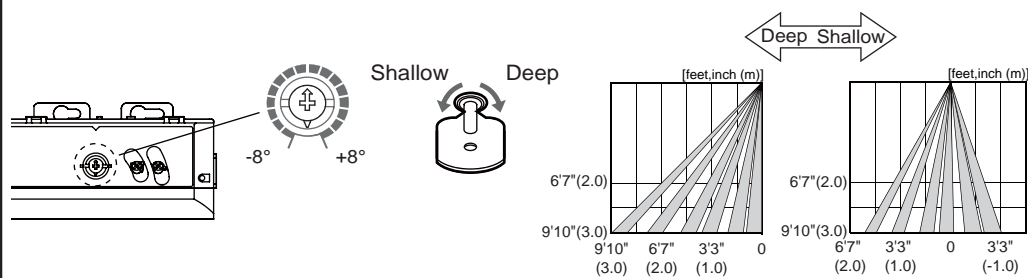
	WARNING	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock.		

ADJUSTMENTS

1 Area angle adjustment

1-1. Area depth angle adjustment

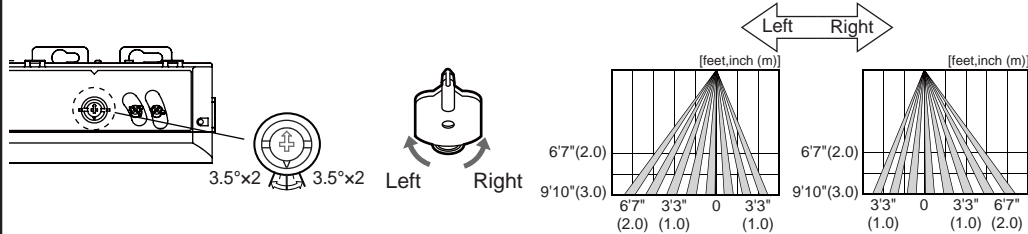
When adjusting the 2nd row close to the door, see dipswitch 16 in **Dipswitch settings table** for the easier adjustment.



NOTE Make sure that the detection area does not overlap with the door / header, and there is no highly reflecting object near the detection area otherwise ghosting / signal saturation may occur.

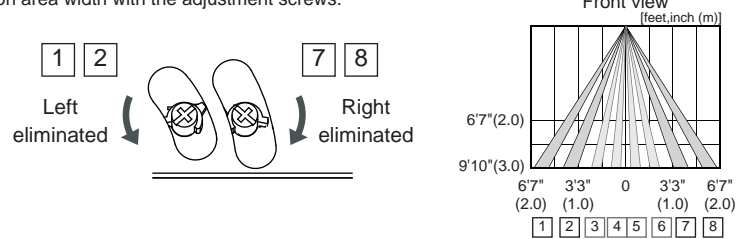
1-2. Area width angle adjustment

The angle of the detection area can both be moved 7° either left or right in 2 steps.



2 Area width adjustment

Adjust the detection area width with the adjustment screws.



NOTE When setting the detection area width, make sure to turn the adjustment screws until it clicks. 1 2 cannot be eliminated separately, neither can 7 8

3 Dipswitch settings

Dipswitch settings table

Dipswitch	Function	Setting				Comment
		Low	High			
Dipswitch 1	Sensitivity	Low 1	High 1			Set the sensitivity according to the mounting height.
Dipswitch 2	Presence timer	30sec. 2 3	60sec. 2 3	180sec. 2 3	600sec. 2 3	The presence timer is applied to BLUEZONE (1st row), 2nd row and 3rd row. The presence timer can be selected from 4 settings.
Dipswitch 3						
Dipswitch 4	Frequency	A 4 5	B 4 5	C 4 5	D 4 5	When using more than one sensor close to each other, set the frequency different for each sensor.
Dipswitch 5						
Dipswitch 6	Row adjustment	6rows 6 7	5rows 6 7	4rows 6 7	3rows 6 7	Set the depth rows with dipswitches 6 and 7.
Dipswitch 7						
Dipswitch 8	Immunity	OFF 8	ON 8			Set dipswitch 8 to "ON" when the sensor operates by itself (Ghosting).
Dipswitch 9	Activation output	N.O. 9	N.C. 9			Dipswitch 9 is for the Activation output to door controller.
Dipswitch 10	Safety output	N.O. 10	N.C. 10			Dipswitch 10 is for the Safety output (to door controller).
Dipswitch 11	Safety input	High 11	Low 11			Dipswitch 11 is for the Safety input (from door controller).
Dipswitch 12	Presence area	1st to 3rd row 12	All areas 12			Set dipswitch 12 to "ON" when the presence timer is applied to all areas.
Dipswitch 13		N/A				
Dipswitch 14	Simultaneous output	OFF 14	ON 14			When Dipswitch 14 is set to "ON", both Activation & Safety output will operate simultaneously regardless of detection area. But only Safety output will respond back with Safety output when it receives Safety input.
Dipswitch 15	BLUEZONE (1st row)	OFF 15	ON 15			When dipswitch 15 is set to "ON", the BLUEZONE (1st row) is active and looks through the threshold.
Dipswitch 16	Installation mode	OFF 16	ON 16			Set dipswitch 16 to "ON" to adjust the 2nd row. During the installation mode only the 2nd row remains active and the operation indicator shows yellow. After setting the row switch dipswitch 16 "OFF".

CHECKING

Check the operation according to the chart below.

	Entry	Power off	Outside of detection area	Entry to 4th to 6th row	Entry to 3rd row	Entry to 2nd row	Entry to BLUEZONE (*)
Image							
Operation indicator	None	None	Green	Orange	Red	Red Blinking	Blue
Activation output	9 ↓ N.O.	14 ↓ OFF	OFF	ON	OFF		
	9 ↑ N.C.		ON	OFF	ON		
	9 ↓ N.O.	14 ↑ ON	OFF	ON	ON		
	9 ↑ N.C.		ON	OFF	OFF		
Safety output	10 ↓ High	14 ↓ OFF	OFF	OFF	ON		
	10 ↑ Low		ON	ON	OFF		
	10 ↓ High	14 ↑ ON	OFF	OFF	ON		
	10 ↑ Low		ON	ON	OFF		

NOTE *: When dipswitch 15 is set to "ON".

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. (Do not use any cleaner / solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- When the operation indicator blinks Green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE 1. When turning the power ON, always walk-test the detection area to ensure the proper operation.
2. Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

TROUBLESHOOTING

Door operation	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Wrong power supply voltage.	Set to the stated voltage.
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.
		Wrong detection area positioning.	Check ADJUSTMENTS 1, 2 .
Door opens when no one is in the detection area. (Ghosting)	Proper	Sensitivity is too low.	Set the sensitivity higher.
		Short presence timer.	Set the presence timer longer.
		Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
		Wrong wiring or connection failure.	Check the wires and connector.
Door remains open	Unstable	Objects that move or emit light in the detection area.	Remove the objects.
		The detection area overlaps with that of another sensor.	Check ADJUSTMENTS 3 dipswitch 4,5.
		Waterdrops on the detection window.	Use the rain-cover. (Separately available) Wipe the detection window with a damp cloth. Do not use any cleaner or solvent. Install in a place keeping the waterdrops off.
	Fast Green Blinking	The detection area overlaps with the door/header.	Adjust the detection area to "Deep" (Outside).
		Sensitivity is too high.	Set the sensitivity lower.
		Others	Set dipswitch 8 to "ON".
Proper operation	Yellow	Wrong setting of dipswitches.	Check ADJUSTMENTS 3 dipswitch 9,10,11.
		Sudden change in the detection area.	Check ADJUSTMENTS 3 dipswitch 1 to 3. If the problem still persists, hard-reset the sensor. (Turn the power OFF and ON again.)
		Wrong wiring or connection failure.	Check the wires and connector.
Slow Green Blinking	Slow Green Blinking	Sensitivity is too low.	Set the sensitivity higher.
		Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
		Sensor failure.	Contact your installer or service engineer.
Proper operation	Slow Green Blinking	Signal saturation. (2nd and/or 3rd row)	Remove highly reflecting objects from the detection area. Lower the sensitivity. Change the area depth angle.
		The detection area overlaps with the door/header.	Adjust the detection area to "Deep" (Outside).
Proper operation	Slow Green Blinking	Installation mode is set to "ON".	Set dipswitch 16 to "OFF".
		Signal saturation. (4th, 5th, 6th row and/or BLUEZONE)	Remove highly reflecting objects from the detection area. Lower the sensitivity. Change the area depth angle.

FCC WARNING (For USA)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

-NOTICE-

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

-NOTICE-

- The antennas cannot be exchanged.
- To comply with FCC RF exposure compliance requirements, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.

IC (For CANADA)

Operation is subject to the following two conditions:

- this device may not cause interference, and
- this device must accept any interference received, including interference that may cause undesired operation of the device.

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i-oneX T

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

	WARNING	Disregard of the warning symbol can cause improper operation which may cause death or serious injury.
	CAUTION	Disregard of the caution symbol can cause improper operation which may cause injury of a person or damage the object.
	NOTE	Special attention is required to the section of this symbol.

NOTE

- This product is a non-contact switch intended for header mount or wall mount for use on an automatic sliding door. Do not use for any other applications.
- When setting the sensor's detection area, make sure that there is no traffic around the installation site.
- Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
- Only use the product as specified in the operation manual provided.
- Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
- Before leaving the installation site make sure that the product is operating properly and instruct the building owner/operator on proper operation of the door and the product.
- The product settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock		

NOTE

- The following conditions are not suitable for sensor installation.
- Fog or exhaust emission around the door
 - Wet floor
 - Vibrating header or mounting surface
 - Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity
 - Highly reflecting floor or highly reflecting objects around the door

SPECIFICATIONS

Model	: i-oneX T	Safety output	: Form A relay 50V 0.3A Max. (Resistance load)
Cover color	: Black	Output hold time	: 0.5 to 1.5sec.
Mounting height	: 6'7" to 9'10" (2.0m to 3.0m)	Response time	: < 0.3sec.
Detection area	: See DETECTION AREA	Operating temperature	: -31°F to 131°F (-35°C to +55°C)
Detection method	: Active infrared reflection	Operating humidity	: < 80%
Depth angle adjustment	: Approach area -15° to +10° Presence/Motion area -10° to +8°	IP rate	: IP54
Power supply	: 12 to 24VAC ±10% (50 / 60 Hz) 12 to 30VDC ±10%	Weight	: 14.6oz (420g)
Power consumption	: < 2.5W (< 4VA at AC)	Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Cable 9'10" (3m)
Operation indicator	: See Operation indicator table		
Activation output	: Form A relay 50V 0.3A Max. (Resistance load)		
Test input	: Opto coupler Voltage 5 to 30VDC Current 6mA Max. (30VDC)		

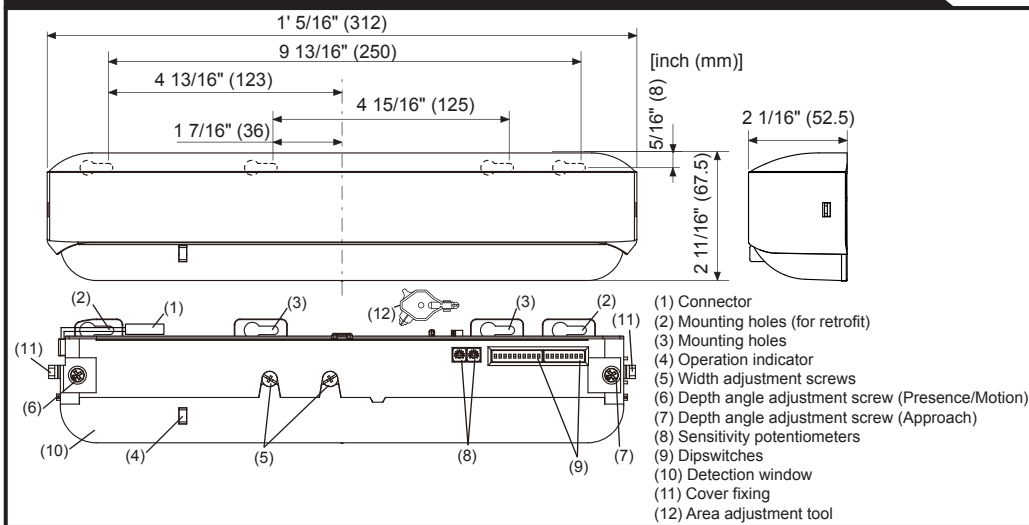
Operation indicator table

Status	Operation indicator color	1sec.	1sec.
Stand-by (installation mode)	Yellow	[Solid bar]	
Stand-by (operation mode)	Green	[Solid bar]	
BLUEZONE (1st row) detection(*1)	Blue	[Solid bar]	
2nd row detection	Red blinking	[Blinking bar]	
3rd/4th row detection	Red	[Solid bar]	
5th row detection	Orange	[Solid bar]	
Approach (6th row) detection	Orange blinking	[Blinking bar]	
Signal saturation	Slow Green blinking	[Blinking bar]	
Sensor failure	Fast Green blinking	[Blinking bar]	

NOTE The specifications herein are subject to change without prior notice due to improvements.

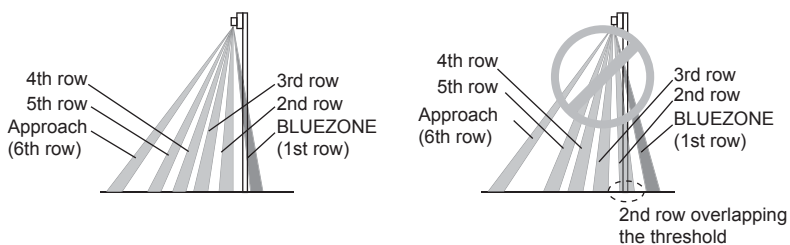
*1 : See **BLUEZONE AREA**

OUTER DIMENSIONS AND PART NAMES



BLUEZONE AREA

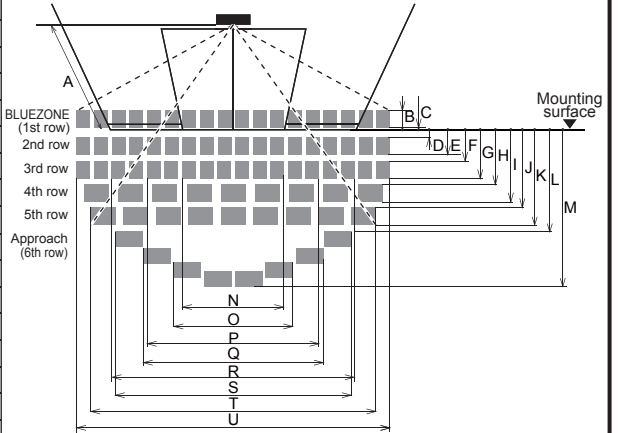
When dipswitch 5 is set to "ON", the BLUEZONE area, that provides extra safety over the threshold, is activated. In case the BLUEZONE function is not required, set dipswitch 5 to "OFF". Do not set the 2nd row overlapping the threshold regardless of the setting of dipswitch 5.



DETECTION AREA

The chart shows the values at depth angle 0°

	[feet,inch(m)]		
A	7'3" (2.20)	8'2" (2.50)	9'10" (3.00)
B	9" (0.22)	10" (0.25)	1' (0.31)
C	6" (0.16)	7" (0.18)	8" (0.21)
D	2" (0.06)	3" (0.07)	3" (0.08)
E	7" (0.17)	8" (0.20)	9" (0.24)
F	1'7" (0.49)	1'10" (0.55)	2'2" (0.65)
G	1'8" (0.50)	1'11" (0.58)	2'4" (0.70)
H	2'8" (0.82)	3'1" (0.93)	3'8" (1.11)
I	2'10" (0.86)	3'3" (0.99)	3'11" (1.19)
J	3'5" (1.04)	3'10" (1.18)	4'8" (1.41)
K	3'7" (1.09)	4'1" (1.24)	4'11" (1.49)
L	4'9" (1.45)	5'5" (1.65)	6'6" (1.98)
M	8'1" (2.46)	9'2" (2.79)	11' (3.35)
N	4'6" (1.38)	5'2" (1.57)	6'2" (1.89)
O	7'1" (2.15)	8" (2.45)	9'8" (2.95)
P	8'4" (2.53)	9'5" (2.88)	11'4" (3.45)
Q	10'6" (3.20)	12' (3.65)	14'4" (4.38)
R	12'1" (3.68)	13'9" (4.18)	16'6" (5.02)
S	14' (4.27)	15'11" (4.86)	19'2" (5.84)
T	13'5" (4.10)	15'4" (4.67)	18'4" (5.60)
U	16'9" (5.10)	19' (5.79)	22'10" (6.95)



Presence area :1st-4th row
Motion area :5th row
Approach area :6th row

Approach area

*Mounting Height = 7'3" (2.2m) [feet,inch(m)]

	-15°	0°	+10°
L	2'2" (0.67)	4'9" (1.45)	6'9" (2.06)
M	5'1" (1.54)	8'1" (2.46)	12' (3.65)
O	5'7" (1.69)	7'1" (2.15)	8'2" (2.50)
Q	8'3" (2.52)	10'6" (3.20)	11'8" (3.56)
S	12' (3.66)	14' (4.27)	15'7" (4.76)



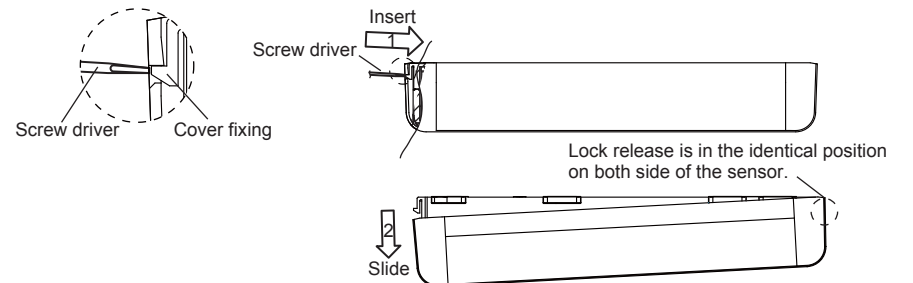
NOTE

The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object. The sensor may not be activated when the entering speed of the object or a person is slower than 2"(50mm) / sec. or faster than 4'11"(1500mm) / sec.

INSTALLATION

1

- Affix the mounting template at the desired mounting position. Refer to the chart in below.
- Drill two mounting holes of $\phi 1/8"$ ($\phi 3.4\text{mm}$).
- To pass the cable through the header, drill a wiring hole of $\phi 5/16"$ ($\phi 8\text{mm}$).
- Remove the mounting template.
- Remove the housing cover with screw driver as shown below. Fix the sensor to the mounting surface with the two mounting screws.



H : Height from the floor to the bottom of the header (The mounting height is "H + Y".)
Y : Distance between the bottom of the header and the sensor
X : Distance between the door and the mounting surface

X	H	Maximum distance (Y) [feet,inch(m)]				
		6'7" (2.00)	7'7" (2.30)	8'2" (2.50)	9'2" (2.80)	9'10" (3.00)
0		No limit				
2" (0.05)		4" (0.10)	4" (0.10)	4" (0.11)	5" (0.12)	5" (0.12)
4" (0.10)		3" (0.08)	4" (0.09)	4" (0.10)	4" (0.11)	4" (0.11)
6" (0.15)		2" (0.06)	3" (0.08)	3" (0.08)	4" (0.09)	4" (0.10)
8" (0.20)		2" (0.05)	3" (0.07)	3" (0.08)	4" (0.09)	4" (0.09)
10" (0.25)		2" (0.05)	2" (0.06)	3" (0.07)	3" (0.08)	3" (0.08)
12" (0.30)		-	-	-	-	-

NOTE Make sure not to mount the bottom of the sensor lower than the bottom of the header.

	CAUTION	Make sure to affix the mounting template as described in the above chart, otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible on the header.
Risk of getting caught		

2

Wire the cable to the door controller as shown below.

Power supply	1	1. Grey 2. Grey	1	12 to 24VAC±10% / 12 to 30VDC±10%
Activation output	2	3. White 4. Yellow	2	Form A relay 50V 0.3A Max.
Safety output	3	5. White stripe 6. Yellow stripe	3	Form A relay 50V 0.3A Max.
Test input	4	7. Red (+) 8. Black (-)	4	Opto coupler / Voltage: 5 to 30VDC

	WARNING	Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield otherwise it may cause electric shock or breakdown of the sensor.
Danger of electric shock		

3

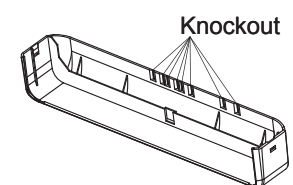
- Plug the connector.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **ADJUSTMENTS 5. Dipswitch settings, Table 1**)

NOTE

Make sure to connect the cable correctly to the door controller before turning the power ON. When turning the power ON or after adjusting the settings, do not enter the detection area for more than 10 seconds in order to enable the presence detection. Do not touch the dipswitches before turning the power ON, otherwise an error occurs.

4

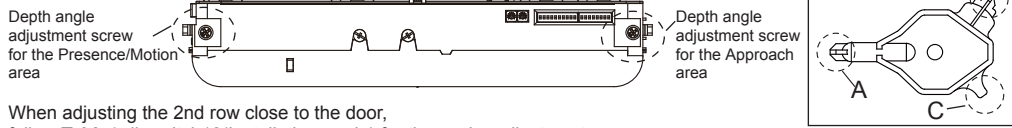
- Place the housing cover. If wiring is to be exposed, break the knockout.



	WARNING	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock		

ADJUSTMENTS

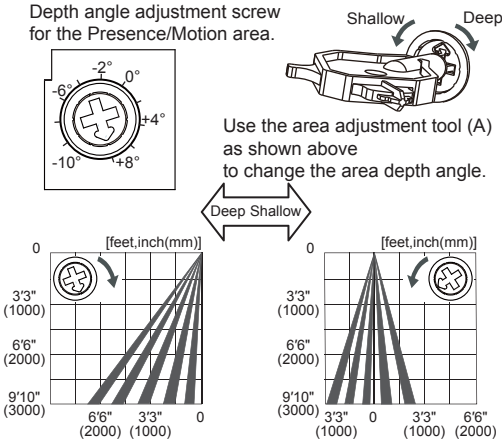
1 Area depth angle adjustment



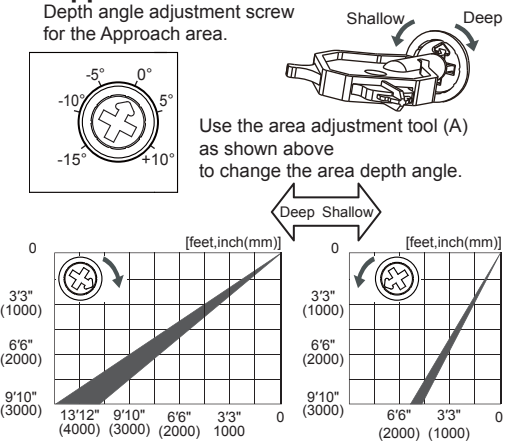
When adjusting the 2nd row close to the door, follow **Table 1** dipswitch 18 (Installation mode) for the easier adjustment. When dipswitch 18 is set to "ON", sensor automatically set back to the operation mode after 5 minutes. If the installation mode is required again, set dipswitch 18 to "OFF", then set to "ON".

NOTE Make sure that the detection area does not overlap with the door / header, and there is no highly reflecting object near the detection area otherwise ghosting / signal saturation may occur.

1-1 Presence/Motion area



1-2 Approach area

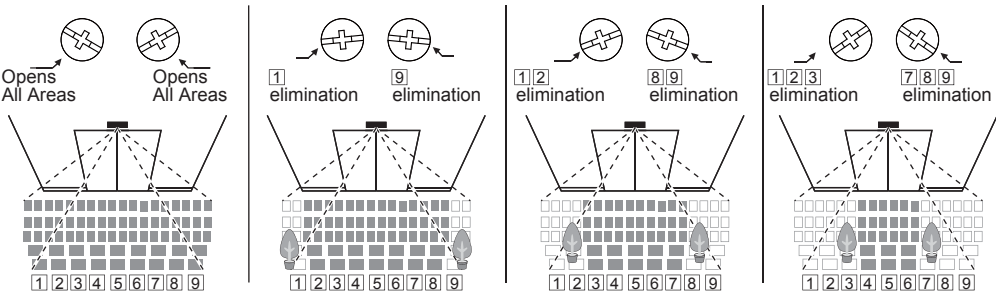


2 Area width adjustment

2-1 Presence/Motion area

Adjust the Presence/Motion area width with the Width adjustment screws. Each side can be adjusted independently, allowing for asymmetrical settings. Use the area adjustment tool (A) to adjust area width.

NOTE When setting the Presence/Motion area width, make sure to turn the width adjustment screws until it clicks.



2-2 Approach area

Approach area width can be adjusted by changing the Dipswitches 8, 9, 10. See 5. Dipswitch settings, Table 1.

3 Presence/Motion area rows adjustment

Presence/Motion area rows can be adjusted by changing the Dipswitches 6 & 7. See 5. Dipswitch settings, Table 1.

4 Sensitivity adjustment

Adjust the Approach area and Motion/Presence area with potentiometer. Turning it clockwise increases the sensitivity and turning counterclockwise lowers the sensitivity. Use the area adjustment tool (B) to change sensitivity.

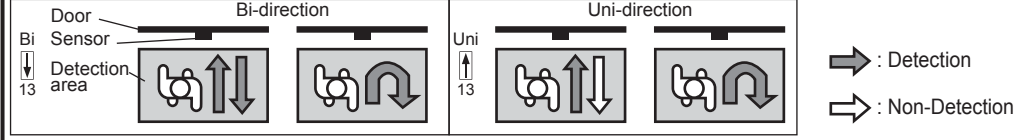
5 Dipswitch settings

The area adjustment tool (C) can be used to change Dipswitch.

Table 1	Function	Setting	Comment
Dipswitch 1	Presence timer	30sec. ↓ ↓	To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.
Dipswitch 2		60sec. ↓ ↓	
Dipswitch 3	Frequency	Setting 1 ↓ ↓	When using more than one sensor close to each other, set the frequency different for each sensor.
Dipswitch 4		Setting 2 ↓ ↓	
Dipswitch 5	BLUEZONE	OFF ↓ / ON ↑	When dipswitch 5 is set to "ON", the BLUEZONE (1st row) is active and looks through the threshold.
Dipswitch 6	Presence/Motion area row adjustment	5rows ↓ ↓	Rows can be eliminated as shown below. 5rows ↓ 4rows ↓ 3rows ↓ 2rows ↓
Dipswitch 7		4rows ↓ ↓	
Dipswitch 8	Approach area width adjustment	8 9 10 ↓ ↓ ↓	The width of Approach area can be adjusted by changing the Dipswitches as shown the left.
Dipswitch 9		1 2 3 4 5 6 7 8 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	
Dipswitch 10		1 2 3 4 5 6 7 8 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	
Dipswitch 11	Rain mode	Normal ↓ / Rain ↑	Set this switch to "Rain" if the sensor is used in a region with a lot of rain.
Dipswitch 12	Snow mode	Normal ↓ / Snow ↑	Set this switch to "Snow" if the sensor is used in a region with snow or a lot of insects.
Dipswitch 13	Direction	Bi ↓ / Uni ↑	*Please refer to Table 2 for the details.
Dipswitch 14	Simultaneous output	OFF ↓ / ON ↑	When Dipswitch 14 is set to "ON", both the activation & safety relay outputs will operate simultaneously regardless of detection area. But only the Safety output relay will respond back with a Safety output when it receives a Test input.

Dipswitch 15	Safety output (to door controller)	N.O. ↓ / N.C. ↑	Select "N.O." / "N.C." for Safety output.
Dipswitch 16	Test input (from the door controller)	High ↓ / Low ↑	The delay time between Test input and Safety output is 10msec..
Dipswitch 17	Future use		
Dipswitch 18	Installation mode	OFF ↓ / ON ↑	Set dipswitch 18 to "ON" to adjust the 2nd row. During the installation mode only the 2nd row remains active and the operation indicator shows yellow. After setting the row, switch dipswitch 18 "OFF".

Table 2



CHECKING

Check the operation in the operation mode according to the chart below.

Entry	Power OFF	Outside of detection area	Entry into Approach area (6th row)	Entry into 5th row	Entry into 4th row	Entry into 3rd row	Entry into 2nd row	Entry into BLUEZONE (1st row)
Image	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]	[Icon]
Status	-	Stand-by	Approach detection active	Motion detection active	Presence detection active			
Operation indicator	None	Green	Orange Blinking	Orange	Red	Red Blinking	Blue	
Activation output	OFF ↓ / ON ↑	[Switch]	[Switch]	[Switch]	[Switch]	[Switch]	[Switch]	[Switch]
Safety output	OFF ↓ / ON ↑	N.O. ↓ / N.C. ↑	N.O. ↓ / N.C. ↑	N.O. ↓ / N.C. ↑	N.O. ↓ / N.C. ↑	N.O. ↓ / N.C. ↑	N.O. ↓ / N.C. ↑	N.O. ↓ / N.C. ↑

NOTE The response time may differ according to the color of the objects and the color/material of the floor.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. Do not use any cleaner / solvent.
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise an electric shock may occur.
- When the operation indicator blinks green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE

- When turning the power ON, always walk-test the detection area to ensure the proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. plant, illumination, etc.)

TROUBLESHOOTING

Door operation	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Wrong power supply voltage.	Set to the stated voltage.
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.
		Wrong detection area positioning.	Check ADJUSTMENTS 1, 2, 3, 4, 5 .
		Sensitivity is too low.	Set the sensitivity higher.
Door opens when no one is in the detection area. (ghosting)	Proper	Short presence timer.	Set the presence timer longer.
		Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.
		Objects that move or emit light in the detection area.	Remove the objects.
		The detection area overlaps with that of another sensor.	Check Table 1 dipswitch 3 & 4.
		Waterdrops on the detection window.	Use the rain-cover. (Separately available) Or wipe the detection window with a damp cloth. Do not use any cleaner or solvent. Or install in a place keeping the waterdrops off.
Door remains open	Proper	Detection area overlaps with door / header.	Adjust the detection area to "Deep"(Outside).
		Sensitivity is too high.	Set the sensitivity lower.
	Fast Green blinking	Raining or snowing	Set dipswitch 11, 12 to "Rain", "Snow".
		Wrong setting of dipswitches	Check Table 1 dipswitch 11, 12, 15.
Proper operation	Slow Green blinking	Sudden change in the detection area.	Check ADJUSTMENTS 4 & Table 1 dipswitch 1, 2. If the problem still persists, hard-reset the sensor. (Turn the power OFF and ON again)
		Wrong wiring or connection failure.	Check the wires and connector.
	Slow Green blinking	Dirty detection window	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
Proper operation	Slow Green blinking	Sensor failure	Contact your installer or service engineer.
		Signal saturation	Remove highly reflecting objects from the detection area. Or change the area depth angle.
Proper operation	Slow Green blinking	The detection area overlaps with the door / header.	Adjust the detection area to "Deep"(Outside).
		Signal saturation (BLUEZONE)	Remove highly reflecting objects from the detection area. Or change the area depth angle.

Manufacturer

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X-ZONE T

5923702 JUL 2016

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

	WARNING	Disregard of the warning symbol can cause improper operation which may cause death or serious injury.
	CAUTION	Disregard of the caution symbol can cause improper operation which may cause injury of a person or damage the object.
	NOTE	Special attention is required to the section of this symbol.

- NOTE**
- This product is a non-contact switch intended for header mount or wall mount for use on an automatic sliding door. Do not use for any other applications.
 - When setting the sensor's detection area, make sure that there is no traffic around the installation site.
 - Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
 - Only use the product as specified in the operation manual provided.
 - Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
 - Before leaving the installation site make sure that the product is operating properly and instruct the building owner/operator on proper operation of the door and the product.
 - The product settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock		

- NOTE**
- The following conditions are not suitable for sensor installation.
- Fog or exhaust emission around the door
 - Wet floor
 - Vibrating header or mounting surface
 - Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity
 - Highly reflecting floor or highly reflecting objects around the door

SPECIFICATIONS

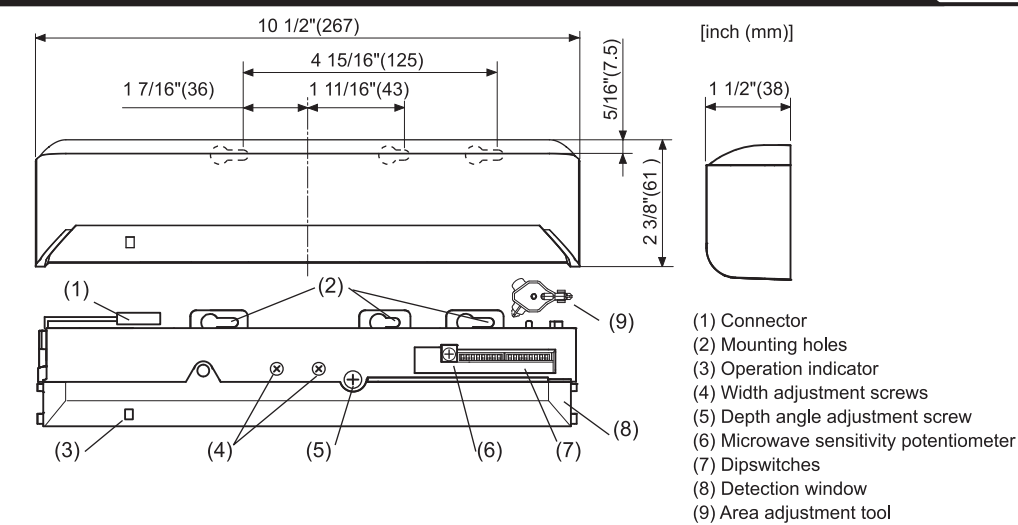
Model	: X-ZONE T	Activation output	: Form A relay
Cover color	: Black		50V 0.3A Max.(Resistance load)
Mounting height	: 6'7" to 11'6" (2.0 to 3.5m)	Test input	: Opto coupler
Detection area	: See DETECTION AREA		Voltage 5 to 30VDC
Detection method	: Active infrared reflection (*1) Microwave doppler effect	Safety output	: Form A relay
Depth angle adjustment	: AIR area -6° to +6° Microwave area +25° to +45°		50V 0.3A Max.(Resistance load)
Power supply	: 12 to 24VAC ±10% (50 / 60Hz) 12 to 30VDC ±10%	IP rate	: IP54
Power consumption	: < 2.5W (< 4VA at AC)	Weight	: 9.5oz (270g)
Operation indicator	: See Operation indicator table	Accessories	: 1 Operation manual
Output hold time	: < 0.5sec.		2 Mounting screws
Response time	: < 0.3sec.		1 Mounting template
Operating temperature	: -31 to 131°F (-35 to +55°C)		1 Area adjustment tool
Operating humidity	: < 80%		1 Cable 9'10" (3m)

Operation indicator table

Status	Operation indicator color	Indicator Pattern
Set-up	Yellow Blinking	[Blinking Yellow bar]
Stand-by (Installation mode)	Yellow	[Solid Yellow bar]
Stand-by (Operation mode)	Green	[Solid Green bar]
BLUEZONE (1st row) detection(*2)	Blue	[Solid Blue bar]
2nd row detection	Red Blinking	[Blinking Red bar]
3rd row detection	Red	[Solid Red bar]
Microwave detection	Orange	[Solid Orange bar]
Signal saturation	Slow Green Blinking	[Blinking Green bar]
Sensor failure	Fast Green Blinking	[Blinking Green bar]

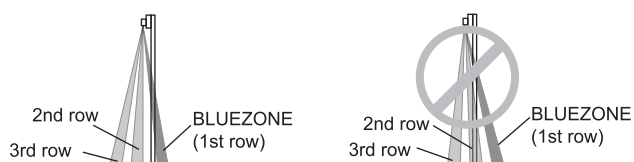
- NOTE**
- The specifications herein are subject to change without prior notice due to improvements.
- *1 : Active infrared reflection has a presence detection function.
 - *2 : See **BLUEZONE AREA**

OUTER DIMENSIONS AND PART NAMES

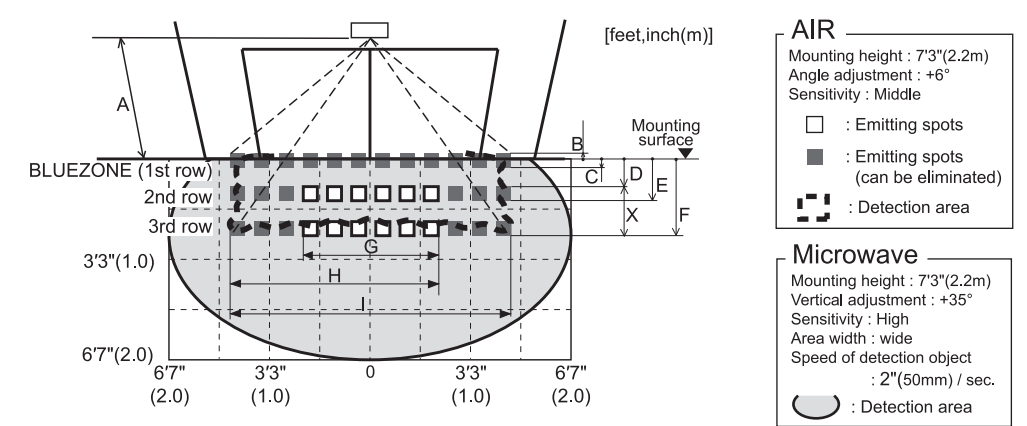


BLUEZONE AREA

When dipswitch 15 is set to "ON", the BLUEZONE area, that provides extra safety over the threshold, is activated. In case the BLUEZONE function is not required, set dipswitch 15 to "OFF". Do not set the 2nd row overlapping the threshold regardless of the setting of dipswitch 15.



DETECTION AREA



- NOTE**
- The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object. The sensor may not be activated when the entering speed of the object or a person is slower than 2" (50mm) / sec. or faster than 4'11" (1500mm) / sec.

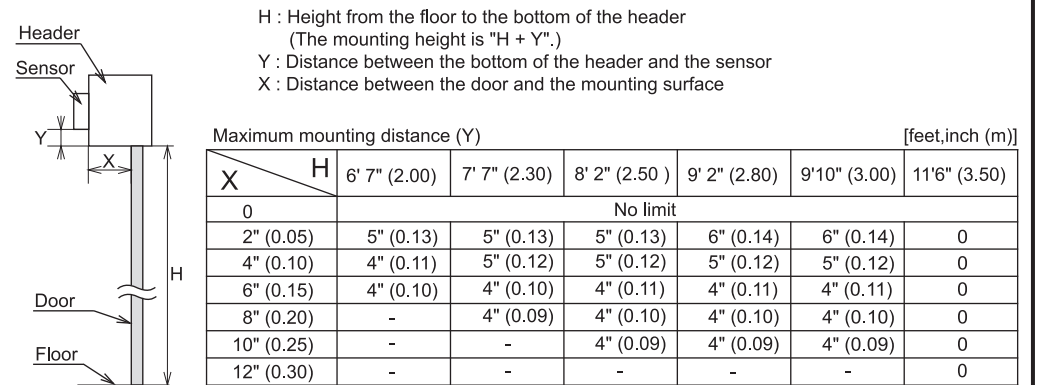
AIR emitting area

The chart shows the values at depth angle +6°

	[feet,inch(m)]					
A	6' 7" (2.00)	7' 3" (2.20)	8' 2" (2.50)	8' 10" (2.70)	9' 10" (3.00)	11' 6" (3.50)
B	2" (0.05)	2" (0.06)	3" (0.07)	3" (0.07)	3" (0.08)	4" (0.09)
C	3" (0.07)	3" (0.08)	4" (0.09)	4" (0.10)	4" (0.11)	5" (0.12)
D	9" (0.23)	10" (0.25)	11" (0.28)	1' (0.31)	1' 1" (0.34)	1' 3" (0.39)
E	1' 2" (0.35)	1' 3" (0.39)	1' 5" (0.44)	1' 7" (0.48)	1' 9" (0.53)	2' (0.61)
F	1' 11" (0.59)	2' 2" (0.65)	2' 5" (0.74)	2' 7" (0.80)	2' 11" (0.89)	3' 5" (1.03)
G	3' 12" (1.21)	4' 4" (1.33)	4' 11" (1.51)	5' 4" (1.63)	5' 11" (1.81)	6' 11" (2.11)
H	6' 1" (1.86)	6' 9" (2.05)	7' 7" (2.32)	8' 3" (2.51)	9' 2" (2.79)	10' 8" (3.25)
I	8' 3" (2.52)	9' 1" (2.78)	10' 4" (3.15)	11' 2" (3.40)	12' 5" (3.79)	14' 6" (4.42)

INSTALLATION

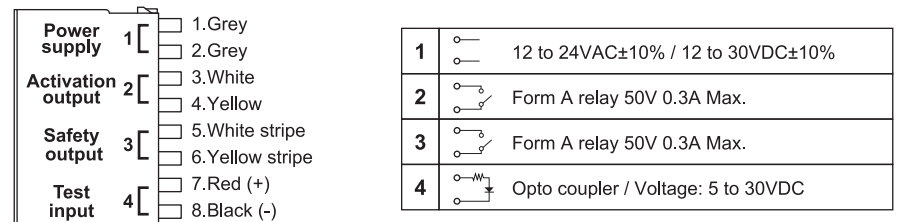
- Affix the mounting template at the desired mounting position. (When setting the detection area close to the door, mount the sensor according to the chart below.)
- Drill two mounting holes of $\phi 1/8"$ ($\phi 3.4$ mm).
- To pass the cable through the header, drill a wiring hole of $\phi 5/16"$ ($\phi 8$ mm).
- Remove the mounting template.
- Remove the housing cover. Fix the sensor to the mounting surface with the two mounting screws.



- NOTE**
- Make sure not to mount the sensor lower than the bottom of header.

	CAUTION	Make sure to affix the mounting template as described in the above chart, otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible on the header.
Risk of getting caught		

- Wire the cable to the door controller as shown below.



	WARNING	Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield otherwise it may cause electric shock or breakdown of the sensor.
Danger of electric shock		

- Plug the connector.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **ADJUSTMENTS 4. Dipswitch settings**)

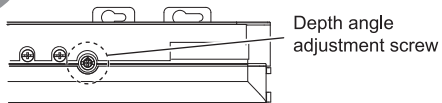
- NOTE**
- Make sure to connect the cable correctly to the door controller before turning the power ON. When turning the power ON or after adjusting the settings, do not enter the detection area for more than 10 seconds in order to enable the presence detection. Do not touch the dipswitches before turning the power ON, otherwise an error occurs.

- Place the housing cover. If wiring is to be exposed, break the knockout.

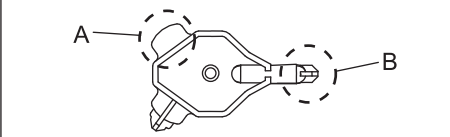
	WARNING	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock		

ADJUSTMENTS

1 Area depth angle adjustment



Area adjustment tool

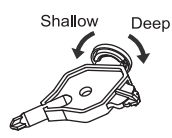


When adjusting the 2nd row close to the door, see **Table 2** dipswitch 16 for the easier adjustment.

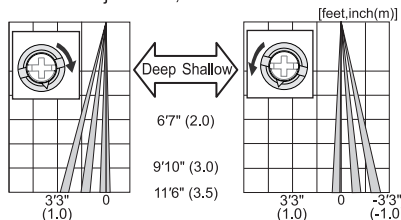
NOTE Make sure that the detection area does not overlap with the door/header, and there is no highly reflecting object near the detection area otherwise ghosting/signal saturation may occur.

1-1 AIR adjustment

Depth angle adjustment screw for the AIR area

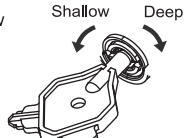


Use the area adjustment tool (A) as shown above to change the area depth angle. For the easier adjustment, see **REFERENCE**.

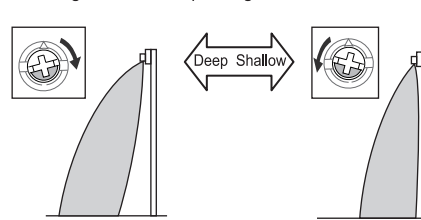


1-2 Microwave adjustment

Depth angle adjustment screw for the microwave area



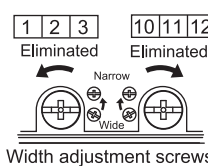
Use the area adjustment tool (B) as shown above to change the area depth angle.



2 Area width adjustment

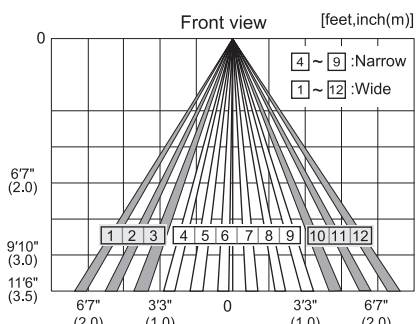
2-1 AIR adjustment

To adjust the AIR detection area width, use the adjustment screws as shown in the picture below.



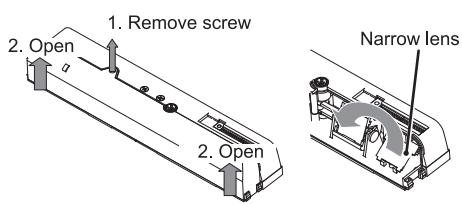
Please adjust by using the tool (B)

NOTE When setting the detection area width, make sure to turn the adjustment screws until it clicks. [1][2][3] cannot be eliminated separately, neither can [10][11][12]



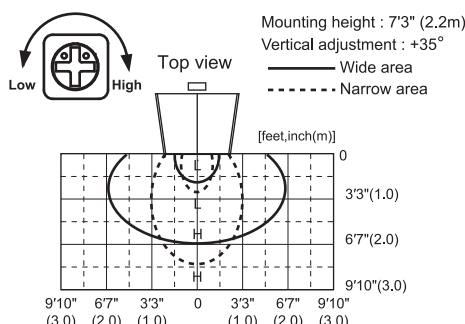
2-2 Microwave adjustment

To adjust the microwave detection area width, use the narrow lens as shown in the picture below.



3 Microwave sensitivity

Adjust the microwave detection area with potentiometer.



4 Dipswitch settings

Table 2

■ AIR settings ■ Microwave settings □ Other settings

Dipswitch	Function	Setting				Comment
		Low	Middle	High	S-High	
Dipswitch 1	Sensitivity	Low 1 2	Middle 1 2	High 1 2	S-High 1 2	Set the sensitivity according to the mounting height. Values below dipswitches are reference only. Adjust the sensitivity according to your risk assessment.
Dipswitch 2		2.0 to 3.0m	2.0 to 3.0m	2.5 to 3.2m	3.0 to 3.5m	
Dipswitch 3	Presence timer	30sec. 3 4	60sec. 3 4	180sec. 3 4	600sec. 3 4	To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.
Dipswitch 4						
Dipswitch 5	Frequency	Setting1 5 6	Setting2 5 6	Setting3 5 6	Setting4 5 6	When using more than one sensor close to each other, set the frequency different for each sensor.
Dipswitch 6						
Dipswitch 7	Rain mode	Normal 7	Rain 7			Set this switch to Rain if the sensor is used in a region with a lot of rain.
Dipswitch 8	Snow mode	Normal 8	Snow 8			Set this switch to Snow if the sensor is used in a region with snow or a lot of insects.
Dipswitch 9	Direction	Bi 9	Uni 9			When dipswitch 9 is set to "Uni", this setting enables the door to close faster when a person walks away from the door.
Dipswitch 10	Immunity	OFF 10	ON 10			Set dipswitch 10 to "ON" when the sensor operates by itself (Ghosting). When dipswitch 10 is set to "ON" the actual detection area may occur smaller.
Dipswitch 11	Activation output (to door controller)	N.O. 11	N.C. 11			Select "N.O."/"N.C." for Activation output.
Dipswitch 12	Safety output (to door controller)	N.O. 12	N.C. 12			Select "N.O."/"N.C." for Safety output. The delay time between Test input and Safety output is 10msec..
Dipswitch 13	Test input (from door controller)	High 13	Low 13			
Dipswitch 14	Simultaneous output	OFF 14	ON 14			When Dipswitch 14 is set to ON, both the activation & safety relay outputs will operate simultaneously regardless of detection area. But only the Safety output relay, will respond back with a Safety output when it receives a Test input.
Dipswitch 15	BLUEZONE (1st row)	OFF 15	ON 15			When dipswitch 15 is set to "ON", the BLUEZONE(1st row) is active and looks through the threshold.
Dipswitch 16	Installation mode	OFF 16	ON 16			Set dipswitch 16 to "ON" to adjust the 2nd row. During the installation mode only the 2nd row remains active and the operation indicator shows yellow. After setting the row set dipswitch 16 "OFF".

CHECKING

Check the operation in the operation mode according to the chart below.

Entry	Power OFF	Outside of detection area	Entry into microwave area	Entry into 3rd row	Entry into 2nd row	Entry into BLUEZONE (1st row)	
							Status
Operation indicator		None	Green	Orange	Red	Red Blinking	Blue
Activation output	11	N.O. 11	N.C. 11	OFF	OFF	OFF	OFF
	12	N.O. 12	N.C. 12	OFF	OFF	OFF	OFF

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. Do not use any cleaner / solvent.
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise an electric shock may occur.
- When the operation indicator blinks green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE 1. When turning the power ON, always walk-test the detection area to ensure the proper operation.
2. Do not place any objects that move or emit light in the detection area. (e.g. plant, illumination, etc.)

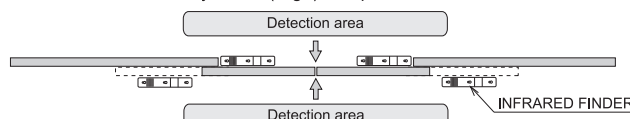
TROUBLESHOOTING

Door operation	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Wrong power supply voltage.	Set to the stated voltage.
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.
		Wrong detection area positioning.	Check ADJUSTMENTS 1, 2, 3 .
		Sensitivity is too low.	Set the sensitivity higher.
Door opens when no one is in the detection area. (Ghosting)	Proper	Short presence timer.	Set the presence timer longer.
		Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
		Objects that move or emit light in the detection area.	Remove the objects.
		The detection area overlaps with that of another sensor.	Check Table 2 dipswitch 5, 6.
Door remains open	Fast Green Blinking	Waterdrops on the detection window.	Use the rain-cover. (Separately available) Or wipe the detection window with a damp cloth. Do not use any cleaner or solvent. Or install in a place keeping the waterdrops off.
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside). Or set dipswitch 10 to "ON".
		Sensitivity is too high.	Set the sensitivity lower.
		Raining or snowing.	Set dipswitch "7", "8", "9", "10" to "Rain", "Snow", "Uni", "ON".
Proper operation	Yellow	Others	Set dipswitch 11 to "ON".
		Wrong setting of dipswitches.	Check Table 2 dipswitch 7, 8, 12.
		Sudden change in the detection area.	Check Table 2 dipswitch 1 to 4. If the problem still persists, hard-reset the sensor. (Turn the power OFF and ON again)
		Wrong wiring or connection failure.	Check the wires and connector.
Proper operation	Slow Green Blinking	Sensitivity is too low.	Set the sensitivity higher.
		Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
		Sensor failure	Contact your installer or service engineer.
Proper operation	Slow Green Blinking	Installation mode is set to "ON".	Set dipswitch 16 to "OFF".
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside).
Proper operation	Slow Green Blinking	Signal saturation.	Remove highly reflecting objects from the detection area. Or lower the sensitivity. Or change the area depth angle for AIR area.

REFERENCE

Area depth adjustment with INFRARED FINDER (Separately available)

- Turn the depth angle adjustment screw to the right (Deep) to place the detection area most away from the door.
- Set INFRARED FINDER sensitivity to "H" (High) and place it on the floor as shown below.



- Turn the depth angle adjustment screw to the left (Shallow) until the emitting area is placed at the position where INFRARED FINDER is in the low detection status (Slow Red Blinking).

FCC WARNING (For USA)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

-NOTICE-

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.

-NOTICE-

- The antennas cannot be exchanged.
- To comply with FCC RF exposure compliance requirements, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.

IC (For CANADA)

Operation is subject to the following two conditions:

- this device may not cause interference, and
- this device must accept any interference received, including interference that may cause undesired operation of the device.

Manufacturer

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WEBSITE:
www.optex.co.jp/as/eng/index.html

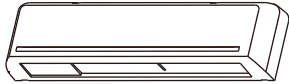
North and South America Subsidiary

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OA-PRESENCE T



5914603 MAR 2013

TM-0031-8

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of the sensor. Failure to read this operation manual may cause improper sensor operation and may result in serious injury or death of person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this operation manual.

	WARNING	Disregard of warning may cause the improper operation causing death or serious injury of person.
	CAUTION	Disregard of caution may cause the improper operation causing injury of person or damage to objects.
	NOTE	Special attention is required to the section of this symbol.
		It is required to check the operation manual if this symbol is shown on the product.

NOTE

- This sensor is a non-contact switch intended for header mount or wall mount of an automatic door. Do not use for any other applications. This sensor cannot be used for industrial doors or shutters, when used, proper operation and safety cannot be guaranteed.
- When setting the sensor's detection area, make sure there is no traffic around the installation site.
- Before turning the power ON, check the wiring to prevent damage or malfunction of equipments that are connected to the sensor.
- Only use the sensor as specified in the operation manual provided.
- Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
- Before leaving the job site make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
- The sensor settings can only be changed by an installer or service engineer. When changed, the changed settings and dates shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of equipments.
Danger of electric shock.		

SPECIFICATIONS

Model	: OA-PRESENCE T	Test input	: Opto coupler
Cover color	: Black / Silver	Voltage	: 5 to 30VDC
Mounting height	: 2.0 to 3.0m (6'7" to 9'10")	Current	: 6mA Max. (30VDC)
Detection area	: See ADJUSTMENTS	Noise level	: <70dBA
Detection method	: Active Infrared Reflection	Output hold time	: Approx. 0.5sec.
Depth angle adjustment	: -5 to 5°	Response time	: <0.3sec.
Power supply (*)	: 12 to 24VAC (±10%) 12 to 30VDC (±10%)	Operating temperature	: -20 to +55°C (-4 to 131°F)
Power consumption	: < 2W (< 3VA at AC)	Operating humidity	: <80%
Operation LED	: See chart below	IP rate	: IP54
Safety / Test output	: Opto coupler (NPN)	Category	: 2 (EN ISO13849-1 : 2008)
	Voltage / 5 to 50VDC	Performance level	: d (EN ISO13849-1 : 2008)
	Current / 100mA Max.	Weight	: 260g (9.2oz)
	Dark current / 600nA Max.	Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Cable 3m(9'10") (6 × 0.14mm ² AWG26 / Overcurrent protection with less than 2A)
	(Resistance load)		

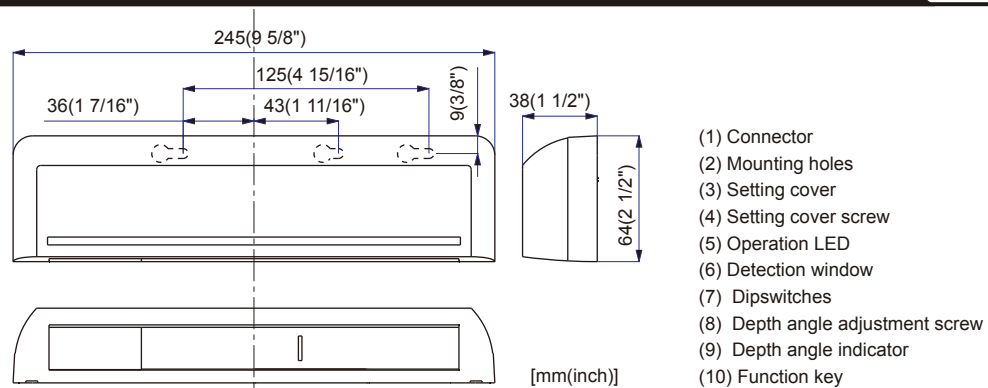
Operation LED

Status	Operation LED color
Stand-by	Green
Detection	Red
Wrong dipswitch setting	Red & Green blinking
Signal saturation	Slow Green blinking
Sensor failure	Fast Green blinking

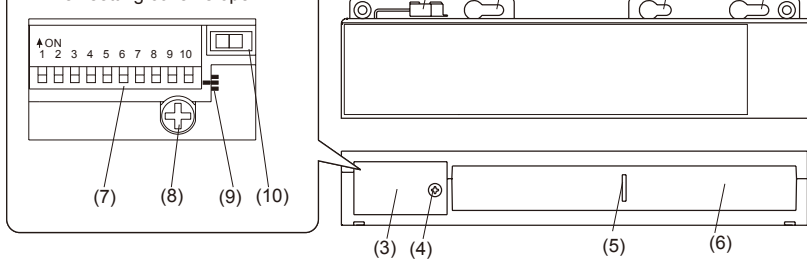
* When using this sensor, the sensor has to be connected to a door system which has the SELV circuit.

NOTE The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES

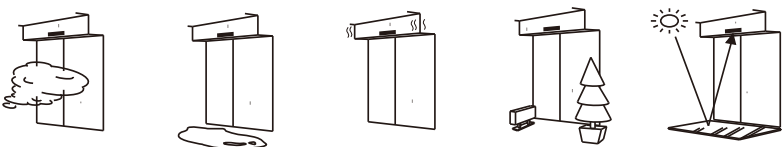


When setting cover is open.



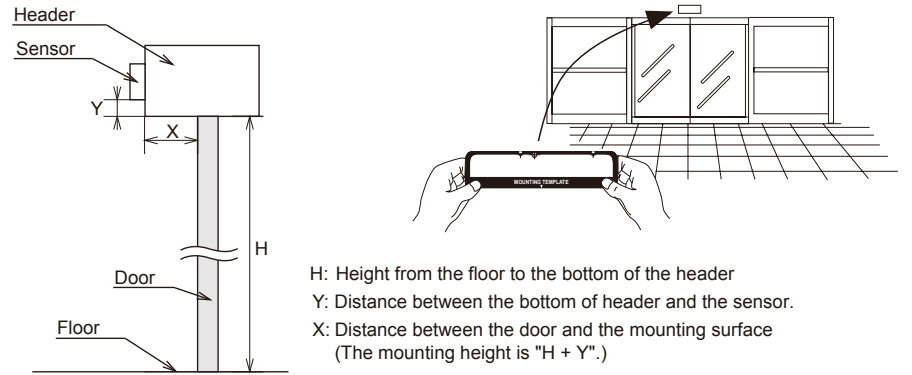
INSTALLATION

- NOTE** The following conditions are not suitable for the sensor installation.
- Fog or exhaust emission around the door.
 - Wet floor.
 - Vibrating header or mounting surface.
 - Moving objects or a heating radiator in the detection area.
 - Highly reflecting floor or highly reflecting objects around the door.



1

- Affix the mounting template at the desired mounting position. (When setting the detection area close to the door, mount the sensor according to the chart below.)
- Drill two mounting holes of $\phi 3.4\text{mm}$ ($\phi 1/8"$).
- To pass the cable through the header, drill a wiring hole of $\phi 8\text{mm}$ ($\phi 5/16"$).
- Remove the mounting template.



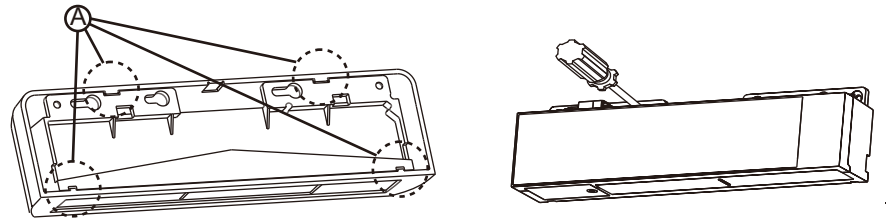
H: Height from the floor to the bottom of the header
Y: Distance between the bottom of header and the sensor.
X: Distance between the door and the mounting surface
(The mounting height is "H + Y".)

Maximum mounting distance (Y)

[mm(feet,inch)]

X \ H	2,000 (6' 6")	2,200 (7' 2")	2,500 (8' 2")	2,930 (9' 9")	3,000 (9'10")
0	No limit				
50 (1 15/16")	45 (1 3/4")	50 (1 15/16")	55 (2 3/16")	70 (2 3/4")	0
100 (3 15/16")	35 (1 3/8")	40 (1 9/16")	45 (1 3/4")	55 (2 3/16")	0
150 (5 7/8")	25 (1")	30 (1 3/16")	35 (1 3/8")	40 (1 9/16")	0
200 (7 7/8")	15 (9/16")	20 (13/16")	25 (1")	35 (1 3/8")	0
250 (9 13/16")	-	15 (9/16")	20 (13/16")	25 (1")	0
300 (11 13/16")	-	-	-	15 (9/16")	0

- Unhook (A) to remove the housing cover as shown below.
- Fix the sensor to the mounting surface with two mounting screws.

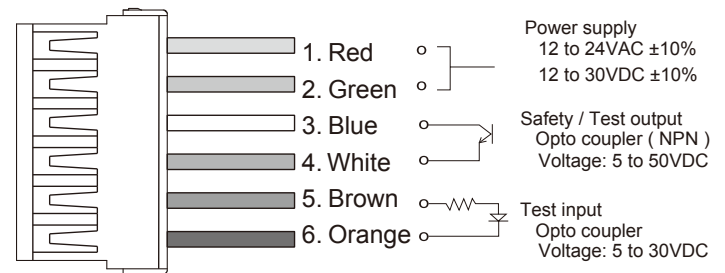


	CAUTION	Make sure to affix the mounting template as described in the above chart, otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible on the header.
Risk of getting caught.		

2

Wire the cable to the door controller as shown below.

To connector of the sensor



	WARNING	Before starting the procedure, ensure that the power is turned OFF. When passing the cable through the hole, do not tear the shield, otherwise it may cause electric shock or breakdown of the sensor.
Danger of electric shock.		

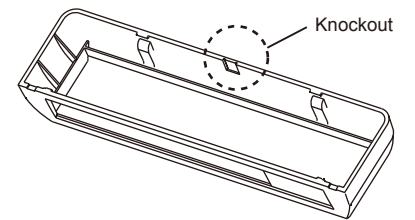
3

- Plug the connector of the sensor.
- Open the setting cover.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **ADJUSTMENTS**)
- Close the setting cover.

NOTE Make sure to connect the cable correctly to the door controller before turning the power ON. To enable the presence detection, do not enter the detection area for 10 seconds after supplying the power. Do not touch the dipswitches before turning the power ON, otherwise an error occurs. When changing the settings of dipswitches, check **ADJUSTMENTS 3 Dipswitch settings**.

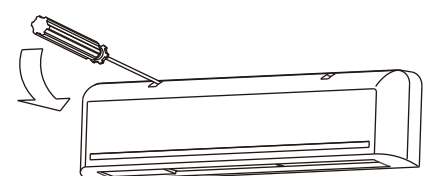
4

Place the housing cover. If wiring is to be exposed, break the knockout.



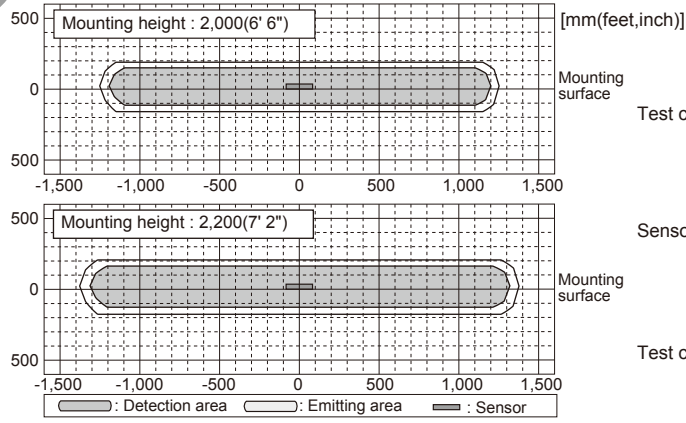
	WARNING	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock.		

NOTE To remove the housing cover of the sensor installed on the header, place a screw driver in the two notches on the upper part of the sensor.



ADJUSTMENTS

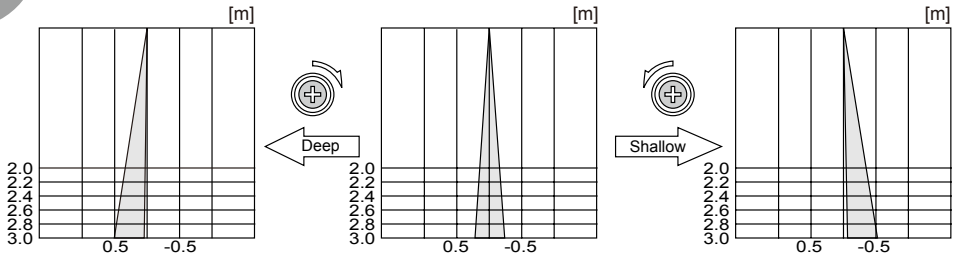
1 Detection area according to the test conditions required by EN 16005.



Test conditions required by EN 16005
 Floor : Grey paper
 Detection object : EN 16005 CA reference body
 Sensor setting
 Area angle : 0°
 Sensitivity : "Middle"
 Area width : 8 Spots
 Test conditions
 Speed of detection object : 50mm / sec.

NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object. The sensor may not be activated when the entering speed of the object or a person is slower than 50mm / sec. or faster than 1,500mm / sec.

2 Area depth angle adjustment

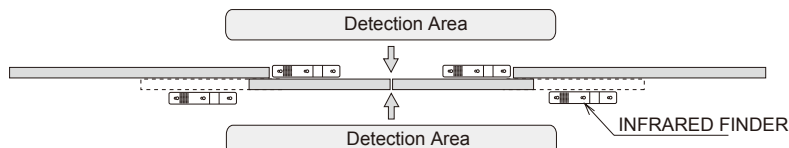


The detection area can be adjusted up to 5° away from the door (Deep) or 5° towards the door (Shallow). Adjust the required detection area by turning the depth adjustment screw with a screw driver. Check the detection area position with Red LED of the Operation LED using a tool such as a reflecting mirror. For the compliance with EN 16005, the required fine adjustments applying the EN 16005 test conditions are recommended.

NOTE Make sure the detection area does not overlap with the door / header, otherwise ghosting / signal saturation may occur. Do not place any highly reflecting objects in the detection area, otherwise signal saturation may occur.

REFERENCE Area depth adjustment with INFRARED FINDER (Separately available)

- Turn the depth adjustment screw to the right (Deep) to place the detection area most away from the door.
- Set INFRARED FINDER sensitivity to "H" (High) and place it on the floor as shown below.

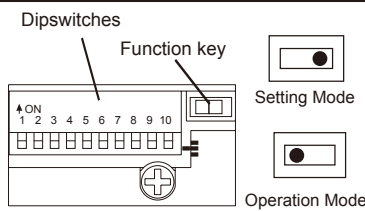


- Turn the depth adjustment screw to the left (Shallow) until the emitting area is placed at the position where INFRARED FINDER is in the low detection status (Slow Red blinking).

3 Dipswitch settings

Follow these steps to change the settings of dipswitches.

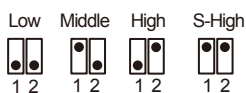
- Change the function key from "Operation Mode" to "Setting Mode".
- Change the dipswitches setting.
- Change the function key back to "Operation Mode".



NOTE When the above procedures (1-3) are not followed, an error (Red & Green blinking) occurs. Make sure to use the sensor only in "Operation Mode". The sensor does not operate properly in "Setting Mode".

3-1. Setting the sensitivity

Normally set to "Middle". "Low" decreases the sensitivity and "High / S-High" increases the sensitivity. Refer to the chart below for the suitable sensitivity to each installation environment.



Floor condition	Mounting height [mm (feet,inch)]					For example
	2,000 (6' 6")	2,200 (7' 2")	2,500 (8' 2")	3,000 (9' 10")		
Low reflection	Middle	Middle	High	S-High	-Carpet -Dark color floor	
Middle reflection	Low	Middle	Middle	S-High	-Concrete	
High reflection	Low	Low	Middle	High	-Tile -Marble	

NOTE Special attention to the setting is required when the door is used often by the elderly or children. Please adjust the sensitivity and presence detection timer according to your risk assessment.

3-2. Setting the presence detection timer

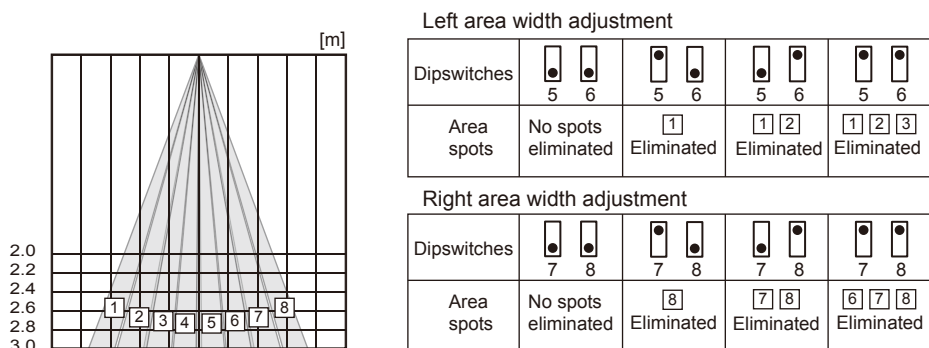
The presence detection timer can be selected from 4 settings. To comply with EN 16005, set the timer "30sec." or longer.



NOTE To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.

3-3. Setting the area width

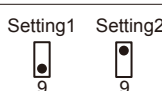
The left and right width can be adjusted by combining dipswitches 5, 6, 7 and 8. Referring to the chart below, select dipswitches 5 and 6 for the left and dipswitches 7 and 8 for the right area width adjustment.



NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object. The sensor may not be activated when the entering speed of an object or a person is slower than 50mm / sec. or faster than 1,500mm / sec.

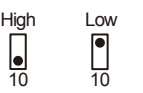
3-4. Setting the frequency

When using more than two sensors close to each other, set the different frequency for each sensor by dipswitch 9.

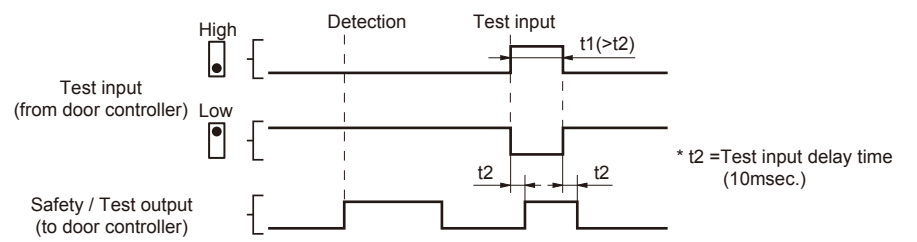


3-5. Setting the test input

Set dipswitch 10 according to the test input from the door controller.



< Test input and Safety / Test output timing chart >



*The test input delay time is the time period between the test input and safety / test output.

CHECKING

Check the operation according to the chart below.

	Power OFF	Outside of detection area	Entry into detection area	Outside of detection area
Entry				
Status	-	Stand-by	Motion/Presence detection active	Stand-by
Operation LED	None	Green	Red	Green
Output	OFF	ON	OFF	ON

COMPLIED STANDARDS

EN 16005:2012 EN 12978+A1:2009 Machinery Directive 2006/42/EC
 EMC Directive 2004/108/EC EN ISO 13849-1:2008 EN ISO 13849-2:2008
 EN 61496-3:2001 clause 4. 3. 5 and 5. 4. 7. 3
 Notified Body: TÜV SÜD Product Service GmbH, Daimlerstraße 40 60314 Frankfurt Germany

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window lightly with a damp cloth. (Do not use any cleaner or solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- When an operation LED blinks green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE

- When turning the power ON, always walk-test the detection area to ensure proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

TROUBLESHOOTING

Problem	Operation LED	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Power supply voltage. Wrong wiring or connection failure.	Set to the stated voltage. Check the wires and connector.
	Unstable	Wrong detection area positioning.	Check ADJUSTMENTS 1, 2 & 3 (*).
		Sensitivity is too low.	Set the sensitivity higher(*).
		Short presence detection timer.	Set the presence detection timer longer(*).
Door opens when no one is in the detection area. (Ghosting)	Unstable	Dirty detection window.	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)
		Vibration of the header.	Set the sensitivity lower.
		Water drops on the detection window.	Use the rain-cover (Separately available). Or install in a place keeping the waterdrops off.
		The detection area overlaps with that of another sensor.	Check ADJUSTMENTS 3-4 (*).
	Proper	The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside).
		Reflecting objects in the detection area. Or reflecting light on the floor.	Remove the objects.
		Sensitivity is too high.	Set the sensitivity lower(*).
		Objects that move or emit light in the detection area. (Ex.Plant, illumination, etc.)	Remove the objects.
		Wet floor.	Check the installation condition referring to INSTALLATION on the reverse side.
		The exhaust emission or fog penetrate into the detection area.	
Door remains open	Red	Sudden change in the detection area.	Check ADJUSTMENTS 3-1 & 3-2 (*). If the problem still persists, hard-reset the sensor. (Turn the power OFF and ON again.)
	Proper	Wrong wiring or connection failure.	Check the wires and connector.
		Wrong setting of dipswitches.	Check ADJUSTMENTS 3-5 (*).
		Wrong setting of function key.	Set to "Operation Mode".
	Fast Green blinking	Sensor failure.	Contact your installer or service engineer.
		Dirty detection window.	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)
	Slow Green blinking	Sensitivity is too low.	Set the sensitivity higher(*).
Signal saturation.		Remove highly reflecting objects from the detection area. Or lower the sensitivity. Or change the area angle.	
Red & Green blinking	The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside).	
	Wrong setting of dipswitches.	1. Set the function key to "Setting Mode" 2. Change dipswitch 10 setting (ON → OFF → ON or OFF → ON → OFF) 3. Set the function key back to "Operation Mode".	
Door remains closed	Proper	Wrong wiring or connection failure.	Check the wires and connector.

* Before changing these settings, set the function key to the "Setting mode". When finished, set back to the "Operation mode".

Manufacturer

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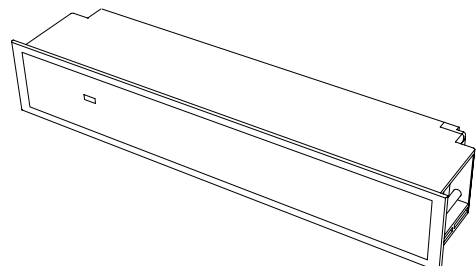
North and South American Subsidiary

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PROSAFE MIRAGE



MANUFACTURER'S STATEMENT

5911751 2006.2

Read this Operation Manual carefully before use, to ensure proper operation of this Optex sensor. Failure to read this Operation Manual may cause improper sensor operation and may result in serious injury or death. This product is a non-contact activating switch intended for mounting in the header or the ceiling of an automatic door. Do not use it for any other applications; otherwise proper operation and safety cannot be guaranteed.

Cautions:

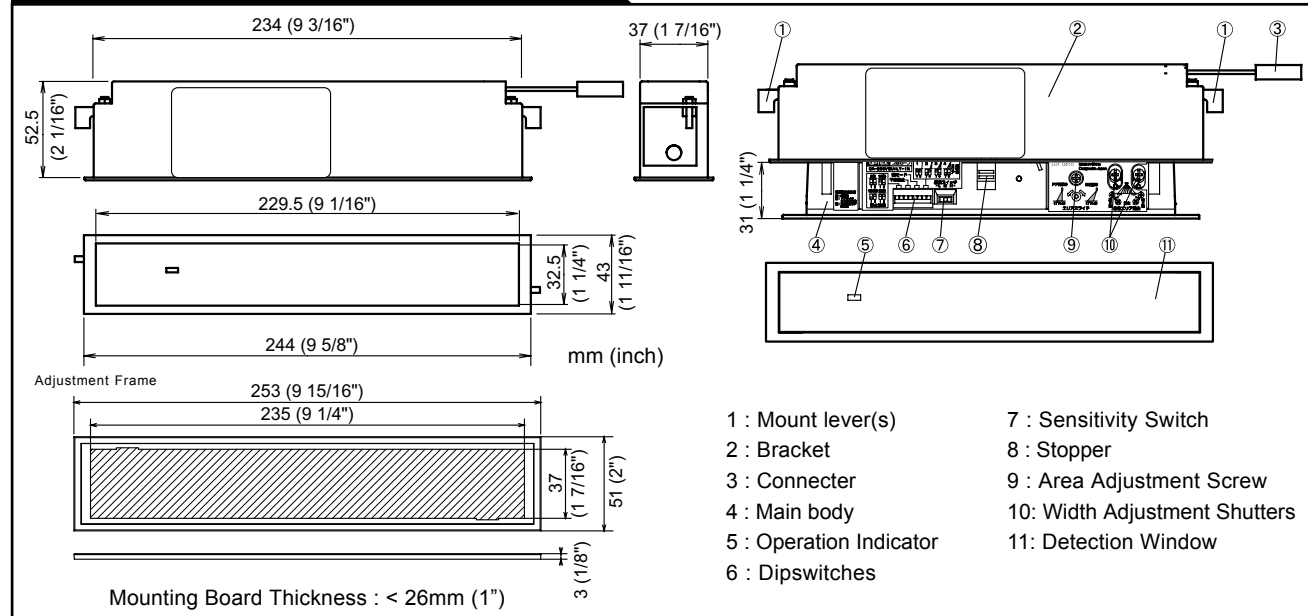
- Follow the instructions (especially **Note**) in this Operation Manual when installing and adjusting the sensor.
- When setting the sensor's area pattern, make sure there is no traffic around the installation site.
- Before turning the power on, check the wiring to prevent damage or malfunction of equipment that is connected to the sensor.
- Do not wash, disassemble, rebuild or repair the sensor by yourself; otherwise it may cause electric shock or breakdown of the sensor.
- Only use the sensor as specified in the supplied instructions.
- Be sure to install the sensor in accordance with the local laws and standards of your country.
- Before leaving the jobsite, be sure that this sensor is operating properly and instruct the building owner/operator on proper operation of the door and this sensor.

SPECIFICATIONS

Model	: MIRAGE	Output	: "Form C" relay 50V 0.3A Max. (Resistance Load)
Cover color type	: Black	Relay Hold Time	: 0.5 sec.
Mounting Height	: 3.0m (9'10") Max.	Response Time	: < 0.3 sec.
Detection Area	: See "Detection Area"	Operating Temperature	: -20°C to +55°C (-4°F to +131°F)
Detection Method	: Active Infrared Reflection Method	Weight	: 260g (9.2oz)
Detection Angle	: ±4° adjustable by 1° every one click	Accessories	: 1 Cable 3m (9'10") 1 Operation Manual 1 Area Adjustment Tool 1 Adjustment Frame
Adjustments	(Deep / Shallow)		
Detection Width	: 4 type selectable with Adjustment Shutters		
Adjustments	(Not angle adjustment)		
Power Supply	: 12 to 30V AC / DC		
Current Draw	: 200mA Max. (At 12V AC)		
Operation Indicator	: Green / Stand-by Red / 1st Row Detection Active Orange / Other Row Detection Active		

* The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS



INSTALLATION

- Drill the mounting hole either under the header or ceiling.

Note Be sure that the mounting position is within the value of those in "SPECIFICATION".
- The cable is arranged to connect to the door controller properly as shown below.

Note Connect the cable when main power is turned off.
- Pressing the Detection Window

Pressing the Stopper

Pull the Main Body

By pressing the Detection Window as shown, the Main Body appears. Then remove the Main Body from the Bracket by pressing the Stopper (OUTER DIMENSIONS 8).
- Note** The cable between the Main Body and the Bracket cannot be removed. Do not pull the cable strongly, otherwise it may be damaged.
- Plug the Connector for the sensor to that for the cable.
- Fold the Mounting Levers inside. Point the arrow sign inside of the bracket to the doorside, then insert the bracket into the mounting hole.
- Fix the Bracket in the mounting hole with the screws on both sides.

Note Be sure to fix firmly, otherwise the sensor may fall off resulting in injuries.
- When the mounting holes are exposed, use the adjustment frame.
- Place the Main Body on the Bracket referring to the "ADJUSTMENT". Supply power to the sensor. Adjust the detection area and set the various Switches.

Note Make sure that you connect the cable correctly to the Control Unit of the door before turning the power on.

DETECTION AREA

Detection Areas are shown in the figure below.

After adjustment, turn the power off and on again, be sure to walk-test all of detection areas.

* The values of the chart blow is of the Emitting Spots, but not of the Detection Area.

The actual Detection Area may become smaller depending on the ambient light and the color / material of object and the floor as well as the entry speed of object.

	[m]				
A	2.00	2.20	2.50	2.70	3.00
B	0.42	0.47	0.53	0.57	0.64
C	0.85	0.94	1.07	1.15	1.28
D	1.50	1.65	1.88	2.03	2.25
E	2.07	2.28	2.59	2.80	3.11
F	0.21	0.23	0.26	0.28	0.31

	[feet , inch]				
A	6' 6 3/4"	7' 2 5/8"	8' 2 7/16"	8' 10 5/16"	9' 10 1/8"
B	1' 4 11/16"	1' 6 3/8"	1' 8 7/8"	1' 10 1/2"	2' 1"
C	2' 9 5/8"	3' 15/16"	3' 6"	3' 9 3/8"	4' 2 3/8"
D	4' 11 1/8"	5' 5 1/16"	6' 1 7/8"	6' 7 13/16"	7' 4 11/16"
E	6' 9 5/8"	7' 5 3/4"	8' 6"	9' 2 3/16"	10' 2 3/8"
F	8 1/8"	8 15/16"	10 3/16"	11"	1' 3/16"

Provided Detection Row type	1st	2nd	3rd	4th
Presence Detection	○	○	×	×
Motion Detection	○	○	○	○

ADJUSTMENT

- ### Fixing and removing the Main Body

Place the Main Body in the Bracket, Paying attention to direction of the sensor. Main body can be fixed in the Bracket when pushing the Detection Window fully. Main Body (Setting part) appears when pushing the Detection Window again.

After adjustment, Check the operation when the Main Body is placed in the Bracket.
- ### Adjusting the Pattern Width

Setting the Width adjustment shutters

Opens All Areas
Eliminate
Eliminate
Eliminate

Note Setting the pattern for exact door opening may give a slow response to side approaching traffic.

- ### Adjusting the Pattern Depth

Setting the Row with the Dipswitch 7 & 8.

Adjusting the Depth Angle between -4° to 4° (1° per click).

Pattern when Standard Pattern when changed -4° to Shallow (inside). Pattern when changed 4° to Deep (outside).

Note Set the pattern for actual traffic. It may cause slow activation for the traffic from the front, when the Row is eliminated.

- ### Setting of Sensitivity Switch and Dipswitches

Setting the Sensitivity

Normally set to "M". "H" increases the sensitivity and "L" lowers the sensitivity.

Setting the Presence timer

1st Row and 2nd Row from door provide the presence detection.

 - Select the presence detection time.
 - Turn the power off and on again. Otherwise it may leave door open for the duration of the presence time set.
 - After making sure that the door closes, wait for 10 seconds before entering the detection area to set the Presence timer.

Setting the Snow mode

Set the Dipswitch 5 and 6 to snow mode, if the sensor is used in a region with snow or a lot of insects.

CHECKING

Check the operation according to the chart below.

Entry motion (image)	Power OFF	Outside the Detection area	Entry into 3rd or 4th Row	Entry into 2nd Row	Entry into 1st Row	Outside the Detection area
Sensor status	Power OFF	Stand-by	Motion Detection Active	Motion or Presence Detection Active		Stand-by
Operation indicator	OFF	Green	Orange		Red	Green
Output	Yellow Green White	Yellow Green White	Yellow Green White		Yellow Green White	Yellow Green White

Note The door may open once after the power is switched on.

Inform the following items to the building owner/operator

- When turning the power on, always walk-test the sensor pattern to ensure proper operation.
- Always keep the detection window clean. If dirty, wipe the window with a damp cloth (Do not use any cleaner or solvent).
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself; otherwise electric shock may occur.
- Contact your installer or the sales engineer if you want to change the settings.
- Do not place an object that moves or emits light in the detection area. (Ex. Plant, illumination etc.)
- Do not paint the Detection Window.

TROUBLESHOOTING

Trouble	Possible Cause	Solution
Does not operate	Power supply is not adequate. Connection Failure.	Adjust to stated voltage. Check the wiring and the connector.
Does not operate consistently	Dirty detection window. Sensitivity is Low.	Wipe the detection window with a damp cloth (Do not use any cleaner or solvent). Set the Sensitivity Switch "H".
Operates by itself (Ghosting)	There is an object that moves or emits light in the detection area. (Ex. plant, illumination etc...)	Remove the object.
	Vibration of the header.	Secure the header. Or set the Sensitivity Switch "L".
	Sensitivity is high.	Set the Sensitivity Switch "L".
	Waterdrops on detection window.	Install in a place keeping the waterdrops off. OR use a rain-cover (Optional).
	Detection area has interfered the area of another sensor.	Set the different frequency position each other.
	The detection 1st row spots are overlapping with the door / header.	Adjust the detection area to deep (outside).
Door stay open or closed	There is an reflected object in the detection area. Solar light reflects.	Remove the object.
	There was a puddle left by rain or snow. The floor has gotten wet.	This sensor is equipped with the anti-malfunction. However, pay attention when installing as malfunction may occur under the left conditions.
	The exhaust of the car and the fog penetrate into the detection area.	
	Presence timer is Infinity. There was an abrupt condition change in the detection area.	Turn the power off and on again.

Contact your installer or the sales engineer if:
- you need to change the settings or replace the sensor.
- the trouble still persists after checking and remedying as described above.



MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

WARNING	Disregard of the warning symbol can cause improper operation which may cause death or serious injury.
CAUTION	Disregard of the caution symbol can cause improper operation which may cause injury of a person or damage the object.
NOTE	Special attention is required to the section of this symbol.

- NOTE**
- This product is a non-contact switch intended for ceiling mount for use on automatic sliding doors. Do not use for any other applications.
 - When setting the sensors detection area, make sure that there is no traffic around the installation site.
 - Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
 - Only use the product as specified in the operation manual provided.
 - Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
 - Before leaving the installation site make sure that the product is operating properly and instruct the building owner/operator on proper operation of the door and the product.
 - The product settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock	

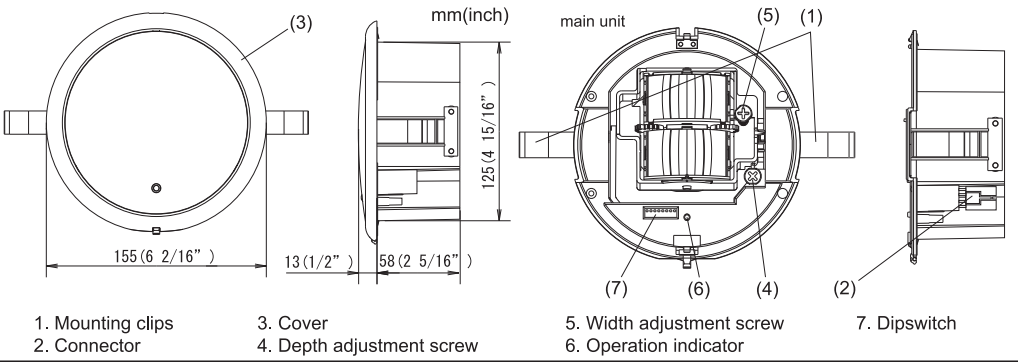
- NOTE** The following conditions are not suitable for sensor installation.
- Fog or exhaust emission around the door
 - Wet floor
 - Vibrating header or mounting surface
 - Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity
 - Highly reflecting floor or highly reflecting objects around the door

SPECIFICATIONS

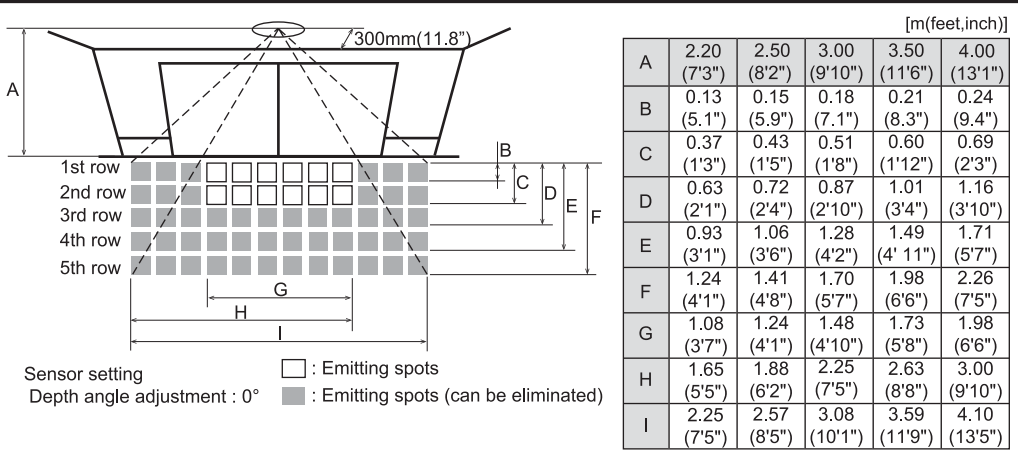
Model	: OA-72C	Output	: Form C relay
Cover color	: Silver		: 50V 0.3A max.(resistance load)
Mounting height	: 2.0 (6'7") to 4.0m (13'1")	Output hold time	: Approx. 0.5 sec.
Detection area	: See DETECTION AREA	Response time	: <0.3 sec.
Detection method	: Active Infrared Reflection	Operating temperature	: -20°C to +55°C (-4°F to 131°F)
Depth angle adjustment	: -15° to +10°	Weight	: 320g (11.2oz)
Width angle adjustment	: -10° to +10°	Accessories	: 1 Cable 3m (9'10")
Power supply	: 12 to 24 VAC (±10%)		: 1 Operation manual
	: 12 to 30 VDC (±10%)		: 1 Mounting template
Power consumption	: < 1.5W (< 5 VA at AC)		
Operation LED	: Green / stand-by		
	: Red / 1st row detection		
	: Orange / 2nd to 5th rows detection		

NOTE The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES



DETECTION AREA



NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object.

*The values of the chart above is of the emitting spots, but not of the detection area.

INSTALLATION

1

- Affix the mounting template at the desired mounting position.
- Drill a mounting hole. (recommended diameter : ϕ 130mm (5"))
- Remove the mounting template.

CAUTION : Risk of getting caught.

Make sure to affix the mounting template as described in the above chart, otherwise it can be dangerous since there may be no presence detection area around the threshold.

3

- Install the sensor with cover, keeping the direction of operation indicator towards the door.
- Press the mounting clips against the sensor to place the sensor into the mounting hole.

2

Remove the cover from the sensor. Plug the connector of the cable to the connector of the sensor.

Gray : Power supply
White : COM.
Yellow : N.O.
Green : N.C.

WARNING : Danger of electric shock.

Before starting the procedure, ensure that the power is turned OFF. When passing through the cable to the hole, make sure not to tear the shield, otherwise it may cause electric shock or breakdown of the sensor.

4

Supply power to the sensor. Adjust the detection area and set the dipswitches. (See ADJUSTMENTS)

NOTE To enable the presence detection, do not enter the detection area for 10 seconds after supplying the power.

5

Mount the cover on the sensor. Mount the cover by making a small gap between sensor and ceiling.

ADJUSTMENTS

1 Area depth angle adjustment

10° to the outside -15° to the door side

2 Width detection area adjustment

10° to left 10° to right

3 Dipswitch setting

Function	Setting				Comment
Sensitivity	Low 1	High 1			Set the sensitivity according to the mounting height. Adjust the sensitivity according to your risk assessment.
Mounting height	2 to 3m 2	2.7 to 4m 2			Set the sensitivity according to the mounting height. Adjust the sensitivity according to your risk assessment.
Presence timer	30sec 3 4	60sec 3 4	180sec 3 4	600sec 3 4	All rows include presence detection function.
Frequency	Setting1 5	Setting2 5			When using more than two sensors close to each other, set the frequency different for each sensor.
Snow mode	OFF 6	ON 6			Set this switch to ON if the sensor is used in a region with snow or a lot of insects.
Area adjustment	5 rows 7 8	4 rows 7 8	3 rows 7 8	2 rows 7 8	Adjust the area detection depth by selecting the dipswitches.

CHECKING

Check the operation according to the chart below.

Entry	Power off	Outside of detection area	Entry into 3rd, 4th or 5th row	Entry into 2nd row	Entry into 1st row	Outside of detection area
Status	-	Stand-by	Motion detection active	Motion/Presence detection active	Presence detection	Stand-by
Operation LED	None	Green	Orange		Red	Green
Output	COM N.O. N.C.	COM N.O. N.C.	COM N.O. N.C.		COM N.O. N.C.	COM N.O. N.C.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

- WARNING**
- Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
 - Do not wash the sensor with water.
 - Do not disassemble, rebuild or repair the sensor yourself, otherwise an electric shock may occur.
 - When an operation LED blinks green, contact your installer or service engineer.
 - Always contact your installer or service engineer when changing the settings.
 - Do not paint the detection window.
- NOTE**
- When turning the power on, always walk-test the detection area to ensure proper operation.
 - Do not place any objects that move or emit light in the detection area. (e.g. plant, illumination, etc.)

TROUBLESHOOTING

Problem	Operation LED	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Power supply voltage.	Set to the stated voltage.
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.
		Wrong detection area positioning.	Check ADJUSTMENTS 1 & 2 .
		Sensitivity is too low.	Set the sensitivity higher.
Door opens when no one is in the detection area. (Ghosting)	Unstable	Short presence detection timer.	Set the presence detection timer longer.
		Dirty detection window.	Wipe the detection window with a damp cloth.
		The detection area overlaps with that of another sensor.	Check ADJUSTMENTS 3 .
		The detection area overlaps with the door / header.	Adjust the detection area to "deep" (outside).
	Proper	Reflecting objects in the detection area. Or reflecting light on the floor.	Remove the objects.
		Sensitivity is too high.	Set the sensitivity lower.
		It snows.	Set the snow mode to ON.
		Objects that move or emit light in the detection area.	Remove the objects.
		Wet floor.	Check the installation condition referring to MANUFACTURER'S STATEMENT on the reverse side.
		The exhaust emission or fog penetrate into the detection area.	
Door remains open	Red or orange	Sudden change in the detection area.	Check ADJUSTMENTS 3 . If the problem still persists, hard-reset the sensor. (turn the power OFF and ON again.)
	Proper	Wrong wiring or connection failure.	Check the wires and connector.
		Sensitivity is too low.	Set AIR area width to "wide". Wipe the detection window with a damp cloth.
		Sensor failure	Contact your installer or service engineer.
Fast green blinking	Slow green blinking	Signal saturation	Remove highly reflecting objects from the detection area or lower the sensitivity or change the area angle.
		The detection area overlaps with the door / header.	Adjust the detection area to "deep" (outside).
Door remains closed	Proper	Wrong wiring or connection failure.	Check the wires and connector.

Beam Switch OS-12C T

Single / Double Beams

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

	WARNING Disregard of warning may cause the improper operation causing death or serious injury of a person.
	CAUTION Disregard of caution may cause the improper operation causing injury of a person or damage to objects.

	WARNING Danger of electric shock. Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
	WARNING Danger of getting caught between the door. (Please explain to the building owner/operator) Even when someone stops on the threshold, the door closes unless the light beam is cut off (The beam switch outputs the signal only when the light beam is cut off). The beam switch is not designed as an apparatus to prevent accidents. It should be used strictly for the purpose of an auxiliary apparatus for safety.

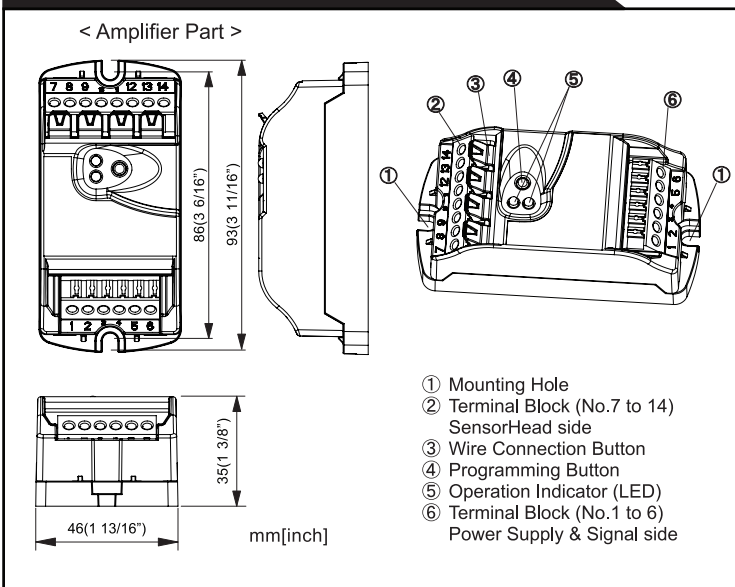
- NOTE**
- When the equipment is in failure, the door is held open. (This is the function to secure the safety of traffic.)
 - Only use the sensor as specified in the supplied instructions.
 - Be sure to install the sensor in accordance with the local laws and standards of your country.
 - Before leaving the jobsite, be sure that this sensor is operating properly and instruct the building owner/operator on proper operation of this sensor.

SPECIFICATIONS

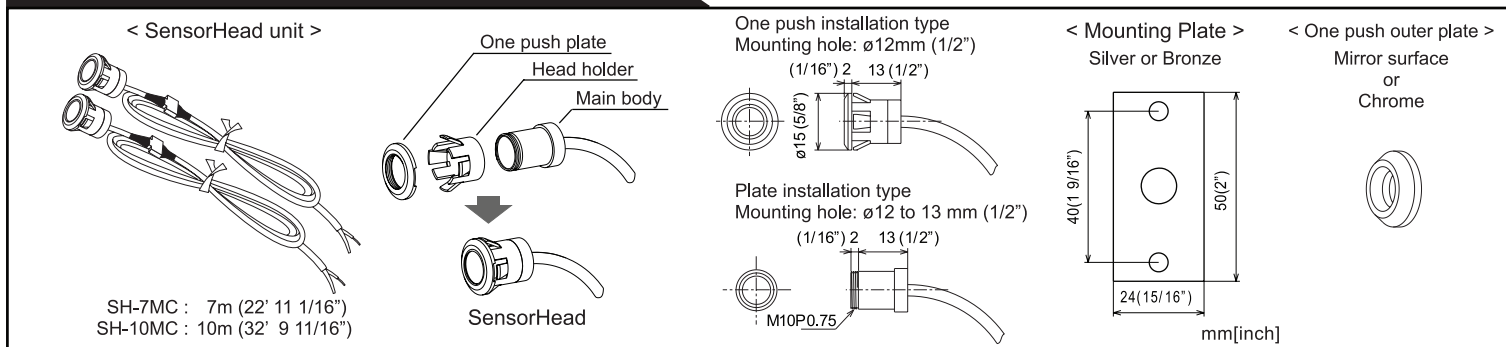
Model	OS-12C T
Installation Distance	Less than 10m (32' 10")
Detection Method	Point to Point Near Infrared Light Beam
Power Supply	12 to 24V AC / 12 to 30V DC
Current Draw	160mA MAX
Operation Indicator	BEAM1 / BEAM2 Stand-by : Green ON / Red ON Detection Active : Green OFF / Red OFF Insufficient sensitivity : Green Blink / Red Blink Test input error : Simultaneous twice Blinking (Red & Green)
Test input	Opto coupler Voltage 5 to 30VDC Current 6mA Max. (30VDC)
Safety Output (Initial setting)	50V 0.3A (Resistance Load) - N.O./N.C. Switchable
Response Time	Approx. 0.1 sec (from the moment of beam cut-off)
Relay Hold Time	Approx. 0.5 sec
Operating Temperature	-20°C to +55°C (-4°F to +131°F)
Weight	Amplifier: 63g (2.2oz)
Component	1 Amplifier, 2 Mounting screws, 1 Manual (Optional sensor head is necessary for operation)

- NOTE** It is possible to use OS-12C T as an amplifier for 1 or 2 beam use by attaching a separately sold SensorHead.
- NOTE** The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES



SEPARATELY SOLD OPTIONAL ITEMS



INSTALLATION

1 Mounting the SensorHeads (Option)

- One push installation type**
Drill a mounting hole $\phi 12\text{mm}$ (1/2") on the door jamb. Put the sensor heads into the mounting hole.
- Plate installation type**
Drill a mounting hole $\phi 12$ to 13 mm (1/2") and two screw hole $\phi 3.5\text{ mm}$ (1/8") on the door jamb.
Remove one push plate and head holder from sensor head. Affix the main body to the plate. Screw the plate to the door jamb.

On drilling the mounting holes

- Be sure to drill holes so that the SensorHeads faces each other.
- After drilling the holes, remove the flashes around the holes. Otherwise, the apparatus may not operate properly as the SensorHead rides on the flashes causing tilts.

Installation Site Environment

Do not place any swaying object which cuts off the beam path. Otherwise the door may be held open.

On setting of one push plate

Be sure to push the SensorHeads in securely. If the SensorHeads are not secured, it may cause an unnecessary activation signal.

Distance between the SensorHeads

Be sure to set the distance to less than 10m (32' 10"). If the distance is more than 10m (32' 10"), the door may be held open.

INSTALLATION (CONTINUED)

3 Wiring SensorHeads

Cutting the wires

When cutting the wires, prepare the tip of the wires as follows:

WARNING Danger of electric shock. Before starting the procedure, be sure to turn off the power supply.

CAUTION Risk of breaking the apparatus. When cutting the wires, be sure to prepare the tip of the wires as shown on the left: If the covers of the shielding wires are peeled off too long, the adjacent tips can easily contact each other causing breakdown of the apparatus.

Prohibition of extending wires

Do not extend the wires. Otherwise, the apparatus may be influenced by noises causing malfunction.

Insert the wires to Terminal Block as shown on the left.

4 Connecting power supply wires and output signal wires

Insert the wires to Terminal Block as shown below.

CAUTION Risk of breaking down the apparatus. Be sure to connect the power supply wires to terminal 1 and 2. If wired wrongly, the apparatus may break down.

Stated connection capacity

- Solid (Rigid) $\phi 0.4$ - $\phi 1.2\text{mm}$ (AWG26-18)
- Stranded (Flexible) 0.3mm^2 - 0.75mm^2 (AWG22-20) (Strand diameter shall be more than 0.18mm)

Warning about wiring

Do not connect more than 2 wires to one terminal.

ADJUSTMENT & CHECKING

1 Sensitivity Adjustment

- Press Programming Button for more than one second. When the green and red LED blinking becomes green and red (no blinking), the setting is completed. The proper sensitivity is adjusted automatically.
- Check the auto-set adjustment with the table below.

LED	State
Green/Red ON	The sensitivity has been set correctly. The adjustment is completed. (When using two beam)
Green ON	The sensitivity has been set correctly. The adjustment is completed. (When using one beam)
Green/Red Blink alternately	The sensitivity is insufficient. Check the followings.
Simultaneous twice Blinking (Red&Green)	Setting error. Contact your installer or service engineer.

Checking Item

If there is no person or object in the detection area. If the lens surface is clean. If the wire connections are done properly. If the emitting/receiving SensorHeads are mounted straight. (They should not be tilted.)

- Sensitivity Adjustment**
Set the sensitivity in the environment same as the actual regular use. Also, be sure that there is no swaying object in the area.
- When changing the number of SensorHead**
Be sure to press the Programming Button. All SensorHeads can be adjusted at once. The apparatus does not operate properly if Programming Button is not pressed.
- Re-setup of sensitivity**
For the maintenance, press Programming Button to readjust. The sensitivity is set automatically.

2 Select N.O./N.C. and Active Low/Active High

OS-12C T needs to be adjusted according to Test input and Output from operators. OS-12C T has 4 amplifier modes (A to D). When safety output of operator is N.O. and Active Low, proceed to **3. Checking the operation.** (No need for adjustment on amplifier mode) If not, follow procedures below to adjust properly.

- Press and hold Programming Button until red LED starts to blink, it becomes amplifier mode.
- Press Programming Button to select appropriate setting out of 4 amplifier modes (A to D) within 10 seconds*, referring to chart below.

	Amplifier Mode		
A	Green <input type="checkbox"/>	Red <input type="checkbox"/>	Active-Low / N.O.
B	Green <input type="checkbox"/>	Red <input type="checkbox"/>	
C	Green <input type="checkbox"/>	Red <input type="checkbox"/>	Active-Low / N.C.
D	Green <input type="checkbox"/>	Red <input type="checkbox"/>	

*One Push

- Press Programming Button until green and red LED blinking goes off to finalize setting.
- Amplifire will not work right if the adjustment is not completed. *When it exceeds 10 seconds without any operation, follow procedure again from start.

- NOTE** Select B mode to work with operators without Test input function.
- NOTE** Select amplifier mode according to operators, otherwise OS-12C T does not work properly.

3 Checking the operation

Check the operation of the apparatus according to the following chart.

Entry motion (Image)	OFF	ON (Green/Red)	OFF	ON (Green/Red)
Operation Indicator	OFF	ON (Green/Red)	OFF	ON (Green/Red)
Status	Power OFF Failure of the apparatus	Stand-by status No person or object exists between the SensorHeads	While a person or object is passing in the beam path	After the traffic has passed, the status becomes stand-by.
Output	N.O.	N.C.	N.O.	N.C.

INFORM THE FOLLOWING ITEMS TO THE BUILDING OWNER/OPERATOR

- When turning the power on, always walk-test the sensor to ensure proper operation.
- Always keep the Lens surface clean. If dirty, wipe the lens with a damp cloth. (Do not use any cleaner or solvent)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself; otherwise electric shock may occur. Contact your installer or the sales engineer if you want to change the settings.
- Do not place an object that moves or emits light in the detection area.
- (Ex. Plant, illumination etc.)
- Do not paint the Lens surface.

TROUBLESHOOTING

Trouble	Possible Cause	Solution
Does not operate	Irregular supply voltage	Adjust to the stated voltage.
	Wire cut or bad connection	Check the wiring.
	Inappropriate installation distance or condition	Check the installation distance and condition.
Operates by itself (Ghosting)	Amplifire mode setting is not adjust the safety output type of your operator.	Check the amplifire mode setting (SEE ADJUSTMENT & CHECKING 2)
	Inappropriate installation distance or condition	Check the installation distance and condition.
	Something swaying between the SensorHeads cutting off the beam.	Remove the obstruction.
	Dirty lens.	Remove the dirt.
	Amplifire mode setting is not adjust the safety output type of your operator.	Check the amplifire mode setting (SEE ADJUSTMENT & CHECKING 2)

Contact your installer or the sales engineer if:
- you need to change the settings or replace the sensor.
- the trouble still persists after checking and remedying as described above.

Manufacturer

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Air-Wave TX

INDOOR/ OUTDOOR SENSOR TRANSMITTER (TD-21U)

Air-Wave TX INSTALLATION INSTRUCTIONS

Please read this manual carefully before installation.

FEATURES

- Can be installed on the wall.
- Weatherproof structure(IP54) for indoor and outdoor applications.
- Over 8 million codes possible, eliminates interference from neighbors.
- Powered by a 9V alkaline battery(not included).
- Supervised low battery.
- LED indicator for verifying detection and low battery status.

1 CAUTION

- 1. Harsh environments**
When using the Air-Wave TX outdoors in severe conditions such as extreme temperatures, rapid temperature change, high humidity, steam or smog malfunction may occur.
- 2. Impact/Shock**
Impact or Shock can cause severe damage or break the Air-Wave TX.
- 3. Light/Moving object**
Direct light or moving objects in front of the Air-Wave TX can cause false alarms.
- 4. Electric Devices**
Mounting the Air-Wave TX less than 3ft(1m) away from electronic devices such as TV's Radios, PC's or Microwaves may result in malfunction.
- 5. Tampering**
Any changes or modifications not expressly approved by OPTEX could void the users authority to operate the equipment (See FCC note under section 13 COMPLIANCE in this manual).

6. Transmission range

- Transmission range may decrease under the following conditions:
- Either Air-Wave TX or receiving unit installed on a metal surface.
 - Presence of a steel door, reinforced concrete or other metal obstructions between Air-Wave TX and receiving units.
 - Places near strong radio sources such as broadcast stations or substation.

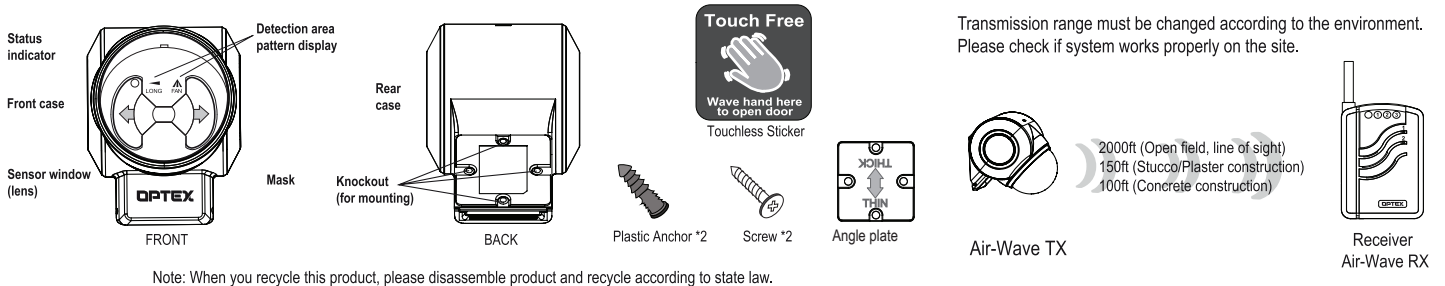
7. Battery replacement

Replace battery every 2 years. Use only 9V alkaline battery.

8. Cleaning

Harsh cleaners such as paint removers or benzene may ruin the surface. Use a soft wet cloth and mild soap to clean.

2 PARTS IDENTIFICATION



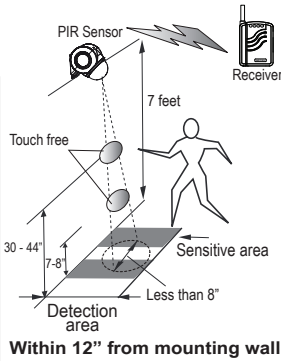
Note: When you recycle this product, please disassemble product and recycle according to state law.

4 DETECTION AREA PATTERN

See Chart Below for approximate detection area dimensions based on mounting height.

Area Pattern

Height	Area Width X Depth
6' (1.8m)	10" X 7" (0.26m) (0.18m)
7' (2.1m)	12" X 8" (0.30m) (0.20m)
8' (2.4m)	14" X 9" (0.35m) (0.23m)

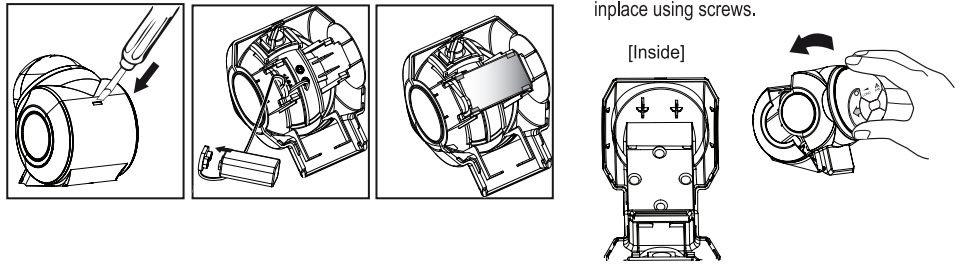


Within 12" from mounting wall

5 INSERT THE BATTERY

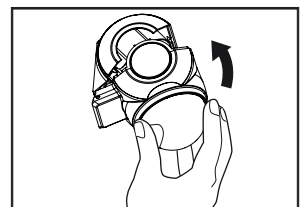
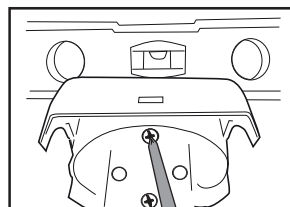
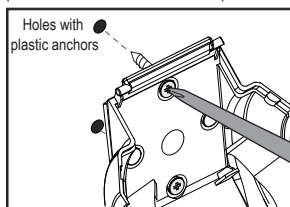
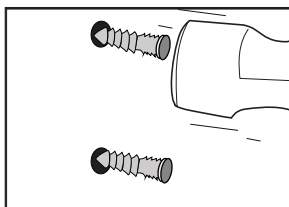
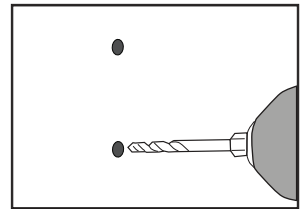
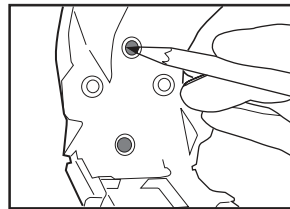
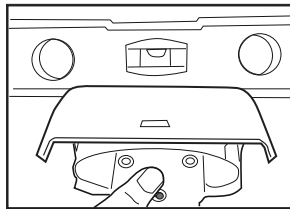
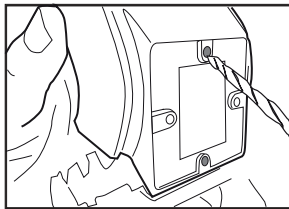
How to set the battery inside the sensor

1. Use a screwdriver to open the casing.
2. Attach the connector to the battery.
3. Fasten the battery with the battery clamp hook.
4. Remove the knock outs of the rear cover and fix the rear cover in place using screws.
5. Close the casing.

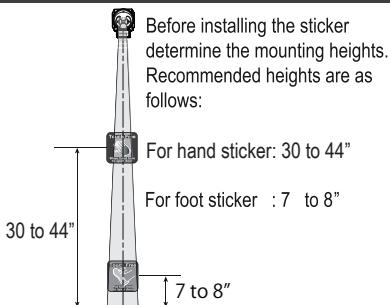


6 INSTALLATION

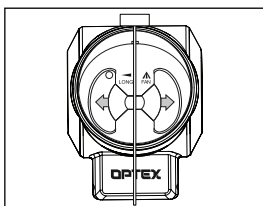
1. Drill two 1/8" mounting holes on back of housing.
2. Hold housing at desired mounting location ensuring it is level.
3. Mark the center of the two mounting holes.
4. Drill holes at the 2 marks using a 3/16" drill bit.
5. Knock in the two plastic anchors.
6. Install housing with supplied screws. (DO NOT FULLY TIGHTEN)
7. Ensure housing is level and tighten screws.
8. Close the sensor casing.



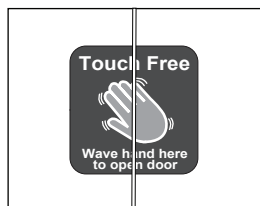
6 INSTALLATION



9. Hang a plum bob in line with the center of the sensor housing to identify center line of detection area.



10. Affix the Touch Free sticker at desired height & centered on the plumb line.

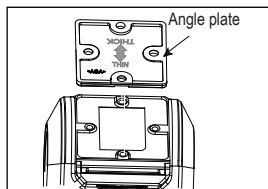


11. Make sure the sensor is detecting when you wave your hand in front of the sticker.

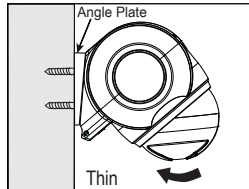
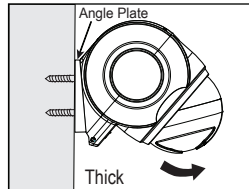


7 ADJUSTMENT FOR AREA DEPTH

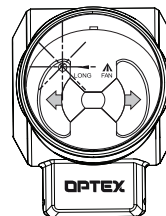
If the detection area is too deep or too shallow, install the included Angle plate at the back side of the housing as necessary.



When installing Angle plate, thick portion at top decrease depth. Thin portion at the bottom increase depth.



8 LOW BATTERY



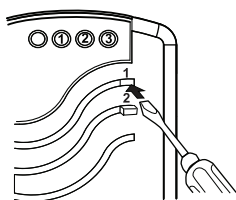
- When the Battery is low, the status indicator starts to flash. When this occurs replace the battery.
- Low Battery can cause false activations.
- There is no need to readjust the Air-Wave TX or the receiver after replacing batteries.

9 TEACH TRANSMITTER CODES TO RECEIVER "TEACH MODE"

Follow these steps to program the transmitter to the receiver. Refer to Receiver Manual for Zone Options-

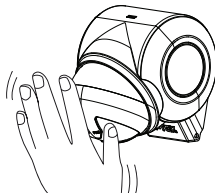
1. Preparation

- Press switch 1 of the receiver until the power indicator starts flashing.
- Press switch 2 to select the zone you wish to assign to the sensor.



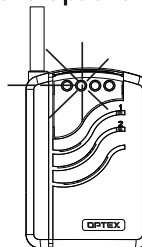
2. Activation

- Wave your hand in front of the Air-Wave TX to trigger it.
- Verify that the receiver has learned successfully by observing the zone indicators of the receiver. Zone indicators should have stopped flashing and remain continuously on.



3. Verification

- After teaching all the transmitter codes (if you have multiple transmitters), return the receiver to normal operating status.
- Make sure that the receiver operates correctly with all the transmitters.



Note:

Cover the Air-Wave TX until you are ready to teach the receiver. Unwanted detection can cause the Air-Wave TX to be assigned to the wrong zone and override the data of other transmitters.

10 TROUBLESHOOTING

1. The system is not operating.

Check the transmitter.

Does the status indicator light up when you wave your hand in the detection area of the Air-Wave TX?	→	If not, check to see whether the battery is inserted correctly. Otherwise try a new battery.
Is the status indicator flashing?	→	Is the detection area setting appropriate? If not, fix the setup.
Is the status indicator flashing?	→	The battery is old. Replace the battery.

Check the receiver.

Is the power indicator of the receiver lit?	→	Is the receiver on? Check the wiring, power switch and connection.
The receiver does not respond to the Air-Wave TX.	→	The Air-Wave TX is not properly recognized by the receiver. Teach the receiver correctly.
The zone indicator of the receiver is on, but nothing happens.	→	The receiver has not been properly setup. Refer to the receiver's manual and verify the setting.
Is there anything blocking the transmission?	→	Relocate the receiver and/or the Air-Wave TX. Metal objects can shorten the effective transmission range.

2. The system is not operating correctly.

A particular zone is malfunctioning.	→	This is probably the transmitter's problem. Check the Air-Wave TX using this zone.
Does direct sunlight or light from automobiles enter the sensor window?	→	Reorient the Air-Wave TX to avoid such light sources.
Is the Air-Wave TX installed on a stable platform?	→	Relocate the Air-Wave TX to a stable platform.
Is there anything that may cause rapid temperature change in the detection area? (e.g. stove)	→	Remove any objects that may cause rapid temperature change from the detection area.
Is there anything that may cause rapid temperature change of the Air-Wave TX? (e.g. air conditioner)	→	Relocate the Air-Wave TX elsewhere.
Before contacting the supplier!	→	Remove the battery, then reinsert the same batteries and verify the Air-Wave TX's operation again.

- If the above solutions do not work, please contact your supplier for services.

13 COMPLIANCE

FCC ID : DC9TD-20U

The changes or modifications not expressly approved by the OPTEX could void the user's authority to operate the equipment. To comply with the FCC RF exposure compliance requirements, this device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter. Note: This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: (1) Reorient or relocate the receiving antenna. (2) Increase the separation between the equipment and receiver. (3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. (4) Consult the dealer or an experienced radio/TV technician for help.

IC : 4012A-00000TD20U

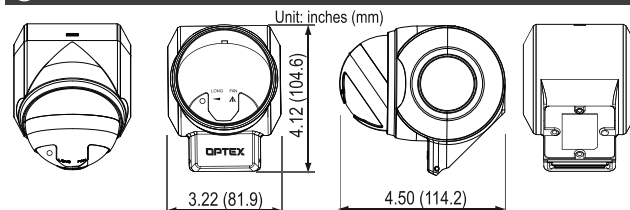
Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

11 SPECIFICATIONS

Product Series	Prowave Air-Wave TX
Product Name	Indoor/ Outdoor Sensor Transmitter
Model Number	TD-21U
Detection Method	Passive Infrared
Detection Range	6 - 8 feet (1.8 - 2.4m)
Status Indicator	Red LED
Power Source	9V Alkaline Battery (Not Included)
Battery Life	Approx. 2 years [250 times per day at 70°F (20°C)]
Frequency	418MHz
Operating Temperature	15°F ~ 120°F (-10°C ~ +50°C)
Installation Location	Outdoor / Indoor
Weight	6.3 oz (180g)
Accessories	Mounting Screw x 2 Plastic Anchor x 2, Angle Plate x 1 Touchless Sticker for hand

Specifications may change without notice

12 DIMENSIONS



14 WARRANTY

1. This product is warranted under normal use for 2 years from the Lot. number. The Lot. number is printed on the sticker on back side of sensor. The first 2 digits stands for year and the second 2 digits are week of manufacturing. If you have questions, call to your sales representative.
2. The warranty is not applicable when below circumstances will be found:
 - Mechanical or electrical modification(s) are made to the product or it is otherwise altered manually.
 - The product is already been serviced at place(s) other than the manufacturer.
 - It is determined that the product malfunction has resulted from improper use or from an accident. Physical damage will not be covered.
 - No copy of the dated sales receipt has been submitted together with the product to be serviced.



OPTEX Co.,LTD.

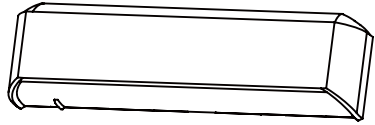
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OA-FLEX T

5924580 NOV 2015

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

	WARNING	Disregard of warning may cause the improper operation causing death or serious injury of a person.
	CAUTION	Disregard of caution may cause the improper operation causing injury of a person or damage to objects.
	NOTE	Special attention is required to the section of this symbol.
		It is required to check the operation manual if this symbol is shown on the product.

NOTE

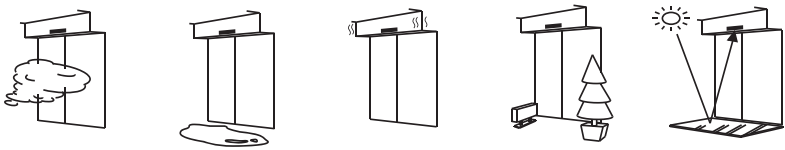
- This product is a non-contact switch intended for header mount or wall mount for use on an automatic sliding door. Do not use for any other applications.
- When setting the sensor's detection area, make sure that there is no traffic around the installation site.
- Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
- Only use the product as specified in the operation manual provided.
- Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
- Before leaving the installation site make sure that the product is operating properly and instruct the building owner/operator on proper operation of the door and the product.
- The product settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock.		

NOTE

The following conditions are not suitable for sensor installation :

- Fog or exhaust emission around the door.
- Moving objects or objects that emit light near the detection field.
- Highly reflecting floor or highly reflecting objects around the door.
- Wet floor.
- Grating floor.



SPECIFICATIONS

Model	: OA-FLEX T	Operating temperature	: -31 to 131°F (-35 to +55°C)
Cover color	: Black	Operating humidity	: < 80%
Mounting height	: 6'7" (2.0m) to 9'10" (3.0m)	Noise level	: < 70dBA
Detection area	: See DETECTION AREA	Output hold time	: Approx. 0.5 sec.
Detection method	: Active infrared reflection(*1)	Response time	: < 0.3 sec.
Area angle adjustment	: Depth : -8° to +8° Width : ±7° (2 clicks with 3.5° every click-Left/Right)	IP rate	: IP54
Power supply (*2)	: 12 to 24VAC ±10% (50 / 60Hz) 12 to 30VDC ±10%	Weight	: 7.8oz (220g)
Power consumption	: < 2.0W (< 5VA at AC)	Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Cable 9'10"(3m) (8 x 0.22mm ² AWG24) (*3)
Operation indicator	: See Operation indicator table		
Test input	: Opto coupler Voltage / 5 to 30VDC Current / 6mA Max. (30VDC)		
Activation output	: Form A relay 50V 0.3A Max. (Resistance load)		
Safety output	: Form A relay 50V 0.3A Max. (Resistance load)		

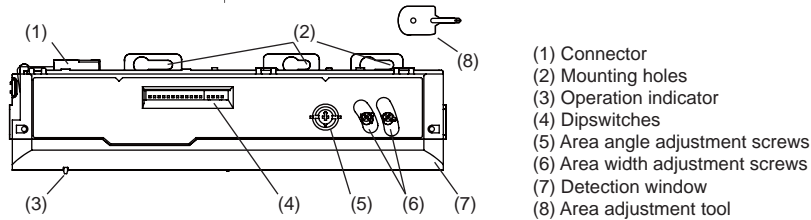
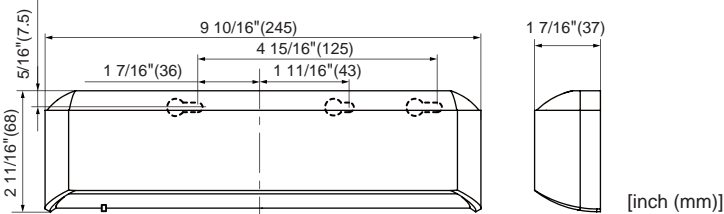
Operation indicator table

Status	Operation indicator color	Indicator Pattern
Set-up	Yellow Blinking	[Blinking Yellow]
Stand-by (Installation mode)	Yellow	[Solid Yellow]
Stand-by (Operation mode)	Green	[Solid Green]
BLUEZONE (1st row) detection (*4)	Blue	[Solid Blue]
2nd row detection	Red Blinking	[Blinking Red]
3rd row detection	Red	[Solid Red]
4th-6th row detection	Orange	[Solid Orange]
Signal saturation	Slow Green Blinking	[Blinking Green]
Sensor failure	Fast Green Blinking	[Blinking Green]

NOTE

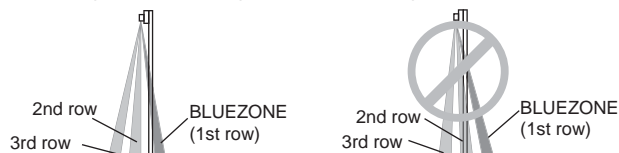
- The specifications herein are subject to change without prior notice due to improvements.
- *1 : BLUEZONE (1st row), 2nd and 3rd rows have a presence detection function.
 - *2 : When using this sensor, the sensor has to be connected to a door system which has the SELV circuit.
 - *3 : Overcurrent protection with less than 2A. *4 : See **BLUEZONE AREA**

OUTER DIMENSIONS AND PART NAMES

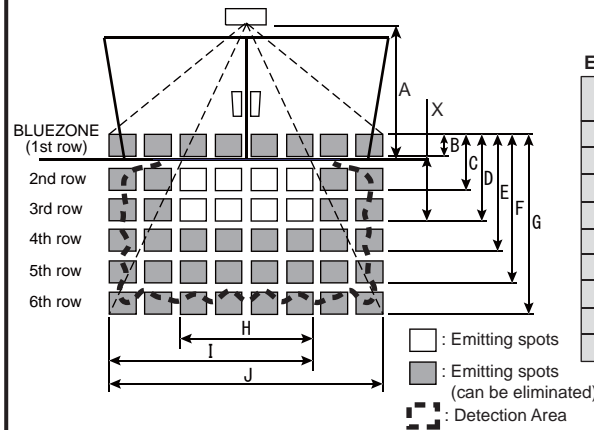


BLUEZONE AREA

When dipswitch 15 is set to "ON", the BLUEZONE area, that provides extra safety over the threshold, is activated. In case the BLUEZONE function is not required, set dipswitch 15 to "OFF". Do not set the 2nd row overlapping the threshold regardless of the setting of dipswitch 15.



DETECTION AREA



Emitting area [feet,inch (m)]				
A	6'7" (2.00)	7'7" (2.30)	8'2" (2.50)	9'10" (3.00)
B	5" (0.13)	6" (0.16)	7" (0.17)	8" (0.21)
C	1'3" (0.38)	1'6" (0.46)	1'8" (0.50)	1'12" (0.60)
D	2'4" (0.71)	2'10" (0.86)	3'1" (0.94)	3'8" (1.13)
E	2'9" (0.84)	3'4" (1.01)	3'7" (1.09)	4'4" (1.31)
F	4'5" (1.34)	5'4" (1.62)	5'9" (1.76)	6'11" (2.11)
G	5'9" (1.75)	6'11" (2.11)	7'6" (2.29)	9" (2.75)
H	3' (0.92)	3'8" (1.11)	3'11" (1.20)	4'9" (1.45)
I	4'11" (1.49)	5'11" (1.80)	6'5" (1.95)	7'8" (2.34)
J	6'9" (2.06)	8'2" (2.48)	8'10" (2.69)	10'7" (3.23)

Charts show the values in the following area angle adjustment settings ; Depth : 0° Width : 0°

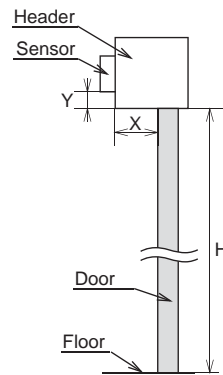
NOTE

The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object. The sensor may not be activated when the entering speed of the object or a person is slower than 50mm / sec. or faster than 1500mm / sec.

INSTALLATION

1

- Affix the mounting template at the desired mounting position. (When setting the detection area close to the door, mount the sensor according to the chart below.)
- Drill two mounting holes of $\phi 1/8"$ ($\phi 3.4\text{mm}$).
- To pass the cable through the header, drill a wiring hole of $\phi 3/8"$ ($\phi 10\text{mm}$).
- Remove the mounting template.
- Remove the housing cover. Fix the sensor to the mounting surface with the two mounting screws.



Maximum mounting distance (Y) [feet,inch (m)]				
X \ H	6'7" (2.00)	7'7" (2.30)	8'2" (2.50)	9'10" (3.0)
0	No limit			
2" (0.05)	8" (0.20)	8" (0.20)	8" (0.20)	0
4" (0.10)	8" (0.20)	8" (0.20)	8" (0.20)	0
6" (0.15)	5" (0.13)	6" (0.15)	7" (0.19)	0
8" (0.20)	-	5" (0.12)	6" (0.14)	0
10" (0.25)	-	-	4" (0.11)	0
12" (0.30)	-	-	-	0

NOTE Make sure not to mount the sensor lower than the bottom of header.

	CAUTION	Make sure to affix the mounting template as described in the above chart , otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible on the header.
Risk of getting caught.		

2

Power supply 1	1. Grey 2. Grey	12 to 24VAC±10% / 12 to 30VDC±10%
Activation output 2	3. White 4. Yellow	Form A relay 50V 0.3A Max.
Safety output 3	5. White stripe 6. Yellow stripe	Form A relay 50V 0.3A Max.
Test input 4	7. Red (+) 8. Black (-)	Opto coupler / Voltage: 5 to 30VDC

	WARNING	Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield. otherwise it may cause electric shock or breakdown of the sensor.
Danger of electric shock.		

3

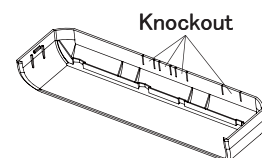
- Plug the connector.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **ADJUSTMENTS 3. Dipswitch settings**)

NOTE

Make sure to connect the cable correctly to the door controller before turning the power ON. When turning the power ON or after adjusting the settings, do not enter the detection area for more than 10 seconds in order to enable the presence detection. Do not touch the dipswitches before turning the power ON, otherwise an error occurs. When changing the settings of dipswitch, see **ADJUSTMENTS 3. Dipswitch settings**

4

- Place the housing cover. If wiring is to be exposed, break the knockout.



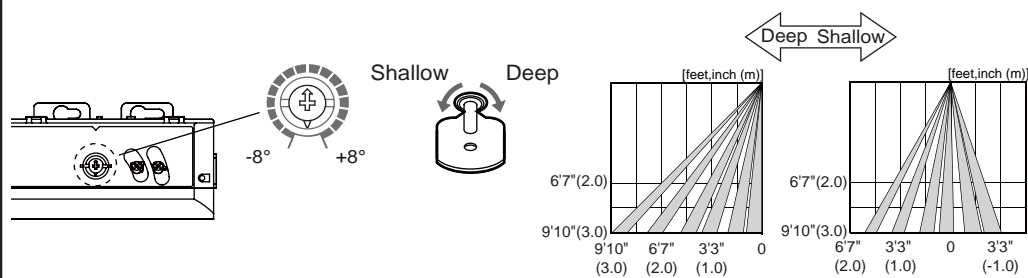
	WARNING	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock.		

ADJUSTMENTS

1 Area angle adjustment

1-1. Area depth angle adjustment

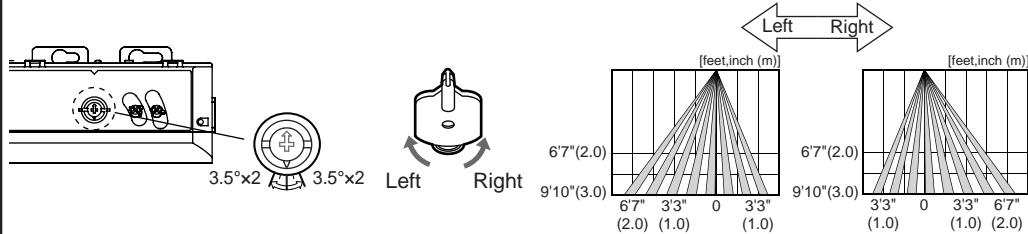
When adjusting the 2nd row close to the door, see dipswitch 16 in **Dipswitch settings table** for the easier adjustment.



NOTE Make sure that the detection area does not overlap with the door / header, and there is no highly reflecting object near the detection area otherwise ghosting / signal saturation may occur.

1-2. Area width angle adjustment

The angle of the detection area can both be moved 7° either left or right in 2 steps.



2 Area width adjustment

Adjust the detection area width with the adjustment screws.



NOTE When setting the detection area width, make sure to turn the adjustment screws until it clicks. 1,2 cannot be eliminated separately, neither can 7,8

3 Dipswitch settings

Dipswitch settings table

Dipswitch	Function	Setting				Comment
		Low	High			
Dipswitch 1	Sensitivity	Low 1	High 1			Set the sensitivity according to the mounting height.
Dipswitch 2	Presence timer	30sec. 2 3	60sec. 2 3	180sec. 2 3	600sec. 2 3	The presence timer is applied to BLUEZONE(1st row), 2nd row and 3rd row. The presence timer can be selected from 4 settings.
Dipswitch 3						
Dipswitch 4	Frequency	A 4 5	B 4 5	C 4 5	D 4 5	When using more than one sensor close to each other, set the frequency different for each sensor.
Dipswitch 5						
Dipswitch 6	Row adjustment	6rows 6 7	5rows 6 7	4rows 6 7	3rows 6 7	Set the depth rows with dipswitches 6 and 7.
Dipswitch 7						
Dipswitch 8	Immunity	OFF 8	ON 8			Set dipswitch 8 to "ON" when the sensor operates by itself (Ghosting).
Dipswitch 9	Activation output	N.O. 9	N.C. 9			Dipswitch 9 is for the Activation output to door controller.
Dipswitch 10	Safety output	N.O. 10	N.C. 10			Dipswitch 10 is for the Safety output (to door controller).
Dipswitch 11	Safety input	High 11	Low 11			Dipswitch 11 is for the Safety input (from door controller).
Dipswitch 12	Presence area	1st to 3rd row 12	All areas 12			Set dipswitch 12 to "ON" when the presence timer is applied to all areas.
Dipswitch 13						N/A
Dipswitch 14	Simultaneous output	OFF 14	ON 14			When Dipswitch 14 is set to "ON", both Activation & Safety output will operate simultaneously regardless of detection area. But only Safety output will respond back with Safety output when it receives Safety input.
Dipswitch 15	BLUEZONE (1st row)	OFF 15	ON 15			When dipswitch 15 is set to "ON", the BLUEZONE (1st row) is active and looks through the threshold.
Dipswitch 16	Installation mode	OFF 16	ON 16			Set dipswitch 16 to "ON" to adjust the 2nd row. During the installation mode only the 2nd row remains active and the operation indicator shows yellow. After setting the row switch dipswitch 16 "OFF".

CHECKING

Check the operation according to the chart below.

	Entry	Power off	Outside of detection area	Entry to 4th to 6th row	Entry to 3rd row	Entry to 2nd row	Entry to BLUEZONE (*)
Image							
Operation indicator	None	Green	Orange	Red	Red Blinking	Blue	
Activation output	9 ↓ N.O.	OFF	OFF	ON	OFF		
	9 ↑ N.C.	OFF	ON	OFF	ON		
	9 ↓ N.O.	14 ↓ OFF	OFF	ON	ON		
	9 ↑ N.C.	14 ↑ ON	OFF	ON	OFF		
Safety output	10 ↓ High	14 ↓ OFF	OFF	OFF	ON		
	10 ↑ Low	14 ↓ OFF	OFF	ON	OFF		
	10 ↓ High	14 ↑ ON	OFF	OFF	ON		
	10 ↑ Low	14 ↑ ON	OFF	ON	OFF		

NOTE *: When dipswitch 15 is set to "ON".

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. (Do not use any cleaner / solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- When the operation indicator blinks Green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE 1. When turning the power ON, always walk-test the detection area to ensure the proper operation.
2. Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

TROUBLESHOOTING

Door operation	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Wrong power supply voltage.	Set to the stated voltage.
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.
		Wrong detection area positioning.	Check ADJUSTMENTS 1, 2 .
Door opens when no one is in the detection area. (Ghosting)	Proper	Sensitivity is too low.	Set the sensitivity higher.
		Short presence timer.	Set the presence timer longer.
		Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
		Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Objects that move or emit light in the detection area.	Remove the objects.
Door remains open	Proper	The detection area overlaps with that of another sensor.	Check ADJUSTMENTS 3 dipswitch 4,5.
		Waterdrops on the detection window.	Use the rain-cover. (Separately available) Wipe the detection window with a damp cloth. Do not use any cleaner or solvent. Install in a place keeping the waterdrops off.
		The detection area overlaps with the door/header.	Adjust the detection area to "Deep" (Outside).
	Fast Green Blinking	Sensitivity is too high.	Set the sensitivity lower.
		Others	Set dipswitch 8 to "ON".
		Wrong setting of dipswitches.	Check ADJUSTMENTS 3 dipswitch 9,10,11.
Slow Green Blinking	Wrong wiring or connection failure.	Check the wires and connector.	
	Sensitivity is too low.	Set the sensitivity higher.	
	Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.	
Proper operation	Yellow	Sensor failure.	Contact your installer or service engineer.
		Signal saturation. (2nd and/or 3rd row)	Remove highly reflecting objects from the detection area. Lower the sensitivity. Change the area depth angle.
Slow Green Blinking	Slow Green Blinking	The detection area overlaps with the door/header.	Adjust the detection area to "Deep" (Outside).
		Installation mode is set to "ON".	Set dipswitch 16 to "OFF".
Slow Green Blinking	Slow Green Blinking	Signal saturation. (4th, 5th, 6th row and/or BLUEZONE)	Remove highly reflecting objects from the detection area. Lower the sensitivity. Change the area depth angle.

FCC WARNING(For USA)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

-NOTICE-

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

-NOTICE-

- The antennas cannot be exchanged.
- To comply with FCC RF exposure compliance requirements, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.

IC(For CANADA)

Operation is subject to the following two conditions:

- this device may not cause interference, and
- this device must accept any interference received, including interference that may cause undesired operation of the device.

Manufacturer

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MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this operation manual.

	WARNING	Disregard of warning may cause improper operation causing death or serious injury of a person.
	CAUTION	Disregard of caution may cause improper operation causing injury of a person or damage to objects.
	NOTE	Special attention is required to the section of this symbol.

NOTE

- This sensor is a non-contact switch intended for door mounting and to use on automatic swing doors.
- When setting the sensor's detection area, make sure that there is no traffic around the installation site.
- Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the sensor.
- Only use the sensor as specified in the operation manual provided.
- Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
- Before leaving the installation site make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
- The sensor settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock		

NOTE

- The following conditions are not suitable for sensor installation :
- Fog or exhaust emission around the door.
 - Moving objects or objects that emit light near the detection area.
 - Highly reflecting floor or highly reflecting objects around the door.
 - Wet floor.
 - Grating floor.

SPECIFICATIONS

Model *	: OA-EDGE1 T / OA-EDGE2 T	Accessories	
Extrusion color	: Silver / Black	Silver self tap screw for extrusion	2pcs
Mounting height	: 4'11"(1.5m) to 9'10" (3.0m)	Silver wood screw for extrusion	2pcs
Detection area	: See DETECTION AREA	Black small screw for endcap	4pcs
Detection method	: Triangulation	Black large screw for wire shroud cover	2pcs
Min. configuration	: 1 master module +1 LED module	Wire shroud	1pcs
Max. configuration	: 4 sensor modules +2 LED modules	Wire shroud cover	1pcs
Depth angle adjustment:	: 0° to +25°	Power supply cable	1pcs
Power supply	: 12 to 24VAC ±10% (50 / 60Hz) 12 to 30VDC ±10%	Communication cable	Refer to matrix Manual
Power consumption	: < 1.3W (< 2VA at AC) at Min. configuration < 3.5W (< 4.5VA at AC) at Max. configuration		
LED indicator	: See chart below		
Test input	: Opto coupler 5 to 30VDC Current / 6mA Max.		
Safety output 1**	: Form C relay		
Safety output 2**	: Voltage / 42VDC Current / 0.3A Max (Resistance load) output : see INSTALLATION chapter 3. Wiring		
output hold time	: Approx. 0.5sec.		
Response time	: <75msec.		
Operating temperature	: -4 to 131°F (-20 to +55°C)		
Operating humidity	: <80%		
IP rate	: IP54		

Model	Sensor length	Cable length			
		4" (105)	10" (250)	19" (480)	35" (900)
OA-EDGE1 T	34.5	-	1pcs	1pcs	-
	40	-	1pcs	-	1pcs
	44	-	1pcs	-	1pcs
OA-EDGE2 T	34.5	1pcs	1pcs	1pcs	-
	40	1pcs	1pcs	1pcs	-
	44	1pcs	1pcs	1pcs	-

*: OA-EDGE1 T have 1 sensor module (Master only).
OA-EDGE2 T have 2 sensor modules (Master + Slave).
**: There are two types of output. (Reactivate & Stall)

LED indicator

Status	Sensor module indicator
Stand-by	Solid Green
Swing side detection (output 1)	Solid Red
Approach side detection (output 2)	Solid Orange
Incomplete Initialization	Red & Green Blinking
Learning	Blinking Yellow
Incomplete learning	Yellow & Red Blinking
Saturation	Slow Red Blinking
Sensor failure	Fast Red Blinking
Communication error	Twice Orange Blinking

LED module indicator

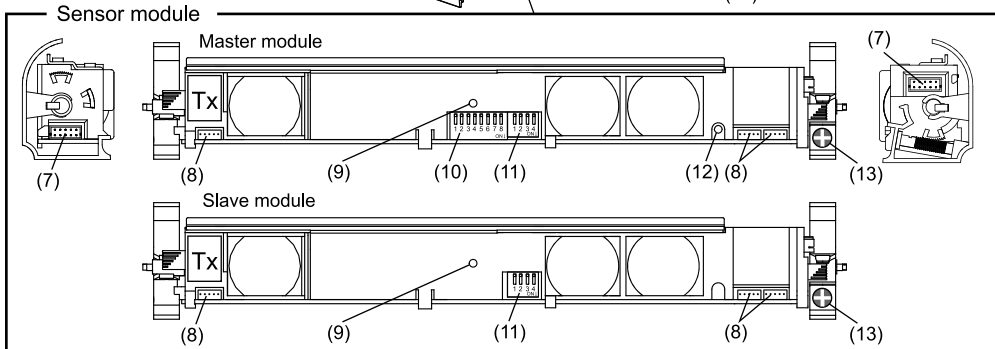
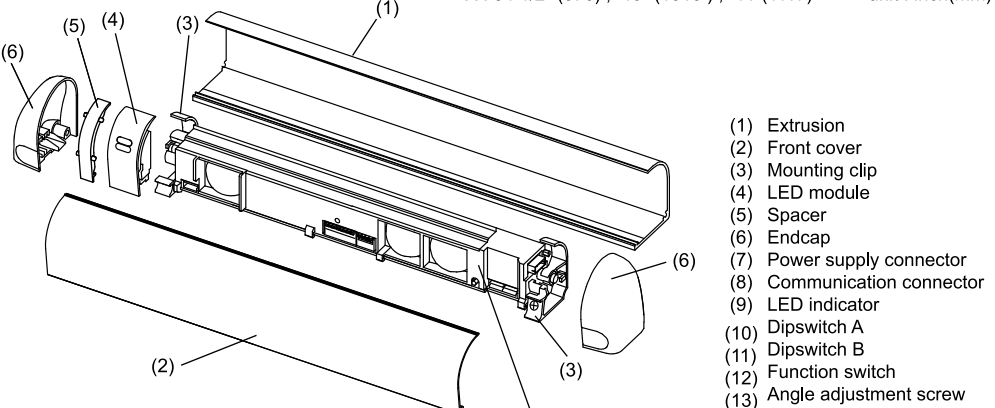
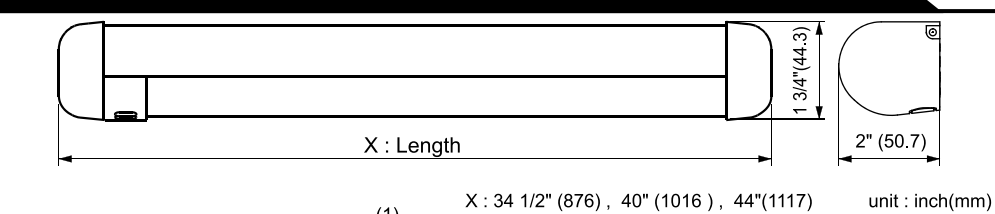
The color depends on the state of the output.

Safety output 1 (Swing side(Stall))
OFF : Solid Green
ON : Solid Red

Safety output 2 (Approach side(Reactivate))
OFF : Solid Green
ON : Solid Orange

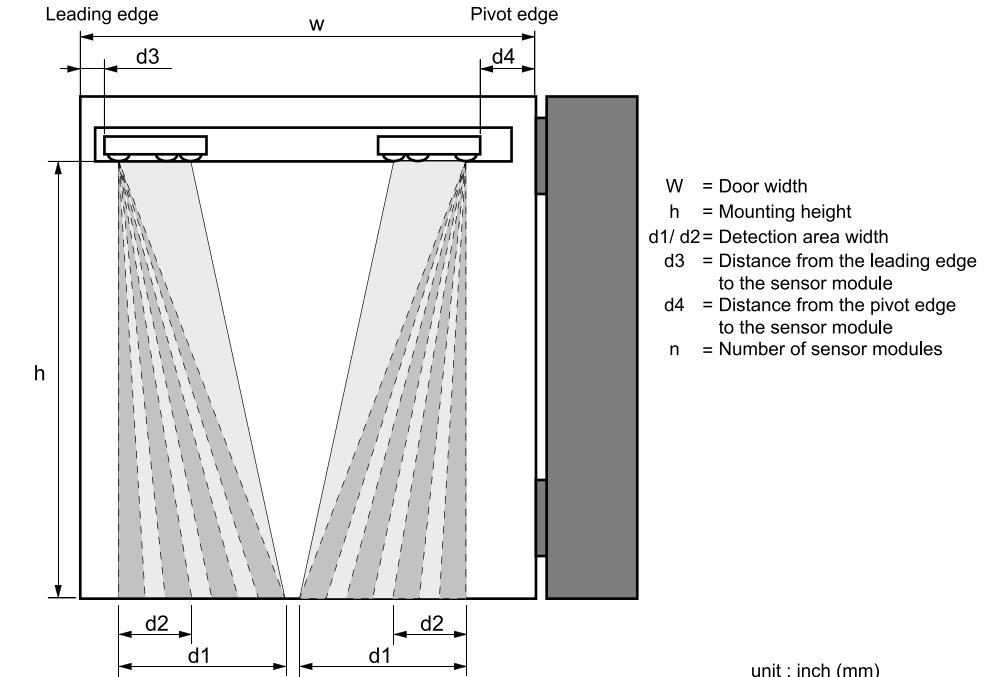
NOTE The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES



DETECTION AREA

Recommended installation position



W				36" (914)		42" (1067)		48" (1219)	
h	d1	d2	d3	n	d4	n	d4	n	d4
5'11" (1800)	1'7" (480)	11" (280)							
6'3" (1900)	1'8" (510)	11 7/16" (290)							
6'7" (2000)	1'9" (525)	11 13/16" (300)							
6'11" (2100)	1'10" (545)	12 3/16" (310)							
7'3" (2200)	1'10" (560)	12 5/8" (320)	4" * (102)	2	4" (102)	2	6" (152)	2	9" (229)
7'7" (2300)	1'11" (590)	13" (330)							
7'10" (2400)	1'12" (605)	13 3/8" (340)							
8'2" (2500)	2'1" (625)	13 3/4" (350)							

NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object and selection of inactive area.

For ANSI A156.10 applications you must walk-test the door using AAADM-recommended testing procedures. Adjustments may need to be performed. If unsure contact OPTEX Technical Support.
* Note: For ANSI A156.10 Swing Side applications we recommend locating no further than 4" from latch edge of panel. For secondary activation (NON ANSI A156.10) module can be located for desired detection area.

INSTALLATION

1 Mounting the extrusion

- Take the sensor modules out of the extrusion.
- If the extrusion is too long for installation cut it down.

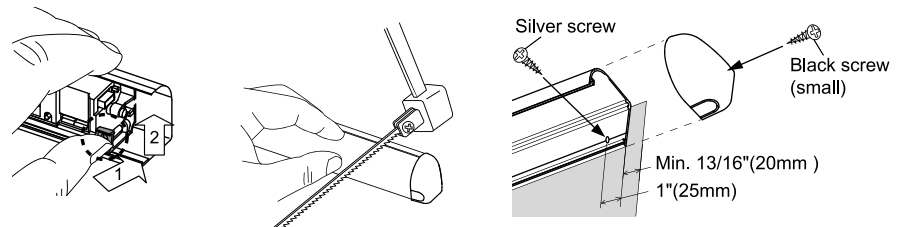
NOTE When cutting the extrusion it is recommended to assemble to the extrusion one end cap. Place the LED module and spacer against the end cap and install the lens cover tight to the LED module. Cut the assembled unit using a miter saw or similar device to ensure proper 90 degree angle. Cut the end opposite the LED module. Ensure the overall length will clear items such as door stops or finger guards.

- Affix the extrusion on the intended mounting position leaving more than 13/16" (20mm) from door edge to attach the endcap.
- If necessary, drill two mounting holes of $\phi 1/8"$ ($\phi 3.4\text{mm}$) and fix the extrusion.

NOTE Recommended location for mounting screws is 1" from edge of aluminum extrusion. This will allow proper positioning of LED Module and Sensor modules without obstruction.

- When mounting a sensor on each side of the door, it is necessary to drill a wiring hole of $\phi 1/2"$ ($\phi 12\text{mm}$) to connect the sensor modules. (See chapter 3. Wiring)

NOTE Make sure there is some space between the mounting clips and the mounting screws. Make sure not to scratch the extrusion when making a hole.



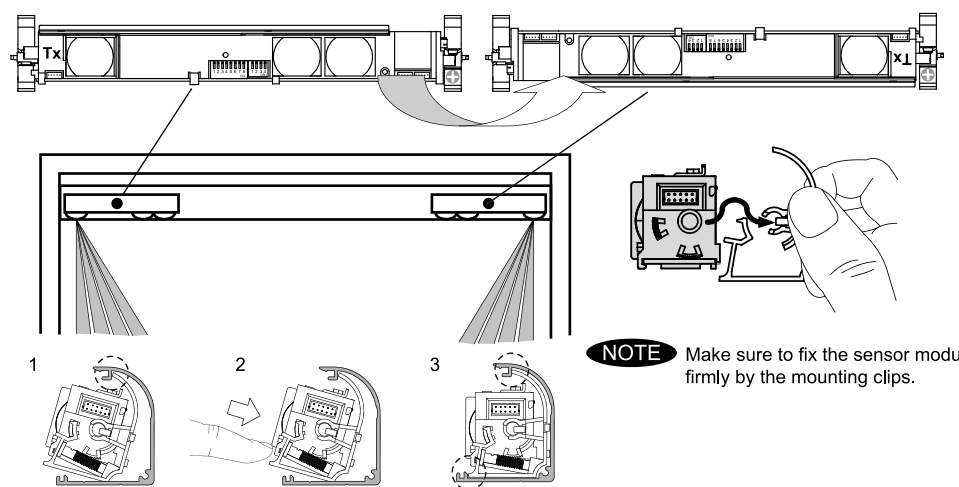
2 Inserting the sensor module

1. Approach side

When installing on approach side (reactivate) refer to values d2 & d3 in chart **DETECTION AREA** as an initial starting point for location of module. Sensor modules can be moved left or right and angle in or out to achieve desired detection area determined by walk testing door operation.

2. Swing side

When installing on swing side in conjunction with an Overhead Presence Sensor see separate included chart for starting location. Requires two modules for this application to ensure conformance to ANSI/BHMA A156.10, Section 8. Must be walk tested and adjusted if necessary to confirm compliance with the standard.

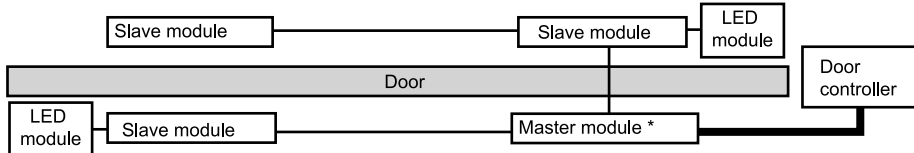


NOTE Make sure to fix the sensor modules firmly by the mounting clips.

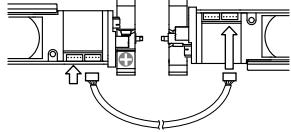
INSTALLATION

3 Wiring

Wire the cable to the door controller as shown below. Power supply cable Communication cable

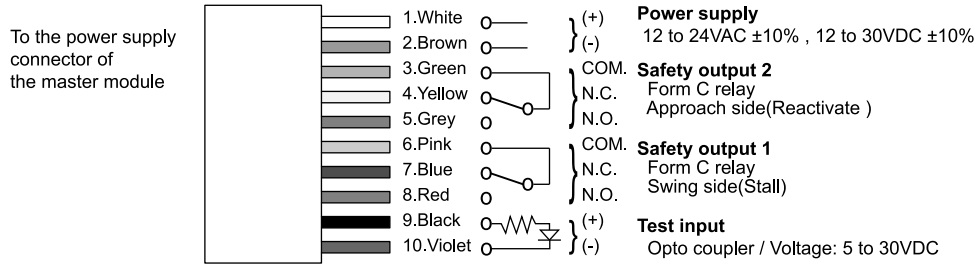


NOTE * When more than 1 master module is installed on the door leaf, make sure that only one power supply cable is connected to the operator otherwise initialization can not be completed. All other master units will automatically function as a slave unit.



Each module has three communication connectors. Use the most convenient connector for the installation site.

NOTE Maximum of three sensor modules can be connected to one master module.



NOTE When the test input is not required, set the dipswitch A7 to OFF.

Prehole 1/8"

The wiring harness can be routed thru jamb or direct to header. Once routing is decided determine appropriate length of wire shroud and trim if necessary. Place wire shroud over harness before routing harness thru jamb or to header. Remove knock out in end cap and attach wire shroud to profile. Attach other end of wire shroud at jamb or header using wire shroud cover if necessary. When installing wire shroud cover mark and predrill two 1/8 inch holes (see picture).

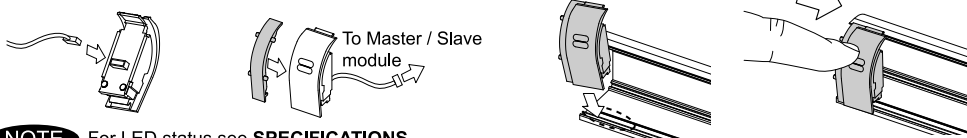
WARNING

Danger of electric shock

Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield otherwise it may cause electric shock or breakdown of the sensor.

4 Inserting LED module

Connect the communication cable to the LED module then to the sensor module and install LED module and spacer. Select the length of communication cable appropriate for your application (4", 10", 19" or 35") Attach the spacer on the endcap side. Insert the LED module to the extrusion. The LED module can be inserted to both side of the extrusion.



NOTE For LED status see SPECIFICATIONS

5 Placing the front cover

After ADJUSTMENTS are completed, place the front cover and endcaps.

NOTE When the front cover is installed inactive height will increase slightly.

ADJUSTMENTS

1 Dipswitch settings

Each Master module is equipped with Dipswitch A and Dipswitch B and each Slave module is equipped with only Dipswitch B. Only dipswitch A of the master module connected to the door controller is applicable and will reflect the settings to all connected master and slave units automatically.

Dipswitch A	
1	A1 Non detection zone (A)
2	A2 Frequency
3	A3 Immunity
4	A4 Presence timer
5	A5
6	A6 For future use
7	A7 Test input
8	A8 Test input delay

Dipswitch B	
1	B1 Non detection zone (B)
2	B2 Area width
3	B3 Self monitoring mode
4	B4 Sensor side (output select)

NOTE Make sure to finish initialization properly to reflect the dipswitch settings otherwise the setting can not be changed. (see chapter 2. Function switch)

1-1. Setting the Non detection zone

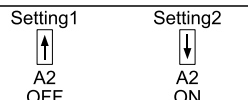
The Non detection zone is the height measured from the floor up to the position where the sensor starts to detect. The zone can be set by a combination with Dipswitch A1 & B1.
[Non detection zone value] = [Dipswitch A1 value] + [Dipswitch B1 value]

Side view	Dipswitch A1	Dipswitch B1	Total Non detection zone
	OFF : 5 7/8" (15cm)	OFF : +0" (+0cm)	5 7/8" (15cm)
	OFF : 5 7/8" (15cm)	ON : +3 15/16" (+25cm)	9 13/16" (25cm)
	ON : 13 3/4" (+35cm)	OFF : +0" (+0cm)	13 3/4" (35cm)
	ON : 13 3/4" (+35cm)	ON : +3 15/16" (+25cm)	17 11/16" (45cm)

NOTE The value is approximate for mounting height of 5' 11" to 9' 10" (1.8 to 3.0m).

1-2. Setting the frequency

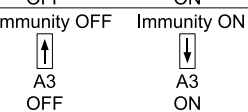
When installing the sensors on a double swing door make sure that the frequency on each sensor is set differently.



1-3. Setting the immunity

Set Dipswitch A3 to ON when the sensor operates by itself (ghosting).

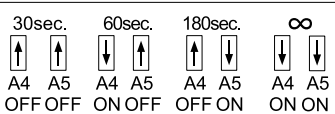
NOTE When Dipswitch A3 is set to ON, the actual detection area may become smaller than Immunity OFF.



1-4. Setting the presence timer

The presence timer can be set by Dipswitch A4 & A5.

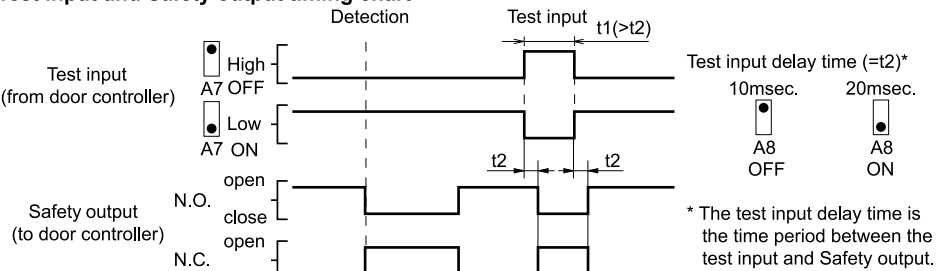
NOTE If an object remains in the detection area longer than the setting, LED indicator may blink fast Red. In this case, it is not Sensor failure. After an object is removed, LED indicator will show Solid Green.



1-5. Setting the test input and test input delay time

Set dipswitches A7 & A8 according to the instructions from the door controller.

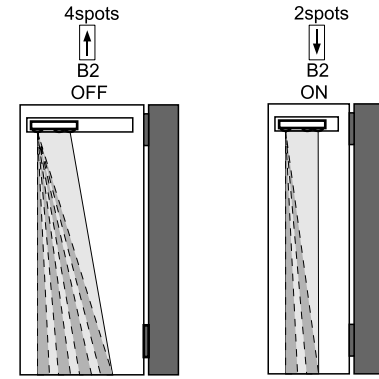
Test input and Safety output timing chart



* The test input delay time is the time period between the test input and Safety output.

1-6. Setting the area width

Set dipswitch B2 to "2 spots" when a narrow detection area is required.



1-7. Self monitoring mode

Set dipswitch B3 to A mode, when you install in USA



1-8. Setting the mounting side (output select)

By selecting the sensor position the outputs & LED indicator will function as shown below :

Dipswitch B4	output	LED indicator
OFF : Swing side	Stall (Safety output1)	Solid Red (Detection)
ON : Approach side	Reactivate (Safety output2)	Solid Orange (Detection)

2 Function switch

Only the master module is equipped with a function switch. The function switch of the master module that is connected to the door controller is only applicable to reflect settings to all sensor modules connected.

NOTE Make sure to use the function switch when the door is in the fully closed position.

2-1. Initialization & Learning

Initialization:

Initialization is necessary when power is supplied for the first time or when there is a change in dipswitch settings. Push the function switch for **MORE THAN 2 SEC.** to initialize the complete sensor configuration.

Learning:

After an initialization or a change in the settings always make a learning cycle by pushing the function switch for **LESS THAN 2 SEC.**

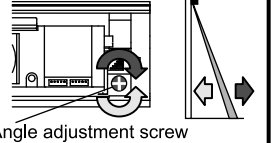
Action	First power supply	Dipswitch setting change	LED indicator
Initialization Push the function switch for more than 2sec.			Red & Green Blinking
		Turn off and then, start to blink Green to indicate the number of connected sensor modules	
Learning Push the function switch for less than 2sec.			Yellow and Red Blinking
			Yellow Blinking
			Solid Green

NOTE Do not enter the detection area when the sensor is performing a learning cycle.

3 Area depth angle adjustment

The angle of each sensor module must be adjusted so that the door stops before it comes into contact with an obstacle. After area angle adjustments, start the learning as described in chapter 2. Function switch.

Adjustable angle : 0° to +25°



CHECKING

Check the operation according to the chart below.

NOTE The door movement might become unstable right after the learning. The movement becomes stabilized after several openings and closings. Always walk-test the detection area to ensure the proper operation.

Entry	Power OFF	Outside of detection area	Entry into opening side detection area	Entry into closing side detection area
Status	-	Stand-by	Detection active	Detection active
LED indicator	None	Solid Green	Solid Red	Solid Orange
Safety output1 Swing side(Stall)	COM. N.O. N.C.	COM. N.O. N.C.	COM. N.O. N.C.	COM. N.O. N.C.
Safety output2 Approach side(Reactivate)	COM. N.O. N.C.	COM. N.O. N.C.	COM. N.O. N.C.	COM. N.O. N.C.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the front cover clean. If dirty, wipe it with a damp cloth. (Do not use any cleaner / solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- When LED indicator blinks Fast Red without any object in the detection area, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the front cover.

NOTE 1. After applying power, wait 10 seconds then walk test detection area to ensure proper operation.
2. Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

TROUBLESHOOTING

Problem	Possible cause	Possible countermeasures
The sensor has no function	Wrong power supply voltage Wrong wiring or connection failure	Set to the stated voltage. Check the wiring and connectors.
Incomplete initialization (Red & Green Blinking)	Initialization has not been conducted. Dipswitch setting is changed.	Push the function switch for more than 2 sec. for initialization.
Initialization is not finished (Red & Green Blinking continuous)	More than 2 master modules are connected with power supply cable.	Connect the power supply cable to only one master module.
Incomplete learning (Yellow & Red Blinking)	Initialization has not been conducted.	Push the function switch for less than 2 sec. for learning.
Learning does not start (Twice Orange Blinking)	Communication error	Check the communication wires or change wires.
Sensor operates by itself. (Ghosting) or learning is not finished. (Yellow & Red Blinking continuous)	Objects that move or emit light in the detection area. (Ex.Plant, illumination, etc.) Same frequency setting on double swing door application. The modules are affecting each other. Signal saturation.	Remove the objects. Set the different frequencies. (Dipswitch A2) Change the module positions or adjust angles or adjust the area width (Dipswitch B2).
Sensor operates by itself. (Ghosting)	The floor pattern is not plain or, the door movement is irregular.	Set the immunity (Dipswitch A3) to "ON". Extend the non detection zone.
The sensor functions without the front cover but not with it.	Waterdrops on the front cover	Install in a place keeping the waterdrops off.
Sensor operation is not linked to door movement.	The module angle is changed. The front cover is dirty. The front cover is scratched	Check the module angles. Wipe the front cover with a damp cloth. (Do not use any cleaner or solvent.) Replace the front cover.
Door remains open or closed without any object in the detection area.	Connection error or wrong mounting side setting. Presence timer set to infinity and sudden change in the detection area.	Check the wiring or mounting side setting. (Dipswitch B4) Push the function switch for less than 2 sec. for learning. Or change presence timer setting. (Dipswitch A4)
	Signal saturation. (Slow Red Blinking)	Change the module positions or adjust angles or adjust the area width (Dipswitch B2).
	The sensor is affected by the floor color.	Push the function switch for less than 2 sec. for learning. Or extend the non detection zone.
	Communication error. (Twice Orange Blinking)	Check the communication wires.
	The front cover on inner or outer side is dirty.	Wipe the front cover with a damp cloth. (Do not use any cleaner or solvent.)
	Sensor failure. (Fast Red Blinking)	Contact your installer or service engineer.

Manufacturer

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5924401 APR 2016

MANUFACTURER'S STATEMENT

Read this manual carefully before use to ensure proper operation of this product. Failure to read this manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this manual.

	WARNING	Disregard of warning may cause improper operation causing death or serious injury of a person.
	CAUTION	Disregard of caution may cause improper operation causing injury of a person or damage to objects.
	NOTE	Special attention is required to the section of this symbol.

- NOTE**
- PREMIER T version Sensor Heads (OA-613 T) & Controller (OC-913C T) are not compatible with old PREMIER version Sensor Heads (OA-603, OA-613) and controller (OC-903C, OC-913C). Do not intermix Old & New versions.
 - This sensor is a non-contact switch intended header mount or wall mount for use on automatic swing doors. Do not use for any other application.
 - When setting the sensor's detection area, make sure that there is no traffic around the installation site.
 - Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the sensor.
 - Only use the sensor as specified in the operation manual provided.
 - Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
 - Before leaving the installation site, make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
 - The sensor settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock		

- NOTE**
- The following conditions may not be suitable for sensor installation.
 - Fog or exhaust emission around the door.
 - Moving objects or objects that emit light near the detection area.
 - Highly reflecting floor or highly reflecting objects around the door.
 - Wet floor.

SPECIFICATIONS

Model (System name) : PREMIER T	Model (Sensor head) : OA-613 T
Power supply : 12 to 24VAC ±10% (50 / 60Hz) 12 to 30VDC	Cover color : Black
Power consumption : < 2.2W (< 4VA at AC)	Mounting height : 6'7" (2.0m) to 8'2" (2.5m)
Output * : CMOS. Relay voltage / 5VDC	Detection area : See DETECTION AREA
Test input : Opto coupler	Detection method : Active infrared reflection **
Output hold time : 0.5sec. fixed (Activate output)	Depth angle adjustment : 1st row area ±5°
Response time : 0.5sec. to 10sec.(Safety output)	2nd & 3rd row area ±5°
Operating temperature : -4 to 131°F (-20 to +55°C)	IP rate : IP44
Operating humidity : < 80%	Weight : 8.1oz (230g)
Accessories : 1 Spec manual	Model (Controller) : OC-913C T
1 Installation manual	Weight : 2.3oz (65g)
2 Mounting screws	
1 Mounting templates for OA-613 T	
1 Communication cable 3'3" (1m)	
1 Wiring cable 2' (0.6m)	
1 Velcro tape	
2 Wiring shells	

* : Two type of outputs (Activate , Safety)
** : All rows have the presence detection.

NOTE The specifications herein are subject to change without prior notice due to improvements.

Operation indicator : OA-613 T

Status	Color	Indicator Pattern
Stand-by	Solid Green	[Solid Green Bar]
1st row area detection	Blinking Red	[Blinking Red Bar]
2nd or 3rd row area detection	Solid Red	[Solid Red Bar]
Waiting for next learning	Solid Yellow	[Solid Yellow Bar]
During learning	Blinking Yellow	[Blinking Yellow Bar]
During opening or closing	Solid Orange	[Solid Orange Bar]
Signal saturation	Slow Green blinking	[Slow Green Blinking Bar]
Sensor failure	Fast Green blinking	[Fast Green Blinking Bar]
Setting error	Slow Orange blinking	[Slow Orange Blinking Bar]
Communication error	Twice Orange blinking	[Twice Orange Blinking Bar]
Mixed version error	Red & Green blinking	[Red & Green Blinking Bar]

Operation indicator : OC-913C T

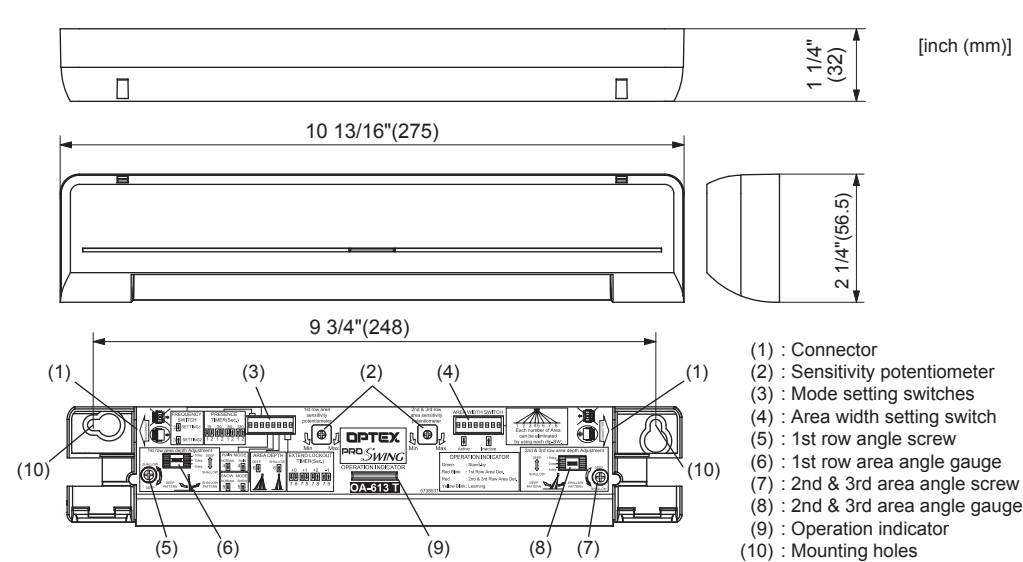
Status	Color	Indicator Pattern
Door fully closed	Solid Green	[Solid Green Bar]
Door closing	Solid Orange	[Solid Orange Bar]
Door fully opened	Solid Red	[Solid Red Bar]
Door opening	Blinking Red	[Blinking Red Bar]
During learning	Slow Green blinking	[Slow Green Blinking Bar]
Communication error	Twice Orange blinking	[Twice Orange Blinking Bar]
Mixed version error	Red & Green blinking	[Red & Green Blinking Bar]

Interface LED : OC-913C T

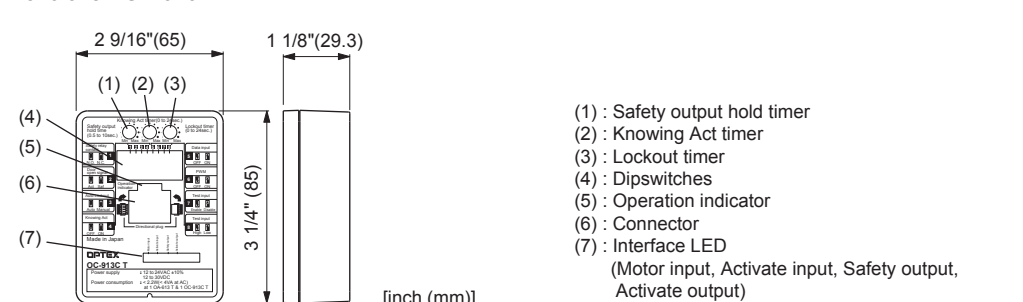
LED indication	Operation
Safety output	Solid Green : When not outputting
	OFF : When outputting
Activate output	Solid Orange : When outputting
	OFF : When not outputting
Activate input	Solid Orange : When receiving input
	OFF : When not receiving input
Motor input	Solid Green : When not receiving Motor positive
	Solid Red : When not receiving Motor negative
	OFF : When not receiving input

OUTER DIMENSIONS AND PART NAMES

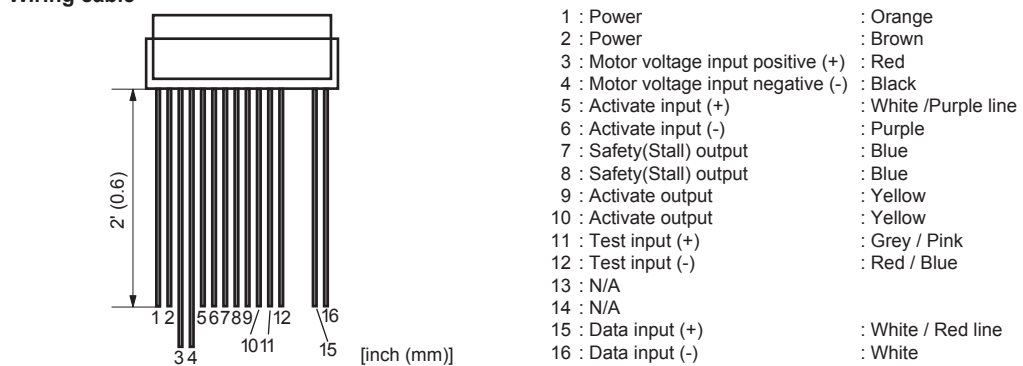
Sensor head: OA-613 T



Controller: OC-913C T



Wiring cable



CAUTION When using Test input (dipswitch 7) is Enable, Signal lines of Safety input should not be connected to the same port.

DETECTION AREA

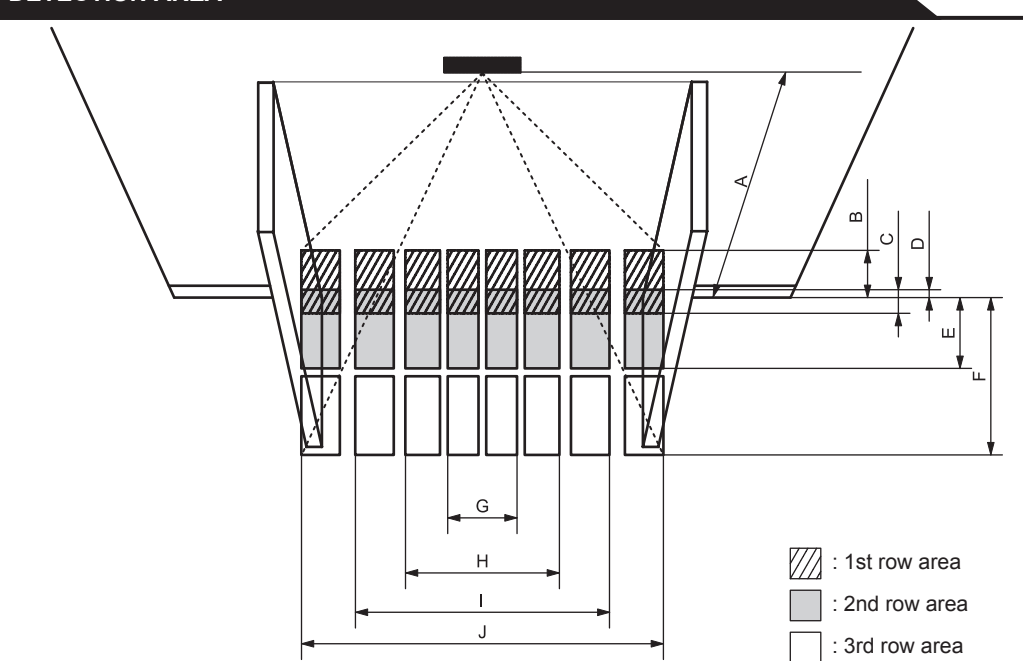


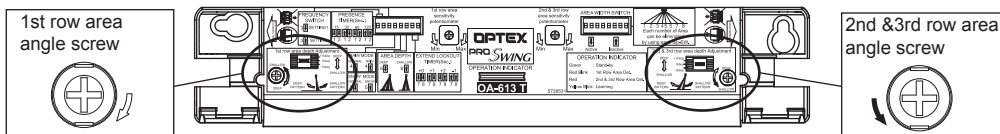
Chart shows figures if all angles are set at 0degree.

	[ft,inch (mm)]		
A	6'7"(2000)	7'3"(2200)	8'2"(2500)
B	1'2"(364)	1'4"(400)	1'6"(455)
C	7"(182)	8"(200)	9"(227)
D	1'(23)	1'(25)	1'(28)
E	2'2"(664)	2'5"(730)	2'9"(830)
F	4'7"(1391)	5'1"(1530)	5'9"(1739)
G	2'3"(682)	2'6"(750)	2'10"(852)
H	4'4"(1318)	4'9"(1450)	5'5"(1648)
I	6'9"(2045)	7'5"(2250)	8'5"(2557)
J	9'5"(2864)	10'4"(3150)	11'9"(3580)

NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object.

ADJUSTMENTS for OA-613 T

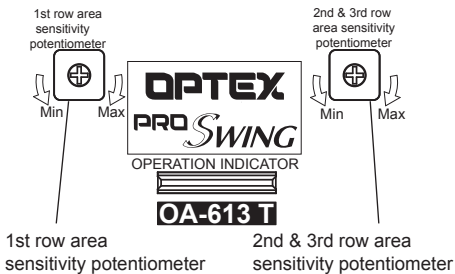
1 Area depth angle adjustment



Start with 1st row area depth angle at -5 degrees (shallow).
If after walk test the pattern is too shallow, adjust towards deep as necessary.

Start with 2nd & 3rd row area depth angle at +5 degrees (deep).
If after walk test the pattern is too deep, adjust towards shallow as necessary.

2 Adjusting the Sensitivity



1st row area sensitivity potentiometer

2nd & 3rd row area sensitivity potentiometer

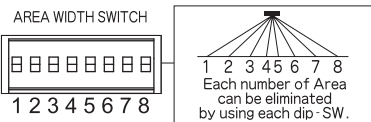
3 Initial setup

This sensor has the function to fit floor condition changes automatically. Therefore, even if objects are put in the detection area, sensor will learn the changes gradually and set back to normal operations automatically after presence timer has expired. To enable a Learn process only, flip any dipswitch on OA-613 T sensor head and wait 1 second, then flip it back to the original position.

NOTE See PREMIER T installation manual step 6 (PREMIER Learn process).

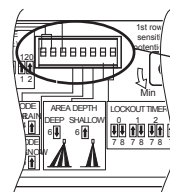
4 Area width setting switch (Right bank)

Set the dipswitch as necessary.
Active : Enable area
Inactive : Disable area



NOTE Whenever a dipswitch is moved a PREMIER Learn process is enabled, ensure proper completion of process (See step 3).

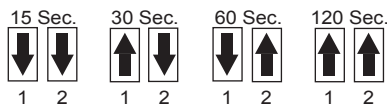
5 Mode setting switch (Left bank)



- 1,2: Presence timer
- 3: Frequency
- 4: Rain mode
- 5: Snow mode
- 6: Area depth
- 7,8: Extend Lockout timer

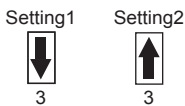
5-1. Setting the Presence timer

To comply with ANSI standard, set to "30sec." or longer.



5-2. Setting the Frequency

When using more than one sensor close to each other, set the different frequency for each sensor by dipswitch 3.

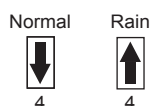


5-3. Setting the Rain mode

Set dipswitch 4 to "Rain" if the sensor is used in a region with a lot of rain.

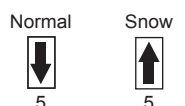
NOTE

When set to "Rain", the actual detection area may become smaller.

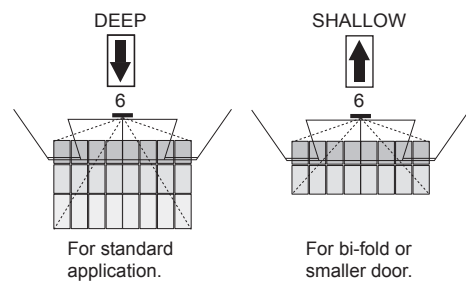


5-4. Setting the Snow mode

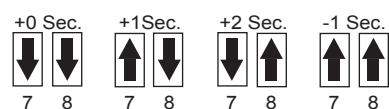
Set dipswitch 5 to "Snow" if the sensor is used in a region with snow or a lot of insects.



5-5. Setting the Area depth



5-6. Setting the Extend Lockout timer

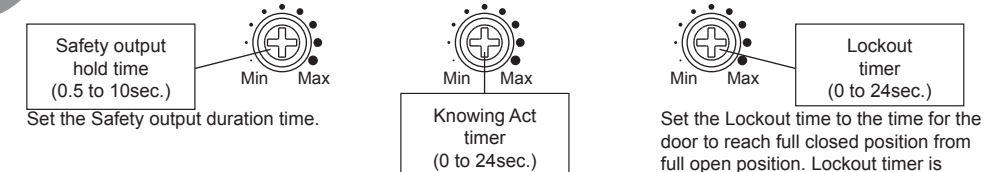


Fine-tune the Lockout time after setting the Lockout timer on OC-913C T by volume (0-24 sec.) Only effective when dipswitch 3 is set to "Manual" and dipswitch 5 is set to "OFF" on OC-913C T.

NOTE See ADJUSTMENTS for OC-913C T

ADJUSTMENTS for OC-913C T

1 Timer adjustment



Set the time required for door to close from fully open position to within 10 degrees when uses for Knowing Act application (dipswitch 4: ON).

Set the Lockout time to the time for the door to reach full closed position from full open position. Lockout timer is effective only when dipswitch 3 is set to "Manual" and dipswitch 5 is set to "OFF".

2 Setting the dipswitches

1. Safety relay contact : Choose the Relay contact.
2. Door open signal switch : Determines safety output when door is open.
3. Auto Lockout : Set the Lockout method
ON : Manual (by volume setting on OC-913C T)
OFF : Auto (by motor voltage)
4. Knowing Act : If uses Knowing Act Function, set to "ON".

Set the dipswitches as shown below.

Dipswitch setting	OFF	ON
1 Safety relay contact	NO	NC
2 Door open signal switch	Act	Saf
3 Auto Lockout	Auto	Manual
4 Knowing Act	OFF	ON
5 Data input	OFF	ON
6 PWM	OFF	ON
7 Test input	Enable	Disable
8 Test input	High	Low

5. Data input : If using data output from door control for Lockout, set to "ON".
When Data input is "ON", setting of Auto Lockout (dipswitch 3) is ignored.

6. PWM : If using PWM from door control for Lockout, set to "ON".
When using PWM, dipswitch 5 also needs to be set to "ON" and setting of Auto Lockout (dipswitch 3) is ignored.

7. Test input : If not using Test input from door control for Lockout, set to "ON". When not using Test input, dipswitch 7 also needs to be set to "ON", and setting of Test input (dipswitch 8) is ignored.

8. Test input : If using Test input of "Active Low" for Lockout, set to "ON".

Knowing Act Function

Use this function when Primary Activation is Knowing Act (i.e. Push Plate, Card reader, etc.) and a secondary activation sensor (door mount or header mount) is desired.

See WIRING in the installation manual when Knowing Act Function is required.

Secondary activation sensor status in Knowing Act Function:

- Full Closed position
Secondary activation sensor is inactive until the Knowing Act device is initiated.
Door can be used manually without activation or reactivation from sensor.
- Door opening & Full open
When door is activated by Knowing Act, the secondary activation sensor is active and the door will remain open when the sensor is in detection.
- Door closing
Secondary activation sensor is active and will reactivate the door upon detection until the Knowing Act timer expires. Set the Knowing Act timer on OC-913C T control to stay active to within 10 degrees from full closed.

NOTE When using the Knowing Act Function, Push/Pull activation MUST be disabled at the door controller.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

1. Always keep the detection window clean. If dirty, wipe the window with a damp cloth. (Do not use any cleaner / solvent.)
2. Do not wash the sensor with water.
3. Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
4. When the operation indicator blinks Green, contact your installer or service engineer.
5. Always contact your installer or service engineer when changing the settings.
6. Do not paint the detection window.

NOTE 1. After applying power, wait 10 seconds then walk test detection area to ensure proper operation.
2. Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

TROUBLESHOOTING

Symptom	Operation indicator		Possible cause	Possible countermeasures
	OA-613 T	OC-913C T		
Initial setup can not start.	None	None	Power supply voltage. Wrong wiring cable (Brown & Orangewires) of OC-913C T.	Set to the stated voltage. Check the wiring cable.
	Twice Orange blinking or None	Twice Orange blinking	Connection failure from OA-613 T to OC-913C T.	Check the connector.
	Slow Orange blinking		Defective communication cable. When all the area are inactive. (Right bank dipswitches on OA-613 T)	Replace as necessary. Verify proper settings. See installation manual step 5.
Incomplete initial setup	Blinking Yellow	Blinking Green	OC-913C T dipswitches set wrong.	Check the dipswitch settings.
Sensor detects when no one is in the detection area. (Ghosting)	Solid Green or Solid Red or Blinking Red	Proper	Improper 1st row or 2nd & 3rd row area angle adjustment.	Set 1st row area angle at -5 degrees (shallow) or 2nd & 3rd row area angle at +5 degrees (deep).
			Stalling caused by traffic just outside of swing path.	Set dipswitch 6 on left bank dipswitch of OA-613 T on/up (shallow).
			Moving objects near guide rails.	Remove the objects.
			Area width dipswitches set wrong. (Right bank dipswitches on OA-613 T)	Verify proper settings. See installation manual step 5.
			Wet floor. The exhaust emission or fog penetrate into the detection area.	Check the installation condition referring to MANUFACTURER'S STATEMENT.
			Reflecting objects in the detection area.	Remove the objects.
			Objects that move or emit light (Ex. Plant, illumination, etc.)	
Water drops on the detection window.	Use the rain-cover (Separately available). Or install in a place keeping the water drops off.			
Sensitivity is too high.	Adjust the sensitivity lower.			
Snow drifting.	Set the snow mode to "Snow".			
Other than above.	Set the rain mode to "Rain".			
Door does not operate properly when a person enters the detection area. (Sensor does not detect.)	Solid Green	Proper	Sensitivity is too low. Area width dipswitches set wrong. (Right bank dipswitches on OA-613 T)	Adjust the sensitivity higher. Verify proper settings. See installation manual step 5.
	Slow Green blinking	Proper	Improper 1st row or 2nd & 3rd row area angle adjustment. Signal saturation.	Set 1st row area angle at -5 degrees (shallow) or 2nd & 3rd row area angle at +5 degrees (deep). Remove highly reflecting objects from the detection area. Or lower the sensitivity.
	Fast Green blinking	Proper	Dirty detection window. Sensor failure.	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.) Contact your installer or service engineer.
OA-613 T detects but door operate.	Red or Blinking Red	Proper	OC-913C T dipswitches set wrong.	Check the dipswitch settings. See installation manual step 2.
Door remains open.	Solid Green	Proper	Improper wiring of door equipment on / off / hold switch.	Verify proper wiring of on / off / hold switch.

Manufacturer

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REACTION ONE / REACTION TWO



MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this operation manual.

WARNING	Disregard of warning may cause the improper operation causing death or serious injury of a person.
CAUTION	Disregard of caution may cause the improper operation causing injury of person or damage to objects.
NOTE	Special attention is required to the section of this symbol.

NOTE

- This sensor is a non-contact switch intended for header mount / ceiling mount of an automatic door. Do not use for any other applications.
- When setting the sensor's detection area, make sure there is no traffic around the installation site.
- Before turning the power on, check the wiring to prevent damage or malfunction of equipments that are connected to the sensor.
- Only use the sensor as specified in the operation manual provided.
- Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
- Before leaving the job site make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
- The sensor setting can only be changed by an installer or service engineer. When changed, register the changed setting and dates in the maintenance logbook accompanying the door.

WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of equipments.
Danger of electric shock.	

NOTE The following conditions are not suitable for the sensor installation.
 -Vibrating header or mounting surface, -Waterdrops or snow on the sensor,
 -Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity.

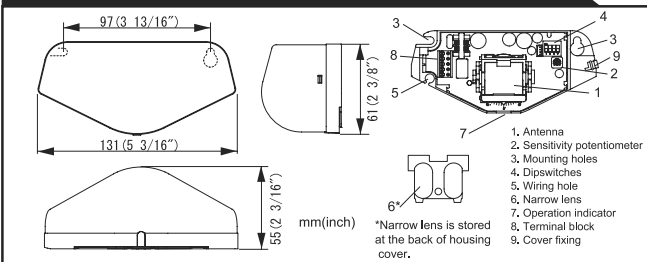
SPECIFICATIONS

Model	: REACTION ONE / REACTION TWO	Output	: Form C relay
Cover color	: Silver / Black		: 50V 0.3A Max.(Resistance load)
Mounting height	: 2.0 (6'7") to 3.5m (11'5")	Output hold time	: 2.0sec. / 4.0sec.
Detection method	: Microwave doppler effect	Response time	: <0.3 sec.
Power frequency	: 24.125GHz	Operating humidity	: <80%
Power density	: <2000m	Operating temperature	: -20°C to +55°C(-4°F to 133°F)
Detection area	: See Detection area	IP rate	: IP54
Vertical adjustment	: +10° to +70° (Header mount) +20° to +80° (Ceiling mount)	Weight	: 140g (4.9oz)
Horizontal adjustment	: 30° to left or right	Accessories	: 1 Cable 3m (9'10") 1 Operation manual 2 Mounting screws 1 Mounting template 1 Narrow lens*
Power supply	: 12 to 24VAC(±10%) 12 to 30VDC(±10%)		
Power consumption	: < 1.5W(±2VA at AC)		
Minimum speed	: 5cm(1' 15/16")/sec.		
Operation indicator	: Green / Stand-by Red / Detection Green blinking / Set-up		

* At the back of housing cover

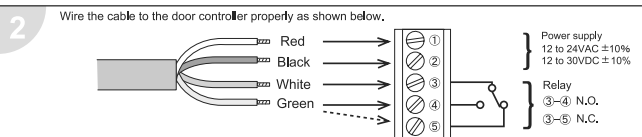
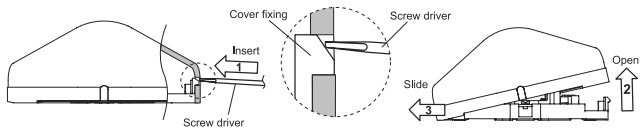
NOTE The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES



INSTALLATION

- Affix the Mounting template at the desired mounting position.
- Drill 2 Mounting holes of ø3.4mm (ø1/8").
- To pass the cable through to the header, drill a Wiring hole of ø8mm (ø5/16").
- Remove the Mounting template.
- Remove the Housing cover with screw driver as shown below. Attach the sensor to the mounting surface with 2 Mounting screws.



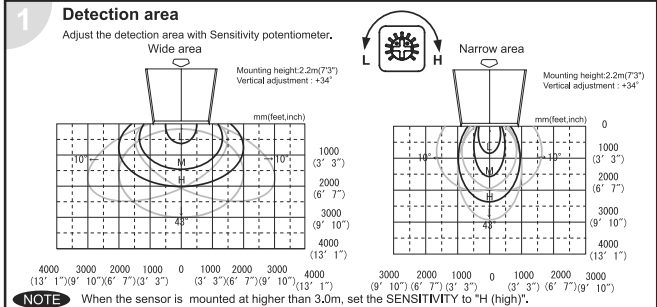
WARNING	Before starting the procedure, ensure that the power is turned OFF. When passing through the cable to the hole, make sure not to tear the shield, otherwise it may cause electric shock or breakdown of the sensor.
Danger of electric shock.	

- Plug the connector of the sensor.
 - Supply power to the sensor and the sensor will automatically start the set-up mode with blinking Green.
 - Adjust the detection area and set the Dipswitches. (See ADJUSTMENTS)
- NOTE** Make sure to connect the cable correctly to the door controller before turning the power ON. The sensor does not detect objects for 10 seconds after supplying power.

- Hook the Housing cover on the left side of main body to place the Housing cover. If wiring is to be exposed, break the knockout.

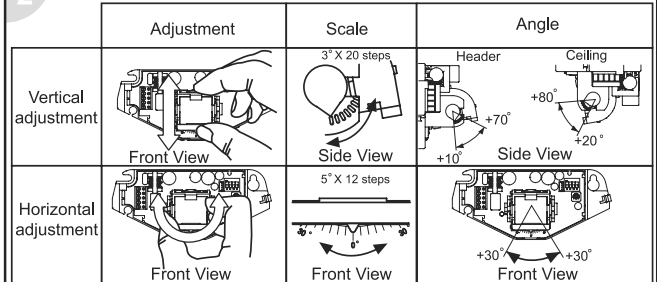
WARNING	Do not use the sensor without the Housing cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock.	

ADJUSTMENTS



NOTE When the sensor is mounted at higher than 3.0m, set the SENSITIVITY to "H (high)".

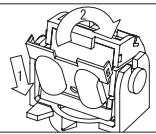
Detection area angle adjustment



CAUTION Do not touch electric part of the sensor to avoid possible breakdown of the sensor.

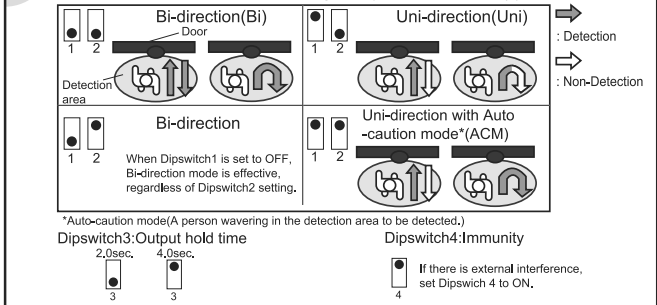
Narrow area

To obtain Narrow area, place Narrow lens attached at the back of housing cover. To place Narrow lens, follow step 1&2 as shown on the right.



Dipswitches settings

Set Dipswitch 1&2 to enable the direction recognition. (REACTION TWO Only.)



INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

- WARNING**
- Always keep the housing cover clean. If dirty, wipe the housing cover lightly with a cloth. (Do not use any cleaner or solvent.)
 - Do not wash the sensor with water.
 - Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
 - Always contact your installer or service engineer when changing the settings.
 - Do not paint the housing cover.
- NOTE**
- After applying power, wait 10 seconds then walk test detection area to ensure proper operation.
 - Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

CHECKING

Check the operation according to the chart below.

Sensor Status	Power OFF	Set-up (Approx. 10sec.)	Stand-by	Detection
Operation indicator	OFF	Green blinking	Green	Red
Output Contact				

TROUBLESHOOTING

Problem	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Wrong power supply voltage.	Set to the stated voltage.
	Unstable	Wrong wiring or connection failure.	Check the wiring and Terminal block.
	Green	Sensitivity is too low. Wrong detection area positioning.	Set the sensitivity higher. Check ADJUSTMENTS.
Door opens when no one is in the detection area. (Ghosting)	Green blinking	The sensor is being set up.	Wait for the set-up to complete.
	Red	Water drops on the housing cover. The detection area is overlapping with the door. Sensitivity is too high. Raining or snowing.	Wipe the housing cover with a cloth. Adjust the detection area away from the door. Or set Dipswitch4 to ON. Set the sensitivity lower. Set Dipswitch 1 to ON.(REACTION TWO Only) Or Dipswitch4 to ON.
Door remains open	Green	Wrong wiring or connection failure.	Check the wiring and Terminal block.

FCC WARNING(For USA)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

-NOTICE-

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

-NOTICE-

1. The antennas cannot be exchanged.
2. To comply with FCC RF exposure compliance requirements, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.

IC(For CANADA)

Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation of the device.



i-oneX T

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

	WARNING	Disregard of the warning symbol can cause improper operation which may cause death or serious injury.
	CAUTION	Disregard of the caution symbol can cause improper operation which may cause injury of a person or damage the object.
	NOTE	Special attention is required to the section of this symbol.

NOTE

- This product is a non-contact switch intended for header mount or wall mount for use on an automatic sliding door. Do not use for any other applications.
- When setting the sensor's detection area, make sure that there is no traffic around the installation site.
- Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
- Only use the product as specified in the operation manual provided.
- Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
- Before leaving the installation site make sure that the product is operating properly and instruct the building owner/operator on proper operation of the door and the product.
- The product settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock		

NOTE

- The following conditions are not suitable for sensor installation.
- Fog or exhaust emission around the door
 - Wet floor
 - Vibrating header or mounting surface
 - Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity
 - Highly reflecting floor or highly reflecting objects around the door

SPECIFICATIONS

Model	: i-oneX T	Safety output	: Form A relay 50V 0.3A Max. (Resistance load)
Cover color	: Black	Output hold time	: 0.5 to 1.5sec.
Mounting height	: 6'7" to 9'10" (2.0m to 3.0m)	Response time	: < 0.3sec.
Detection area	: See DETECTION AREA	Operating temperature	: -31°F to 131°F (-35°C to +55°C)
Detection method	: Active infrared reflection	Operating humidity	: < 80%
Depth angle adjustment	: Approach area -15° to +10° Presence/Motion area -10° to +8°	IP rate	: IP54
Power supply	: 12 to 24VAC ±10% (50 / 60 Hz) 12 to 30VDC ±10%	Weight	: 14.6oz (420g)
Power consumption	: < 2.5W (< 4VA at AC)	Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Cable 9'10" (3m)
Operation indicator	: See Operation indicator table		
Activation output	: Form A relay 50V 0.3A Max. (Resistance load)		
Test input	: Opto coupler Voltage 5 to 30VDC Current 6mA Max. (30VDC)		

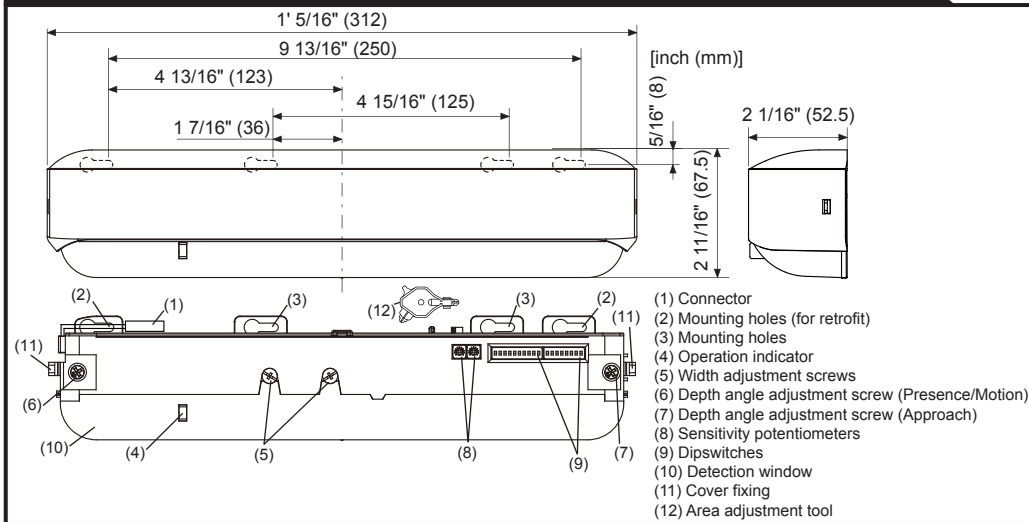
Operation indicator table

Status	Operation indicator color	1sec.	1sec.
Stand-by (installation mode)	Yellow	[Solid bar]	
Stand-by (operation mode)	Green	[Solid bar]	
BLUEZONE (1st row) detection(*1)	Blue	[Solid bar]	
2nd row detection	Red blinking	[Blinking bar]	
3rd/4th row detection	Red	[Solid bar]	
5th row detection	Orange	[Solid bar]	
Approach (6th row) detection	Orange blinking	[Blinking bar]	
Signal saturation	Slow Green blinking	[Blinking bar]	
Sensor failure	Fast Green blinking	[Blinking bar]	

NOTE The specifications herein are subject to change without prior notice due to improvements.

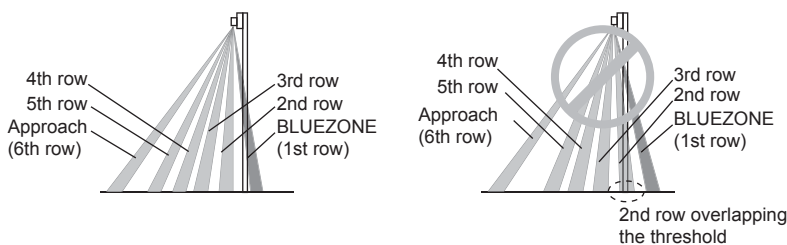
*1 : See **BLUEZONE AREA**

OUTER DIMENSIONS AND PART NAMES



BLUEZONE AREA

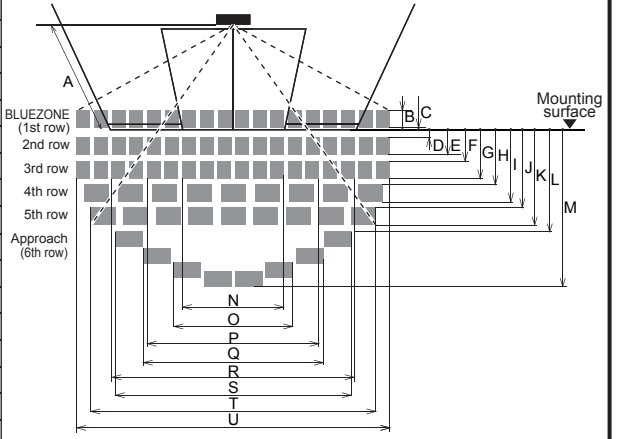
When dipswitch 5 is set to "ON", the BLUEZONE area, that provides extra safety over the threshold, is activated. In case the BLUEZONE function is not required, set dipswitch 5 to "OFF". Do not set the 2nd row overlapping the threshold regardless of the setting of dipswitch 5.



DETECTION AREA

The chart shows the values at depth angle 0°

	[feet,inch(m)]		
A	7'3" (2.20)	8'2" (2.50)	9'10" (3.00)
B	9" (0.22)	10" (0.25)	1' (0.31)
C	6" (0.16)	7" (0.18)	8" (0.21)
D	2" (0.06)	3" (0.07)	3" (0.08)
E	7" (0.17)	8" (0.20)	9" (0.24)
F	1'7" (0.49)	1'10" (0.55)	2'2" (0.65)
G	1'8" (0.50)	1'11" (0.58)	2'4" (0.70)
H	2'8" (0.82)	3'1" (0.93)	3'8" (1.11)
I	2'10" (0.86)	3'3" (0.99)	3'11" (1.19)
J	3'5" (1.04)	3'10" (1.18)	4'8" (1.41)
K	3'7" (1.09)	4'1" (1.24)	4'11" (1.49)
L	4'9" (1.45)	5'5" (1.65)	6'6" (1.98)
M	8'1" (2.46)	9'2" (2.79)	11' (3.35)
N	4'6" (1.38)	5'2" (1.57)	6'2" (1.89)
O	7'1" (2.15)	8" (2.45)	9'8" (2.95)
P	8'4" (2.53)	9'5" (2.88)	11'4" (3.45)
Q	10'6" (3.20)	12' (3.65)	14'4" (4.38)
R	12'1" (3.68)	13'9" (4.18)	16'6" (5.02)
S	14' (4.27)	15'11" (4.86)	19'2" (5.84)
T	13'5" (4.10)	15'4" (4.67)	18'4" (5.60)
U	16'9" (5.10)	19' (5.79)	22'10" (6.95)



Approach area

*Mounting Height = 7'3" (2.2m) [feet,inch(m)]

	-15°	0°	+10°
L	2'2" (0.67)	4'9" (1.45)	6'9" (2.06)
M	5'1" (1.54)	8'1" (2.46)	12' (3.65)
O	5'7" (1.69)	7'1" (2.15)	8'2" (2.50)
Q	8'3" (2.52)	10'6" (3.20)	11'8" (3.56)
S	12' (3.66)	14' (4.27)	15'7" (4.76)

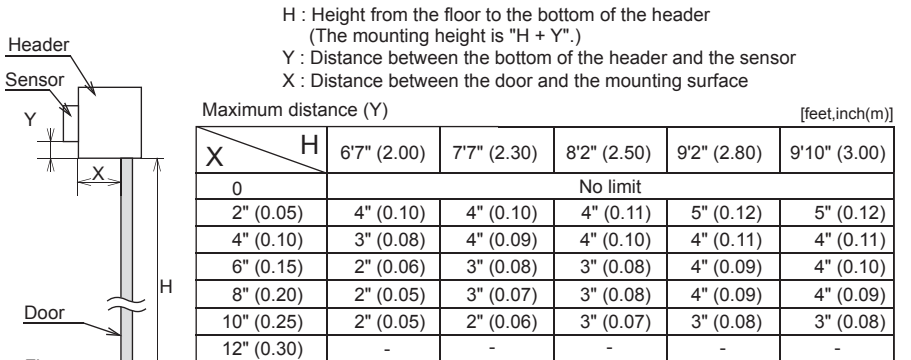
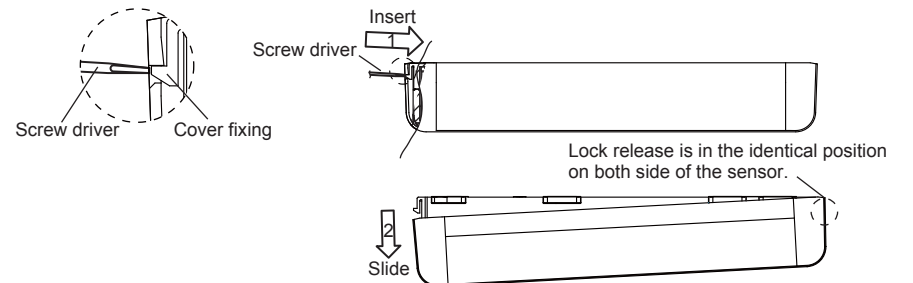
NOTE

The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object. The sensor may not be activated when the entering speed of the object or a person is slower than 2"(50mm) / sec. or faster than 4'11"(1500mm) / sec.

INSTALLATION

1

- Affix the mounting template at the desired mounting position. Refer to the chart in below.
- Drill two mounting holes of $\phi 1/8"$ ($\phi 3.4\text{mm}$).
- To pass the cable through the header, drill a wiring hole of $\phi 5/16"$ ($\phi 8\text{mm}$).
- Remove the mounting template.
- Remove the housing cover with screw driver as shown below. Fix the sensor to the mounting surface with the two mounting screws.



NOTE Make sure not to mount the bottom of the sensor lower than the bottom of the header.

	CAUTION	Make sure to affix the mounting template as described in the above chart, otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible on the header.
Risk of getting caught		

2

Wire the cable to the door controller as shown below.

Power supply	1	1. Grey 2. Grey	1	12 to 24VAC±10% / 12 to 30VDC±10%
Activation output	2	3. White 4. Yellow	2	Form A relay 50V 0.3A Max.
Safety output	3	5. White stripe 6. Yellow stripe	3	Form A relay 50V 0.3A Max.
Test input	4	7. Red (+) 8. Black (-)	4	Opto coupler / Voltage: 5 to 30VDC

	WARNING	Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield otherwise it may cause electric shock or breakdown of the sensor.
Danger of electric shock		

3

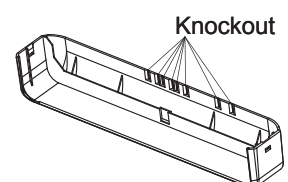
- Plug the connector.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **ADJUSTMENTS 5. Dipswitch settings, Table 1**)

NOTE

Make sure to connect the cable correctly to the door controller before turning the power ON. When turning the power ON or after adjusting the settings, do not enter the detection area for more than 10 seconds in order to enable the presence detection. Do not touch the dipswitches before turning the power ON, otherwise an error occurs.

4

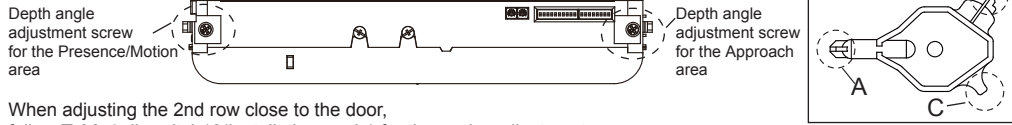
Place the housing cover. If wiring is to be exposed, break the knockout.



	WARNING	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock		

ADJUSTMENTS

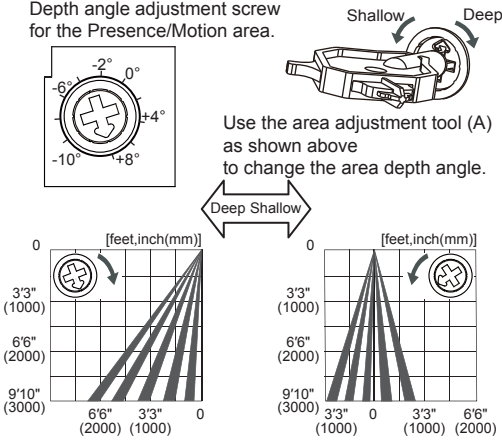
1 Area depth angle adjustment



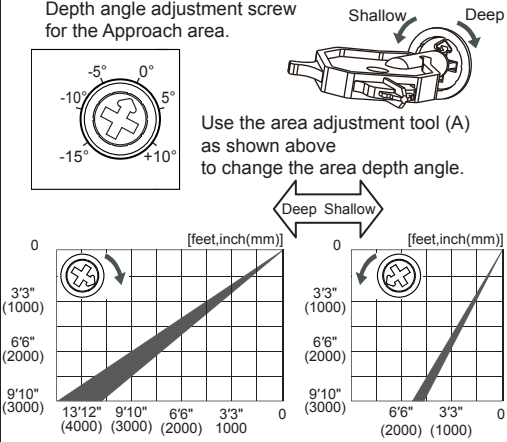
When adjusting the 2nd row close to the door, follow **Table 1** dipswitch 18 (Installation mode) for the easier adjustment. When dipswitch 18 is set to "ON", sensor automatically set back to the operation mode after 5 minutes. If the installation mode is required again, set dipswitch 18 to "OFF", then set to "ON".

NOTE Make sure that the detection area does not overlap with the door / header, and there is no highly reflecting object near the detection area otherwise ghosting / signal saturation may occur.

1-1 Presence/Motion area



1-2 Approach area

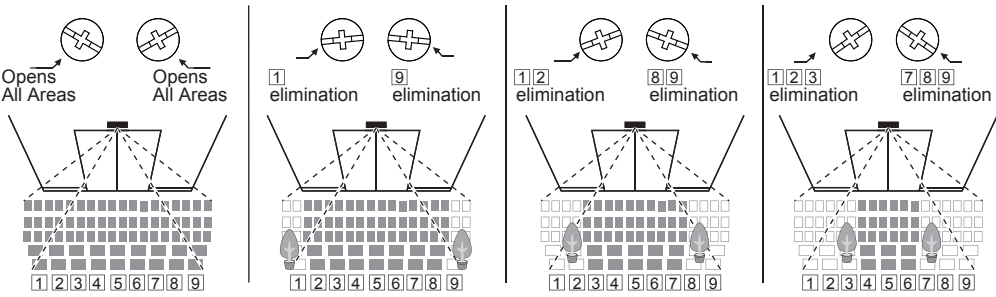


2 Area width adjustment

2-1 Presence/Motion area

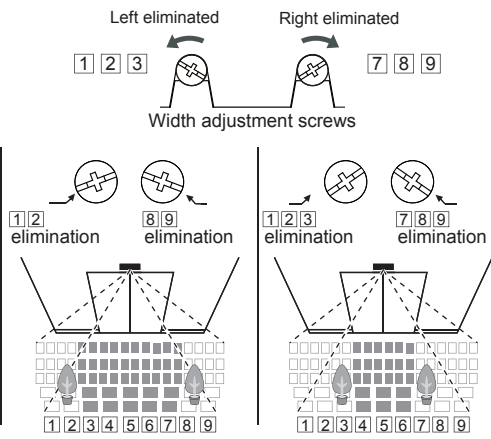
Adjust the Presence/Motion area width with the Width adjustment screws. Each side can be adjusted independently, allowing for asymmetrical settings. Use the area adjustment tool (A) to adjust area width.

NOTE When setting the Presence/Motion area width, make sure to turn the width adjustment screws until it clicks.



2-2 Approach area

Approach area width can be adjusted by changing the Dipswitches 8, 9, 10. See 5. Dipswitch settings, Table 1.



3 Presence/Motion area rows adjustment

Presence/Motion area rows can be adjusted by changing the Dipswitches 6 & 7. See 5. Dipswitch settings, Table 1.

4 Sensitivity adjustment

Adjust the Approach area and Motion/Presence area with potentiometer. Turning it clockwise increases the sensitivity and turning counterclockwise lowers the sensitivity. Use the area adjustment tool (B) to change sensitivity.

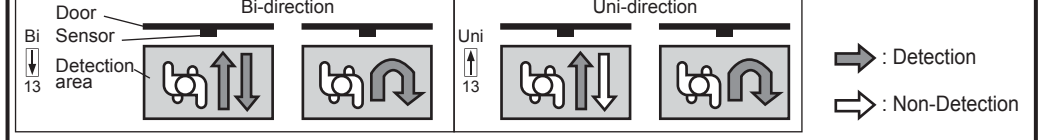
5 Dipswitch settings

The area adjustment tool (C) can be used to change Dipswitch.

Table 1	Function	Setting	Comment
Dipswitch 1	Presence timer	30sec. ↓ ↓	To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.
Dipswitch 2		60sec. ↓ ↓	
Dipswitch 3	Frequency	Setting1 ↓ ↓	When using more than one sensor close to each other, set the frequency different for each sensor.
Dipswitch 4		Setting2 ↓ ↓	
Dipswitch 5	BLUEZONE	OFF ↓ ON ↑	When dipswitch 5 is set to "ON", the BLUEZONE (1st row) is active and looks through the threshold.
Dipswitch 6	Presence/Motion area row adjustment	5rows ↓ ↓	Rows can be eliminated as shown below.
Dipswitch 7		4rows ↓ ↓	
Dipswitch 8	Approach area width adjustment	8 9 10 ↓ ↓ ↓	The width of Approach area can be adjusted by changing the Dipswitches as shown the left.
Dipswitch 9		1 2 3 4 5 6 7 8 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	
Dipswitch 10		1 2 3 4 5 6 7 8 ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓	
Dipswitch 11	Rain mode	Normal ↓ Rain ↑	Set this switch to "Rain" if the sensor is used in a region with a lot of rain.
Dipswitch 12	Snow mode	Normal ↓ Snow ↑	Set this switch to "Snow" if the sensor is used in a region with snow or a lot of insects.
Dipswitch 13	Direction	Bi ↓ Uni ↑	*Please refer to Table 2 for the details.
Dipswitch 14	Simultaneous output	OFF ↓ ON ↑	When Dipswitch 14 is set to "ON", both the activation & safety relay outputs will operate simultaneously regardless of detection area. But only the Safety output relay will respond back with a Safety output when it receives a Test input.

Dipswitch	Function	N.O. ↓	N.C. ↑	Comment
15	Safety output (to door controller)	↓ 15	↑ 15	Select "N.O." / "N.C." for Safety output.
16	Test input (from the door controller)	High ↓ 16	Low ↑ 16	The delay time between Test input and Safety output is 10msec..
17	Future use			
18	Installation mode	OFF ↓ 18	ON ↑ 18	Set dipswitch 18 to "ON" to adjust the 2nd row. During the installation mode only the 2nd row remains active and the operation indicator shows yellow. After setting the row, switch dipswitch 18 "OFF".

Table 2



CHECKING

Check the operation in the operation mode according to the chart below.

Entry	Power OFF	Outside of detection area	Entry into Approach area (6th row)	Entry into 5th row	Entry into 4th row	Entry into 3rd row	Entry into 2nd row	Entry into BLUEZONE (1st row)
Image								
Status	-	Stand-by	Approach detection active	Motion detection active	Presence detection active			
Operation indicator	None	Green	Orange Blinking	Orange	Red	Red Blinking	Blue	
Activation output	OFF ↓ 14	ON ↑ 14						
Safety output	OFF ↓ 14	N.O. ↓ 15 N.C. ↑ 15						

NOTE The response time may differ according to the color of the objects and the color/material of the floor.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. Do not use any cleaner / solvent.
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise an electric shock may occur.
- When the operation indicator blinks green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE

- When turning the power ON, always walk-test the detection area to ensure the proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. plant, illumination, etc.)

TROUBLESHOOTING

Door operation	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Wrong power supply voltage.	Set to the stated voltage.
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.
		Wrong detection area positioning.	Check ADJUSTMENTS 1, 2, 3, 4, 5 .
		Sensitivity is too low.	Set the sensitivity higher.
Door opens when no one is in the detection area. (ghosting)	Proper	Short presence timer.	Set the presence timer longer.
		Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.
		Objects that move or emit light in the detection area.	Remove the objects.
Door remains open	Proper	The detection area overlaps with that of another sensor.	Check Table 1 dipswitch 3 & 4.
		Waterdrops on the detection window.	Use the rain-cover. (Separately available) Or wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
		Detection area overlaps with door / header.	Adjust the detection area to "Deep"(Outside).
	Fast Green blinking	Sensitivity is too high.	Set the sensitivity lower.
		Raining or snowing	Set dipswitch 11, 12 to "Rain", "Snow".
		Wrong setting of dipswitches	Check Table 1 dipswitch 11, 12, 15.
Slow Green blinking	Proper	Sudden change in the detection area.	Check ADJUSTMENTS 4 & Table 1 dipswitch 1, 2. If the problem still persists, hard-reset the sensor. (Turn the power OFF and ON again)
		Wrong wiring or connection failure.	Check the wires and connector.
	Dirty detection window	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.	
Slow Green blinking	Sensor failure	Contact your installer or service engineer.	
	Signal saturation	Remove highly reflecting objects from the detection area. Or change the area depth angle.	
Proper operation	Slow Green blinking	The detection area overlaps with the door / header.	Adjust the detection area to "Deep"(Outside).
		Signal saturation (BLUEZONE)	Remove highly reflecting objects from the detection area. Or change the area depth angle.



MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

WARNING	Disregard of the warning symbol can cause improper operation which may cause death or serious injury.
CAUTION	Disregard of the caution symbol can cause improper operation which may cause injury of a person or damage the object.
NOTE	Special attention is required to the section of this symbol.

- NOTE**
- This product is a non-contact switch intended for ceiling mount for use on automatic sliding doors. Do not use for any other applications.
 - When setting the sensors detection area, make sure that there is no traffic around the installation site.
 - Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
 - Only use the product as specified in the operation manual provided.
 - Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
 - Before leaving the installation site make sure that the product is operating properly and instruct the building owner/operator on proper operation of the door and the product.
 - The product settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock	

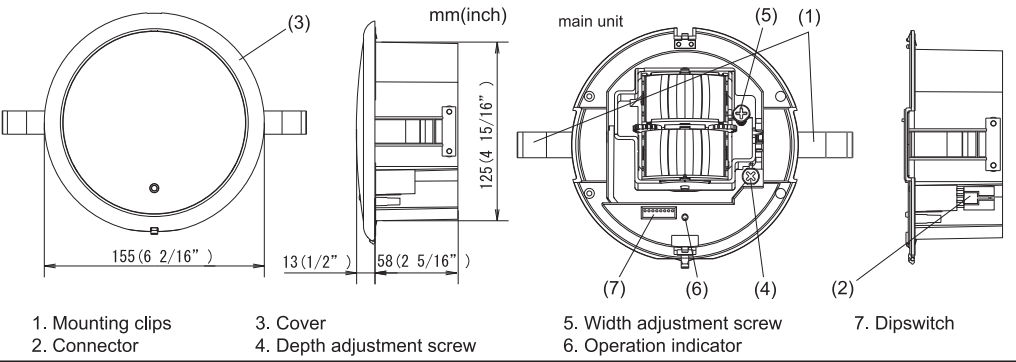
- NOTE** The following conditions are not suitable for sensor installation.
- Fog or exhaust emission around the door
 - Wet floor
 - Vibrating header or mounting surface
 - Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity
 - Highly reflecting floor or highly reflecting objects around the door

SPECIFICATIONS

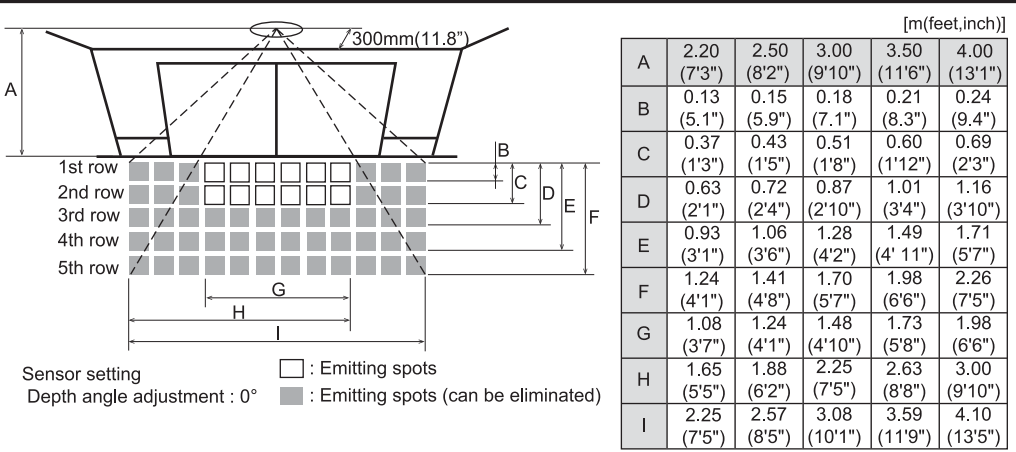
Model	: OA-72C	Output	: Form C relay
Cover color	: Silver		: 50V 0.3A max.(resistance load)
Mounting height	: 2.0 (6'7") to 4.0m (13'1")	Output hold time	: Approx. 0.5 sec.
Detection area	: See DETECTION AREA	Response time	: <0.3 sec.
Detection method	: Active Infrared Reflection	Operating temperature	: -20°C to +55°C (-4°F to 131°F)
Depth angle adjustment	: -15° to +10°	Weight	: 320g (11.2oz)
Width angle adjustment	: -10° to +10°	Accessories	: 1 Cable 3m (9'10")
Power supply	: 12 to 24 VAC (±10%)		: 1 Operation manual
	: 12 to 30 VDC (±10%)		: 1 Mounting template
Power consumption	: < 1.5W (< 5 VA at AC)		
Operation LED	: Green / stand-by		
	: Red / 1st row detection		
	: Orange / 2nd to 5th rows detection		

NOTE The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES



DETECTION AREA



NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object.

*The values of the chart above is of the emitting spots, but not of the detection area.

INSTALLATION

- Affix the mounting template at the desired mounting position. Drill a mounting hole. (recommended diameter : ϕ 130mm (5")) Remove the mounting template.

CAUTION : Risk of getting caught.

Make sure to affix the mounting template as described in the above chart, otherwise it can be dangerous since there may be no presence detection area around the threshold.
- Remove the cover from the sensor. Plug the connector of the cable to the connector of the sensor.

Gray : Power supply
White : COM.
Yellow : N.O.
Green : N.C.

WARNING : Danger of electric shock.

Before starting the procedure, ensure that the power is turned OFF. When passing through the cable to the hole, make sure not to tear the shield, otherwise it may cause electric shock or breakdown of the sensor.
- Install the sensor with cover, keeping the direction of operation indicator towards the door. Press the mounting clips against the sensor to place the sensor into the mounting hole.

NOTE To enable the presence detection, do not enter the detection area for 10 seconds after supplying the power.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See ADJUSTMENTS)
- Mount the cover on the sensor. Mount the cover by making a small gap between sensor and ceiling.

ADJUSTMENTS

- Area depth angle adjustment**
- Width detection area adjustment**
- Dipswitch setting**

Function	Setting				Comment
Sensitivity	Low 1	High 1			Set the sensitivity according to the mounting height. Adjust the sensitivity according to your risk assessment.
Mounting height	2 to 3m 2	2.7 to 4m 2			Set the sensitivity according to the mounting height. Adjust the sensitivity according to your risk assessment.
Presence timer	30sec 3 4	60sec 3 4	180sec 3 4	600sec 3 4	All rows include presence detection function.
Frequency	Setting1 5	Setting2 5			When using more than two sensors close to each other, set the frequency different for each sensor.
Snow mode	OFF 6	ON 6			Set this switch to ON if the sensor is used in a region with snow or a lot of insects.
Area adjustment	5 rows 7 8	4 rows 7 8	3 rows 7 8	2 rows 7 8	Adjust the area detection depth by selecting the dipswitches.

CHECKING

Check the operation according to the chart below.

Entry	Power off	Outside of detection area	Entry into 3rd, 4th or 5th row	Entry into 2nd row	Entry into 1st row	Outside of detection area
Status	-	Stand-by	Motion detection active	Motion/Presence detection active	Presence detection	Stand-by
Operation LED	None	Green	Orange		Red	Green
Output	COM N.O. N.C.	COM N.O. N.C.	COM N.O. N.C.		COM N.O. N.C.	COM N.O. N.C.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

- WARNING**
- Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
 - Do not wash the sensor with water.
 - Do not disassemble, rebuild or repair the sensor yourself, otherwise an electric shock may occur.
 - When an operation LED blinks green, contact your installer or service engineer.
 - Always contact your installer or service engineer when changing the settings.
 - Do not paint the detection window.
- NOTE**
- When turning the power on, always walk-test the detection area to ensure proper operation.
 - Do not place any objects that move or emit light in the detection area. (e.g. plant, illumination, etc.)

TROUBLESHOOTING

Problem	Operation LED	Possible cause	Possible countermeasures	
Door does not open when a person enters the detection area.	None	Power supply voltage. Wrong wiring or connection failure.	Set to the stated voltage. Check the wires and connector.	
	Unstable	Wrong detection area positioning. Sensitivity is too low. Short presence detection timer. Dirty detection window.	Check ADJUSTMENTS 1 & 2 . Set the sensitivity higher. Set the presence detection timer longer. Wipe the detection window with a damp cloth.	
		Door opens when no one is in the detection area. (Ghosting)	The detection area overlaps with that of another sensor. The detection area overlaps with the door / header. Reflecting objects in the detection area. Or reflecting light on the floor. Sensitivity is too high. It snows. Objects that move or emit light in the detection area. Wet floor. The exhaust emission or fog penetrate into the detection area.	Check ADJUSTMENTS 3 . Adjust the detection area to "deep" (outside). Remove the objects. Set the sensitivity lower. Set the snow mode to ON. Remove the objects.
			Door remains open	Sudden change in the detection area. Wrong wiring or connection failure. Sensitivity is too low. Sensor failure
Fast green blinking	Signal saturation	Contact your installer or service engineer.		
	Slow green blinking	The detection area overlaps with the door / header.		Adjust the detection area to "deep" (outside).
Door remains closed		Proper	Wrong wiring or connection failure.	Check the wires and connector.

Air-Wave TX

INDOOR/ OUTDOOR SENSOR TRANSMITTER (TD-21U)

Air-Wave TX INSTALLATION INSTRUCTIONS

Please read this manual carefully before installation.

FEATURES

- Can be installed on the wall.
- Weatherproof structure(IP54) for indoor and outdoor applications.
- Over 8 million codes possible, eliminates interference from neighbors.
- Powered by a 9V alkaline battery(not included).
- Supervised low battery.
- LED indicator for verifying detection and low battery status.

① CAUTION

- 1. Harsh environments**
When using the Air-Wave TX outdoors in severe conditions such as extreme temperatures, rapid temperature change, high humidity, steam or smog malfunction may occur.
- 2. Impact/Shock**
Impact or Shock can cause severe damage or break the Air-Wave TX.
- 3. Light/Moving object**
Direct light or moving objects in front of the Air-Wave TX can cause false alarms.
- 4. Electric Devices**
Mounting the Air-Wave TX less than 3ft(1m) away from electronic devices such as TV's Radios, PC's or Microwaves may result in malfunction.
- 5. Tampering**
Any changes or modifications not expressly approved by OPTEX could void the users authority to operate the equipment (See FCC note under section 13 COMPLIANCE in this manual).

6. Transmission range

- Transmission range may decrease under the following conditions:
- Either Air-Wave TX or receiving unit installed on a metal surface.
 - Presence of a steel door, reinforced concrete or other metal obstructions between Air-Wave TX and receiving units.
 - Places near strong radio sources such as broadcast stations or substation.

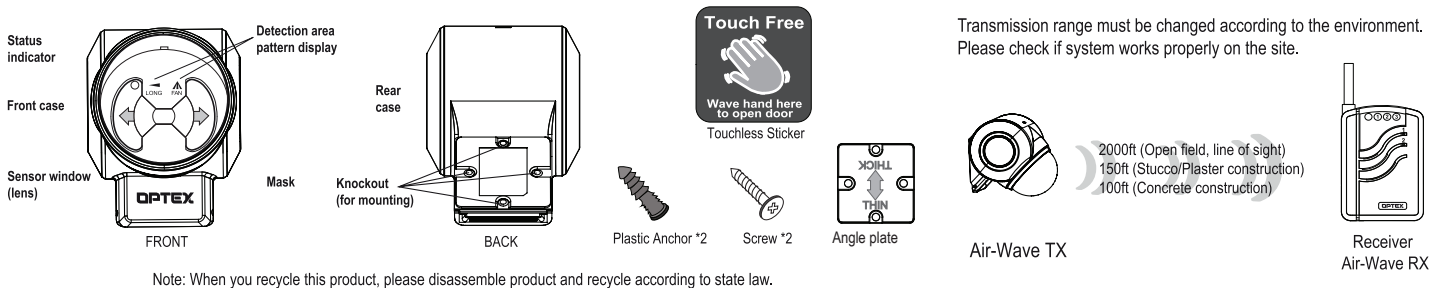
7. Battery replacement

Replace battery every 2 years. Use only 9V alkaline battery.

8. Cleaning

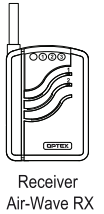
Harsh cleaners such as paint removers or benzene may ruin the surface. Use a soft wet cloth and mild soap to clean.

② PARTS IDENTIFICATION



③ TRANSMISSION RANGE (REFERENCE)

Transmission range must be changed according to the environment. Please check if system works properly on the site.

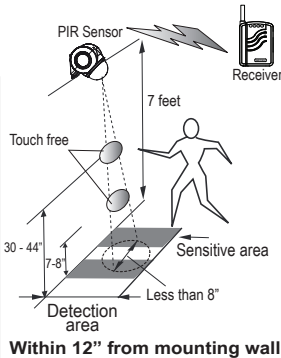


④ DETECTION AREA PATTERN

See Chart Below for approximate detection area dimensions based on mounting height.

Area Pattern

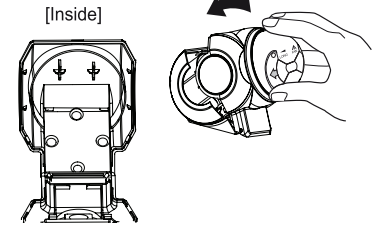
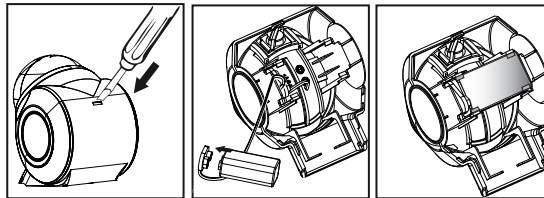
Height	Area Width X Depth
6' (1.8m)	10" X 7" (0.26m) (0.18m)
7' (2.1m)	12" X 8" (0.30m) (0.20m)
8' (2.4m)	14" X 9" (0.35m) (0.23m)



⑤ INSERT THE BATTERY

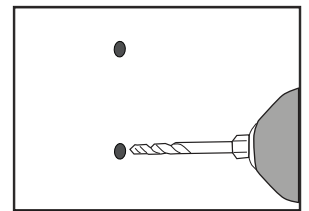
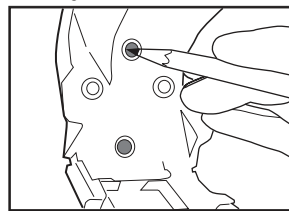
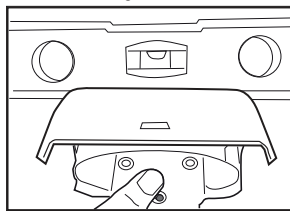
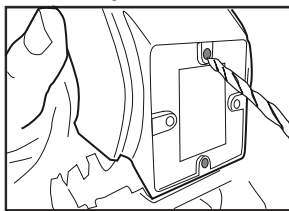
How to set the battery inside the sensor

1. Use a screwdriver to open the casing.
2. Attach the connector to the battery.
3. Fasten the battery with the battery clamp hook.
4. Remove the knockout of the rear cover and fix the rear cover in place using screws.
5. Close the casing.

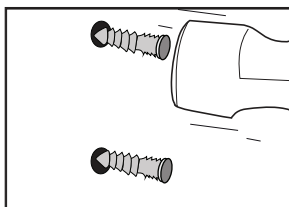


⑥ INSTALLATION

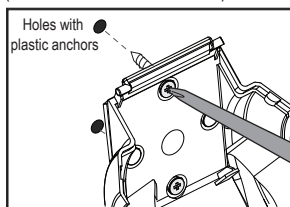
1. Drill two 1/8" mounting holes on back of housing.
2. Hold housing at desired mounting location ensuring it is level.
3. Mark the center of the two mounting holes.
4. Drill holes at the 2 marks using a 3/16" drill bit.



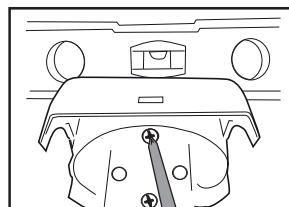
5. Knock in the two plastic anchors.



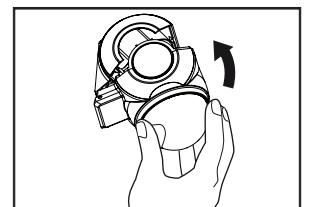
6. Install housing with supplied screws. (DO NOT FULLY TIGHTEN)



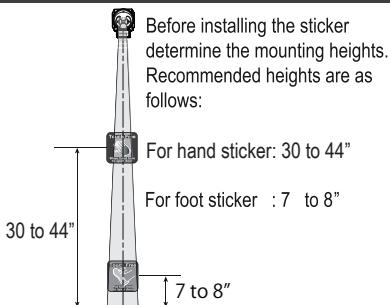
7. Ensure housing is level and tighten screws.



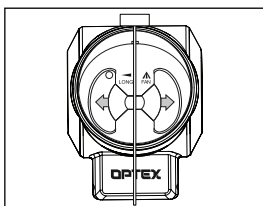
8. Close the sensor casing.



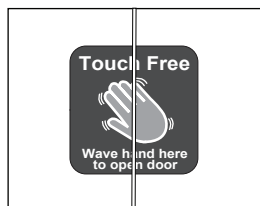
6 INSTALLATION



9. Hang a plum bob in line with the center of the sensor housing to identify center line of detection area.



10. Affix the Touch Free sticker at desired height & centered on the plumb line.

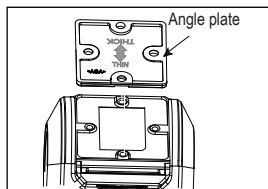


11. Make sure the sensor is detecting when you wave your hand in front of the sticker.

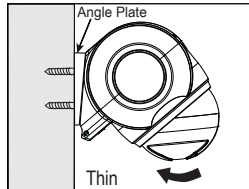
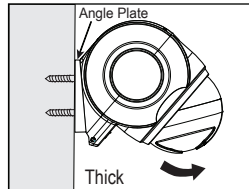


7 ADJUSTMENT FOR AREA DEPTH

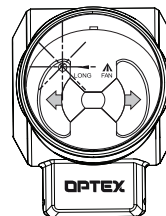
If the detection area is too deep or too shallow, install the included Angle plate at the back side of the housing as necessary.



When installing Angle plate, thick portion at top decrease depth. Thin portion at the bottom increase depth.



8 LOW BATTERY



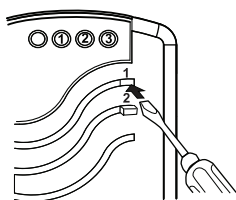
- When the Battery is low, the status indicator starts to flash. When this occurs replace the battery.
- Low Battery can cause false activations.
- There is no need to readjust the Air-Wave TX or the receiver after replacing batteries.

9 TEACH TRANSMITTER CODES TO RECEIVER "TEACH MODE"

Follow these steps to program the transmitter to the receiver. Refer to Receiver Manual for Zone Options-

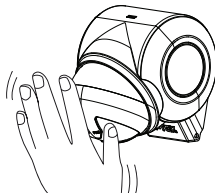
1. Preparation

- Press switch 1 of the receiver until the power indicator starts flashing.
- Press switch 2 to select the zone you wish to assign to the sensor.



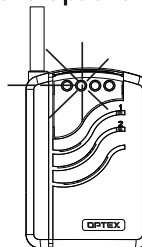
2. Activation

- Wave your hand in front of the Air-Wave TX to trigger it.
- Verify that the receiver has learned successfully by observing the zone indicators of the receiver. Zone indicators should have stopped flashing and remain continuously on.



3. Verification

- After teaching all the transmitter codes (if you have multiple transmitters), return the receiver to normal operating status.
- Make sure that the receiver operates correctly with all the transmitters.



Note:

Cover the Air-Wave TX until you are ready to teach the receiver. Unwanted detection can cause the Air-Wave TX to be assigned to the wrong zone and override the data of other transmitters.

10 TROUBLESHOOTING

1. The system is not operating.

Check the transmitter.

Does the status indicator light up when you wave your hand in the detection area of the Air-Wave TX?	→	If not, check to see whether the battery is inserted correctly. Otherwise try a new battery.
Is the status indicator flashing?	→	Is the detection area setting appropriate? If not, fix the setup.
Is the status indicator flashing?	→	The battery is old. Replace the battery.

Check the receiver.

Is the power indicator of the receiver lit?	→	Is the receiver on? Check the wiring, power switch and connection.
The receiver does not respond to the Air-Wave TX.	→	The Air-Wave TX is not properly recognized by the receiver. Teach the receiver correctly.
The zone indicator of the receiver is on, but nothing happens.	→	The receiver has not been properly setup. Refer to the receiver's manual and verify the setting.
Is there anything blocking the transmission?	→	Relocate the receiver and/or the Air-Wave TX. Metal objects can shorten the effective transmission range.

2. The system is not operating correctly.

A particular zone is malfunctioning.	→	This is probably the transmitter's problem. Check the Air-Wave TX using this zone.
Does direct sunlight or light from automobiles enter the sensor window?	→	Reorient the Air-Wave TX to avoid such light sources.
Is the Air-Wave TX installed on a stable platform?	→	Relocate the Air-Wave TX to a stable platform.
Is there anything that may cause rapid temperature change in the detection area? (e.g. stove)	→	Remove any objects that may cause rapid temperature change from the detection area.
Is there anything that may cause rapid temperature change of the Air-Wave TX? (e.g. air conditioner)	→	Relocate the Air-Wave TX elsewhere.
Before contacting the supplier!	→	Remove the battery, then reinsert the same batteries and verify the Air-Wave TX's operation again.

- If the above solutions do not work, please contact your supplier for services.

13 COMPLIANCE

FCC ID : DC9TD-20U

The changes or modifications not expressly approved by the OPTEX could void the user's authority to operate the equipment. To comply with the FCC RF exposure compliance requirements, this device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter. Note: This equipment has been tested and found to comply with the limits for a Class B Digital Device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction, may cause harmful interference to radio communication. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures. (1) Reorient or relocate the receiving antenna. (2) Increase the separation between the equipment and receiver. (3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. (4) Consult the dealer or an experienced radio/TV technician for help.

IC : 4012A-00000TD20U

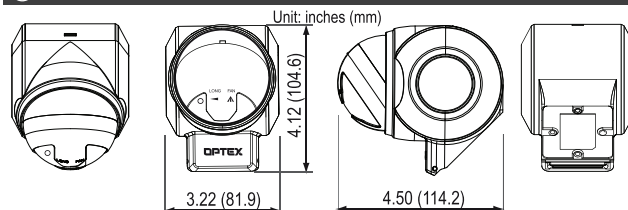
Operation is subject to the following two conditions. (1) This device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that permitted for successful communication.

11 SPECIFICATIONS

Product Series	Prowave Air-Wave TX
Product Name	Indoor/ Outdoor Sensor Transmitter
Model Number	TD-21U
Detection Method	Passive Infrared
Detection Range	6 - 8 feet (1.8 - 2.4m)
Status Indicator	Red LED
Power Source	9V Alkaline Battery (Not Included)
Battery Life	Approx. 2 years [250 times per day at 70°F (20°C)]
Frequency	418MHz
Operating Temperature	15°F ~ 120°F (-10°C ~ +50°C)
Installation Location	Outdoor / Indoor
Weight	6.3 oz (180g)
Accessories	Mounting Screw x 2 Plastic Anchor x 2, Angle Plate x 1 Touchless Sticker for hand

Specifications may change without notice

12 DIMENSIONS



14 WARRANTY

1. This product is warranted under normal use for 2 years from the Lot. number. The Lot. number is printed on the sticker on back side of sensor. The first 2 digits stands for year and the second 2 digits are week of manufacturing. If you have questions, call to your sales representative.
2. The warranty is not applicable when below circumstances will be found:
 - Mechanical or electrical modification(s) are made to the product or it is otherwise altered manually.
 - The product is already been serviced at place(s) other than the manufacturer.
 - It is determined that the product malfunction has resulted from improper use or from an accident. Physical damage will not be covered.
 - No copy of the dated sales receipt has been submitted together with the product to be serviced.



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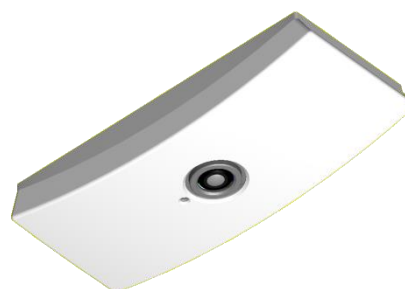
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Charlotte, NC 28211 U.S.A.
TOLL-FREE: 800 877 6656
FAX: +1 704 365 0818
WEBSITE: www.optextechnologies.com

VC-1020 Sensor Unit

Installation Manual

System : VC-1020 Sensor Unit
Issued : July 5th 2014 [First Edition]
Issued by : Giken Trastem Co., Ltd.
Distribution to: Sensor Installer, Installation Engineer

Version: IM-VC1020-1407-1-EN




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SAFETY INDICATIONS

This section provides notes to use the product safely. Please read this section carefully to ensure proper and safe use of the product.



Warning

- ⊘ • Do not operate this product in such a way that a malfunction or failure could directly affect human life.
- ⓘ • If there is any abnormality such as smoke or an unusual smell from the product, stop using it immediately.
- ⊘ • Do not drop or hit the product. If the product has been damaged, stop using it immediately.
- ⊘ • Do not disassemble, modify, or repair the product. Doing so may cause fires and malfunctions.
- ⓘ • This product is class A information technology equipment. Using the product in a household environment can cause electronic jamming. In such a case, the user should take appropriate measures.
- ⓘ • Use the product with the cover firmly attached to prevent falling.



Caution

- ⊘ • This product is intended for indoor use only. Do not install it outdoors.
- ⊘ • This product cannot be used in general households.
- ⊘ • Do not install the product in the following places: (1) Places subject to direct sunlight, (2) Places near fire or hot and humid places, (3) Places where condensation can occur, (4) Places to which vibrations are transmitted directly, and (5) Places affected by rain or water.
- ⊘ • The inside of the product can reach a high temperature during operation.
- ⊘ • Do not pour or apply chemicals such as thinner, benzene, air freshener, or insecticide on the product.

FCC Part 15 Subpart B Class A

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



The CE marking indicates compliance to 2004/108/EC EMC Directive with Standards EN55022 Class A ; EN55024

Giken Trastem assumes no responsibility if the installation and wiring connection which are stated in the instruction manual provided together with this product is not carried out, or if the AC adapter that is provided together with this product is not used, or when product without CE marking is connected to this device.

Conditions of use:

This product is not intended for use in any safety-critical or personal safety application. GIKEN TRASTEM assumes no liability for any accident resulting in personal injury, death, or property damage if this product has been used in the above conditions.

1. INTRODUCTION

SENSOR UNIT

The sensor detects and tracks the number of people accurately using Image Recognition technology. The sensor is installed on the ceiling of entrances and passageways of retail, public facilities etc. to capture movements of people from above.

IN and OUT traffic data is recorded to the sensor continuously every minute and the collected data is sent to the designated server via LAN.

Traffic data can be compiled and used as marketing information.

The sensor can cover movements of the people in a wide area and recognizes and tracks the movements of people accurately therefore can omit people hovering near the counting area to provide an accurate traffic count.

This manual “PALOSSIE AIO (VC-1020 Sensor Unit) Installation Manual (Overseas)” explains the required steps to install the system.

This manual is intended for the system installer.

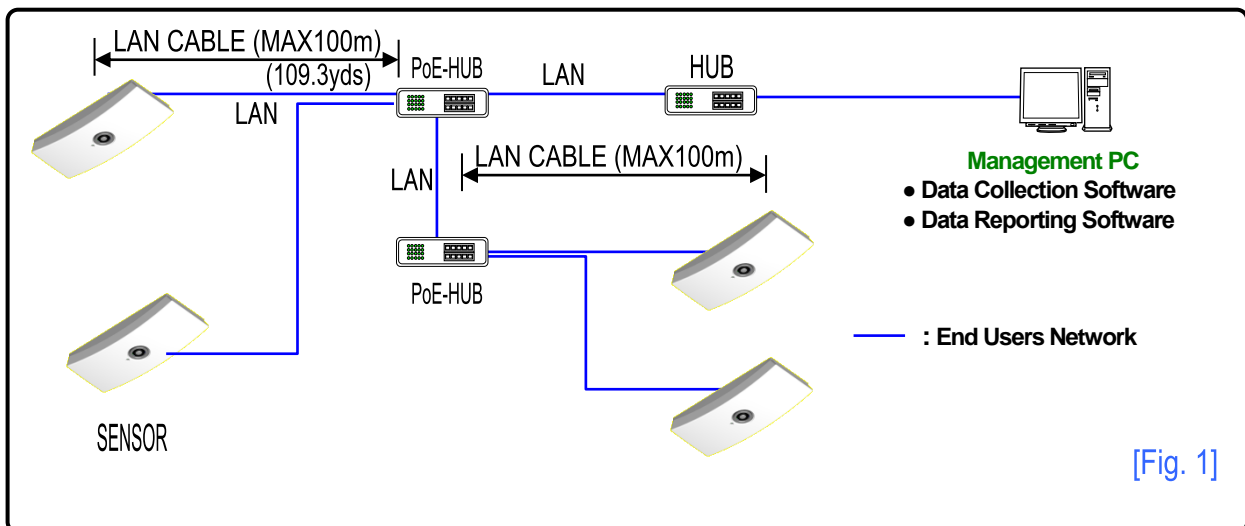
Please follow the steps indicated in this manual when installing the sensor unit.

2. SYSTEM DIAGRAM / INSTALLATION WORK DETAILS

The system diagram below illustrates a general system installation of a mid-scale facility.

Details of SENSOR UNIT ->PoE HUB ->Management PC connection example. (refer to Fig. 1)

The cable length from the Sensor Unit to PoE HUB is max. **100m (109.3yds).**



Work details for System Installation

Item	Work Details	Remarks
1	Signal lines, Power lines, Wire laying work according to System Wiring Diagram	
2	SENSOR UNIT ceiling mount installation and wire connection work	
3	Connect LAN cable	
4	Locally purchase PoE HUB	
5	Data Collection, Reporting Software Installation	Data Collection, Reporting Software (if required)

3. SENSOR UNIT INSTALLATION AND WIRING

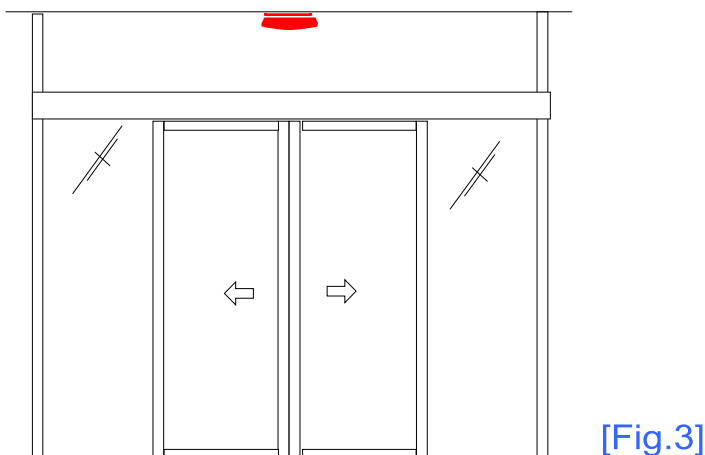
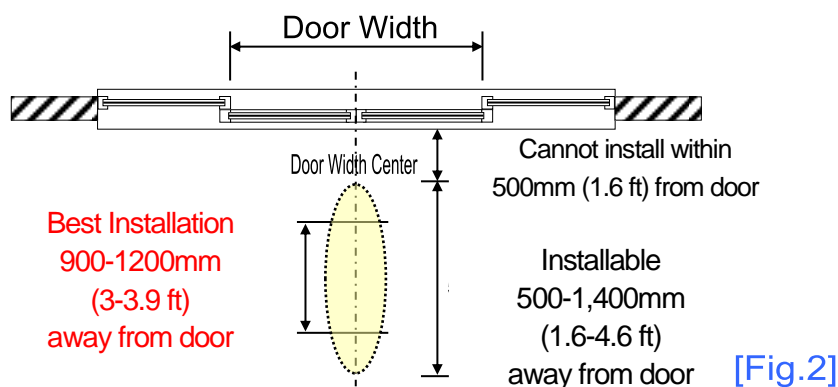
■ Precautions

Please keep the SENSOR lens free from any dust or debris.

■ Installation Location Criterion

Install the SENSOR along the center of the door width, unless there is an object obstructing the center of the door width. (Refer to Fig. 2)

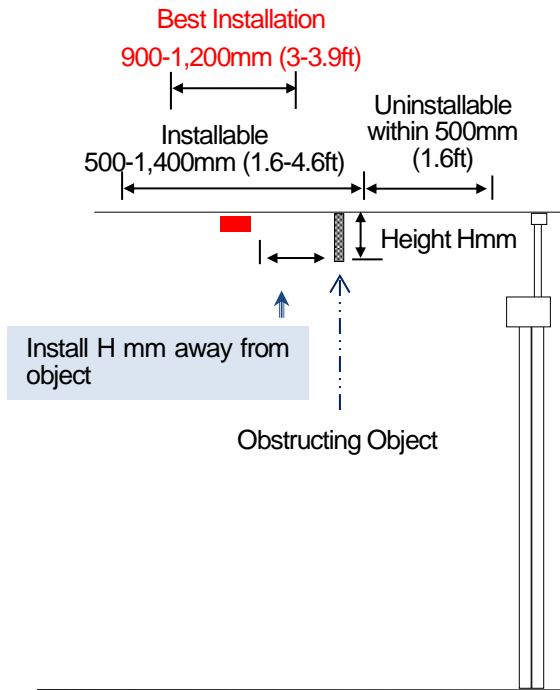
- 1) When installing the sensor at a corridor or passageway, install the sensor in the center, between the walls or pillars.
- 2) When installing 2 sensor units at 1 entrance (for wide entrances), divide the door width into two sections and install the sensors along the center of each divided section.



[Precautions for Installation Location]

If the sensors cannot be installed according to the criteria above, contact and check with our staff and install according to their directions.

Ex) Cannot install SENSOR at the door width center, or the SENSOR cannot be installed between the recommended 500-1400mm etc.

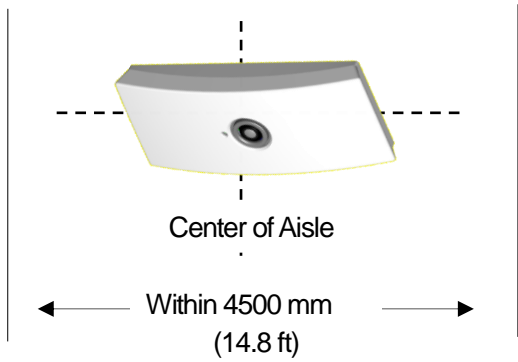


NOTE: When there is an obstructing object near the sensor, install the sensor the "same height as object" away from the object.

[Fig.4]

4. SENSOR INSTALLATION LOCATION EXAMPLE

1) Installation Example for Passageway



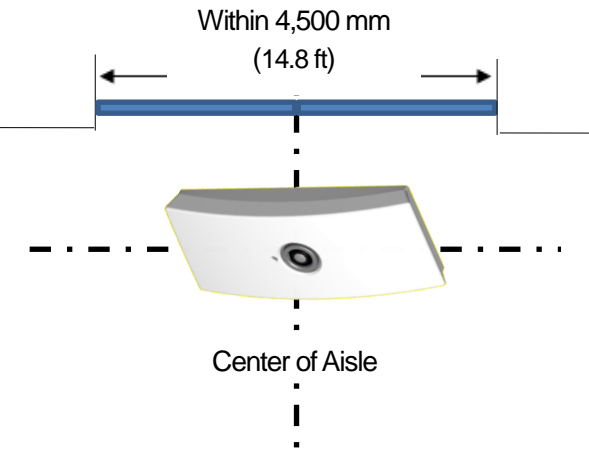
Center of Aisle

Within 4500 mm (14.8 ft)

*The drawing above illustrates a passageway between two walls with a ceiling height over 3,000mm (9.8 ft) and a width less than 4,500mm (14.8 ft) *When the installed height is less than 3,000mm the counting width will be less than 4,500mm.

[Fig.5]

2) Installation Example for Entrance/Passageway



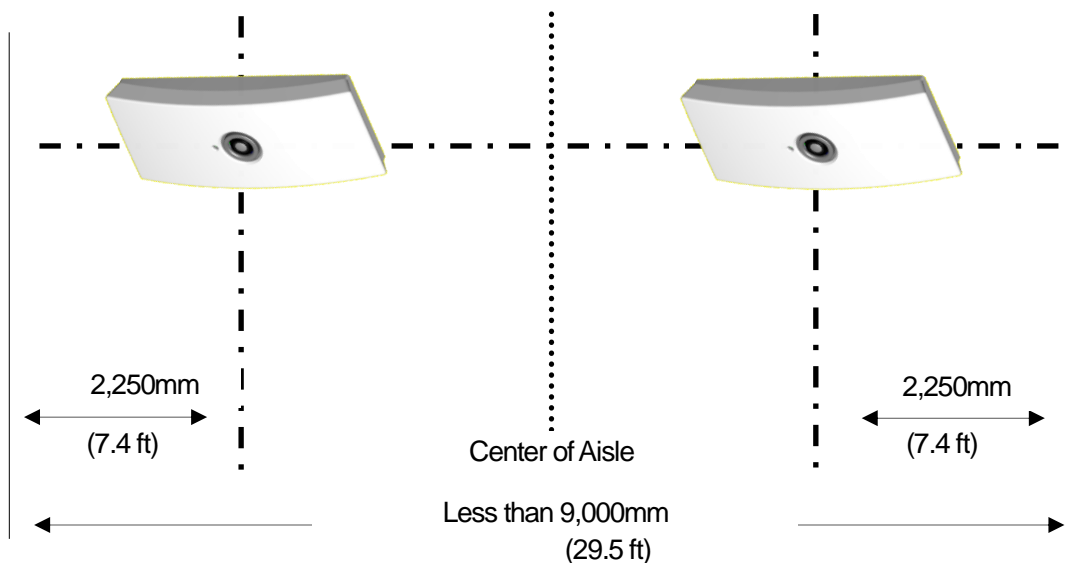
Within 4,500 mm (14.8 ft)

Center of Aisle

* The drawing above is an example of an entrance with a ceiling height over 3,000mm (9.8 ft) and a width of less than 4,500mm (14.8 ft).

[Fig.6]

3) Installation Example for Passageway (Installing 2 SENSORS)



2,250mm (7.4 ft)

Center of Aisle

Less than 9,000mm (29.5 ft)

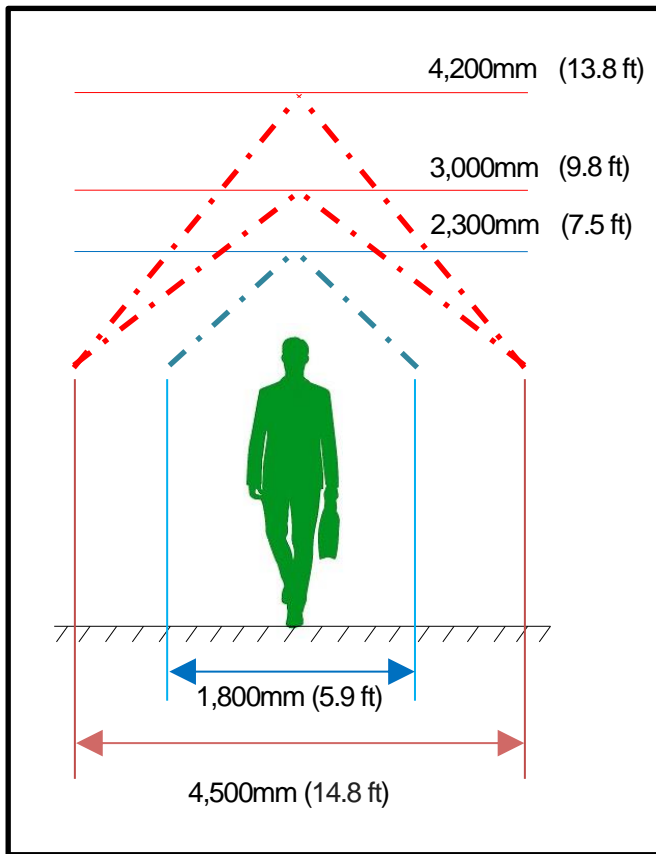
2,250mm (7.4 ft)

* The drawing above illustrates a counting area between two walls with a ceiling height of over 3,000mm (9.8 ft) and a counting width less than 9,000mm (29.5 ft).

* If the ceiling height is less than 3,000mm (9.8 ft), counting width is less than 4,500mm (14.8 ft).

[Fig.7]

*The counting width varies according to fitted heights.



[Fig.8]

Ceiling height and Detection Area

Standard Mode

Ceiling Height	Detection Area
2,300mm (7.5 ft)	1,800mm (5.9 ft)
~	~
3,000mm to 4,200mm (9.8 ft – 13.8 ft)	4,500mm (14.8 ft)

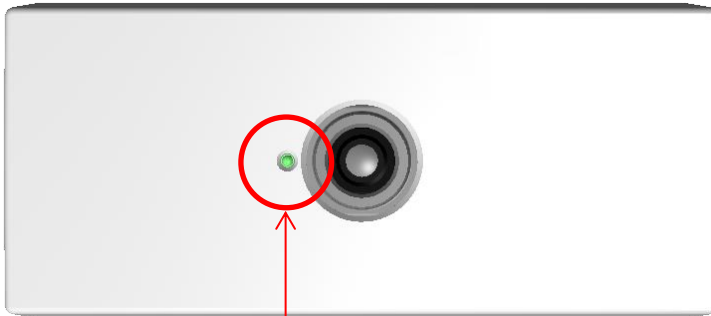
High Mode

*When using high mode the detection area is smaller.

Ceiling Height	Detection Area
4,000mm (13.1 ft)	3,000mm (9.8 ft)
5,000mm (16.4 ft)	4,000mm (13.1 ft)
6,000mm (19.7 ft)	4,000mm (13.1 ft)

5. SENSOR DESCRIPTION

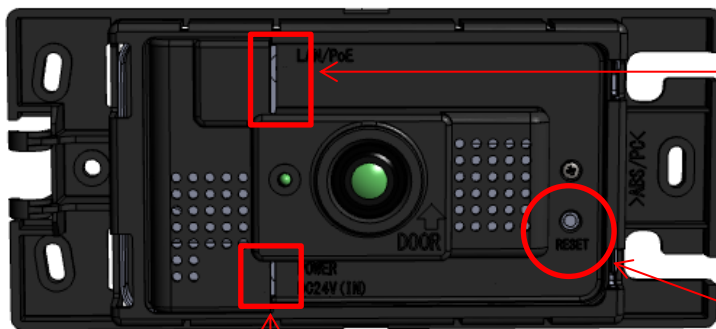
Sensor Cover Attached



Operation LED

Initializing	:AMBER (When powered on will take 20 seconds to boot.)
Normal	:GREEN ON
IN Count	:RED FLASH
OUT Count	:GREEN FLASH
Power OFF	:DARK

Cover Removed



LAN / PoE Port

Power over Ethernet switching hub (PoE HUB) is connected via LAN cable.

DC Jack

AC adapter can be connected when a PoE is not used.

IP Address Reset Switch

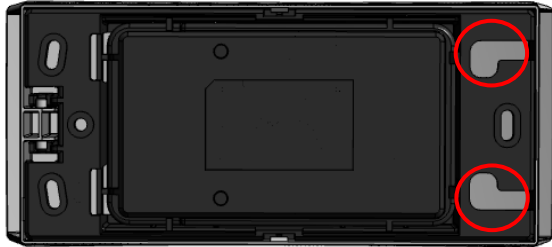
*Registered IP address of the sensor can be initialized by holding down this switch for 5 seconds or longer.

Note: The default IP address is "192.168.0.249" / Subnet Mask is "255.255.255.0"

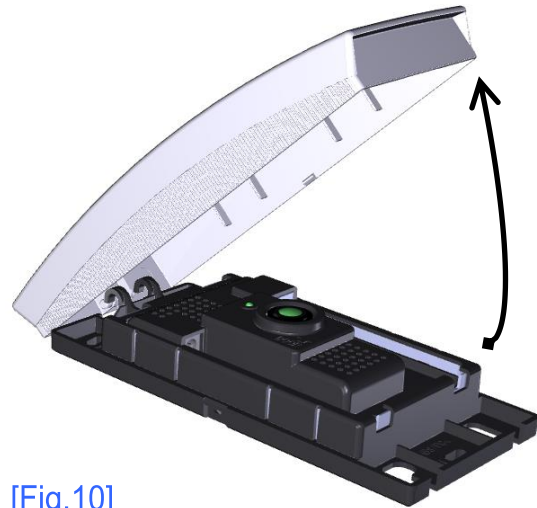
6. SENSOR UNIT INSTALLATION

■ Removing the sensor unit cover

- 1) Insert your fingers in the location indicated in RED bottom of sensor and pull the cover from the unit. (Refer to [Fig. 9])
- 2) Completely remove the cover from the sensor unit. (Refer to [Fig. 10])



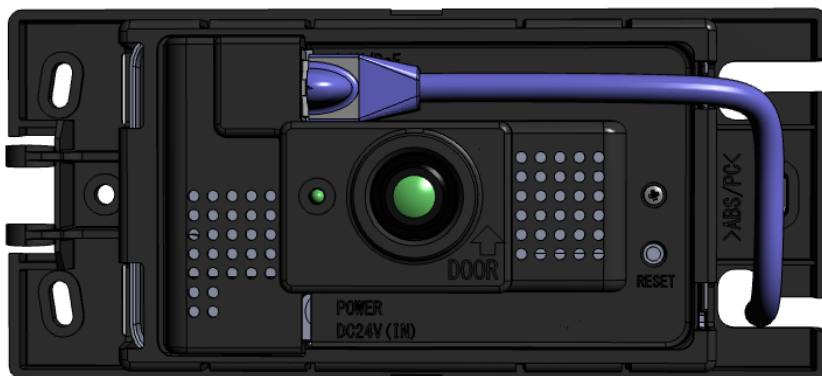
[Fig.9]



[Fig.10]

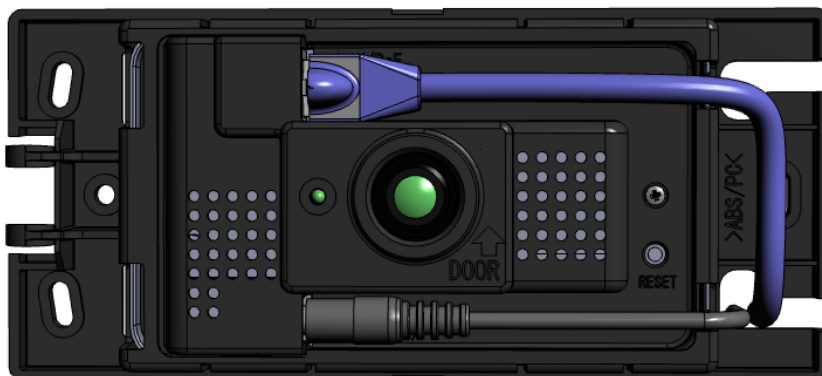
■ Wiring the sensor unit

- 1) Connect the LAN cable. (Refer to [Fig.11])



[Fig.11]

- 2) When supplying power from the power adapter without using PoE, insert the DC jack as indicated below. (Refer to [Fig.12])




[Fig.12]

DC24 (DC Jack) max.7W

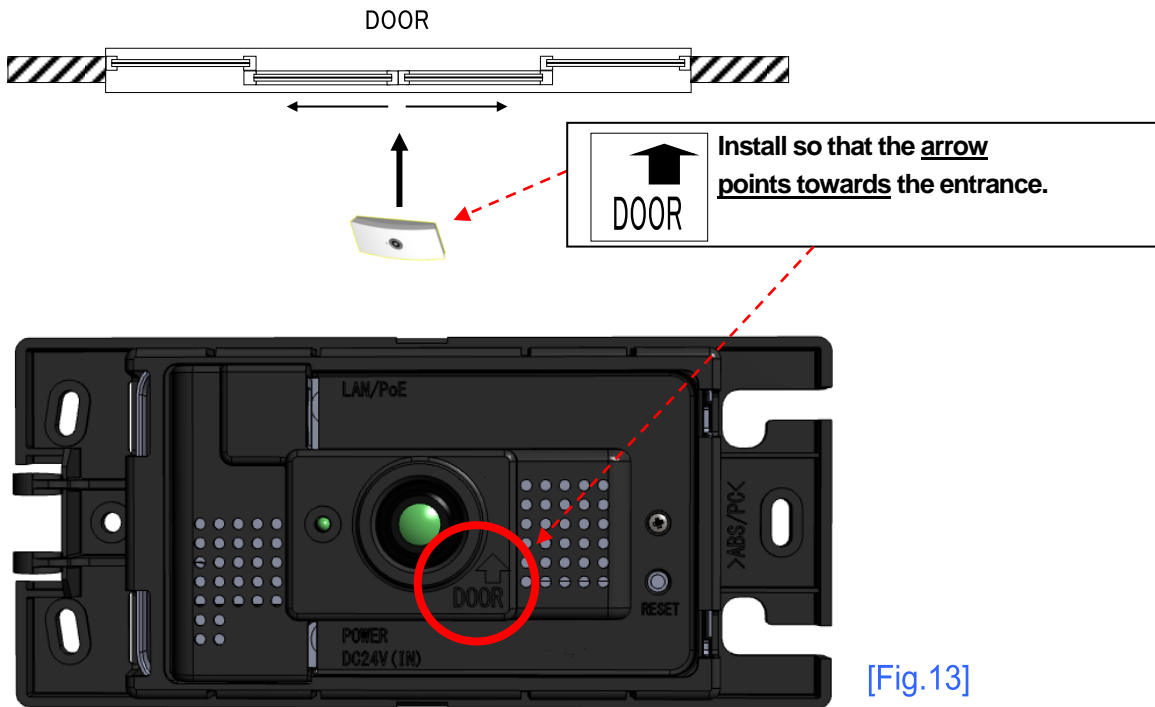
■ **Sensor Installation**

1) There is a specific sensor mounting direction.

The DOOR Indicator  on the sensor unit indicates the direction to install the sensor.

Mount the sensor with the DOOR Arrow pointed towards the entrance.

The sensor can also be installed at areas without doors such as passageways, please install in the most suitable area in those cases. (Refer to [Fig. 13])



[Fig.13]

2) Secure the sensor unit to the ceiling at 3 points with screws (board anchors or suitable screw depending on ceiling material).

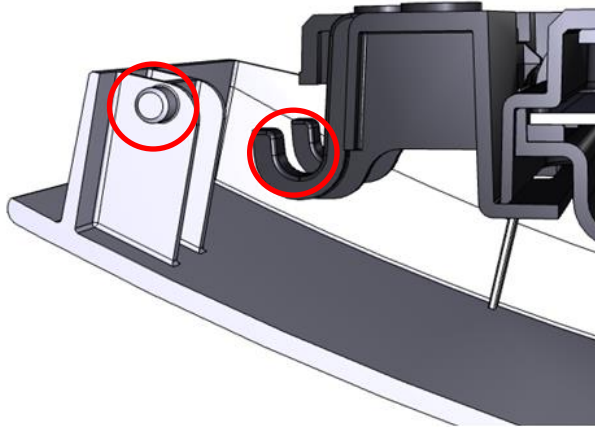


[Fig.14]

* Cables should be attached to the actual sensor unit. Omitted for explanation purposes.

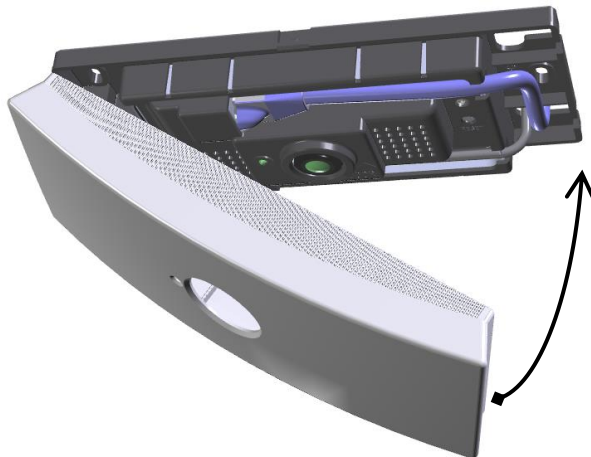
■ Attaching the Sensor Cover

- 1) After securely fixing the sensor to the ceiling, reattach the cover. Hook the cover to the unit.
(Refer to [Fig. 15])



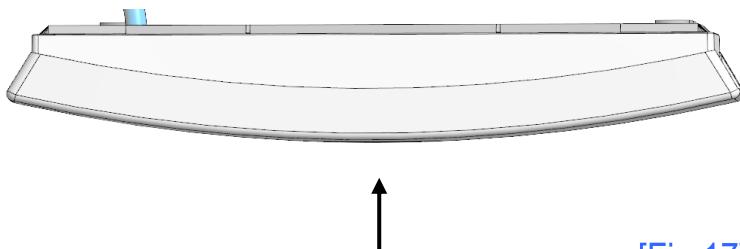
[Fig.15]

- (2) Attach the cover to the sensor unit. (Refer to [Fig. 16])



[Fig.16]

- (3) Push the cover up until it is secured to the unit. (Push the cover till it Clicks shut.) (Refer to [Fig. 17])



[Fig.17]

Sensor Installation work is complete.

7. WEB SETTINGS

Do NOT connect the LAN cable to the END USERS network until the SENSOR UNIT network settings are completed.

■ Web Settings.

(1) Connect PoE HUB (injector) to sensor unit. (Refer to Fig. 18)

(2) Power up the sensor (will take 20 seconds to initialize)

While the sensor is initializing the LED will light AMBER, after the sensor is initialized the LED will turn on GREEN.

(3) Connect the setup PC to sensor unit via PoE HUB (PoE injector)

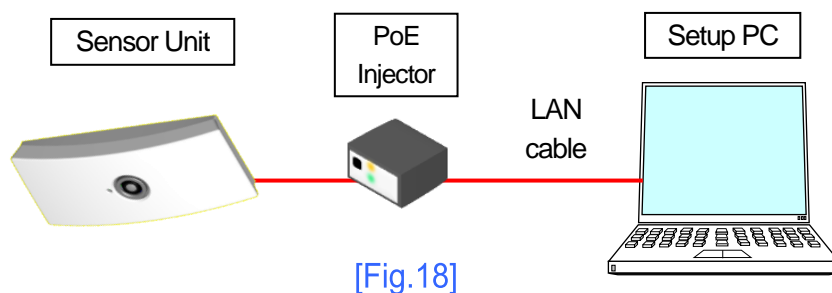
*Setup PC requirements: Operating System (Windows VISTA or later) / Internet Explorer 8 or later.

*The sensor unit default IP address is "192.168.0.249". Please change the Setup PC network parameters to the same IP network range to enable communication between the setup PC and sensor (eg. 192.168.0.250).

(4) Setup the following network and sensor setup parameters.

Set the IP address, subnet mask, default gateway, port number and time settings, sensor mounting height, counting area, counting direction.

Please refer to "Web Settings Manual" for setup details.



8. CONNECT TO NETWORK

After completing the web settings, connect the LAN cable to end users network via PoE HUB.

(Please insert the LAN connector, until it clicks)

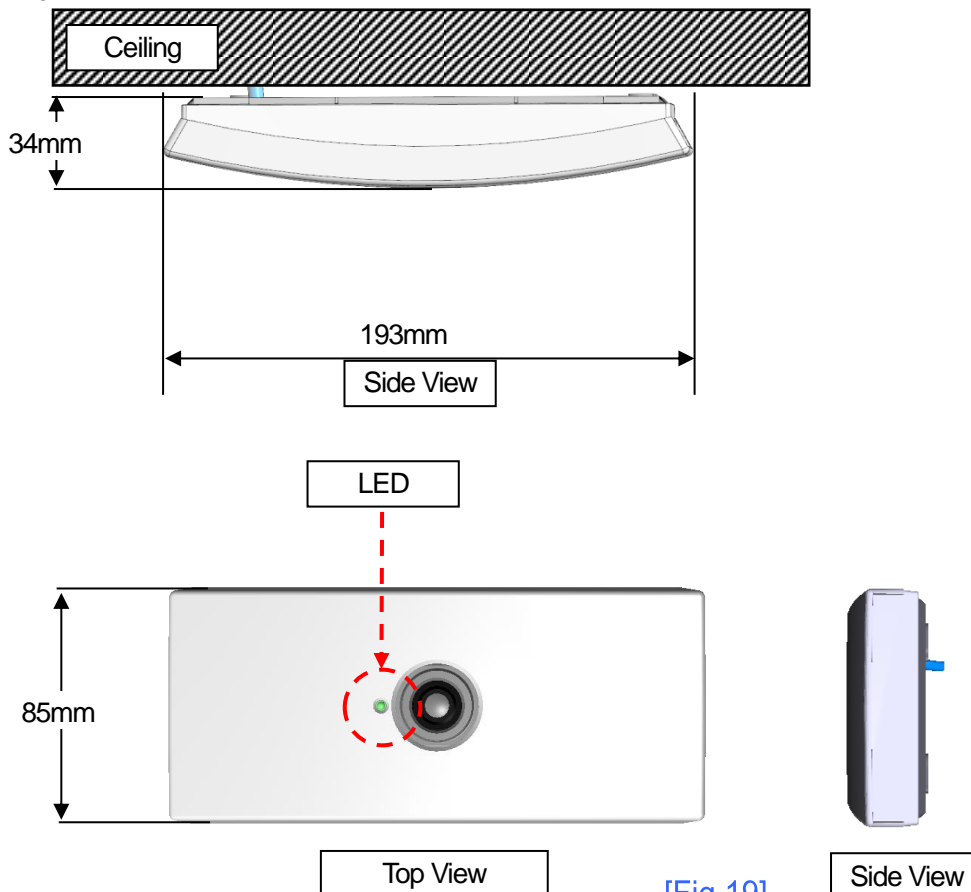
***Upon connecting the LAN, sensor connects the end user's network. Recheck the IP Address of the sensor, before connecting the network.**

9. SENSOR UNIT Specifications

SENSOR UNIT (VC-1020) Specifications

Item	Specifications	Remarks
Dimensions	W : 193 mm (7.6inches) H : 85 mm (3.35inches) D : 34 mm (1.34inches)	Refer to [Fig. 19]
Installed Height	2,300mm to 4,200mm (7.5 to 13.8 ft)	High mode:4,000mm to 6,000mm (13.1 to 19.7 ft)
Power Source	DC48V (Max. 7W)	DC Jack: 24V
Cable Type	CAT5-UTP	
Wiring Distance	Distance to PoE HUB within 100m (109.3 yds).	
Connector	LAN connector	
LED Indicator	GREEN ON: Power ON (Normal) AMBER : Initializing (20 secs.) DARK : Power OFF	RED FLASH : IN GREEN FLASH: OUT

View



[Fig.19]

CONTACT DETAILS

DISTRIBUTOR**MANUFACTURER**

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- Seoul Office 603 Lawyer's Tower 1573-10 Seocho-Dong, Seocho-gu, Seoul, 137-070, KOREA
TEL : +82-(0)2-582-7018 FAX: +82-(0)2-582-7019

! Operating Hours (Contact)

- Weekdays: AM 9:00 to PM 17:30 (GMT +9:00)
- Weekends/Holidays: Closed (Respond on next working day.)



ACCURANCE-3D

Anti-Tailgate / Anti-Piggyback Sensor System

Model No :Control Box A3001CB

:TOF Sensor A3001S

Specifications and Operation examples

(Version Draft 0.16)

Specifications and Model names are not fixed yet. 2014, October 07. Rik Murata



OPTEx CO., LTD.

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Introduction

A3001 is Anti-Tailgate/Anti-Piggyback sensor system that uses Time Of Flight technology.

This product can only be incorporated with the size limited Interlock door.

Note that the product does not prevent unauthorized entry physically.

The product is designed to register only and therefore not to prevent property loss and casualty, or physical damage.

Please note that the manufacturer and distributors are not liable for any densification by any damages.

System contents

The following items are contained in this system:

Control Box A3001CB

TOF sensor A3001S

1. Part Names

Control Box A3001CB



< A3001CB >

NOTE : Keypads are not available yet, in October, 2014.

At lower left side : Power inputs(2), 2 Power output sockets for A3001S, 2 keypad terminals(2x4), 2ch x 5 inputs, 2ch x 8 outputs

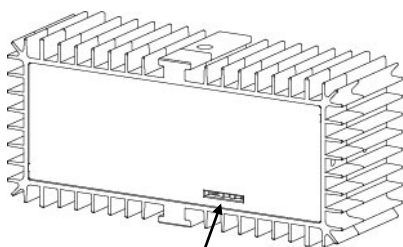
At lower center : RS-232C interface, USB 2.0 x 4, Ethernet(RJ-45) x 2

LAN #1(Left) "192.168.1.250" with DHCP server

LAN#2(Right) "192.168.2.250" with DHCP server

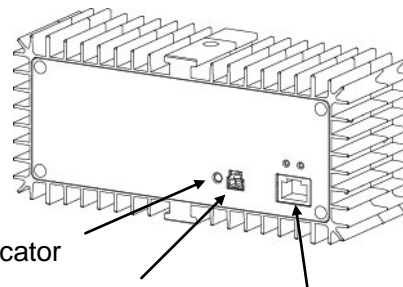
NOTE : You need to connect PC using "Remote desktop function" to see the display on A3001CB.

TOF Sensor A3001S



Operation Indicator

Front Side



Power Indicator

Power Supply

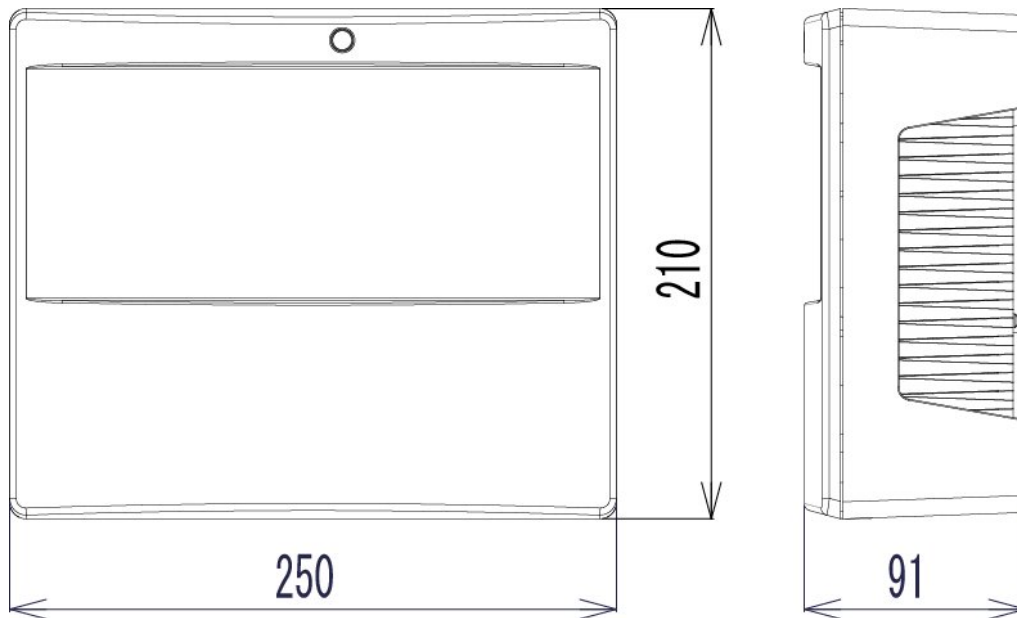
LAN Connector

Back Side

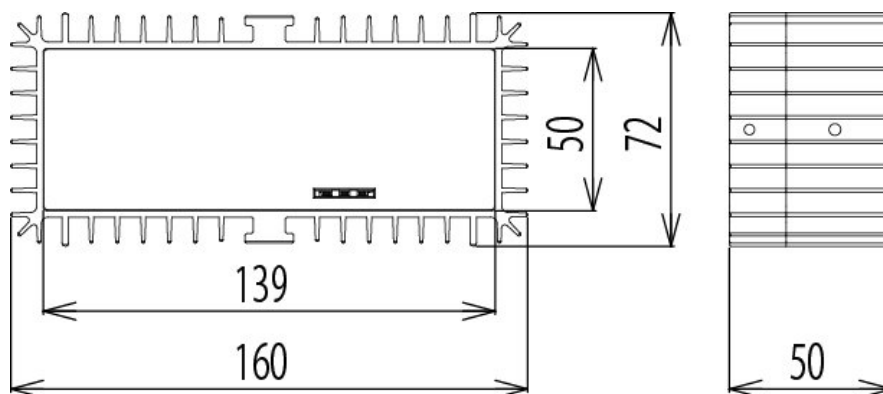
2. Specifications

2-1. Outer Dimensions

Control Box A3001CB



TOF Sensor A3001S



2-2. Common Specifications

Items	Specifications	Remarks
Ambient operating temperature	-10°C - +50°C	
Ambient operating humidity	0% - 80%	No condensation
Ambient operating illuminance	0lx – 100,000lx	
Installation location	Indoor	
Sensor mounting height	2.3m - 2.6m	A3001S for 2.9m height
Applicable door	size limited Interlock door for example, 1 x 1.5m	
Maximum detection height of person	2.05m	Depends on installation height
Power supply	24VDC (±10%)	
Power consumption	TOF Sensor : 10-20W (typ.) Control box : 10-20W (typ.)	Max power consumption is 50-70W for Control Box and 2 TOF sensors.



2-3. LED Indications

2-3-1. Control Box A3001CB

Mode	Position of LED	LED Color	LED status	Function
Operation	Next to Power switch	Green	ON	Power ON
Start up	On Control Box	Green	Blinking at 2Hz	Learning Door Position
		Green	ON	Position Initialization Complete
		Red	Blinking at 2Hz	Operating System starting up
		Red	ON	Operating System start up Complete
		Orange	Blinking at 2Hz	Sensor Initialization
		Orange	ON	Sensor Initialization Complete
		Green	ON for 2sec.	TOF System ready to run
		Red		
Operation	On Control Box	Green	Blinking at 2Hz	AIR Detection
		Green	ON	AIR Non Detection
Output	On Control Box	Orange	ON for 0.2sec.	Zero output
		Orange	ON for 2sec.	One Person output
		Red	ON for 2sec.	More Person output
		Orange	ON for 2sec.	Suspicious output
		Red		
Error	On Control Box	Orange	Simultaneous Blinking at 2Hz	When NOT communicating (e.g. LAN disconnection, hardware/software defect)
		Red		
		Orange	Alternative Blinking at 2Hz	Insufficient Reflection
		Red		

2-3-2. TOF Sensor A3001S

Mode	Position of LED	Color	LED status	Function
Operation	Back side of TOF Sensor	Green	ON	Power-ON
Start-Up	Front side of TOF Sensor	Green	ON for 2sec.	During Power-Up (first 2sec)
		Red		
		Blue		
		Blue	Simultaneous Blinking at 2Hz	When NOT communicating
Red				
Operation	Front side of TOF Sensor	Green	Blinking at 2Hz	AIR Detection
		Green	ON	AIR Non Detection
Output	Front side of TOF Sensor	Blue	ON for 0.2sec.	Zero output
		Blue	ON for 2sec.	One Person output
		Red	ON for 2sec.	More Person output
		Blue	ON for 2sec.	Suspicious output
		Red		
Error	Front side of TOF Sensor	Blue	Simultaneous Blinking at 2Hz	When NOT communicating (e.g. LAN disconnection,)
		Red		
		Blue	Alternative Blinking at 2Hz	Insufficient Reflection
		Red		

2-4. Control Box A3001CB Specifications

2-4-1 Control Box A3001CB basic Specifications

Items	Specifications	Remarks
Power supply	24VDC (±10%)	
Power consumption	10-20W (typ.)	
Basic System	Embedded PC	
OS	Embedded Windows	
Start-up time	60 - 120 Sec	
Dimensions	W:250mm H:210mm D:91mm	
Mass	1,800g	Without LCD
Mounting method	3 Screws	
Monitor	None	
ROM	Compact flash 2G byte	
SSD	80GB	For DATA storage.
LAN 1	Ethernet (Gigabit) RJ-45	Fixed IP with DHCP Server (192.168.1.250)
LAN 2	Ethernet (Gigabit) RJ-45	Fixed IP with DHCP Server (192.168.2.250)
USB	USB 2.0 4ch	only with special password
Real-time clock	Provided	*Life expectancy of battery (CR2032) to be considered as weaken batteries may cause initialization of date and time setting.
Power switch	Provided	
Power indicator	Green LED	
Output indicators	3 LEDs (Green, Red, Orange) x 2ch	
I/O (for door PLC controller)	I/O board (2ch Primary, Secondary) 5 inputs x 2ch 8 outputs x 2ch	See 1-4.
I/O Outputs 1-5	outputs	Photo MOS Output 30V DC 0.05A(Max)
I/O Outputs 6	Heartbeat output 0.33Hz	Active Sink
I/O Output 7-8	Spare outputs	Close
I/O Input 1-4	Outer door contact	Photo coupler Input
I/O Input 5	Spare input	24VDC

2-4-2. Control Box A3001CB terminal configurations

Keypad terminal configuration

	Keypad			
	1	2	3	4
Primary	+5V	TXD	RDX	GND
Secondary	+5V	TXD	RDX	GND

NOTE : Keypads are not available yet, Oct. 2014.

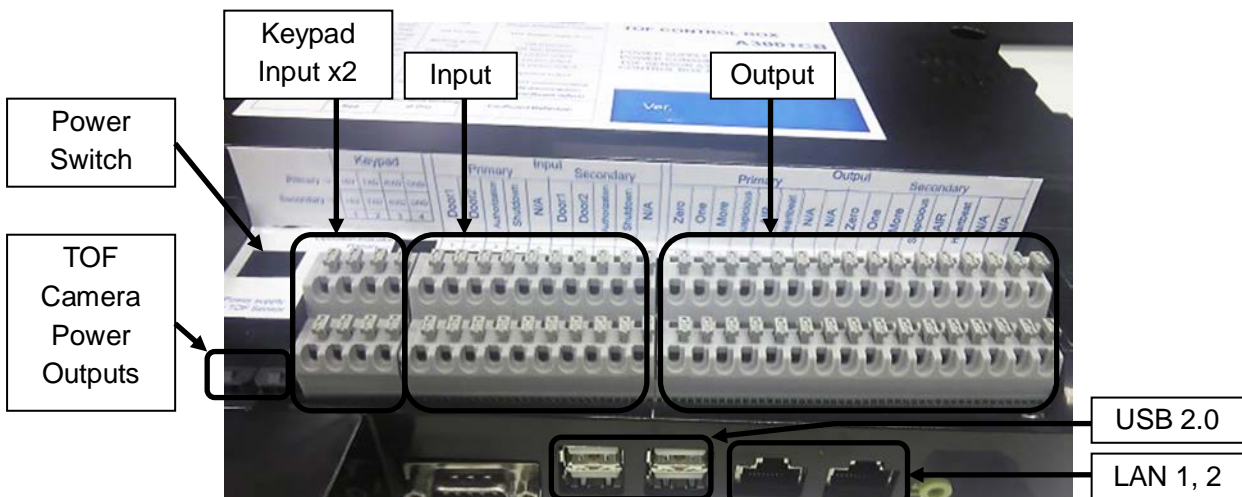
Input terminal configuration

Input									
Primary				Secondary				Common	
1	2	3	4	5	6	7	8	9	10
Door1	N/A	Authorization	N/A	Door 1	N/A	Authorization	N/A	Other sensor	Shutdown

Output terminal configuration

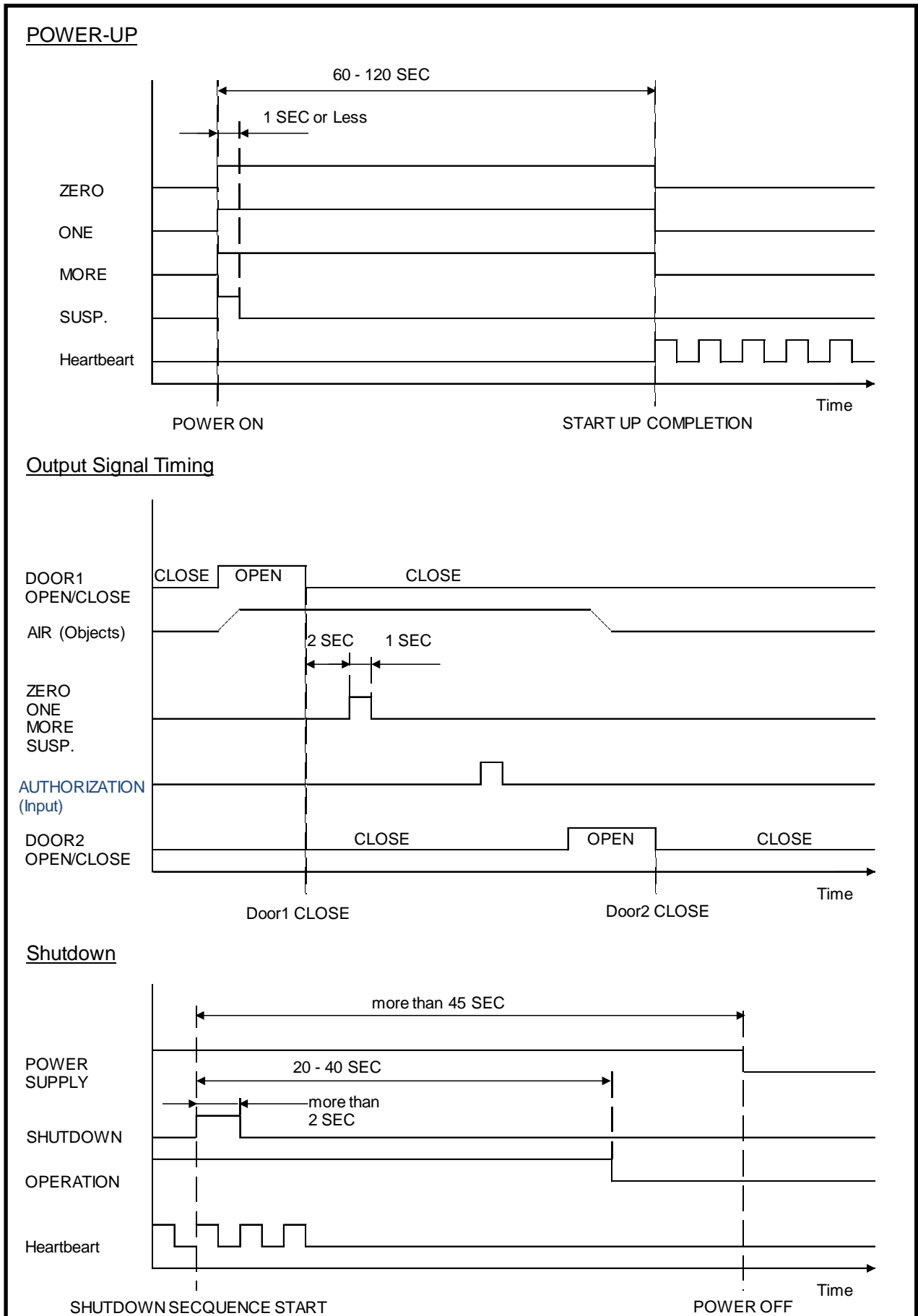
Output															
Primary								Secondary							
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
Zero	One	More	Suspicious	AIR	Heartbeat	N/A	N/A	Zero	One	More	Suspicious	AIR	Heartbeat	N/A	N/A

NOTE: "N/A" terminal can be used for the customer's usage.



2-4-3. Input / Output Signal diagram

Heartbeat output makes a 0.33 Hz signal as a heartbeat signal.



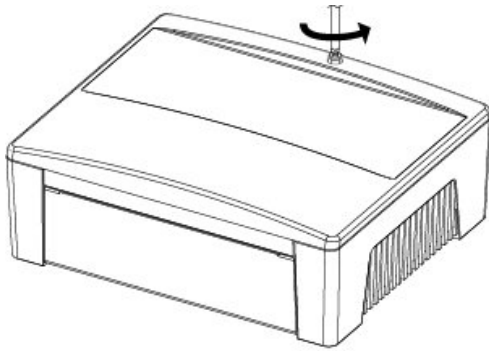
2-5. Time of Flight Sensor A3001S Specifications

Items	Specifications	Remarks
Detection method	Time Of Flight	
Light source	IR LED	
Image pixels	176 (H) 132 (V)	
Angle of view	Horizontal: approx. 70 degrees Vertical: approx. 55 degrees	
Power supply	24VDC (±10%)	Supplied from Control Box
Dimensions	160mm (W) 72mm (H) 50mm(D)	Excluding cable
Mass	600g	
Mounting method	Screwed on SMB(*) or ceiling panel 1/4 inch Screw * 2	(*)Sensor Mounting Box
Power indicator	Green LED	
Output indicators	3 LEDs (Green, Red, Blue)	
I/O	LAN 1ch (Ethernet) RJ-45	

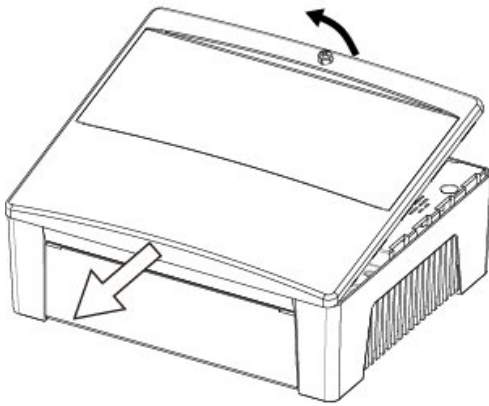
NOTE : 50 degree x 40 degree version is considered for the higher mounting height up to 4m.

2-6. Operation Method

2-6-1. Disassembly method of Top Case

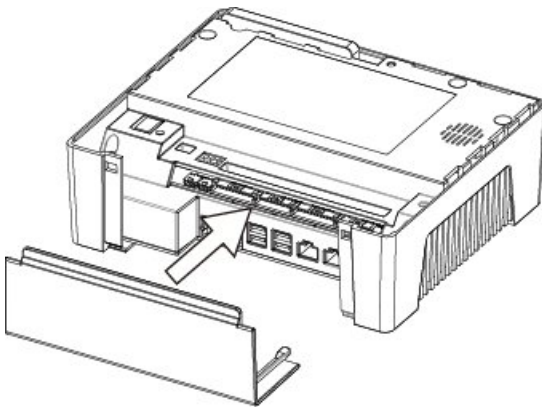


1. Turning the screw on the upper side of body.
※The screw does not come off.

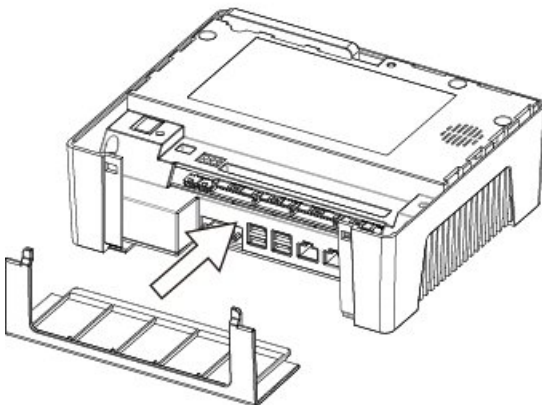


2. Take off two nails by picking up Top Case as shown in the figure on the left.

2-6-2. Assembly method of Front Case



1. Front Case can be used in 2 ways by assembly direction.



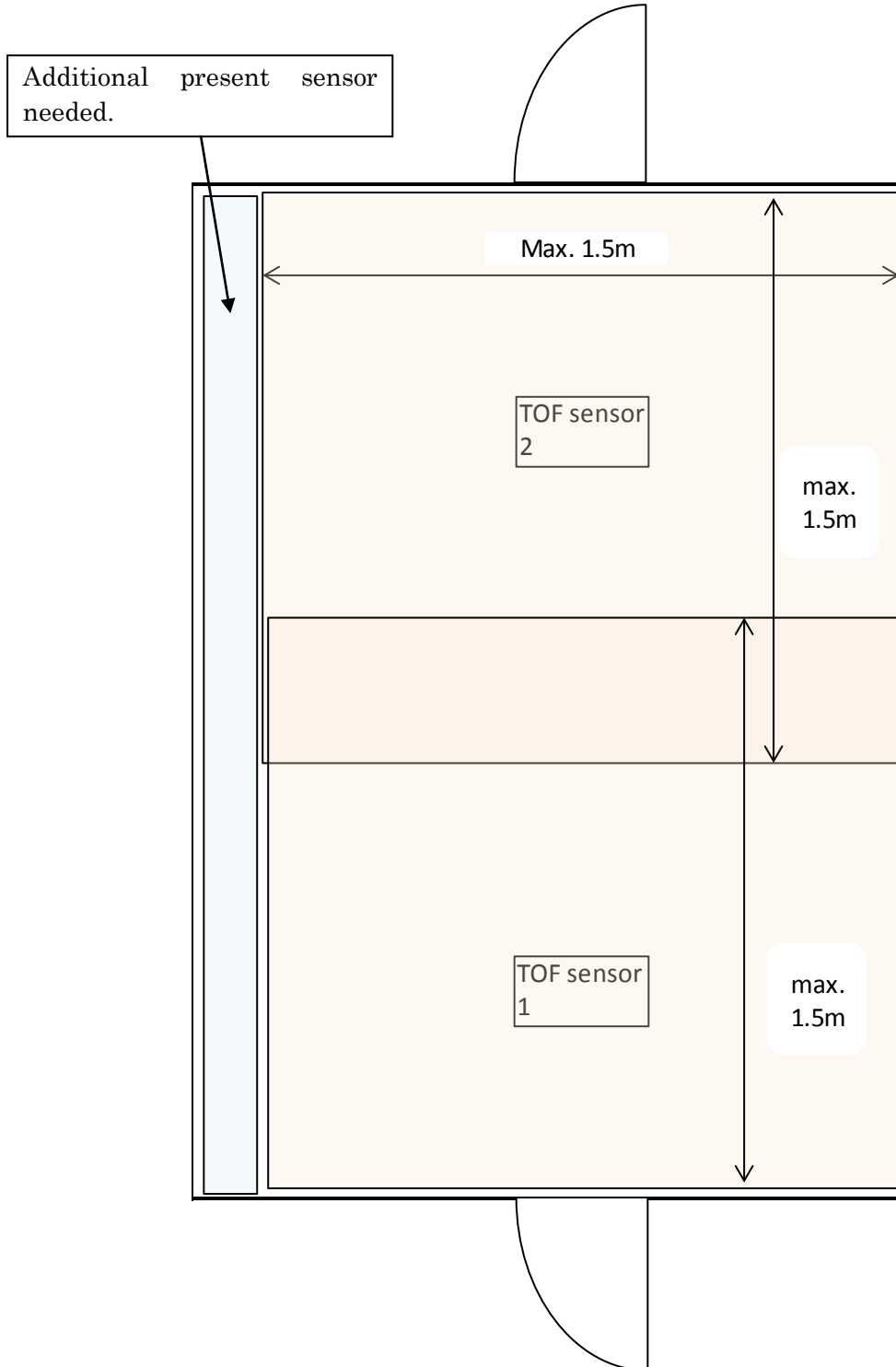
2. For front wiring assembly Front Case as shown in the figure on left lower, for back wiring assembly Front Case as shown in the figure on left upper.

3. Installation

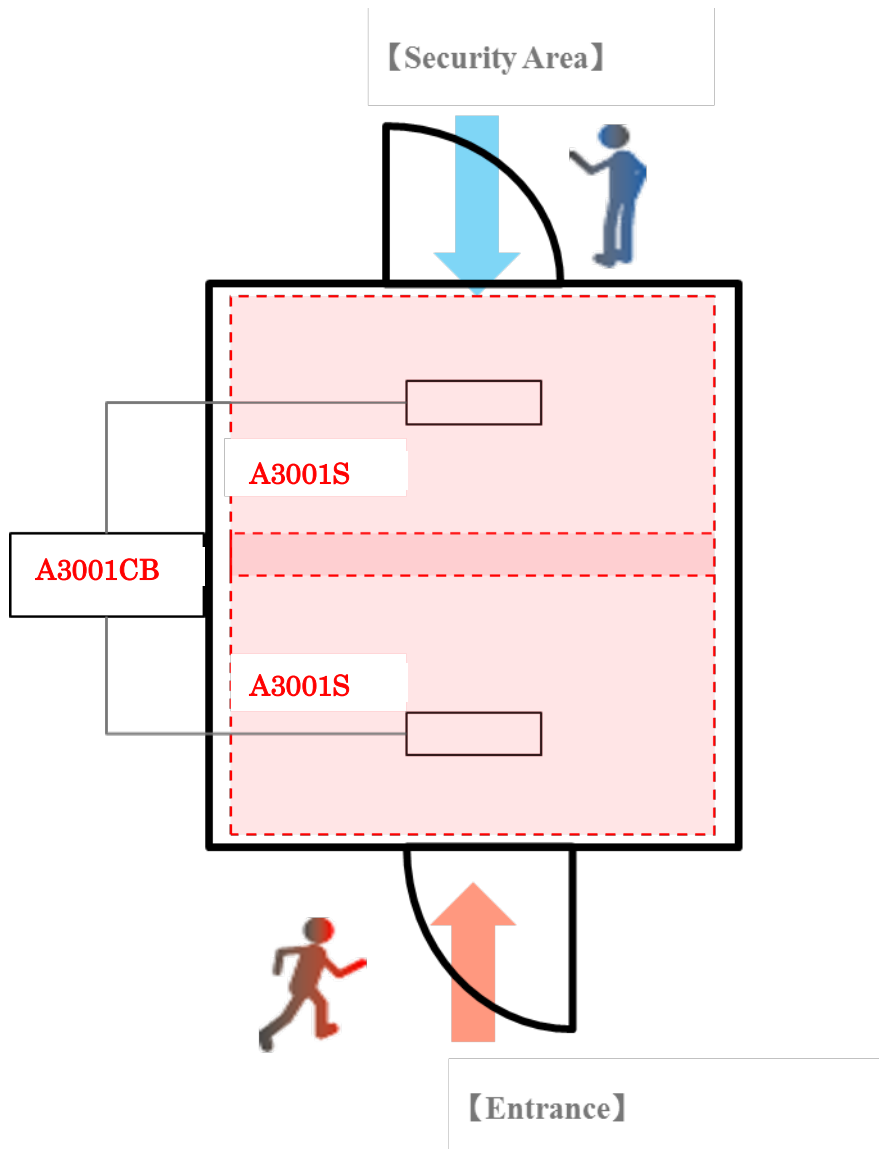
3-1. Installation dimensions (an example for Interlock Application)

3-1-1. Mounting position of A3001S TOF sensor

A3001S TOF sensor installation height : 2.3 – 2.6m (Standard) 2.6 - 2.9m (Higher version)



(Installation Example for Interlock Application)



Interlock example

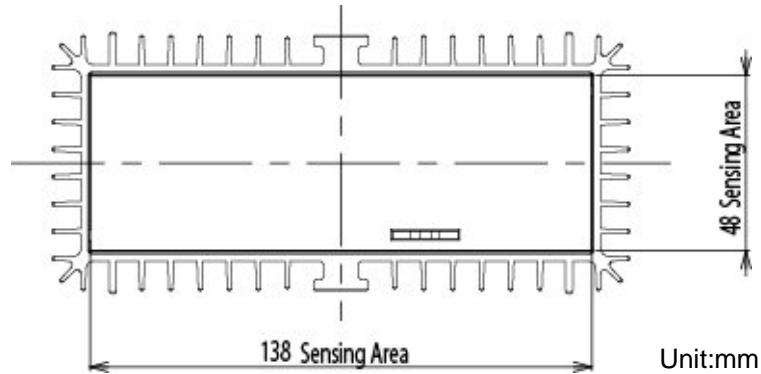
A3001CB can control two TOF sensors, A3001S at the same time.

3-1-2. How to mount TOF Sensor

When mount TOF Sensor, ensure that there is no obstacle in the Sensing Area (138mm*48mm) as shown in the figure below, and don't cover 30mm above TOF Sensor.

*Make sure that avoid contact of a part of the door (ex.brush) with the surface of Sensing area.

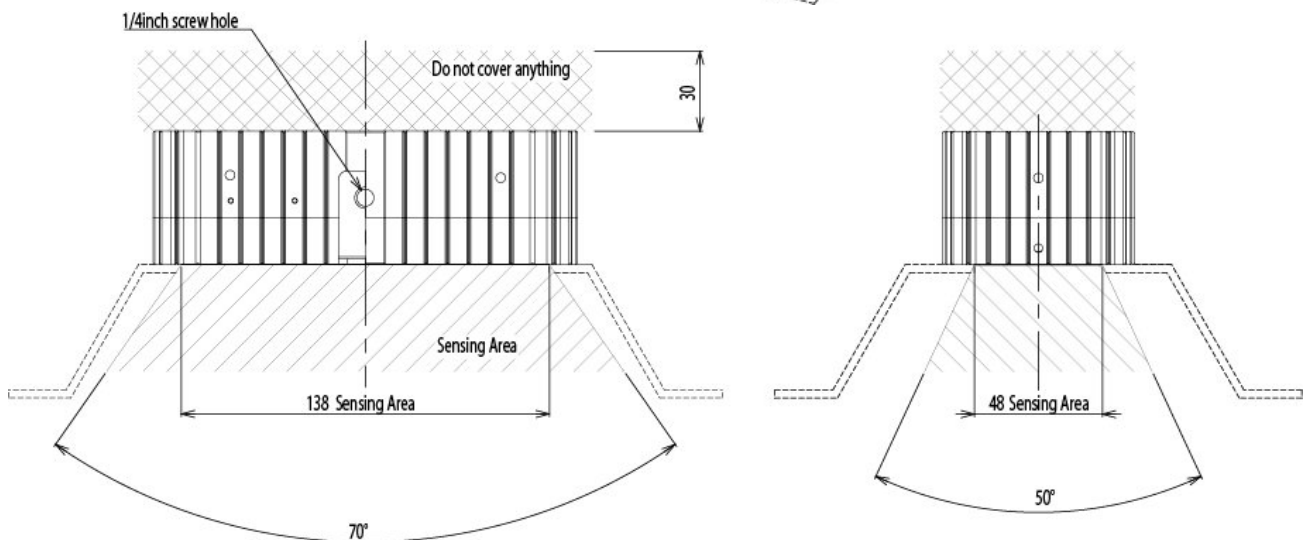
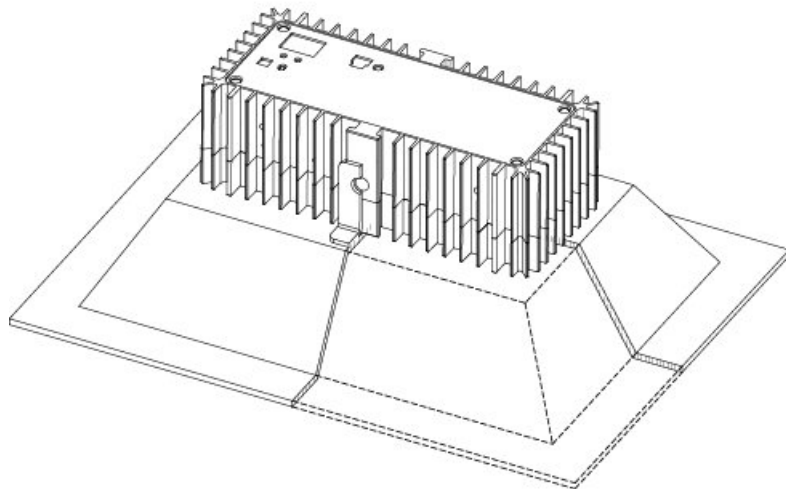
*Keep TOF Sensor not to feel static electricity to restrain the dust adhesion to a Sensing area.



If ceiling height is lower than 2.3m, make a mounting jig such as shown in the below.

*The following drawing is reference information.

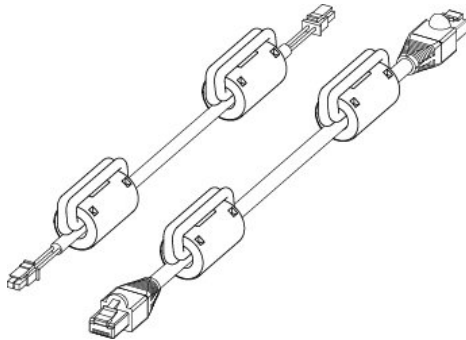
Actually, please mounting based on the usage of the door, each law and regulation.



3-2. Wiring

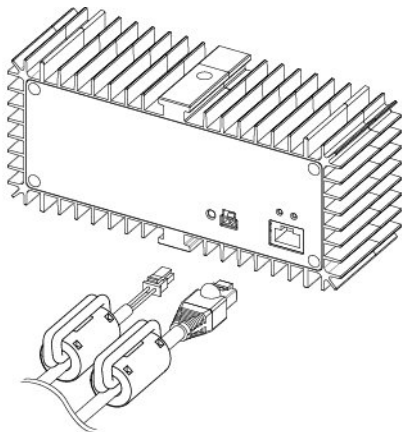
3-2-1. Wiring between Control Box and TOF Sensor

Connect the Control Box and TOF Sensor with the provided Sensor Power Cable and LAN Cable.

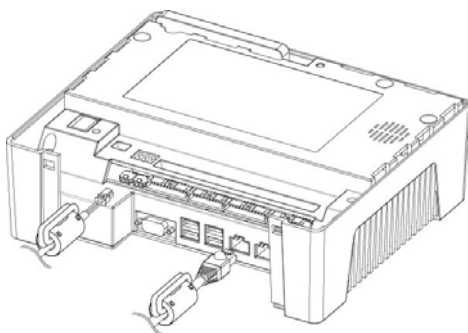


1. Prepare Sensor Power Cable and LAN Cable as shown in the figure on the left.

*When use two units of TOF Sensor, prepare 2set of each cable.



2. Insert both cables to back of the TOF Sensor as shown in the figure on the left.
Insert the connectors all the way until the lock is in place.
To remove connectors, pull out cables while pressing the locks.



3. Insert both cables to the Control Box as shown in the figure on the left.
Insert the connectors all the way until the lock is in place.
To remove connectors, pull out cables while pressing the locks.

*When use one unit of TOF Sensor, please connect to LAN1 (left side)

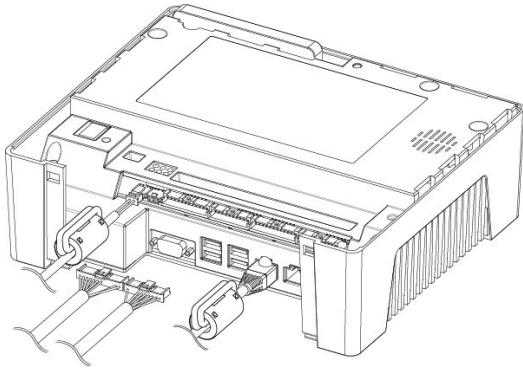
4. When all cables are connected, TOF Sensor wiring is completed.



3-2-2. Wiring between Control Box and Door Controller

Connect the Control Box and Door Controller with the Cables.

1. Prepare the I/O Cables to connect I/O outputs/Inputs.

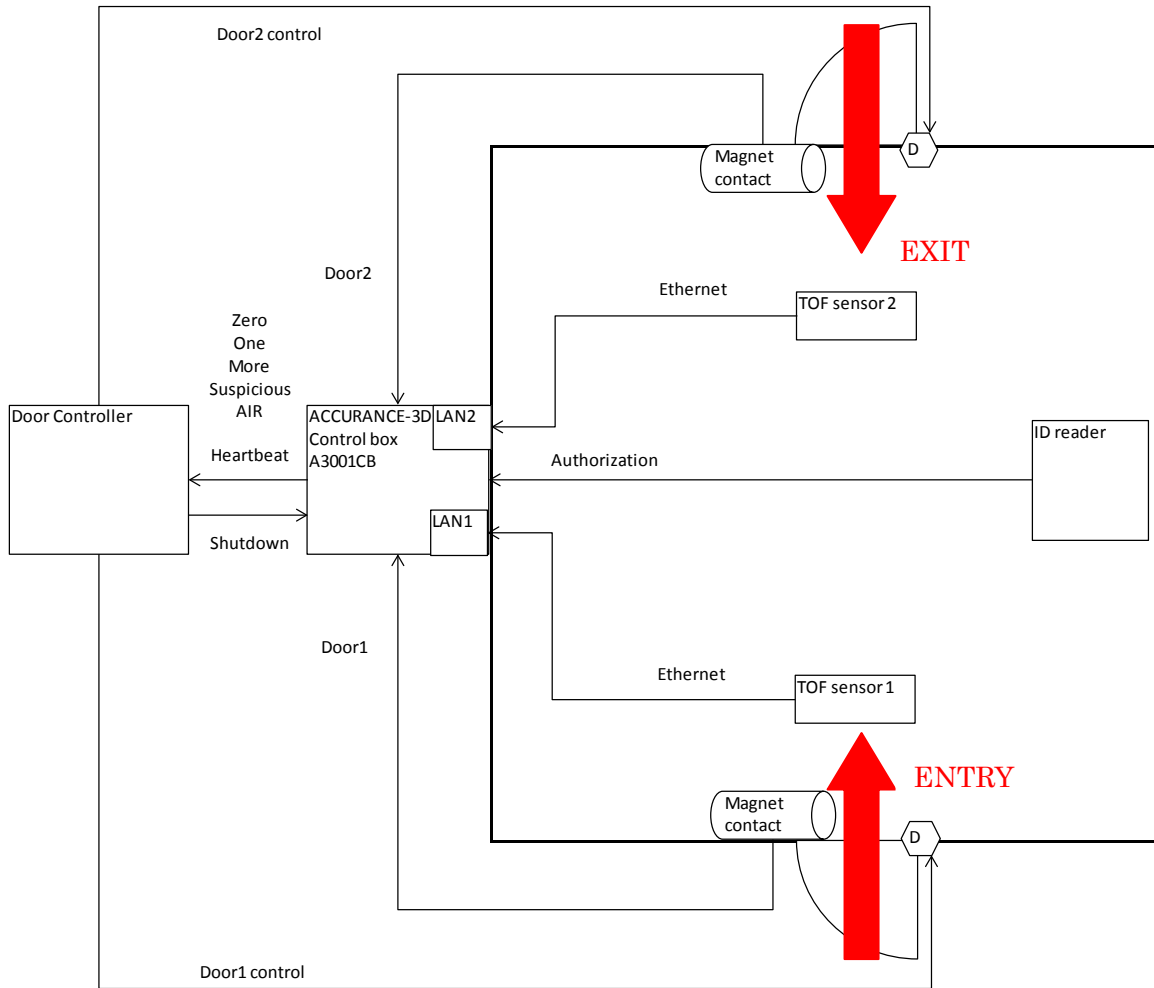


1. Connect the cables into the terminals on A3001CB and Door Controller or Door contact sensors.

*Making sure to insert PRIMARY side firstly.
When use one unit of TOF Sensor, use PRIMARY side only.

2. This completes the wiring between the Control Box and Door Controller.

(Installation example for Interlock Application)



< Wiring configuration between Door controller >

4. Initial Setting

4-1. PC Setting

4-1-1. Before Initial Setting

This product is installed and configured through wired LAN (Ethernet). Separately prepare a Windows PC and LAN cable for configuration of settings (installation). And when use two units of TOF Sensor, prepare Ethernet hub (*1).

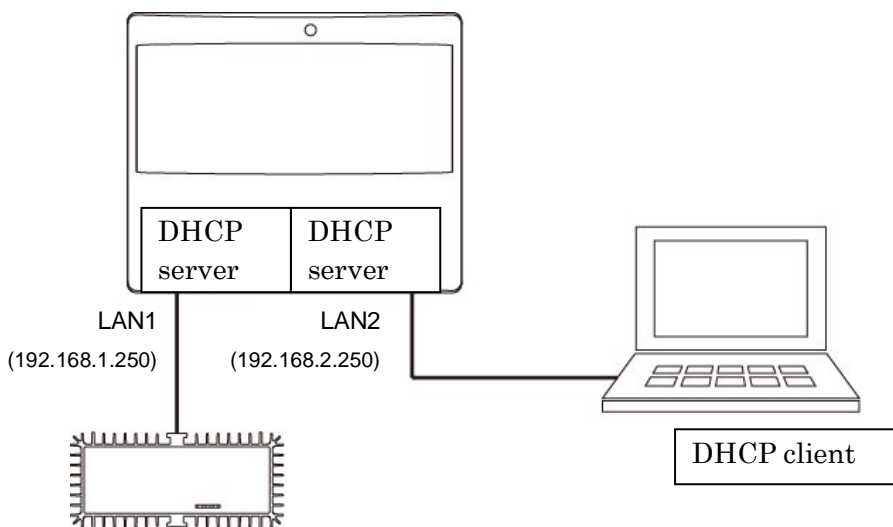
In addition, use Remote Desktop Connection (*2) for settings.

(*1) Please use more than transmission rate of 1Gbps.

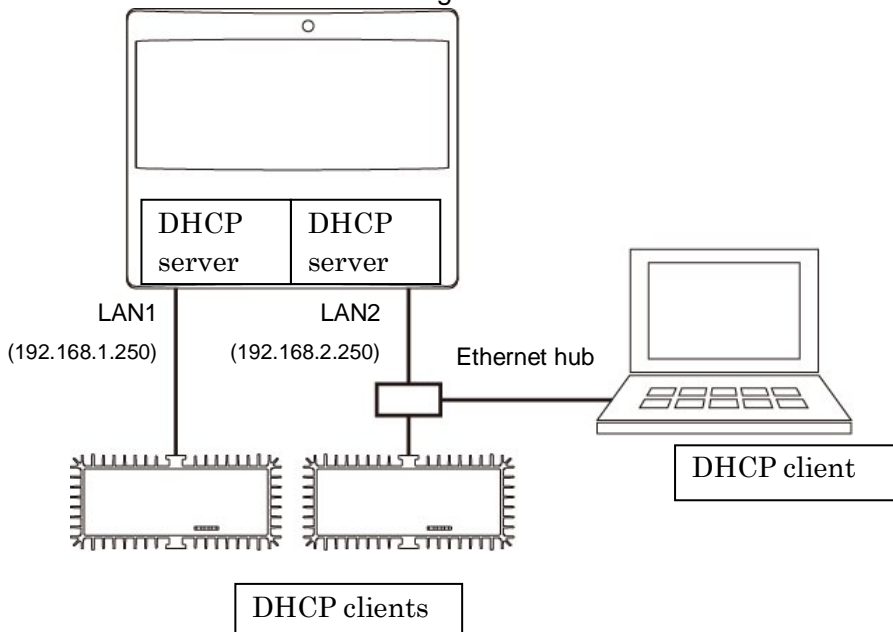
(*2) This product has been confirmed to work with Remote Desktop Connection (Windows XP, Windows VISTA, Windows 7, Windows 8)

4-1-2. LAN Connection

In case of 1 TOF sensor usage:

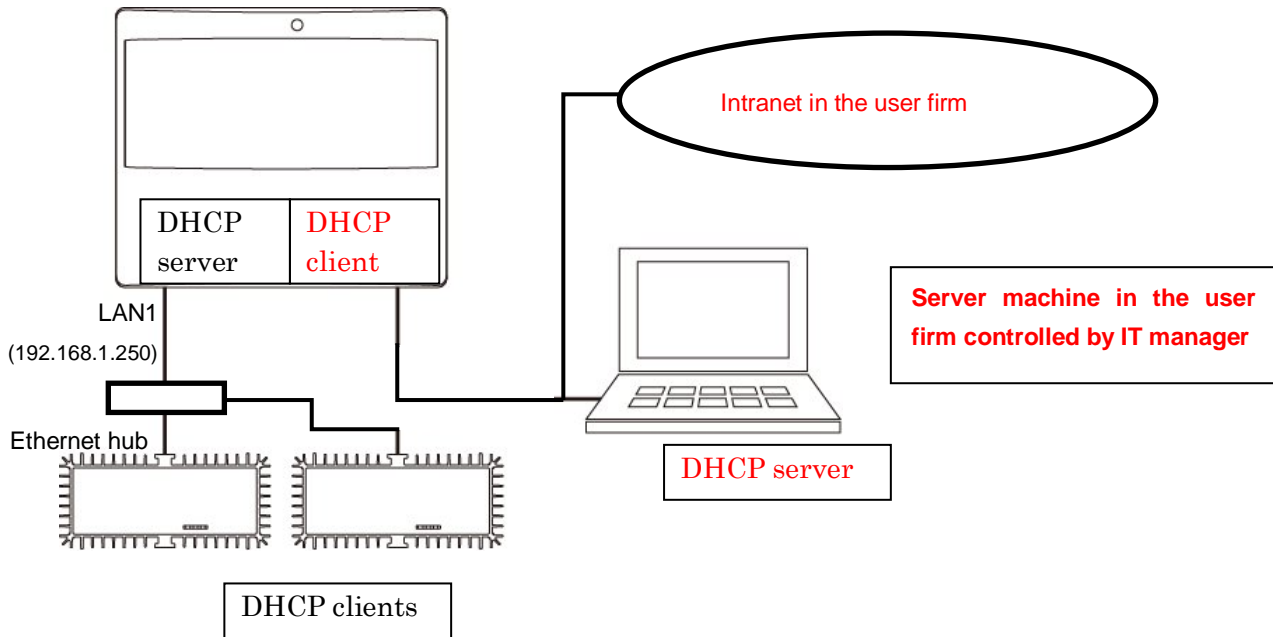


In case of 2 TOF sensors usage:



*After the initial setting, disconnect Ethernet hub.

In case of connecting to a intranet in the user firm.



NOTE : In this case IT manager of the intranet need to know MAC address of A3001CB. MAC address is indicated on the product.

NOTE : Ethernet interfaces are used as DHCP servers with static IP now, AUGUST 2014. OPTeX have a plan to make a static IP system without DHCP server only on LAN#2 later, but not now.

4-1-3. PC Setting – TCP/IP

To change setting from the factory setting, configure the wired LAN (TCP/IP) setting of your PC as follows;

Disable the proxy setting.

Enable one wired LAN only and disable all others, when not performing properly with multiple connections.

Disable a firewall since the firewall may influence the operation.

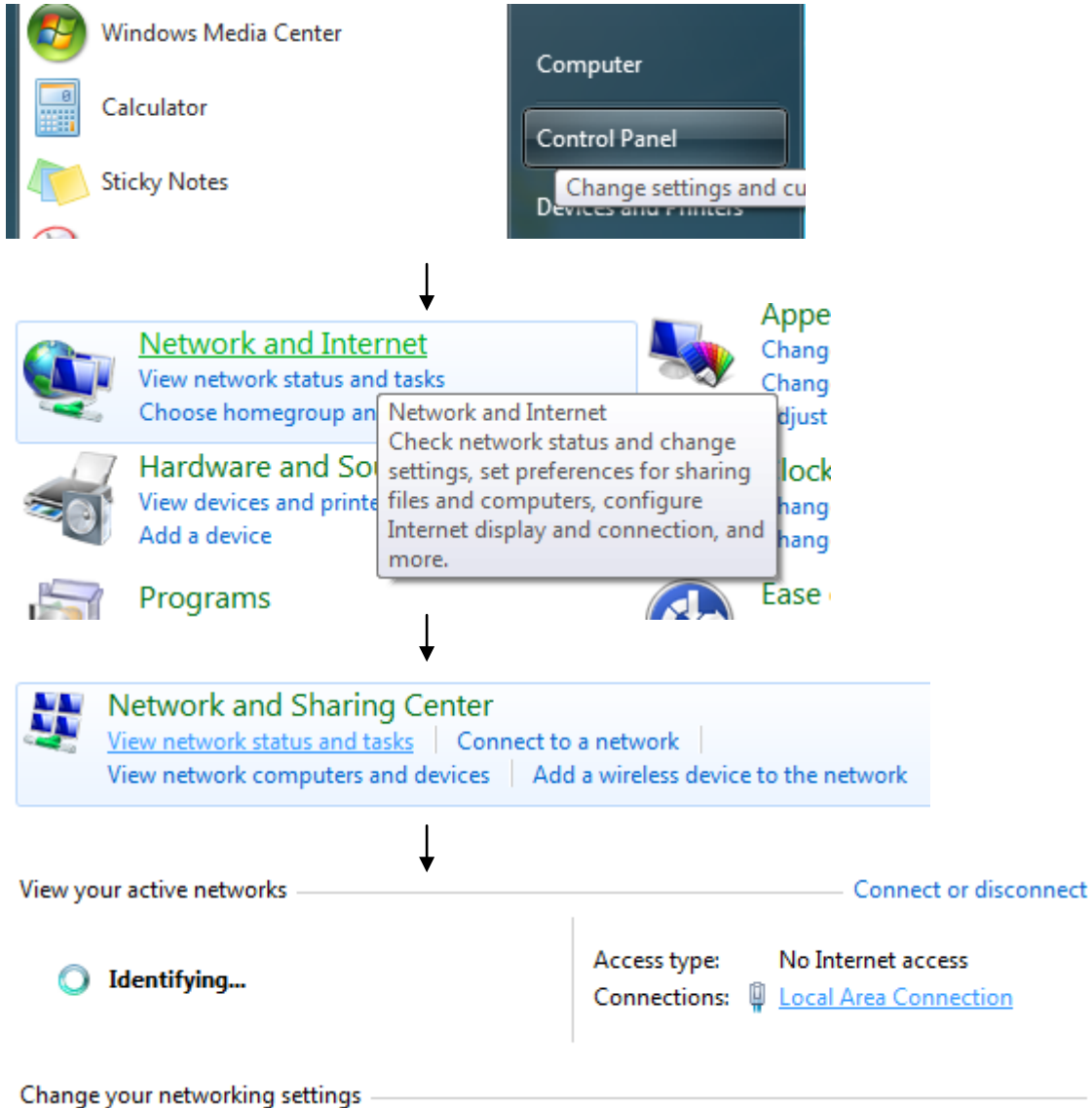
For the procedures of LAN setting of the PC, see the manual for your PC.

NOTE : Ethernet interfaces are used as DHCP servers with static IP now, September 2014. OPTeX have a plan to make a static IP system without DHCP server only on LAN#2 later, but not now.

4-1-5. PC Setting - Remote Desktop Connection

4-1-5-1. PC Network Setting

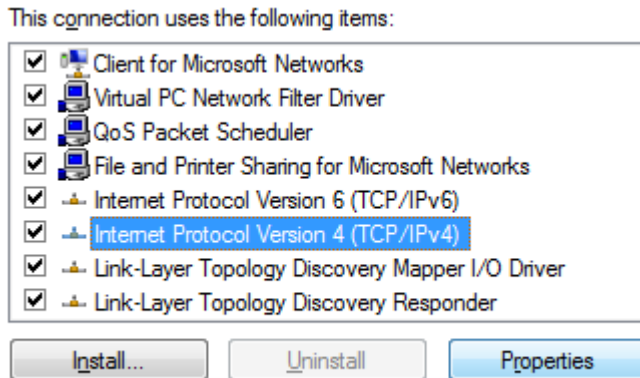
Click Control Panel -> Network and Internet -> view network status and tasks -> Local Area Connection, and show the status of Local Area Connection.



Click Properties of Local Area Connection Status.

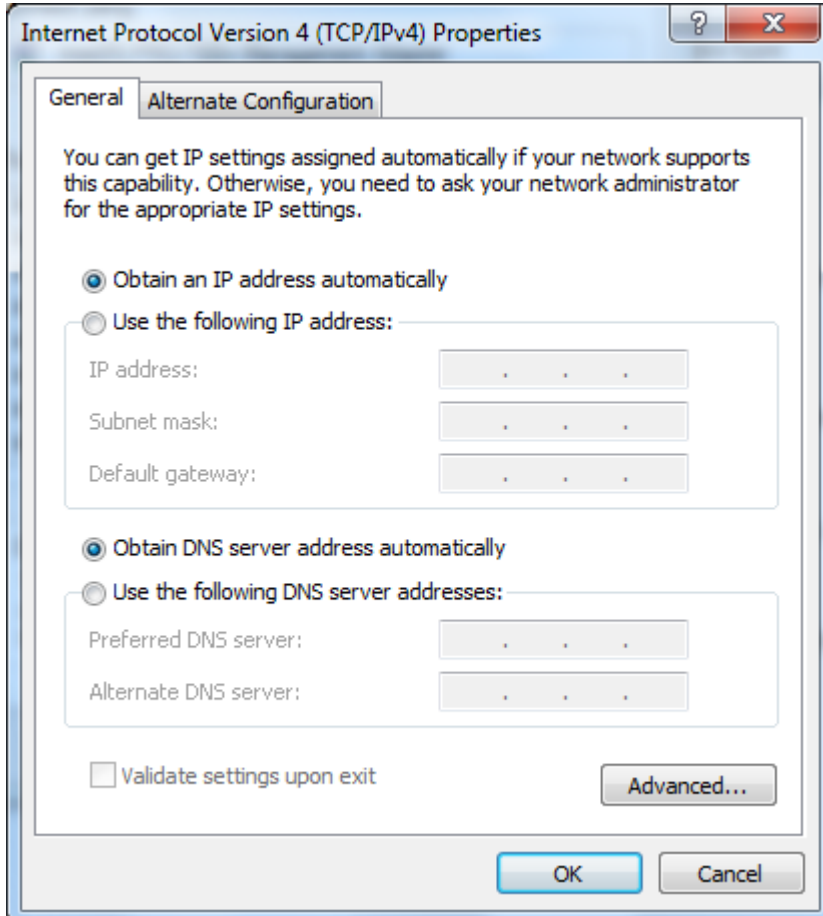


Select Internet Protocol Version 4 (TCP/IPv4) of Local Area Connection Status Properties, and click Properties.



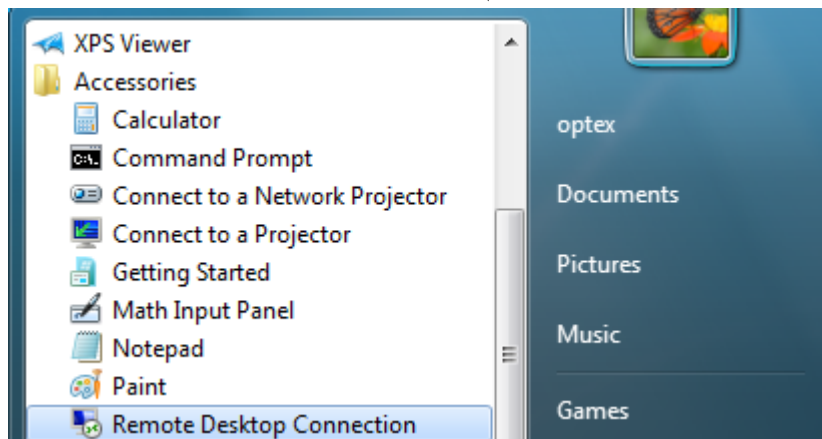
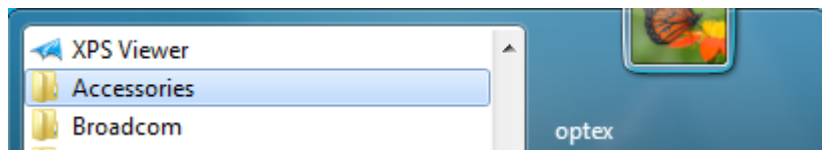
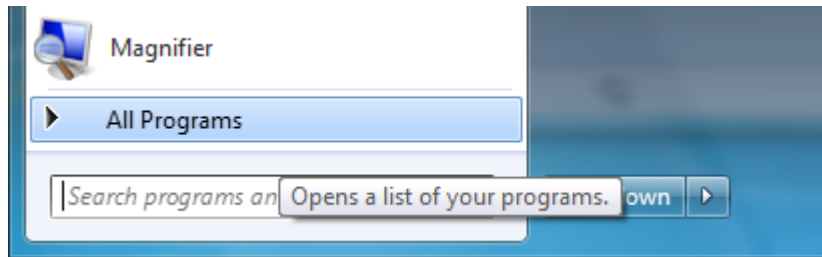
Description

Select Obtain an IP address automatically and Obtain DNS server address automatically of Internet Protocol Version 4 (TCP/ IPv4) Properties, and click OK.

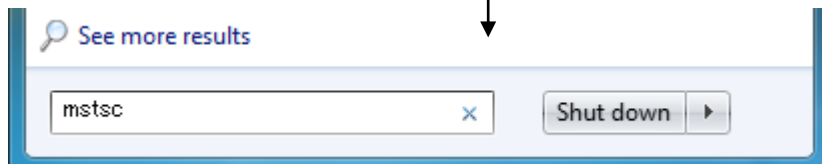
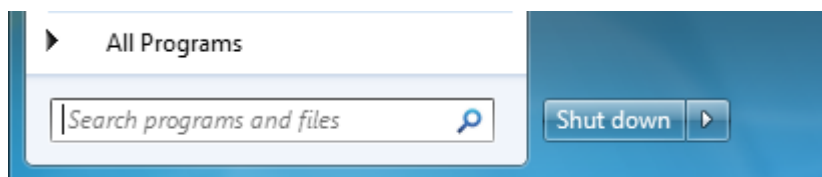


4-1-5-2. Start-up Remote Desktop Connection

Click All Programs -> Accessories -> Remote Desktop Connection from Start menu.



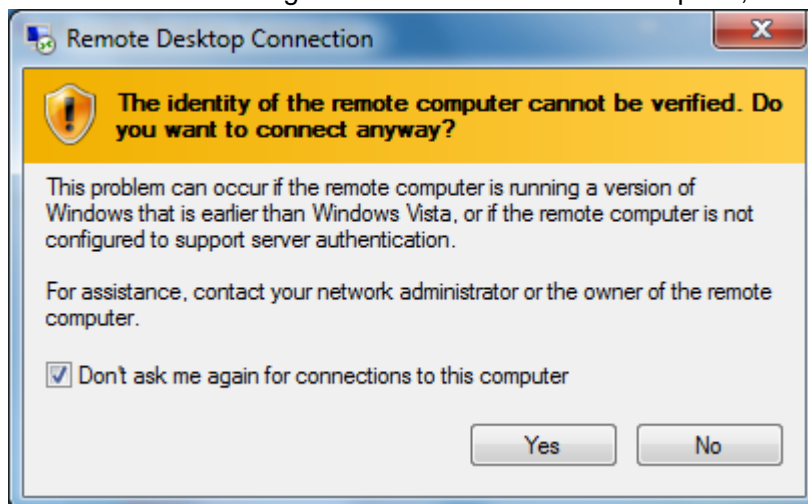
Or, input "mstsc" to Search programs and files of Start menu.



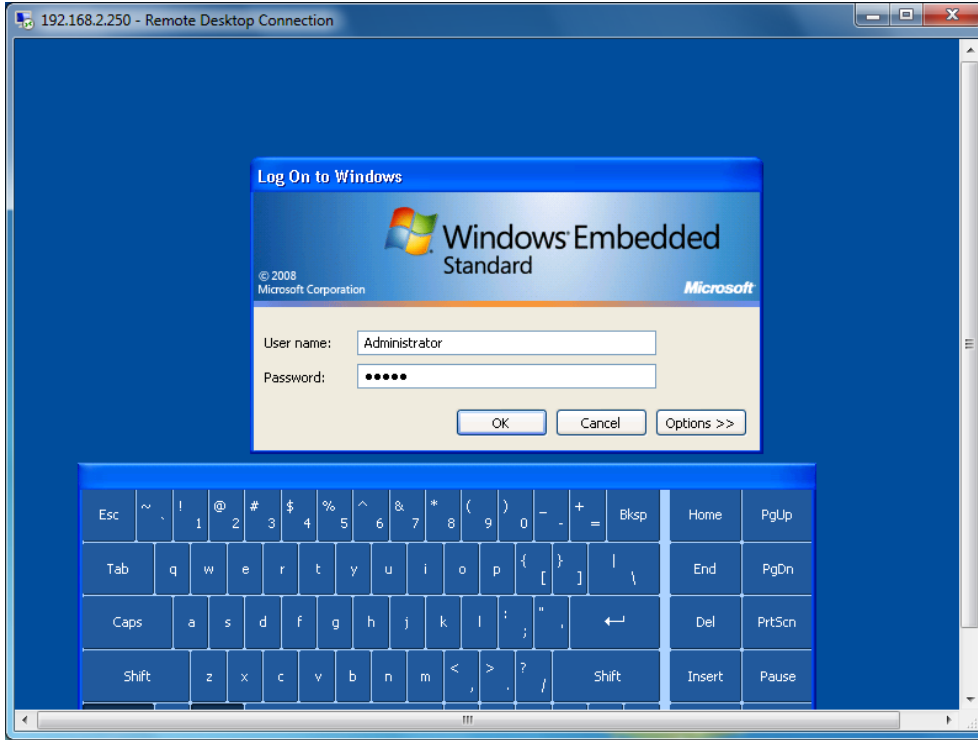
Input '192.168.2.250' to Computer: of Remote Desktop Connection, and click Connect.



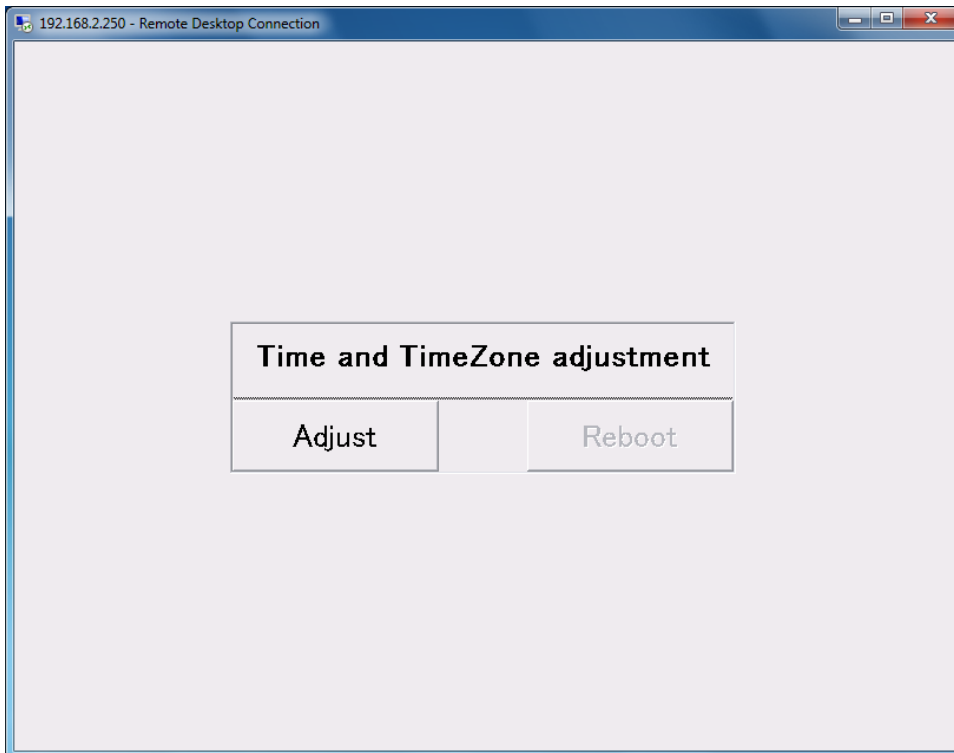
Select Don't ask me again for connections to this computer, and click Yes.



Input 'Administrator' to User name, "accurance" to Password, and click OK.



After Log On, the screen changes to ACCURANCE-3D application.



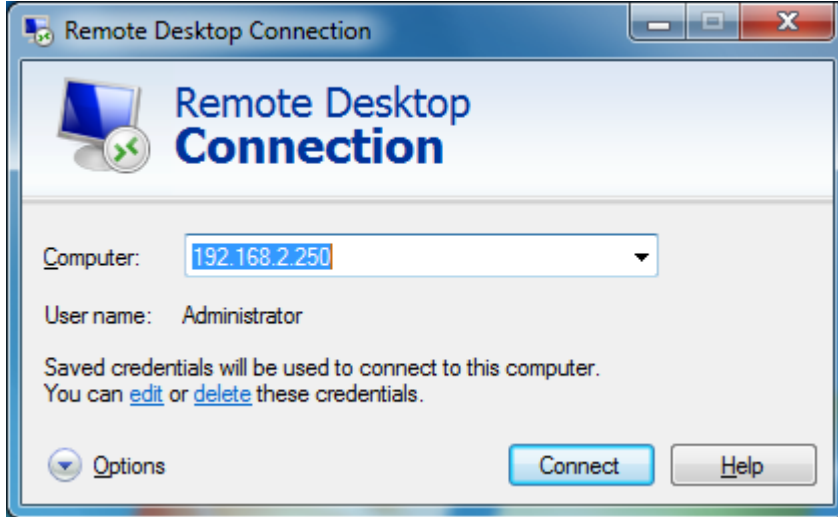
*For ACCURANCE-3D application setting, see 4-2 "Initial Setting of ACCURANCE-3D application".

4-1-5-3. Automatic Log On of Remote Desktop Connection

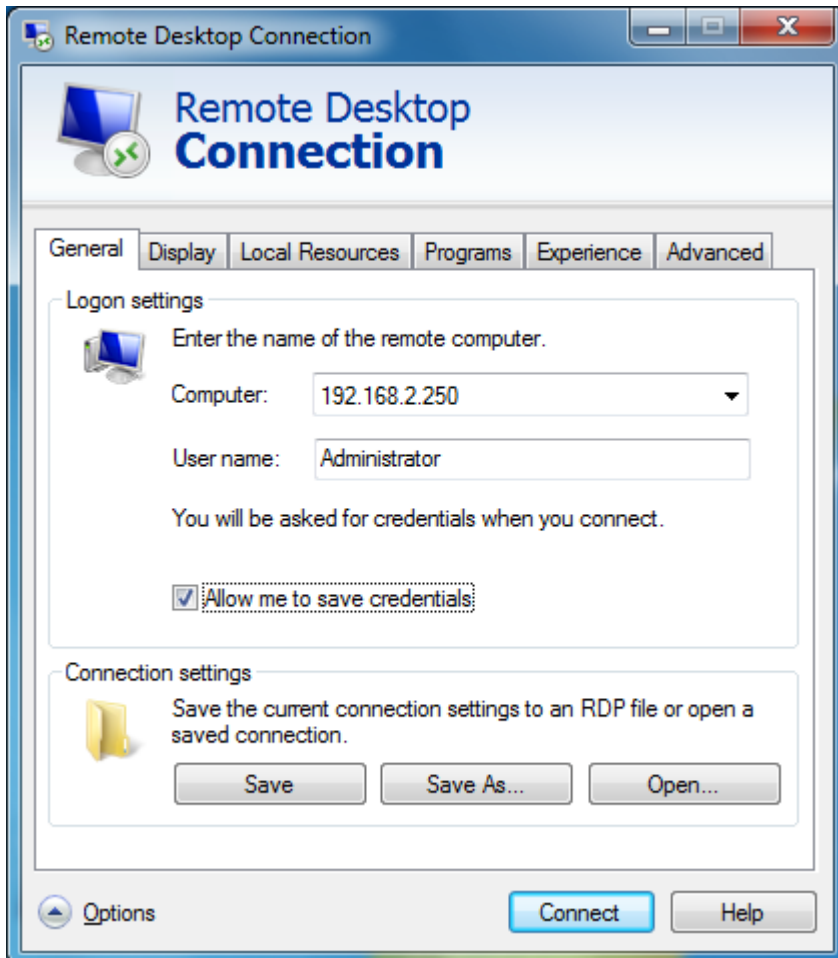
Reconnection of Remote Desktop Connection is necessary at the time of setting of the ACCURACE-3D application.

Performing the following setting is recommended.

Click Option of Remote Desktop Connection.



Input "Administrator" to User name, and select Allow me to save credentials, and click Connect.

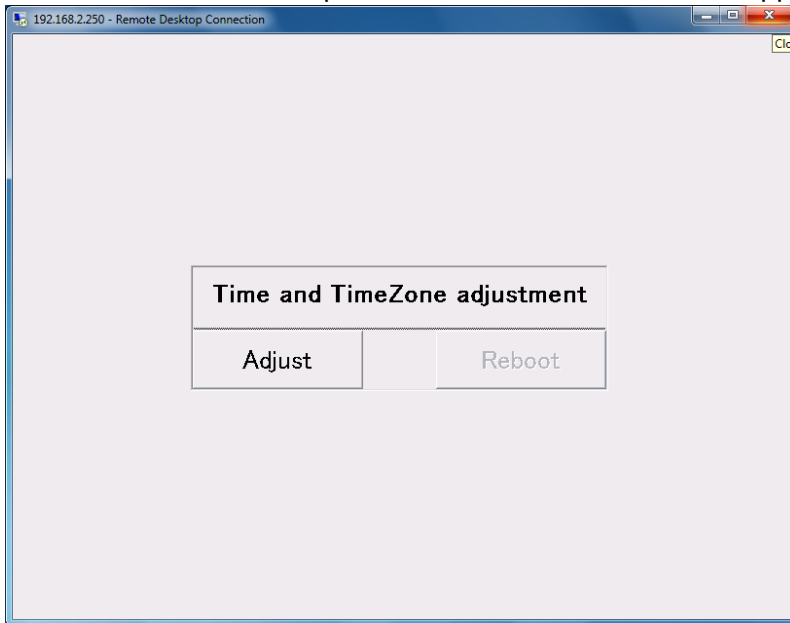


When asked "Do you trust this remote connection?", select Don't ask me again for connections to this computer, and click Connect.

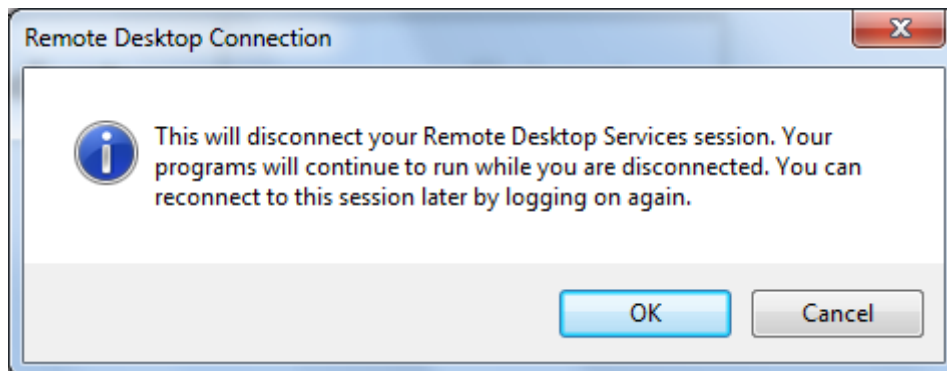
Input 'accuracy' to Administrator Password, click OK.

4-1-5-4. Remove of Remote Desktop Connection

Click X of Remote Desktop Connection in the corner on the upper right.

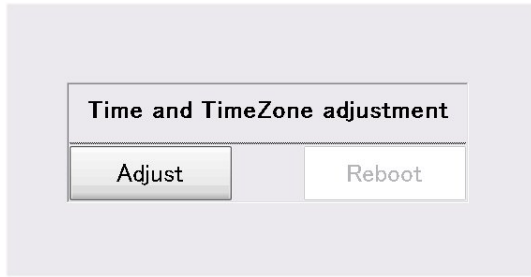


When asked "Remote Desktop Connection" pops up, click OK.



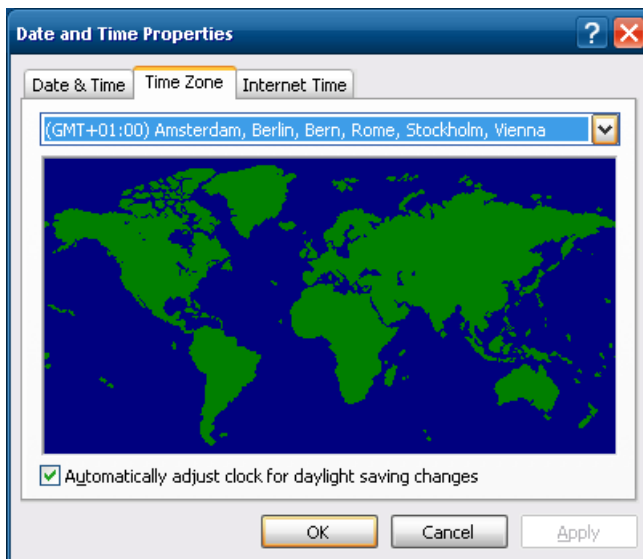
4-2. Initial Setting of ACCURACE-3D application

4-2-1. Date & Time Adjustment

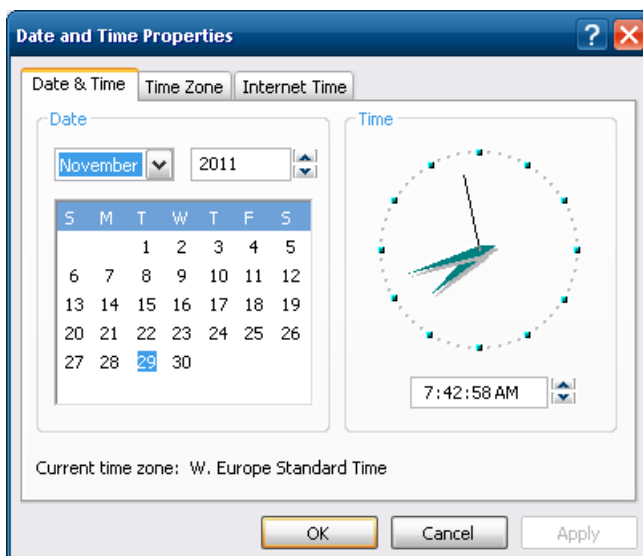


Firstly, adjust the time.
Click Adjust as shown in the figure of on the left.

Click Time Zone, and the following figure below appears.
Select the Area and click Apply.



Return to Date & Time, please confirm the setting of date and time.
*Date and time can also be changed later.



After adjusting date and time, click OK. And click Reboot on the first screen.

Wait for a while (2-3 minutes) for Control Box to reboot.

*When set to Automatic Log On of Remote Desktop Connection, reconnect the Control Box automatically. But User name and Password may need to be entered.

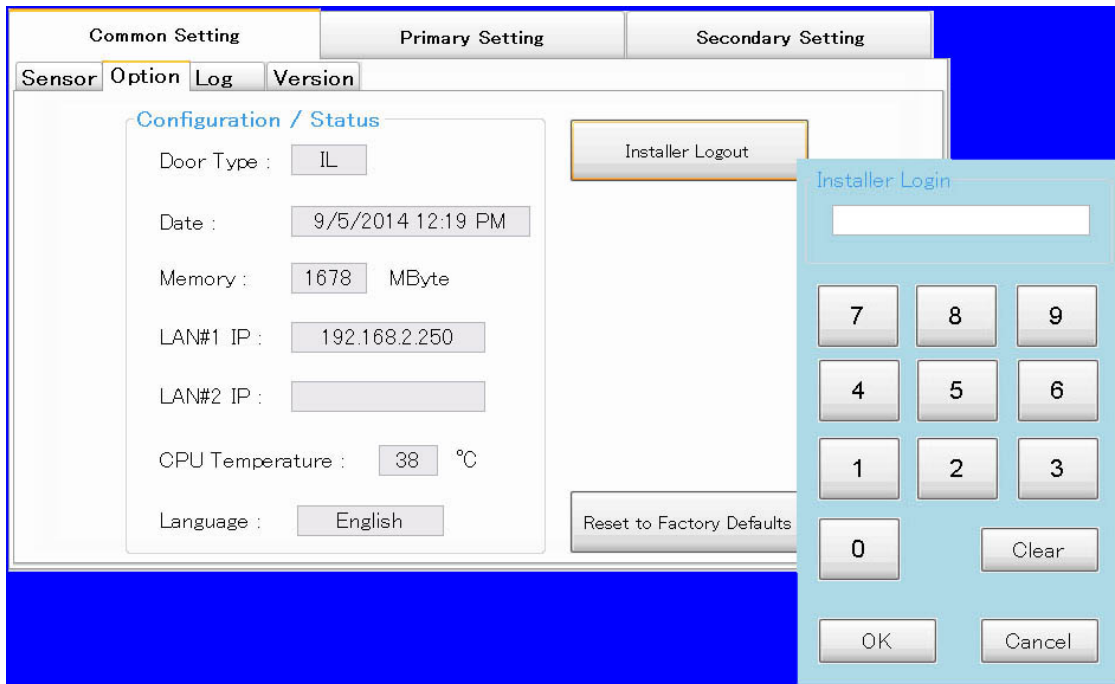
*For the setting of Automatic Log On of Remote Desktop Connection see 4-1-5-3 "Automatic Log On of Remote Desktop Connection" about the setting.

4-2-2. Installer Setting

After reboot Control Box, Click Option as shown in the figure on the below.



Click Installer Login as shown in the screen on the right.

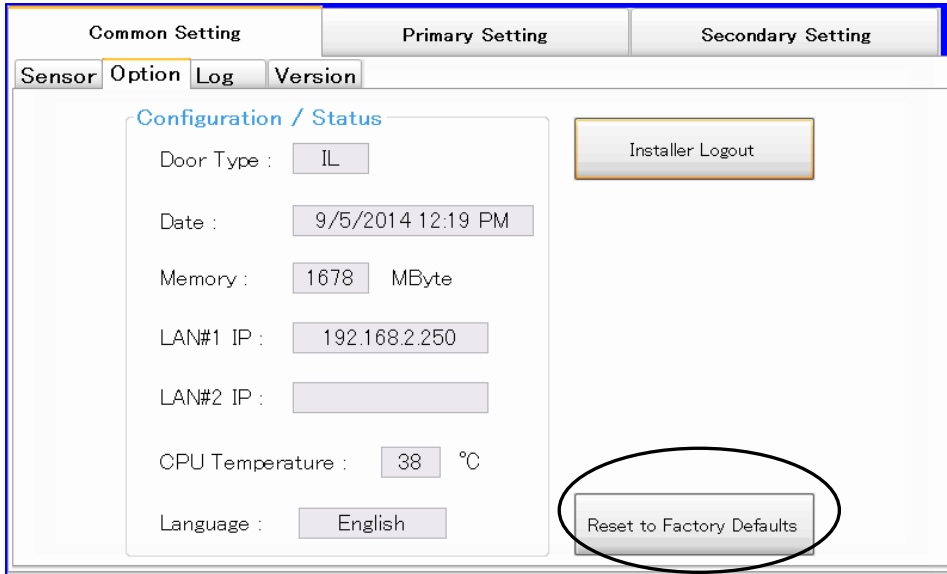


After typing the password, press OK on the password-typing screen.

After Login "Login successful" appears, click OK.

Password is "1111" now. It is temporary.

When logged in, and the background of the screen (This manual is printed black and white) becomes blue, and the buttons are added.

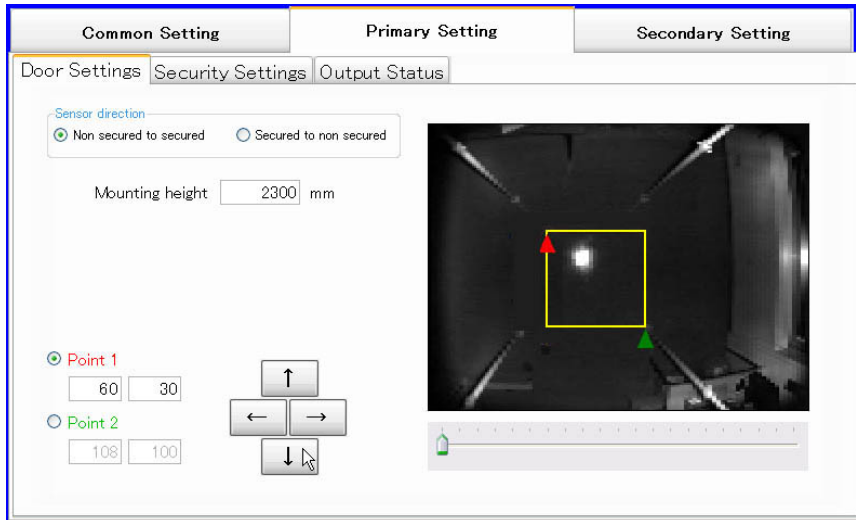


When using two units of TOF Sensor, please check that Primary and Secondary are set respectively for each TOF Sensors.

When not correctly set, click button of "Swap primary and secondary".



4-2-3. Door Setting



< Before Position Setting >

Sensor Direction

Select the direction of the sensor.

Select whether the installation is for detection from the non-secured side to the secured side or from the secured side to the non-secured side.

Mounting Height / Diameter

Select the values of Height Under Canopy and Door Diameter.

Set rest position

Confirm the Door Position is at the rest position, and click the button.

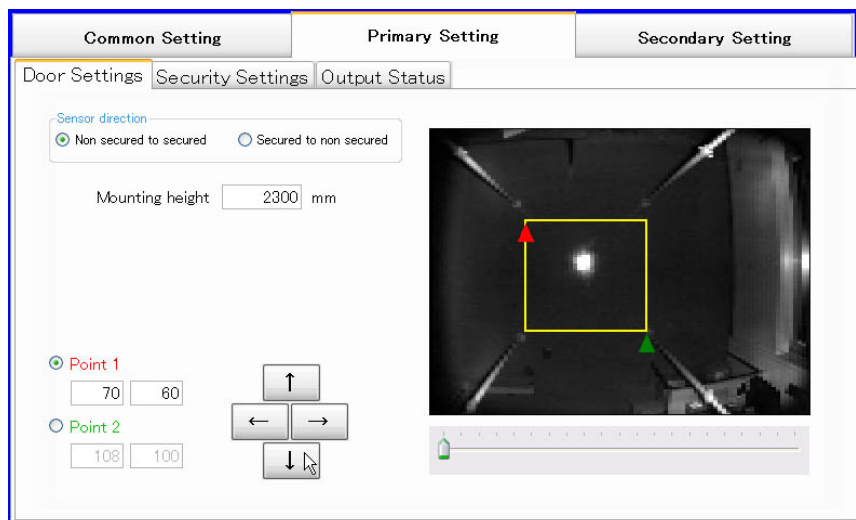
Door Position Setting

Point 1 (left-side upper position)

Select the "Point 1" button and click the **left-side upper position** shown on the floor on the screen as shown in the figure above (on the picture I wrote an appropriate detection zone). This position can be fine-adjusted by using the arrow buttons on the screen.

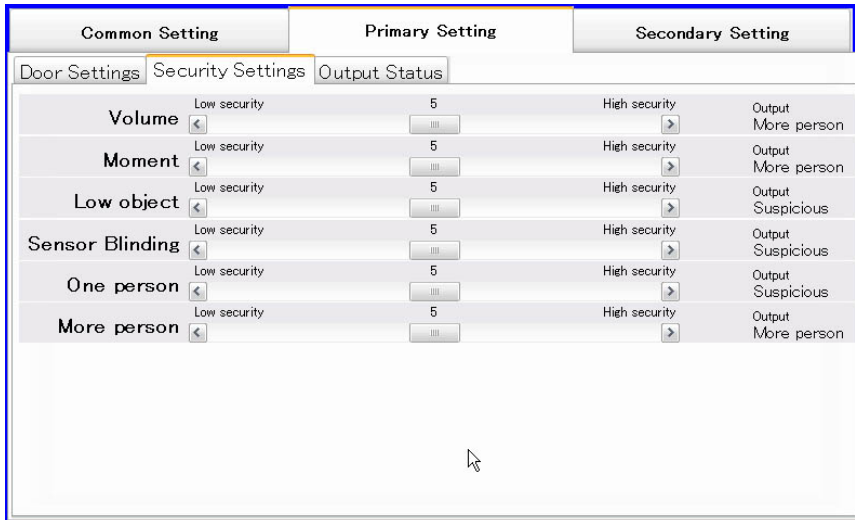
Point 2 (right-side lower position)

Select the "Tip of End Position" button to click the **right-side lower position** shown on the floor on the screen as shown in the figure above. This position can be fine-adjusted by using the arrow buttons on the screen.



< After Position Setting >

4-2-4. Security Settings



< Parameter Setting >

NOTE : Default setting is All=5.

This product has six sensitivity adjustments: Volume, Moment, Low object, Sensor Blinding, One person and More persons.

All sensitivity controls have the options of 1 to 9 and the factory settings for all controls are 5.

Changing these settings allows the adjustment of piggy-backing sensitivity.

Increasing the sensitivity setting value makes the piggy-backing sensitivity higher but may increase the possibility of false rejection.

Decreasing the sensitivity setting value makes the piggy-backing sensitivity lower but decreases the possibility of false rejection.

*Values are reference only, and vary depending on the installation environment.

Volume

The piggyback detection is influenced more by other parameters such as "More persons" and "Moment" when choosing Low.

When "Volume" rejection occurs, Red LED turns on for 2 sec indicating "More persons" output.

Moment

The piggyback detection is influenced by setting of other parameters such as "More persons" and "Volume" when choosing Low.

When "Moment" rejection occurs, Red LED turns on for 2 sec indicating "More persons" output.

Low object

If a "Low Object" rejection occurs, the blue and red LED will illuminate for 2 seconds indicating "Suspicious" output.

Sensor Blinding

When a "Sensor Blinding" rejection occurs the blue and red LED will illuminate for 2 seconds indicating "Suspicious" output.

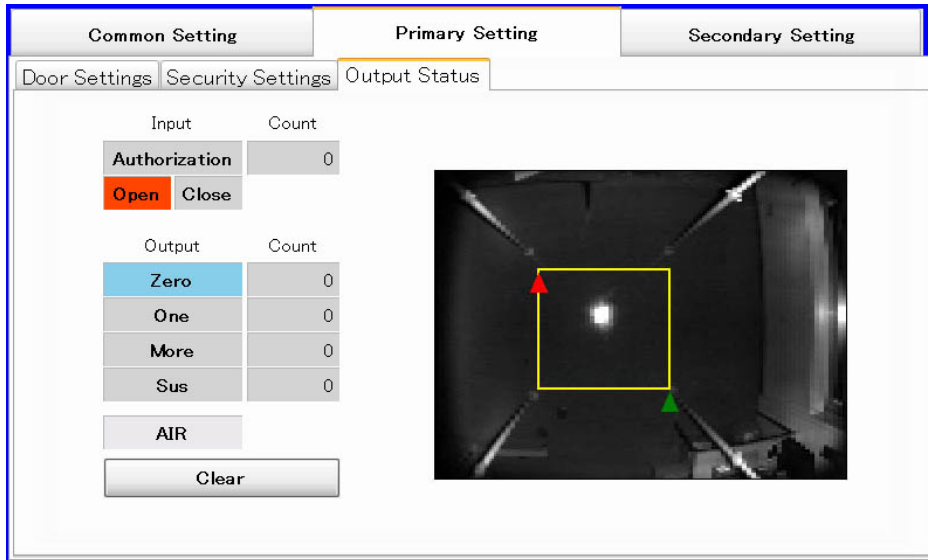
One person

If the "One Person" is not recognized, a rejection occurs and the blue and red LED will illuminate for 2 seconds indicating "Suspicious" output.

More person

If a "More Person" rejection occurs, the red LED will illuminate for 2 seconds indicating "More Person" output.

4-2-5. Output Status



This product counts each output.

Authorization

When an authorization signal is received from Door Controller, the background color turns into red. It shows the number of authorization.

Zero, One, More, Sus

Each background color is changed by output result.

It shows the number of output.

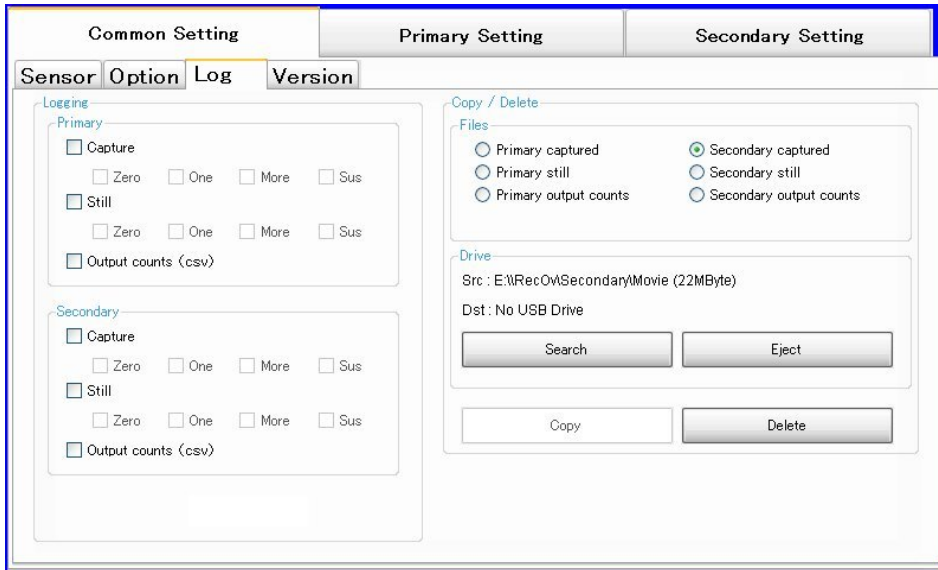
AIR

When outputting AIR Detection, the background color turns into red.

Reset the number of the counts with "Clear" button.

*When using two units of TOF Sensor, please set Secondary Setting in the same way as above.

4-2-6. Output Log / Delete Log



This product records authorization logs with capture data.

Note: As capturing video is heavy load do not set it unless necessary.

Logging Setting

Select 'Capture' or 'Still' both for PRIMARY and SECONDARY, and select the output result 'Zero' 'One' 'More' 'Sus' to be recorded.

When wishing to record the number of outputs, select 'Output counts (csv)'.

*The logging is stopped automatically when;

- The memory of SSD is full.
- The temperature of Control Box becomes high.

The log can be output to an external device via the USB ports on Control Box.

Cancel Log

Cancel the setting of Log as described in 1. Ready to Log.

Select Log

Select the output logs to be copied from Files as shown on the screen.

Connect external memory to USB port on the Control Box.

After connecting external memory, click 'Search' button at Drive section on the screen.

When the memory device is recognized, the memory information is shown at Dst:.

Src: shows the capacity of output Log, confirm the capacity of the external memory as shown Dst:.

Output Log

After confirming the capacity of memory is enough for the capacity of output log, click 'Copy' at the bottom right on the screen.

Please wait until finish output Log.

Remove External Memory Device

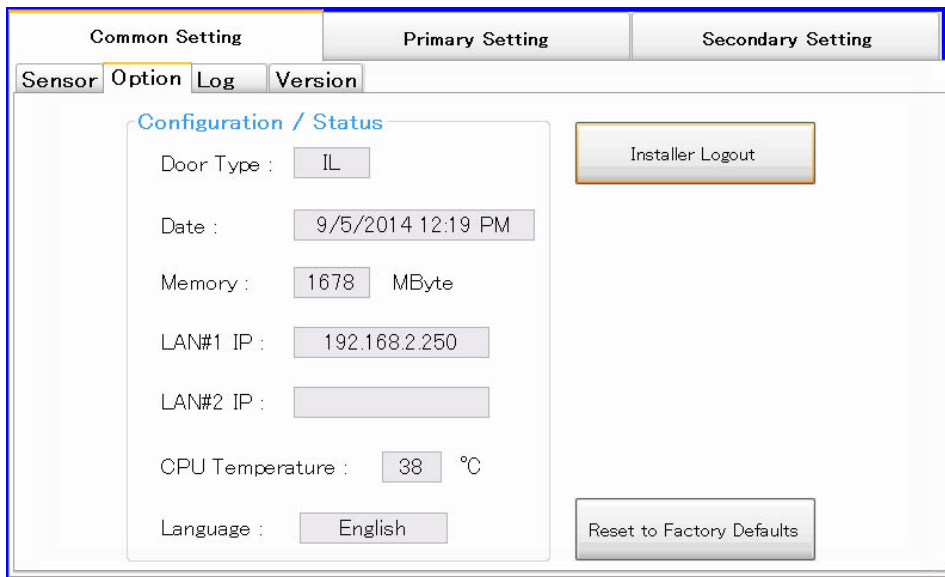
When completing output of the Log, click 'Eject' inside of Drive on the screen.

When the memory device is disconnected, remove the device.

Delete Log

Select output log from 'Files', and click 'Delete' at bottom right on the screen.

4-2-7. Installer Logout



When finish all settings, click the button of "Installer Logout".

When logged out, and the background of the screen becomes gray, and the three buttons will disappeared.

5. Operation Checking

When all settings have been made, enable the "free in" (non-authorization) mode of the door and check the operations as described below:

Rotate the door with no object (person) to detect. Make sure that the blue indicator LED is illuminated for 0.2 seconds.

Let one person enter the door. Make sure that the blue indicator LED is illuminated for 2.0 seconds.

Let two people enter the door (piggy-backing). Make sure that the red indicator LED is illuminated for 2.0 seconds.

If the above outputs show no problem, switch the door mode to the authorization mode and perform the same test. In the authorization mode, the door stops at the detection of two people entering together (piggy-backing) and prevents the entry. Try several different ways of entry (ex.: one person with a bag in hand) and make sure that there is no false rejection.

If there is any problem found in the detection or any site-specific problem, see 4-2-5 "Sensitivity Setting" to change the sensitivity setting as required.

This completes operation checking.

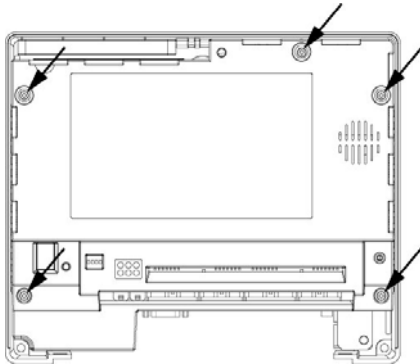
6. Troubleshooting

Problem	Check if...	Corrective action
Does not operate	Power indicator (green LED) of Control Box and TOF Sensor is on.	Check the wiring between TOF Sensor and Control Box. See 3-2"Wiring" Check the switch of Control Box is turned on. Check the switch of door system is turned on. Check the wiring between Control Box and door system. When use one unit of TOF Sensor, use PRIMARY side only.
Door suddenly stops	Transmission rate of Ethernet Hub is more than 1Gbps. Ethernet Hub is removed.	Use Ethernet Hub with 1Gbps or higher. Remove Ethernet Hub and connect LAN cable directly to Control Box and TOF Sensor.
Problem relating to initial settings		
No Remote Desktop Connection	ACCURACE-3D A3001CB application screen (4-1-5-4) is appeared.	Check the wiring between Control Box and PC. See 3-2-1"Wiring between Control Box and PC" Check the switch of Control Box is turned on. Check the setting of PC. See 4-1-4."PC Setting - TCP/IP" and 4-1-5."PC Setting - Remote Desktop Connection".
No image on the screen	The power indicator (green LED) of TOF Sensor is on. Red and Blue LED of the TOF Sensor are Simultaneously blinking.	Check the wiring between TOF Sensor and Control Box.
Wrong detection		
Door stops at Plus position	Primary and Secondary are set respectively for each TOF Sensors.	Swap Primary and Secondary. See 4-2-2"Installer Setting"
Many False rejection	Front side of TOF Sensor is clean. (No dust, no scratch)	Wipe the front side of TOF Sensor with a damp cloth. Change TOF Sensor.
	Door Setting (4-2-3) is set correctly	Check the setting of Door setting. See 4-2-3"Door Setting"
Problem relating to Log		
Cannot record Log / no logged file saved	SSD is set Logging is set The memory of SSD is full	Check the connection of SSD. Check the setting of Logging See 4-2-6"Output Log / Delete Log" Delete existing log files.
Cannot copy Log files	External memory device is set	Check the connection of external memory device. Check the capacity of external memory device is enough for output log files.

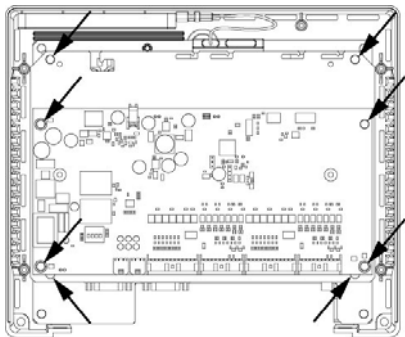
7. How to remove battery safely

Control Box has a button-type battery on inside material. When you replace and/or dispose the battery, please see below;

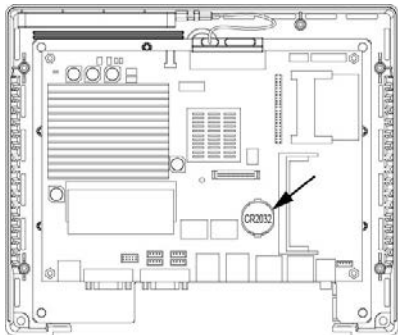
And, make sure turn off the power of the Control Box and disassemble wirings.



Disassemble 5 screws as shown in the figure on the left. And take out the cover.



Next, disassemble 8 screws as shown in the figure on the left.



Replace and/or dispose the battery (CR2032) on the material as shown in the figure on the left.

When dispose the old battery, please treat it according to the local law.



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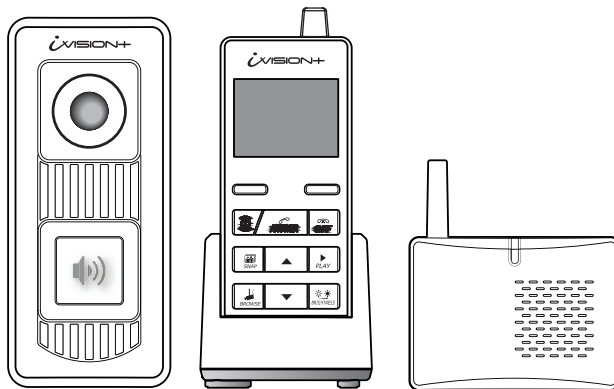
Specifications Draft *.* OCTOBER 2014

59-1900-00

Wireless Video Intercom

iVISION+

User Manual



For a setup of each device, please refer to individual "Installation Instructions"

ATTENTION:

Thank you for purchasing the iVISION+ wireless video intercom. Due to the nature of radio frequency transmission technology, the transmission range, stability of images, video and sound of the iVISION+ can not be guaranteed at all times. Performance of this product depends on the environment where the product is being used. Please carefully read all included documents and test for feasibility before applying any damages to the installation environment. Keep documents safe for future reference.

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- 2-2. Door Camera Unit (IVP-DU)
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- 4-3. Operating OPEN DOOR function
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- 7-2. Sensor Alert Enabling/Disabling Setting
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1. What you can do with iVISION+

1-1. Basic features of iVISION+

Knowing who is/was at your door

iVISION+ is a wireless video intercom system with multi unit expansion capability. When someone comes to your door and presses the button on the Door Camera Unit (Max. 2 units), the Handheld Monitor Unit (Max. 4 units) rings a chime and displays a video image from the camera. The Handheld Monitor Unit will store still images even if no one is there to answer the call.



Replace an old door bell with video

If you already have a door bell with 10-24VAC/DC power supplied, enable Door Camera Unit for a browsing feature and actively view from a Handheld Monitor Unit anytime you like. Gateway Chime Unit adds a extra chime to let you know someone is at the door.

1-2. Expanding iVISION+ with additional units

Operate third party equipments (e.g. Door lock)

Connecting a third party equipment such as a door lock or a garage door activator to a relay output of Gateway Chime Unit (IVP-GU) can enable "OPEN DOOR" function on a Handheld Monitor Unit.

Up to two units* of IVP-GU can be hosted in a iVISION+ system.

* One IVP-GU can only be associated with one of two Door Camera Unit at all times.

Capture* images triggered by motion detectors: OPTEX TD-20U


Addition of OPTEX Wireless2000 TD-20U** enables a sensor triggered call from a Door Camera Unit with image capturing function.

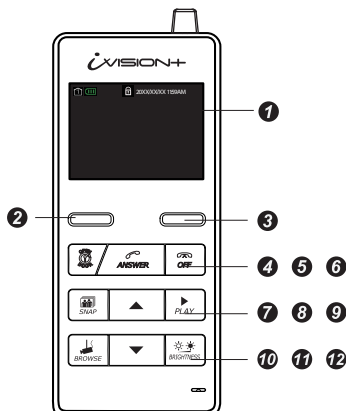
* The Door Camera Unit must be powered by an external power source.

** WSS2000 device is available for a purchase in an individual package.

2. Overview of iVISION+ devices

2-1. Handheld Monitor Unit (IVP-HU)

Please make sure that all Handheld Monitor Units are on cradles and being charged.
A battery mark  appears while they are charging. Clarity of intercom sound may be dependent on radio transmission condition.

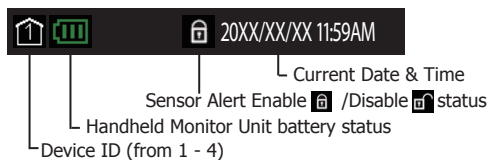


- 1** Monitor Screen / Status Indicator
Monitor Screen shows video image from Door Camera Unit when PUSH button on the IVP-DU is pressed. Status Indicator appears for 10 sec when any button is pressed.

STANDBY MODE

IVP-HU goes into a power saving condition after 10 seconds. No Status Indicator appears. Press any button to exit this mode.

IDLE MODE



BROWSING MODE

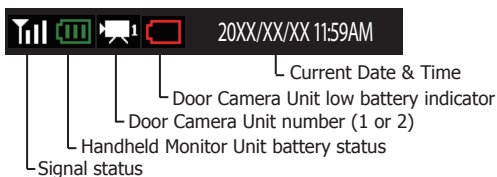
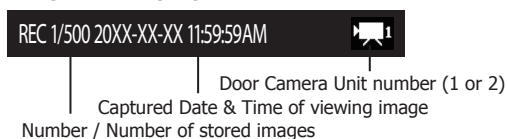


IMAGE VIEWING MODE



2 LEFT function key

Used for confirmation of a command that appears on the lower left of the screen.
Press and hold for 3 sec to enter into SYSTEM SETUP menu.

3 RIGHT function key

Used for confirmation of a command that appears on the lower right of the screen.
Press and hold for 3 sec to enter into SENSOR ALERT disabling/enabling menu.

4 OPEN DOOR

Enabled only when a third party electronic door lock is connected to iVISION+ system via OPTEX IVP-GU unit.


Select DOOR1 or DOOR 2 to activate output relay on designated IVP-GU unit.

5 ANSWER

Press to answer a call from Door Camera Unit

6 OFF

Press to terminate a talk. Lights when charging. Press and hold for 3 sec to ON/OFF the device.

Unit 1  must remain "ON" for automatic recording function to be enabled.

7 SNAP

Press to capture an image while answering a call or when browsing a Door Camera Unit.

8 UP **11** DOWN

IDLE MODE: Select a volume of a ring tone



While Answer or Browse: Select a volume




9 PLAY

IDLE MODE: Press to enter IMAGE VIEWING MODE
Press and hold for 3 sec to delete all stored images.

10 BROWSE



Enabled only when Door Camera Unit is powered from an external power source.
IDLE MODE: Press to enter BROWSING MODE
Select Door 1 or Door 2 to view. Listen in or additionally press ANSWER button to speak out.

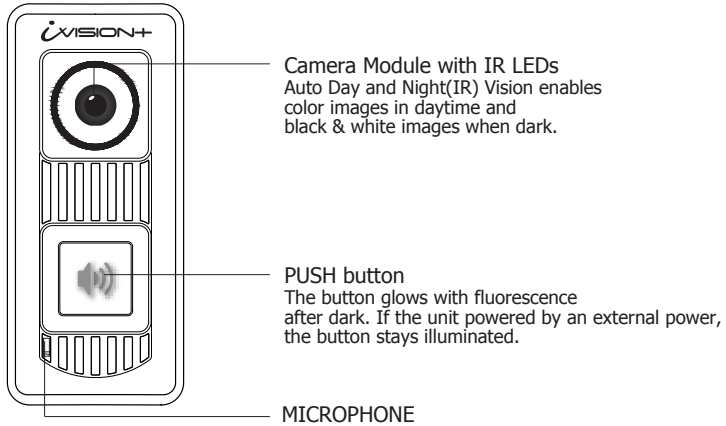
12 BRIGHTNESS


Press  to set brightness



2-2. Door Camera Unit (IVP-DU)

The Door Camera Unit is a device that makes a call to the Handheld Monitor Units (IVP-HU) when the push button is pressed by a visitor. Each iVISION+ system can carry up to 2 units of Door Camera Units and each is identified by  or  on Handheld Monitor Units.



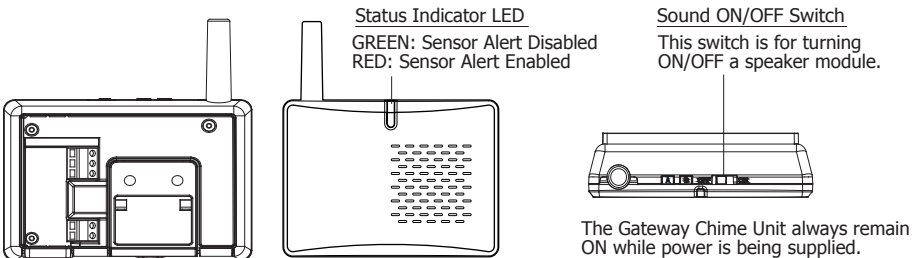
Please replace the batteries when Handheld Monitor Units show a low battery status indicator  on upper middle of the screen. The sign indicates that Door Camera Unit has low power supply from current 3 AA batteries.

Caution

Do not mix an old and a new battery in this unit. Do not use Lithium batteries. Leakage or explosion can occur and may lead to severe damage and injuries.

2-3. Gateway Chime Unit (IVP-GU)

The Gateway Chime Unit is an extra chime and an open relay output device for the iVISION+. IVP-GU is required when expanding the iVISION+ system with another third party equipment such as a door lock and a garage door activator. IVP-GU also receives a signal from OPTEX Wireless2000 TD-20U and bridges the signal to iVISION+ system.



3. Before Using iVISION+

3-1. Getting ready with iVISION+ system

CHECK 1: Handheld Monitor Unit needs to be charged before usage



Before using iVISION+ system, the system must be installed accordingly to individual Installation Instruction. Once the installation is done, please make sure that each Handheld Monitor Unit is fully charged on a cradle. The OFF button lights up while charging until fully charged.

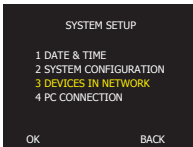
IDLE MODE



└ This indicator shows battery status on the Handheld Monitor Unit.

CHECK 2: Confirm devices registered in the system

To check number of iVISION+ devices in your system, press and hold LEFT function key for 3 sec to bring up a SYSTEM SETUP menu. Select "3 DEVICES IN NETWORK" by DOWN ▼ button and confirm OK.




REFERENCE

Installation Instruction of Handheld Monitor Unit
[7-1 Confirming number of iVISION+ devices in a HOME ID]

CHECK 3: Identify the Main Handheld Unit



Identify the Main Handheld Unit by an indicator  on a screen.

The main handheld unit is the unit that captures and stores images while "Auto Recording Function" is activated.

The main unit must stay turned ON for the "Auto Recording Function"

IDLE MODE



└ This indicator No. 1 is shown on the main unit. 2,3 & 4 are sub units.

CHECK 4: Select a chime volume from the Handheld Monitor Unit

While in IDLE MODE, Use UP ▲ and DOWN ▼ keys to select a chime volume for each Handheld Monitor Unit in the iVISION+ system.



3-2. How to ON/OFF the system



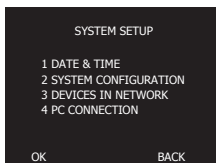
Pressing down the "OFF" button for 3 seconds, will turn ON/OFF the Handheld Monitor Unit.

Caution

At least one paired Handheld Monitor Unit needs to stay turned "ON" to respond to a call from the external Door Camera Unit. When the main Handheld Monitor Unit  is turned off, Auto Recording feature does not work.

3-3. Date and Time Setting

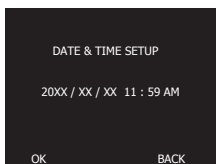
Please enter SYSTEM SETUP menu by pressing down on LEFT function key for more than 3 seconds. (Changes in SETUP can only be made on HU1)



① Select "1 DATE & TIME" by using UP ▲ and DOWN ▼ keys and press LEFT function key to confirm "OK"

② Within a DATE & TIME SETUP MODE:

Use UP ▲ and DOWN ▼ keys to increase / decrease a value
Press PLAY ▶ to move to the next field.



③ Complete the setup with OK.

- While another HU is in ANSWER MODE, the Date & Time Setting will not be reflected on the unit.

- When additional IVP-HU are added in a system, please repeat process above to reflect the Date & Time Setting to new IVP-HU units.

3-4. Changing Volumes



IDLE MODE

Pressing Up ▲ and DOWN ▼ keys while on idle changes volume of the chime that ring out from the Handheld Monitor Units.

ANSWERING/BROWSING MODE

Pressing Up ▲ and DOWN ▼ keys while answering a call or browsing changes volume of the sound out from the Handheld Monitor Units.

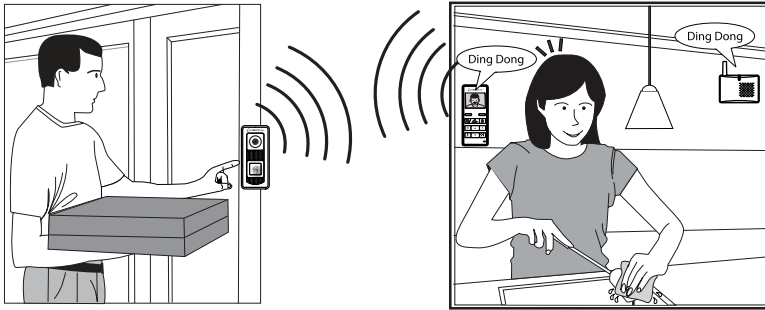
3-5. Changing Brightness on Handheld Monitor Unit



Click on Brightness to shift brightness of the screen.
Brightness changes in 5 steps and repeats.

4. How to Use Basic Features

4-1. Answering to a Door Camera Unit




"ANSWER" to talk




"OFF" to end

- (1) When a visitor presses the PUSH button on a Door Camera Unit, all other iVISION+ devices in the system make a chime sound. The Handheld Monitor Units will automatically display a video image from the Door Camera Unit.
- (2) Press "ANSWER" button to talk to the visitor. The call will automatically be terminated after 60 seconds* unless ANSWER button is pressed again during the conversation to extend for another 60 seconds.

*Conversations are limited to a 60 second duration to conserve battery life or for when it is forgotten to manually end the conversation by pressing the "OFF" button.
- (3) While in a conversation with a Door Camera Unit, if additional Gateway Chime Unit has been installed, you can press the "OPEN DOOR" to open a electric door lock or activate an additional third party equipment.
- (4) Press the "OFF" button to end the conversation.

Handheld Monitor Units allow 60 seconds before answering a call manually and engage in a conversation with a visitor. Unless disabled (ref: SEC. 5), number of images captured by the Door Camera Unit will be stored into a memory of the main Handheld Unit  until the call is answered.

In order to see if there is a missed call please press any button to exit STANDBY MODE. PLAY button on the main Handheld Unit  will blink when there is a new captured image from a time no one answered a call.

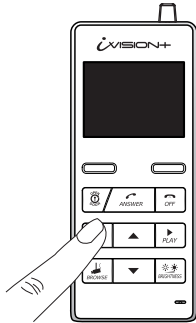
Please refer to Sec. 6 "Handling Stored Images" for more options.

Answering to an additional call from another Door Camera Unit



If another Door Camera Unit calls during ANSWER/BROWSING MODE, pressing RIGHT function key within 60 seconds, switches monitor to the incoming call.

Note: Pressing ANSWER button, instead, extends current session without switching to the incoming call.

4-2. Using SNAP function to capture an image



the Handheld Monitor Unit can capture an image from a Door Camera Unit and stores up to 500 images in an internal memory.

During ANSWER or BROWSING MODE, press SNAP  to record a still image from the Door Camera Unit. An REC Indicator  in red will appear on the top of the screen for 1 second.

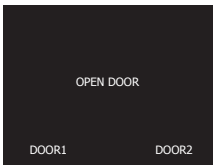


REC Indicator


4-3. Operating OPEN DOOR function

CAUTION

OPEN DOOR function is only available if iVISION+ system is expanded with a Gateway Chime Unit(IVP-GU) and properly connected to a third party equipment.




IDLE MODE

Pressing OPEN DOOR  will bring an OPEN DOOR menu on the screen. Select DOOR1 or DOOR2 to activate a designated output relay on IVP-GU. Two short beeps will confirm the signal transmission. Return to IDLE MODE by pressing OFF.



During ANSWER/BROWSING MODE

Pressing OPEN DOOR  button while answering a call or browsing directly activates the IVP-GU output relay designated to a Door Camera Unit. This is indicated on the top of the screen.


ANSWER/BROWSING MODE




Indicator for a Door Camera Unit in operation

4-4. Ending ANSWER / BROWSING MODE (Returning to IDLE MODE)



Press OFF  button to terminate ANSWER or BROWSING MODE and return to IDLE MODE.

CAUTION

Pressing OFF  button for more than 3 seconds will turn off the power of the Handheld Monitor Unit. When the power is turned off the unit will not respond to a call from a Door Camera Unit.

5. Auto Recording Images

5-1. How "Auto Recording" works



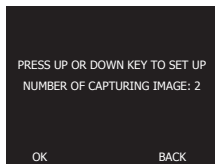
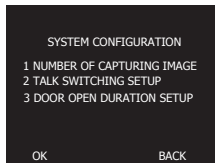
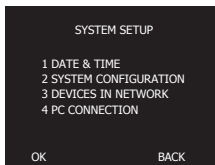
Every time Door Camera Unit makes a call, until ANSWER button is pressed, the main Handheld Unit  capture images from the screen and stores into its internal memory.

When the Handheld Monitor Unit has newly captured images from Auto Recording, PLAY  button blinks when you exit STANDBY MODE.

If you wish to disable the Auto Recording function, please follow step 5-2 for setting a number of images to be captured to "0" zero.





The internal memory of the Main Handheld Monitor Unit can store up to 500 images. If additional images are captured and being stored, oldest images are deleted and overwritten automatically.

5-2. Changing number of images to be captured in "Auto Recording"



NOTE

By default, the number of images to be captured during Auto Recording is "2".

- (1) Please enter SYSTEM SETUP menu by pressing down on LEFT function key for more than 3 seconds.
- (2) Select "2 SYSTEM CONFIGURATION" by using UP  and DOWN  keys and press LEFT function key to confirm "OK"
- (3) Select "1 NUMBER OF CAPTURING IMAGE" and press LEFT function key to confirm "OK"
- (4) Using UP  and DOWN  keys, select the number of images to be captured during "Auto Recording" from "0" zero to "10" ten.
- (5) Please press LEFT Function key to "OK" your selection. The screen will consequently return to IDLE MODE.

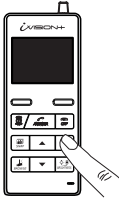
5-3. Timings for capturing images







First image will be captured within a second after the PUSH button on the Door Camera Unit is pressed. The second image will be captured 4 seconds after the first image. The third and following images will be captured at intervals of 1 second.

6. Handling Stored Images

6-1. Viewing Images

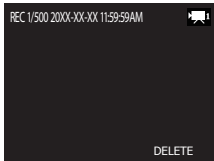


- (1) While in IDLE MODE, press PLAY  to enter IMAGE VIEWING MODE
- (2) Use UP  and DOWN  keys to browse through stored images.
- (3) End IMAGE VIEWING MODE by pressing OFF  button.



6-2. Deleting Stored Images

CAUTION

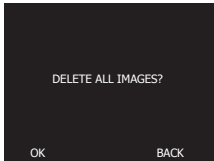
Please note that once images are deleted, they can not be restored.




Deleting selected images in a memory

- (1) While in IMAGE VIEWING MODE, select image to delete by UP  and DOWN  keys.
- (2) Press RIGHT function key to delete the image.

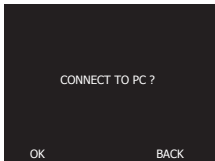
Deleting all images stored in a memory





- (1) While in IDLE MODE, press and hold PLAY  button for more than 3 seconds.
- (2) If OK, press LEFT function key to delete all images.

Recommended monthly deletion of all images to reduce a risk of memory failure.

6-3. Viewing Images from Your PC



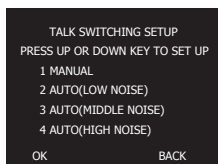
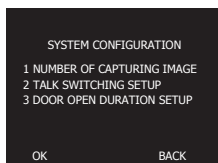
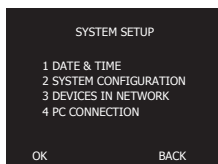
- (1) Enter SYSTEM SETUP menu by pressing LEFT function key for more than 3 seconds.
- (2) Select "4 PC CONNECTION" by using UP  and DOWN  keys. Confirm "OK" by LEFT function key.
- (3) Make sure that the Handheld Monitor Unit is connected to a PC by micro-USB cable*1, and proceed with "OK" by pressing LEFT function key. PC CONNECTION MODE will start.
- (4) Your PC will recognize the Handheld Monitor Unit as an external storage device. Access the device to retrieve or manage stored image files*2.
- (5) Eject the storage device from the PC and confirm "BACK" by RIGHT function key to return to IDLE MODE.

*1 micro-USB cable must be obtained separately from available electronics shops

*2 PC may require addition procedures to recognize the device. Supports Windows® 7 or later versions.

7. Other Settings

7-1. Talk Switching Mode Setting



Press LEFT function key to speak to a Door Camera Unit (Effective in all settings)

By default, Talk Switching Setup between a Door Camera Unit and a Handheld Monitor Unit is set to AUTO(MIDDLE NOISE). This means that a conversation switches automatically from a listener to a speaker on either side of the intercom when an unit is picking up a voice or any relevant sound. If you wish to change the setting, please take following procedures.

- (1) Enter SYSTEM SETUP menu by pressing LEFT function key for more than 3 seconds.
- (2) Select "2 SYSTEM CONFIGURATION" by using UP ▲ and DOWN ▼ keys and press LEFT function key to confirm "OK"
- (3) Select "2 TALK SWITCHING SETUP" by using UP ▲ and DOWN ▼ keys and press LEFT function key to confirm "OK"
- (4) In TALK SWITCHING SETUP screen, select a mode from 1 to 4 by using UP ▲ and DOWN ▼ keys and press LEFT function key to confirm "OK".

1 MANUAL

This is a "Push to talk" mode. Door Camera Unit only receives a voice or a sound from a Handheld Monitor Unit when LEFT function key is being pressed. Use this mode to avoid unwanted sound from the house to be heard from a Door Camera Unit.

2 AUTO(LOW NOISE)

Listener and speaker side switches automatically in this mode. Use this in a very quiet and low noise environment to enhance conversational responses.

3 AUTO(MIDDLE NOISE)

Listener and speaker side switches automatically in this mode. This is a factory default setting.

4 AUTO(HIGH NOISE)

Listener and speaker side switches automatically in this mode. Use this with a noisy environment to enhance conversational responses.

7-2. Sensor Alert Enabling/Disabling Setting

While Door Camera Unit(IVP-DU) is powered by an external power source and OPTEX Wireless2000 TD-20U is connected to iVISION+ system through Gateway Chime Unit, calls can be triggered by motion detectors, capturing images from the IVP-DU.

In order to change this setting, enter ENABLE/DISABLE SENSOR ALERT menu by pressing RIGHT function key for more than 3 seconds. Confirm by LEFT function key to switch setting or cancel by RIGHT function key.



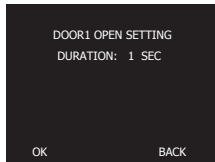
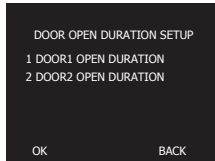
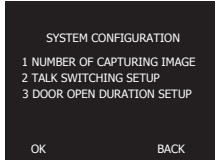
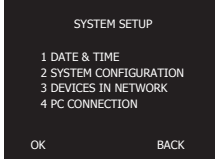
Sensor Alert Enabled: TD-20U triggers a call to iVISION+ system.



Sensor Alert Disabled: TD-20U does not trigger a call to iVISION+ system.

7-3. Door Open Duration Setting*

* This setting is only active while iVISION+ system is properly connected to a third party doorlock or a garage door activator through a Gateway Chime Unit (IVP-GU).



NOTE

By default, DOOR OPEN DURATION Setting is 1 second*.

* The actual duration that the third equipment operate may differ from this setting.

This setting adjust a operation time of a NO/NC terminal output on IVP-GU to 1 sec, 5 sec, 30 sec or 60 sec.

- (1) Enter SYSTEM SETUP menu by pressing LEFT function key for more than 3 seconds.
- (2) Select "2 SYSTEM CONFIGURATION" by using UP ▲ and DOWN ▼ keys and press LEFT function key to confirm "OK"
- (3) Select "3 DOOR OPEN DURATION SETUP" by using UP ▲ and DOWN ▼ keys and press LEFT function key to confirm "OK"
- (4) In DOOR1(2) OPEN SETTING screen, select a duration time by using UP ▲ and DOWN ▼ keys and press LEFT function key to confirm "OK".

DURATION: 1 SEC
5
30
60

8. Frequently Asked Questions

Q: Is the iVISION+ compatible to the old iVISION?

A: No, the iVISION+ is not compatible to iVISION system.

Q: If I connect existing door bell wires to the Door Camera Unit, will the bell still ring?

A: No. The input terminals on the Door Camera Unit are strictly for powering purposes. Please use Gateway Chime Unit to replace the existing doorbell.

Q: Can I download the images from the Handheld Monitor Unit to my PC?

A: Yes. micro-USB cable is required to download images. (Refer to Sec. 6-3)

Q. What is the RF transmission range for iVISION+?

A: Signal reaches a maximum of three hundred ft (clear line of site).
RF signal condition may vary depending on surrounding environment and materials.

Q: How many Handheld Monitor Units can I have communicating to a Door Camera Unit?

A: One at a time. If another Door Camera Unit makes a call while answering, the call can be only answered from the current Handheld Monitor Unit.

Q: How can I adjust the volume on the Door Camera Unit?

A: There is no volume adjustment for the Door Camera Unit.

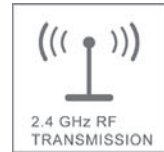
9. Trouble Shooting

Symptoms	Probable causes & solutions
The video image is distorted. The voice is cut off while answering/browsing a Door Camera Unit.	Is a microwave oven or a wireless LAN device in operation near the Handheld Monitor Unit? <ul style="list-style-type: none"> • Re-locate the Handheld Monitor Unit away from such equipment.
A howling noise distorts the sound.	If the Handheld Monitor Unit is too close to the Door Camera Unit, a howling sound can occur. <ul style="list-style-type: none"> • Please move the IVP-HU away from IVP-DU until the howling sound disappears.
The ring tone cannot be heard.	<ul style="list-style-type: none"> • Check battery status on Handheld Monitor Unit and charge if necessary. Change volume setting on the Handheld Monitor Unit. (Refer to Sec. 3-1 "Check 4")
The charging does not start when the Handheld Monitor Unit is placed in the charging cradle.	Is the AC adaptor disconnected from the socket or the charging cradle? <ul style="list-style-type: none"> • Please check all power connections. • Clean the charging terminals with a dry cloth.
The display on a Handheld Monitor Unit is black and does not respond to any key.	Is the unit in standby? <ul style="list-style-type: none"> • Press any button to energize the display. • Make sure the unit is powered on. (Refer to Sec. 3-2) • If the battery has ran out, charge the Handheld Monitor Unit.
The video image flickers.	Fluorescent lights nearby to the Camera Door Unit may cause the image to flicker.
The video image appears blurred by lights.	It may be difficult to see the image if the camera lens receives strong light such as sunlight. <ul style="list-style-type: none"> • Avoid direct sunlight by re-positioning or placing a shade. • Adjust the brightness setting (Refer to Sec. 3-5)
During PLAY function, viewing stored images is slow.	Please clear out all stored images by referring to Sec. 6-2 "Deleting all images stored in a memory". This will format a memory and improve a viewing speed. Do not forget to make a PC backup of images if necessary.
The Handheld Monitor Unit has a very short battery life.	If the units had not been powered for a long time, it may require to repeat charge-discharge process for several times to rejuvenate a battery life. If the battery life does not improve, please contact our technical assistance.

Technical Assistance (800) 966-7839

If you require technical assistance about a setup, operation or use of this product please call our Technical Support at this number. (US Domestic calls only)

FCC WARNING



About the radio frequency transmitter

- This unit transmits a wireless signal in the frequency range 2.4 -2.4835GHz.

This unit shares a frequency band with a wide range of equipment: i.e. industrial, scientific and medical equipment, licensed and unlicensed low-power radio transmitters such as those used for RFID applications in factories/warehouses and amateur radio stations. Before use please confirm that no such equipment is in use in your vicinity.

In the event that this unit causes unwanted interference to such device, please discontinue use immediately and contact the customer service center for consultation on interference avoidance measures.

This device complies with Industry Canada license-exempt RSS standard(s).

Operation is subject to the following two conditions :

- (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Privacy & portrait/image rights

- Please respect the privacy and image rights of others when using this equipment. By using this equipment the user assumes total responsibility in upholding these rights.
- Images stored must not be used for any purpose other than that for which the equipment is designed.
- Images should be deleted once no longer required - see page 10 for details of how to delete the stored images.



OPTEX CO., LTD. (JAPAN)

URL: <http://www.optex.net/>

OPTEX INC. (U.S.)

URL: <http://www.optexamerica.com/>

OPTEX DO BRASIL LTDA. (Brazil)

URL: <http://www.optex.net/br/es/sec/>

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(The Netherlands)**

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OPTEX SECURITY SAS (France)

URL: <http://www.optex-security.com/>

OPTEX SECURITY Sp.z o.o. (Poland)

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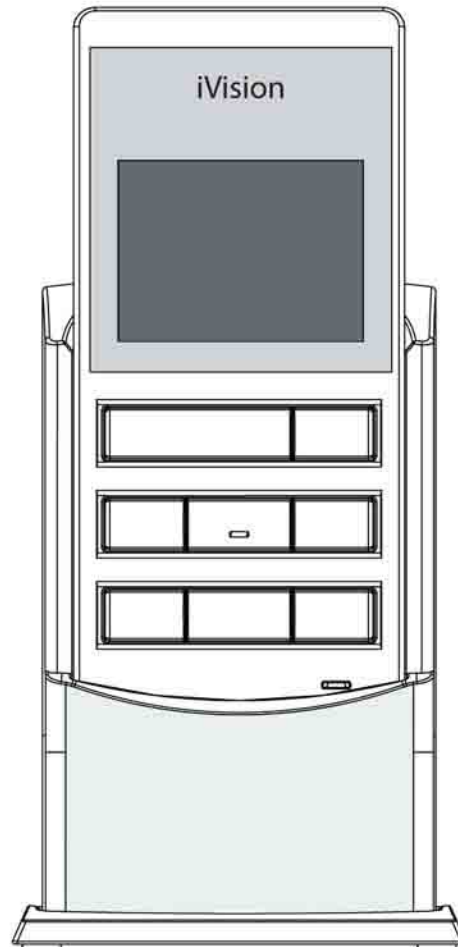
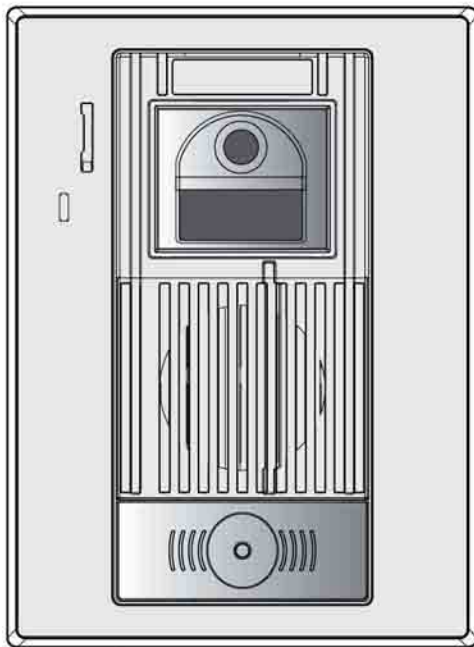
URL: <http://www.optexkorea.com/>

**OPTEX (DONGGUAN) CO.,LTD.
SHANGHAI OFFICE (China)**

URL: <http://www.optexchina.com/>

Instruction Manual

iVision Wireless Video Door Intercom



ATTENTION:

Thank you for purchasing the iVision wireless video door intercom.

Before permanently mounting the camera door unit on the wall, please confirm successful wireless signal transmission by testing the quality of the voice and video image.

Before installation and use, please read this instruction manual thoroughly and keep it safe for future reference.

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Introduction and installation

Introduction

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Using the system

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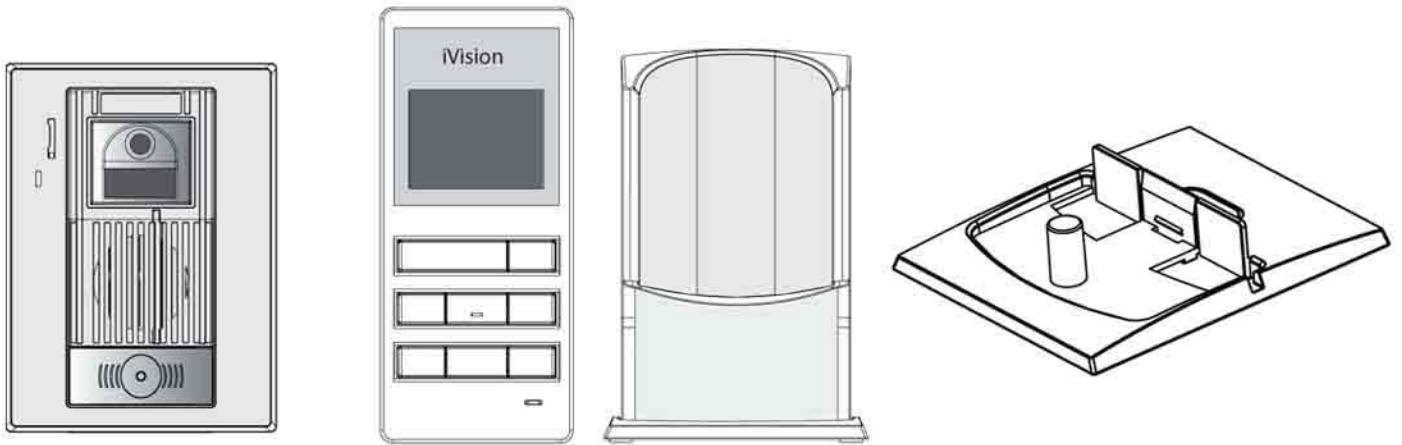
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What's included in your kit

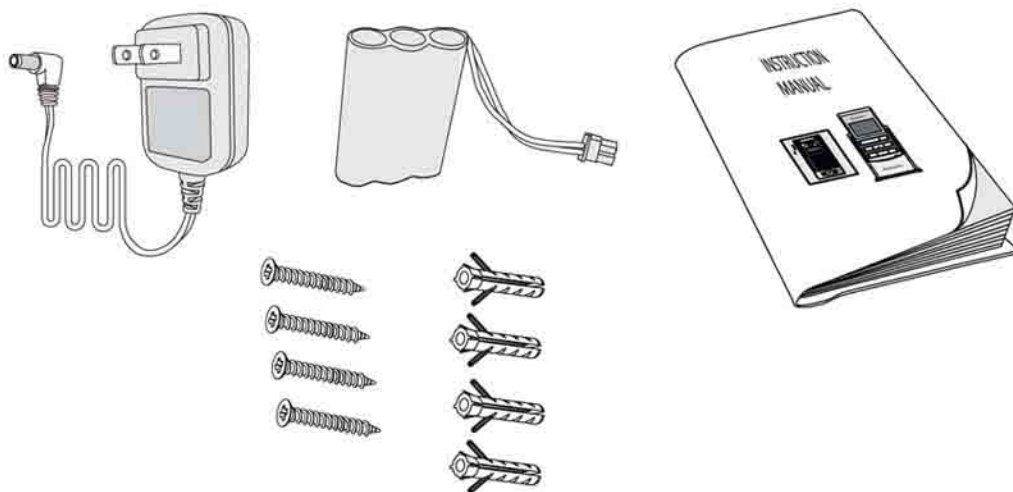
Main units

- 1 x Camera Door Unit
- 1 x Indoor Portable LCD Display Unit
- 1 x Charging Cradle
- 1 x Charging Cradle Stand



Accessories

- 1 x AC Adaptor
- 1 x Rechargeable Battery pack
- 4 x Mounting Screws
- 4 x Screw Pegs
- 1 x Instruction Manual



***6 AA batteries for door unit not included

Safety precautions

Please observe the following precautions when installing or using the kit.

Rechargeable Battery Pack

Do not disassemble the battery pack.

Do not dispose of in fire.

Use only the specified battery pack in the kit.

Do not use this battery pack in other equipment.

Only charge the battery pack using the charging cradle & AC adaptor supplied.

Do not bring the battery terminals (+/-) into contact with a metal surface/object.

Do not hold the battery pack by the wires.

Should any liquid leak from the battery pack, avoid contact with your skin or eyes.

Indoor LCD Display Unit

Ensure the AC adaptor is securely plugged into the main power outlet.

Do not use within 8in (22 cm) of a person wearing a cardiac pacemaker - the operation of the pacemaker could be affected.

Do not install/use in damp, steamy or dusty environments.

Do not hold the LCD monitor to your ear - your hearing could be damaged.

Do not install in an unstable location or where subject to strong vibration.

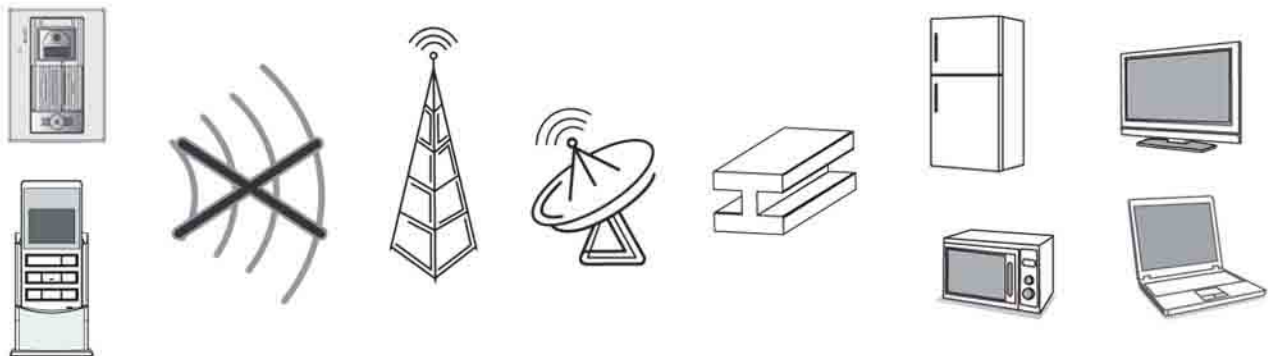
Outdoor Camera Unit

Do not mix old and new batteries or lithium and alkaline batteries as leakage or possible explosion can occur.

Operation guidelines

Avoid using the Indoor Portable LCD Display Unit in the following areas

- Close to a fire, thermal appliance or other source of extreme heat/cold.
- Within 10ft (3m) of a television, microwave oven, personal computer, wireless LAN equipment, wireless audio/visual equipment - the radio frequency waves emitted by these devices can affect operation.
- In direct sunlight.
- Where extreme fluctuations in temperature can occur - if moving the unit from a warm to cold environment, or vice versa, please allow 30 minutes before use.



The following can also affect successful operation of the system

- Metal doors and shutters.
- Walls with aluminium foil insulation.
- Concrete or galvanized metal walls.

The effective communication range is 330ft (100m) in free air space (line of sight). This range will be significantly reduced by the number and thickness of walls through which the signal is required to pass - please keep to a minimum wherever possible.

About the radio frequency transmitter

- This unit transmits a wireless signal in the frequency range 2.4 - 2.4835GHz.
- The modulation system is GFSK and the interference-causing radius is 262ft (80m).



This unit shares a frequency band with a wide range of equipment: i.e. industrial, scientific and medical equipment, licensed and unlicensed low-power radio transmitters such as those used for RFID applications in factories/warehouses and amateur radio stations. Before use please confirm that no such equipment is in use in your vicinity.

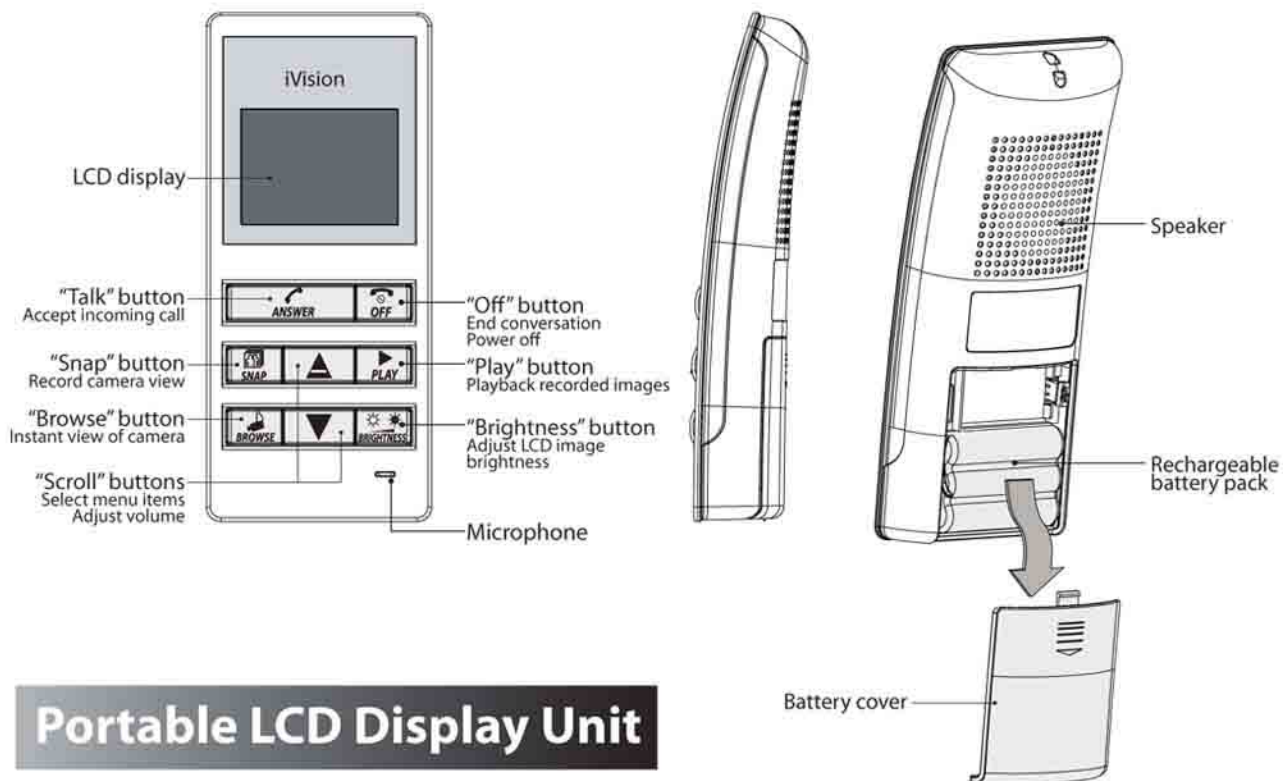
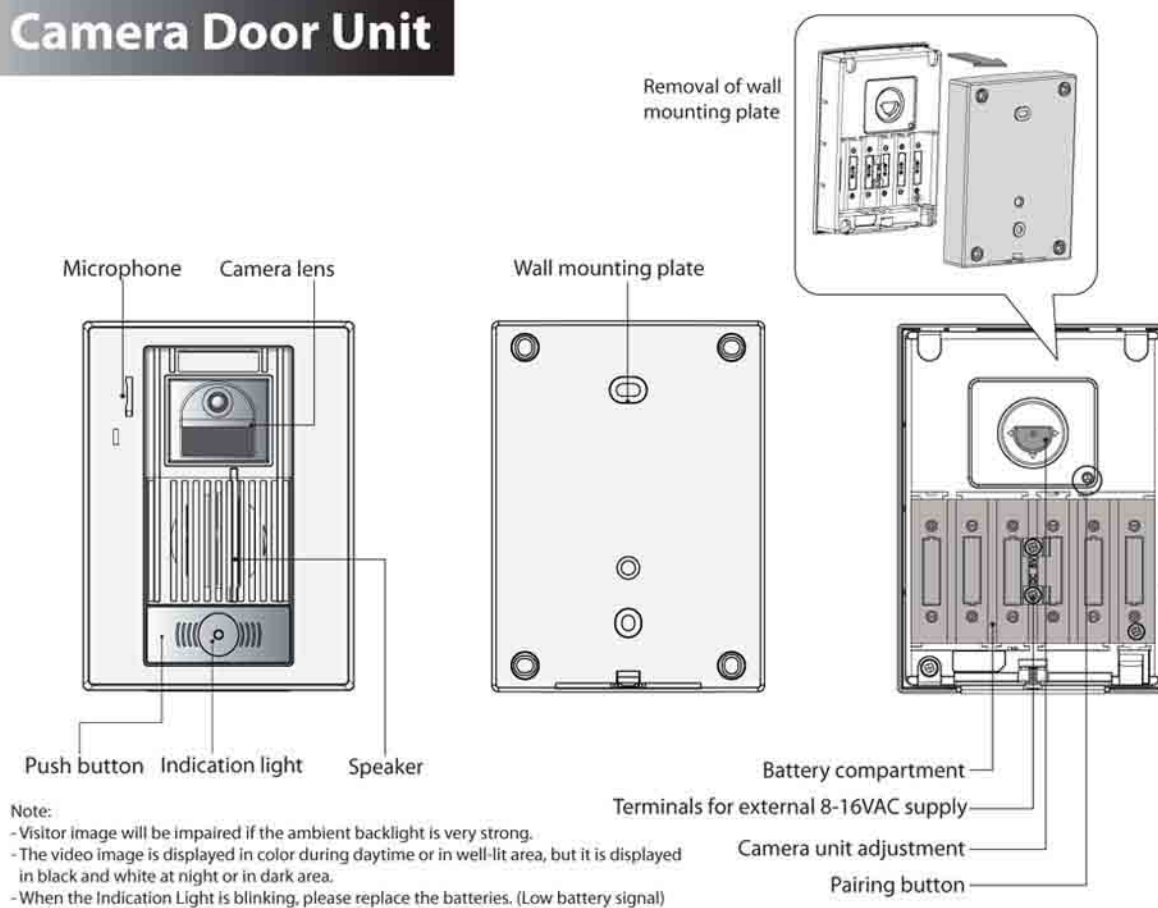
In the event that this unit causes unwanted interference to such device, please discontinue use immediately and contact the customer service center for consultation on interference avoidance measures.

Privacy & portrait/image rights

- Please respect the privacy and image rights of others when using this equipment. By using this equipment the user assumes total responsibility in upholding these rights.
- Images stored must not be used for any purpose other than that for which the equipment is designed.
- Images should be deleted once no longer required - see page 19 for details of how to delete the stored images.

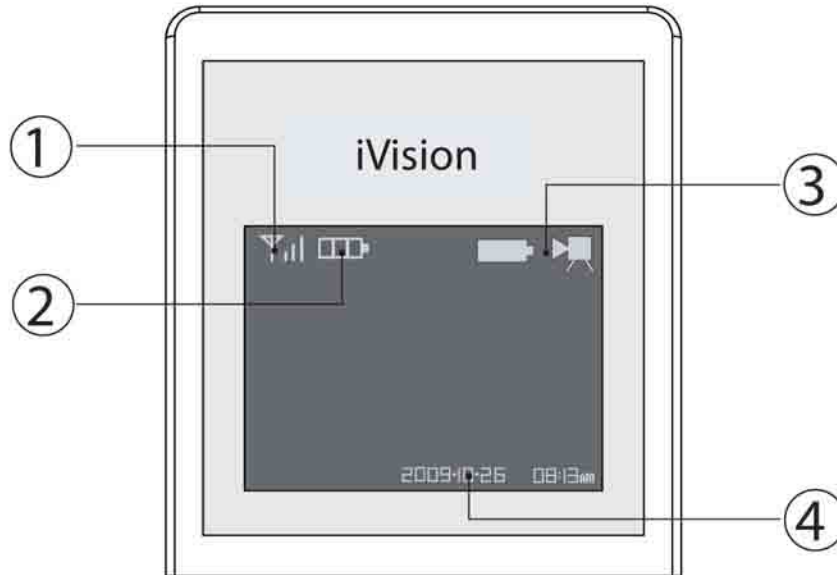
Identifying the key system

Camera Door Unit



Portable LCD Display Unit

LCD Display



① RF transmission condition

Excellent

Good

Weak

None

② Battery power condition indicator (Portable Indoor Display Unit)

Excellent

- Battery status after 6 hours full charging.
- Operation temperature at 68°F (20°C)
- Standby: 72 hours

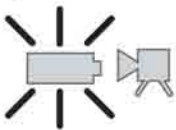
Good

Low

- Please charge the battery.

Flat

③ Low battery indicator (Camera door unit)



- When the camera batteries are running low, the icon will blink at the upper right corner of the screen for 10 seconds during talking or live browsing.
- Based on an average of (1) 10 second activation per day using lithium batteries, the estimated battery life is approx. 12 months. (The use of alkaline batteries will result in shorter lifetime.)

④ Date and time indications

The date and time is displayed at the bottom of the screen.

(For date and time setting → See page 17)

* Notice:

The standby time could be less than half depending on the charging level of the battery pack, ambient conditions such as temperature, the status of RF transmission in the area and function settings.

Installation

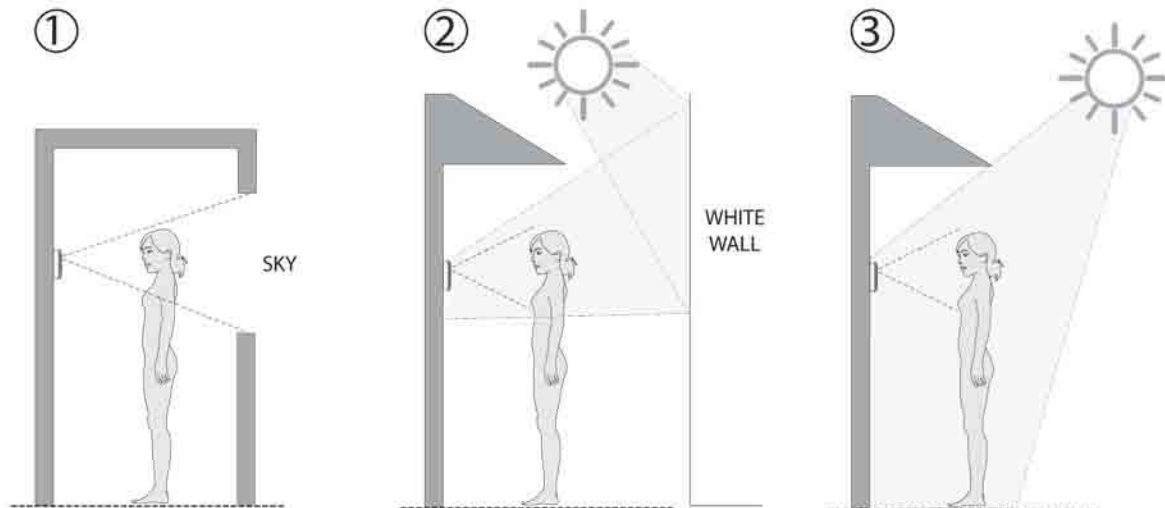
Selecting a location for the Camera Door Unit

1) Areas to avoid when mounting the door camera unit

The performance of the system may be affected when mounting the unit in the following areas -

- Areas that are subjected to vibration or shock.
- Near a source of hydrosulphuric, phosphorus, ammonia, sulphur, carbon, acid, dust and noxious fumes.
- An enclosed area that may cause echo
- Where rain or water may directly hit the back of the unit.

The video image may be seriously impaired where the camera faces directly into the sun, and also in the following situations.



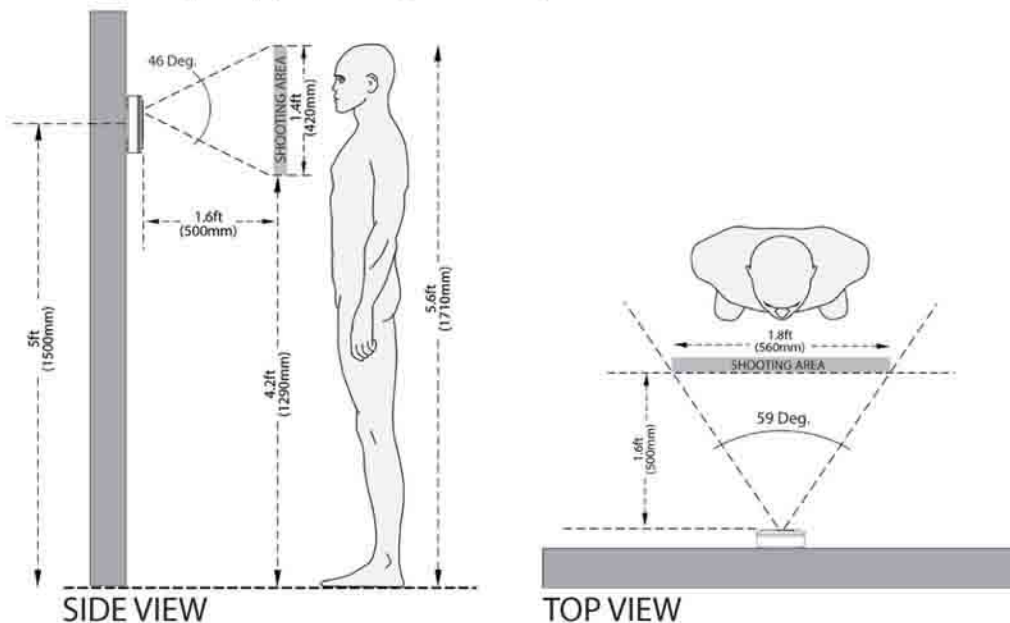
- ① Location where the background is primarily occupied by the sky, such as in the upper floor of an apartment building.
- ② Location which has an adjacent white wall that will directly reflect sunlight.
- ③ Location that receives direct bright sunlight.

2) Camera position & Field of View (FOV)

The Camera Door Unit can be mounted in a variety of locations. Review the information below before installation. It is suggested that you experiment with different mounting locations by holding the camera in position, pressing the doorbell pushbutton then checking the image on the LCD monitor.

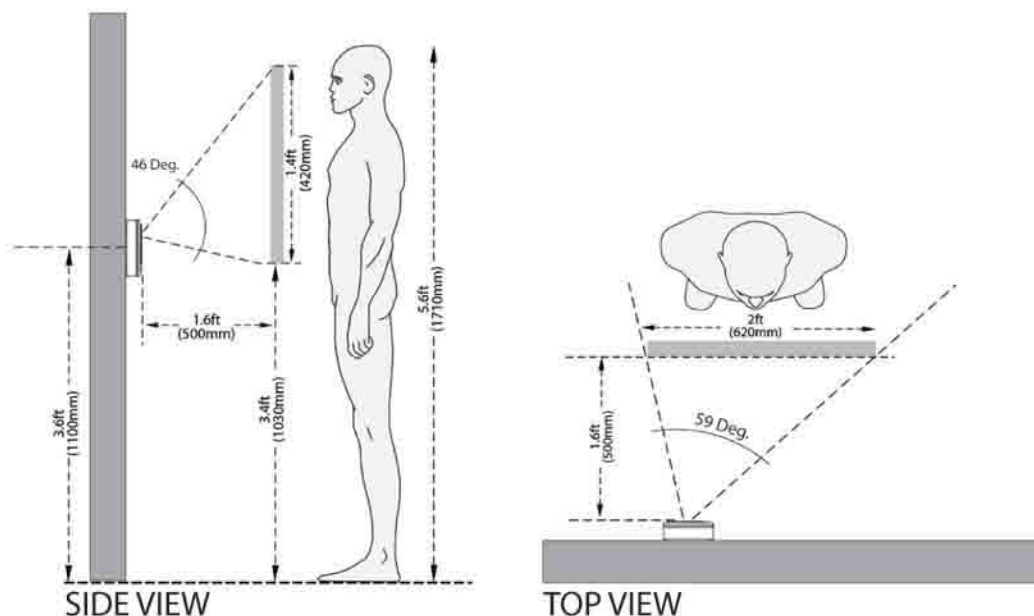
The diagrams below show an example camera position to view a visitor 1.6ft (500mm) from the camera.

- Camera tilt angle = 0 Deg. (this is the default setting).
- Camera mounting height approx. 5ft (1500mm).



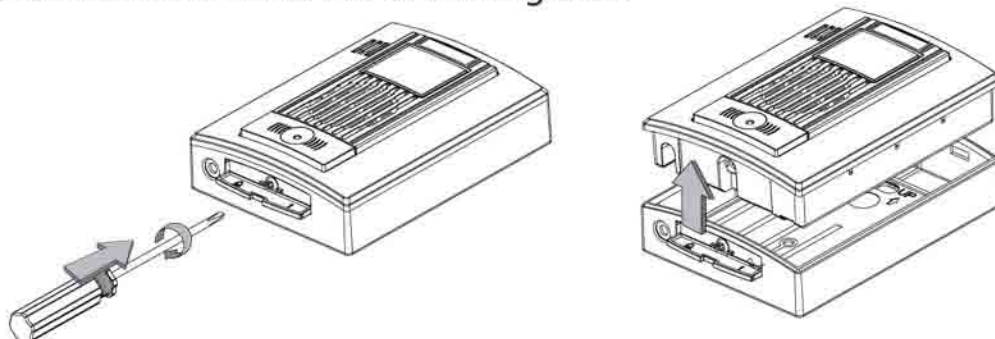
The Camera Door Unit can be mounted in a lower position or on the left or right side. The target shooting area can be adjusted as shown below.

- Camera tilt angle = 15 Deg. (upward).
- Camera pan angle = 15 Deg. (to the right).
- Lower mount height approx. 3.6ft (1100mm)
- Camera mounted to left side



Installing the Camera Door Unit

1) Remove the main unit from the mounting base



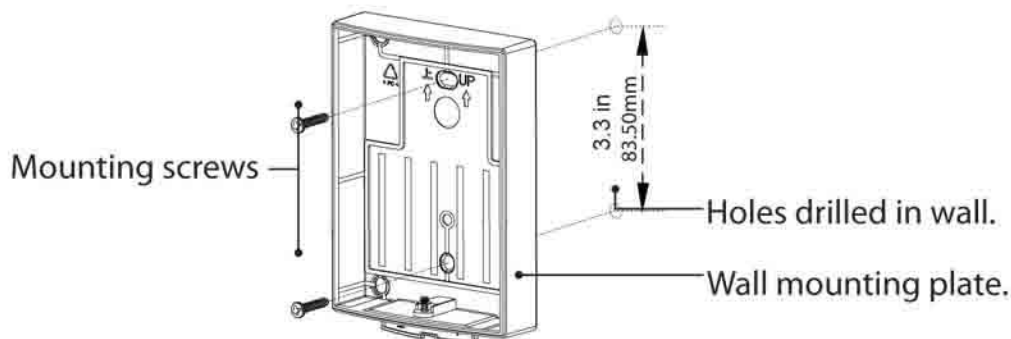
① Open the screw cover with a flat blade screwdriver, then loosen the screw using a crosshead screwdriver.

② Lift to remove the main unit from the mounting base.

2) Fix the mounting base on the wall at the height and location selected

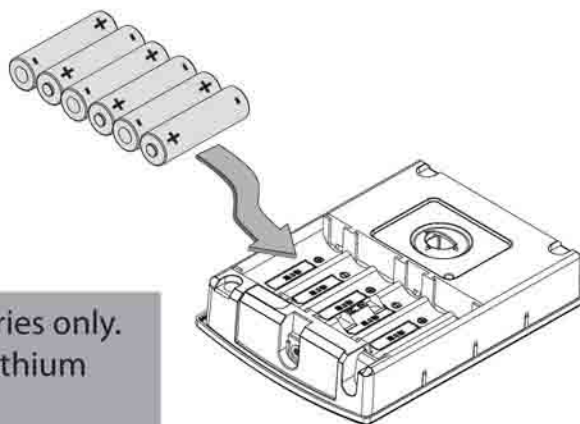


Do not use an electrical screwdriver for fitting wall mounting plate. It can crack or break plate.



3) Install the batteries

Insert 6 x AA alkaline batteries. Please ensure to observe the correct +/- polarity as shown.



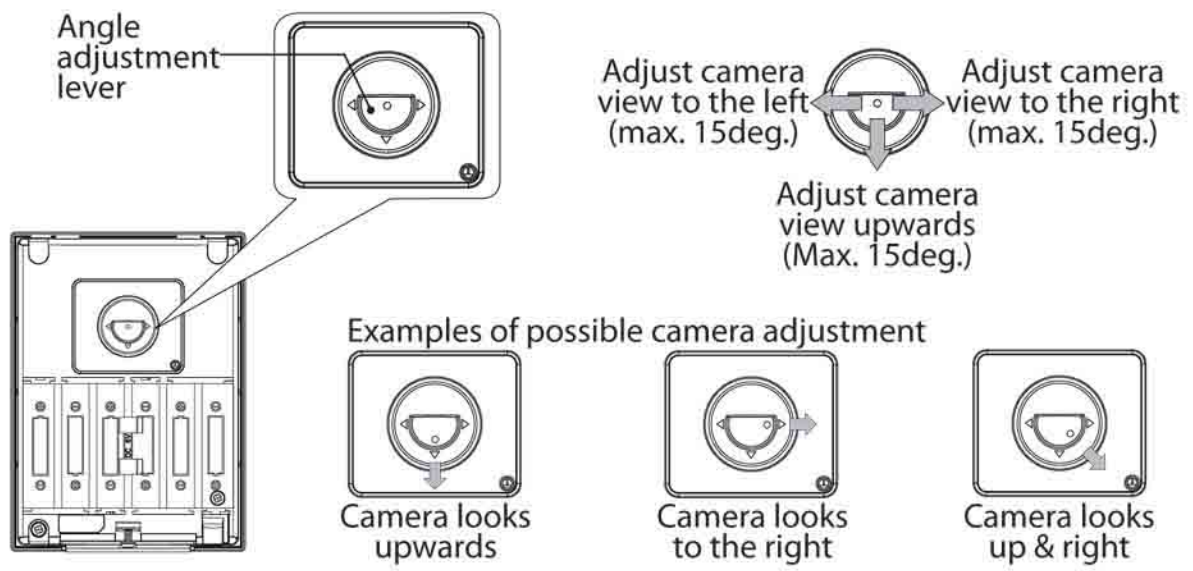
NOTICE: for longer battery life, lithium batteries are strongly recommended.



Please use the specified batteries only. Do not mix new and used or lithium and alkaline batteries.

4) Adjust the camera lens angle

- The camera lens is adjustable to a maximum of 15 degrees.
- Please note that the video image may become slightly distorted if the camera angle is set to maximum upper left/right adjustment.

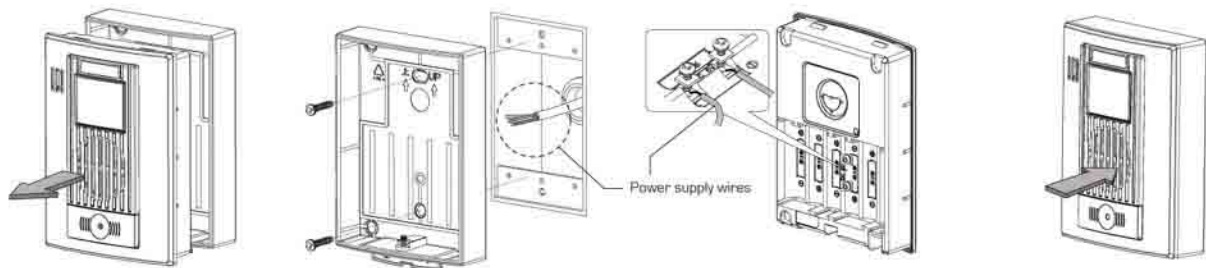


5) Re-fit the main unit to the mounting base

- Ensure to secure with the screw and replace the screw cover.

6) Powering the Camera Door unit via main power (optional)

The Camera Door unit can be used without batteries by connecting it directly to an existing 8-16V wired doorbell supply or 8-16V external power pack (not supplied).

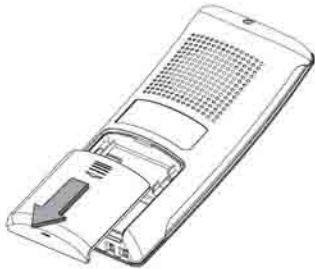


- 1 Remove the main unit from the mounting base.
- 2 Pass the bell wire or the wire from the power pack through the mounting plate before fixing the plate to the wall. Connect the wire to the supply terminals directly.
- 3 Re-fit the main unit to the mounting base and secure with the screw.

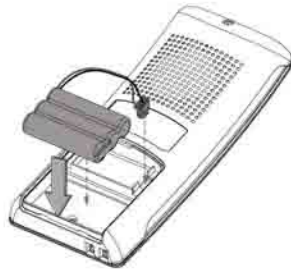
Charging the Indoor Portable LCD Display unit.

The indoor portable LCD display unit will need to be charged for approximately 6 - 8 hours before first use.

1) Install the battery pack



- 1 Remove the battery compartment cover.



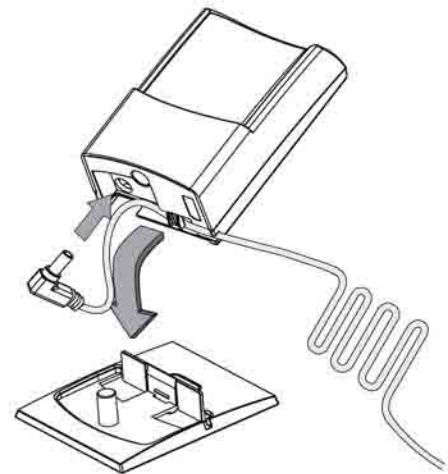
- 2 Connect the battery connector to the socket located in the battery compartment. Seat the battery pack into the compartment.



- 3 Re-fit the battery cover - do not remove the foam cushion.

2) Assemble the charging cradle

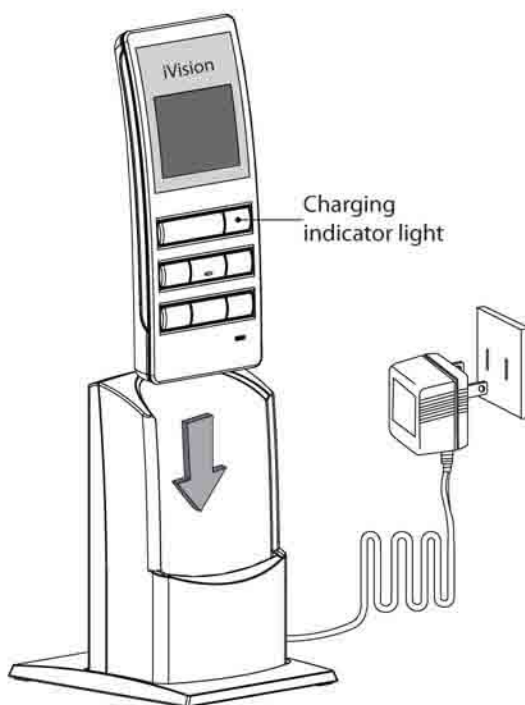
- Insert the plug from the AC adaptor into the socket on the base of the charging cradle. Secure the cable under the cord grip.
- Fit the charging cradle onto the stand and snap into place.



3) Plug the AC adaptor into a 120VAC outlet

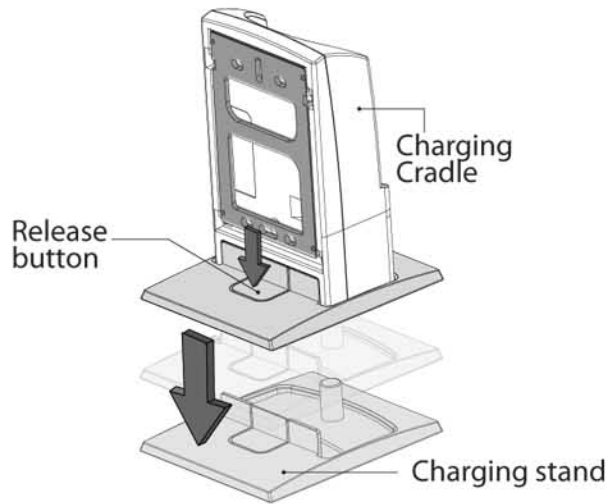
4) Place the Indoor Portable LCD Display unit into the charging cradle

- A full charge will take around 6 hours, longer if the unit is used during charging.
- The charging indicator light will extinguish when charging is complete.
- It's ok to leave the LCD unit in the charging cradle - it cannot be over-charged.
- Ensure the charging terminals are kept free from dust and dirt.
- If the system is not being used for a period of time, remove the battery pack.

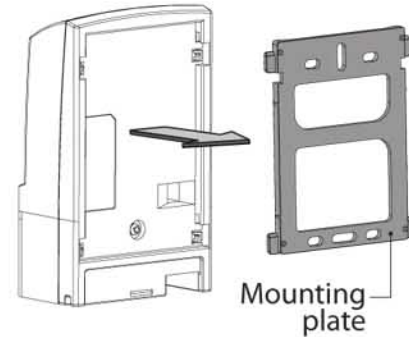


Wall mounting the Charging Cradle

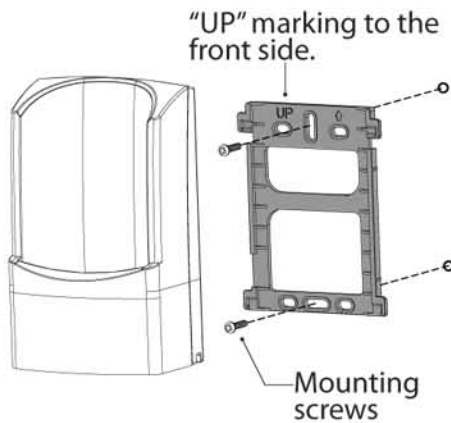
The Charging Cradle can either be used free-standing by use of the stand, or wall mounted as described below.



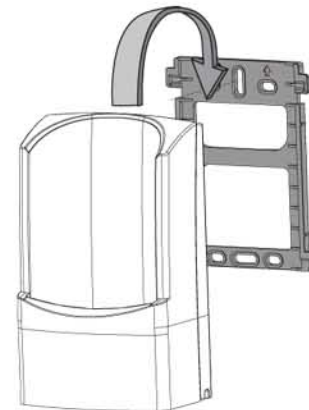
- 1 Remove the stand by pressing down the release button located behind of the charging stand & pulling the cradle upwards.



- 2 Remove the mounting plate from the charging cradle.



- 3 Mount the mounting plate to the wall using the screws and pegs provided. Ensure the UP marking is on the front side.



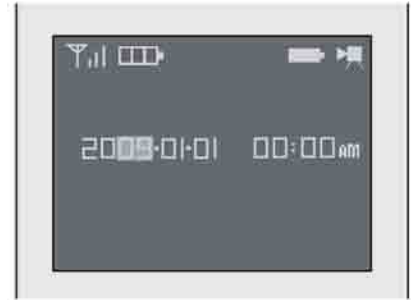
- 4 Hang the Charging Cradle securely on the mounting plate and push it down so that it snaps in place.



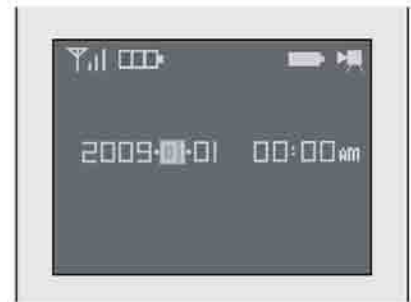
Be sure to fix the cradle firmly to the wall so that it does not become detached when inserting/removing the Indoor Portable LCD Display unit.

Setting the Date and Time

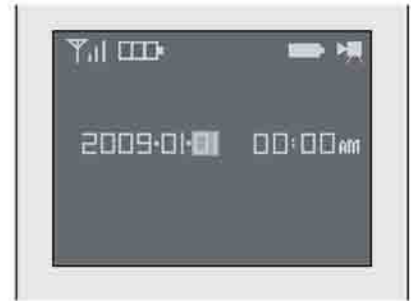
- 1) Hold the "PLAY" button for 3 seconds.
The date and time will appear with the YEAR highlighted as shown.
Press the "UP" and "DOWN" arrows to select the year.



- 2) Press the "PLAY" button to move to the MONTH selection.
Press the "UP" and "DOWN" arrows to select the month.



- 3) Press the "PLAY" button to move to the DATE selection.
Press the "UP" and "DOWN" arrows to select the date.



- 4) Press the "PLAY" button to move to the HOUR selection.
Press the "UP" and "DOWN" arrows to select the hour.
Ensure the correct AM/PM setting is selected.



- 5) Press the "PLAY" button to move to the MINUTE selection.
Press the "UP" and "DOWN" arrows to select the minute.



- 6) Press the "OFF" button to complete the settings and exit Date & Time Setting mode.

Using the system

Answering a caller

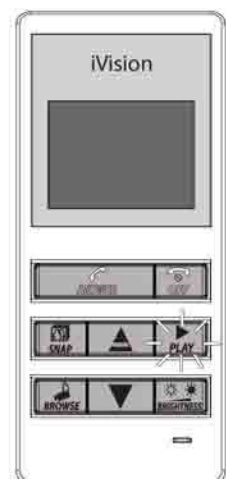


- 1) When a visitor presses the pushbutton, ring tones can be heard and the camera image shows on the LCD monitor.
 - A moving image of the visitor will appear for ten seconds followed by a still image.
 - The still image is stored in memory.
 - The "OFF" and "ANSWER" buttons will blink slowly.
- 2) Press the "ANSWER" button to talk to the visitor for up to 60 seconds.
- 3) Press the "OFF" button to finish the conversation.



You have 150 seconds to answer a call and initiate a conversation. If you do not answer a call, an image of the visitor is stored in memory. The PLAY button will blink slowly to alert you that a visitor called while you were out - see page 19 "Viewing the recorded images" for details of how to view the recorded image.

Conversations are limited to a 60 second duration to conserve battery life should you forget to manually end the conversation by pressing the "OFF" button.

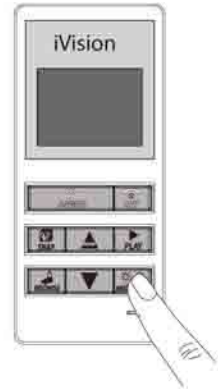


Adjusting the Brightness & Volume

The following adjustments can only be made while the system is operating. The easiest way to achieve this is to press the doorbell pushbutton and then press the "ANSWER" button.

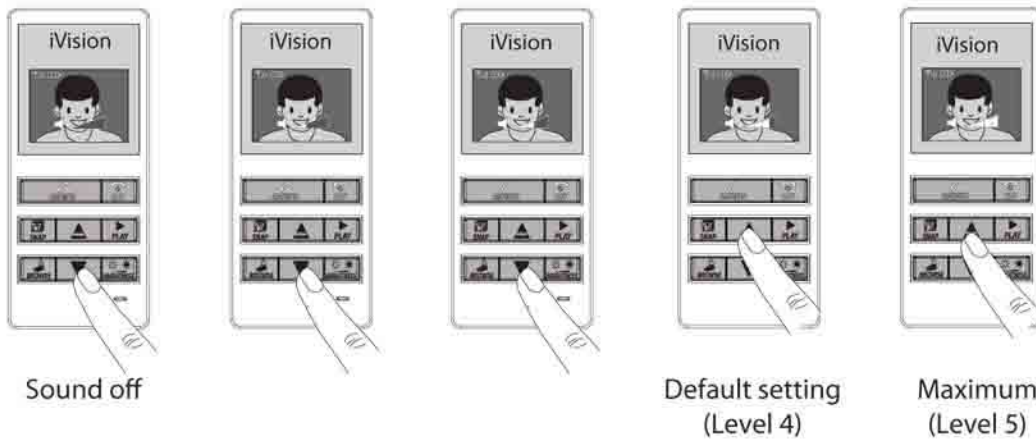
1) Changing the Display brightness

- Press the "BRIGHTNESS" button repeatedly until the desired display brightness is achieved - 5 levels are available.



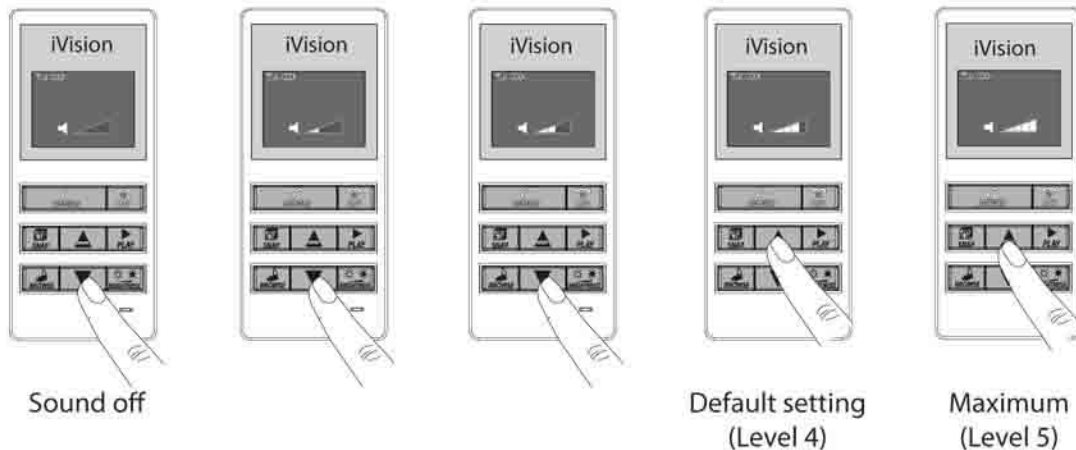
2) Changing the voice volume

- Press the "UP" and "DOWN" arrow buttons during the conversation to change the voice volume - 5 levels are available.



3) Changing the LCD Display unit ringtone volume

- Press the "OFF" button to place the unit in STANDBY
- Press the "UP" and "DOWN" arrow buttons during standby to change the ringtone volume - 5 levels are available.



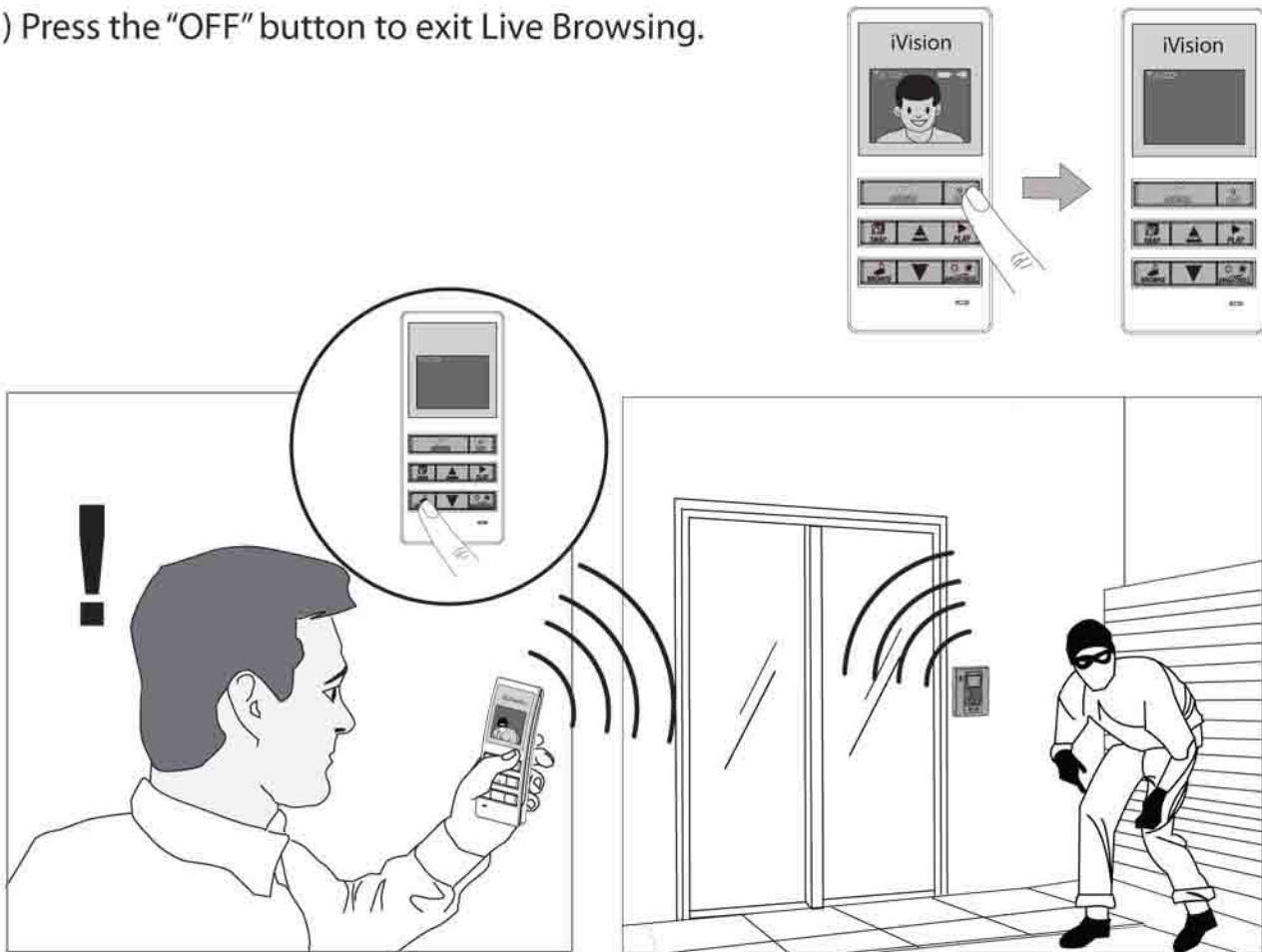
Live Browsing

Please note - the Live Browsing feature is only available if the Door Camera Unit is powered via main power (see page 11 for details).

This function allows you to monitor the view from the Door Camera on the LCD display at any time. The feature is disabled when powered by batteries.

- 1) Press the "BROWSE" button.
- The Camera Door unit is activated.
 - The LCD monitor will display the image from the Camera Door unit.
 - Sound from the Camera Door unit microphone can be heard.
- OR** 2) Press the "ANSWER" button.
- The Camera Door unit is activated.
 - The LCD monitor will display the image from the Camera Door unit.
 - Sound from the Camera Door unit microphone can be heard.
 - You can talk to the person outside via the LCD monitor.

- 3) Press the "OFF" button to exit Live Browsing.



Notes:

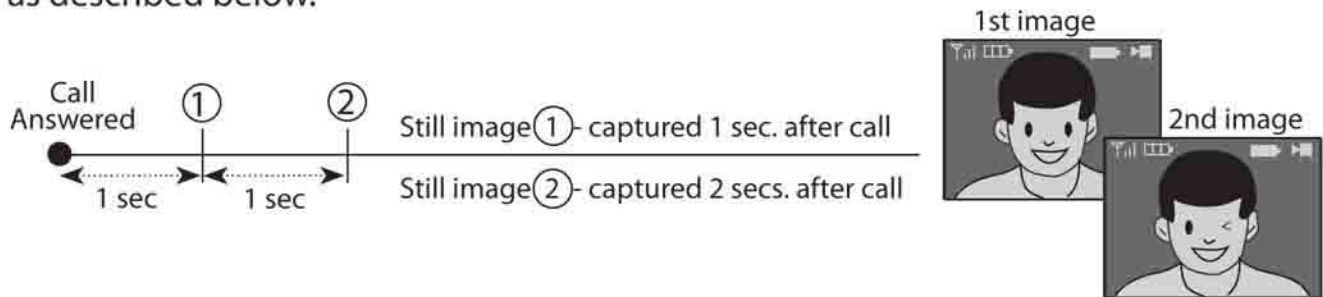
- After pressing the "BROWSE" or "ANSWER" button, it may take up to 4 seconds for the 'Live Browsing' feature to activate.
- Conversations are limited to a 60 second duration to conserve battery life should you forget to manually end the conversation by pressing the "OFF" button.

Recording Video Images

Automatic Recording

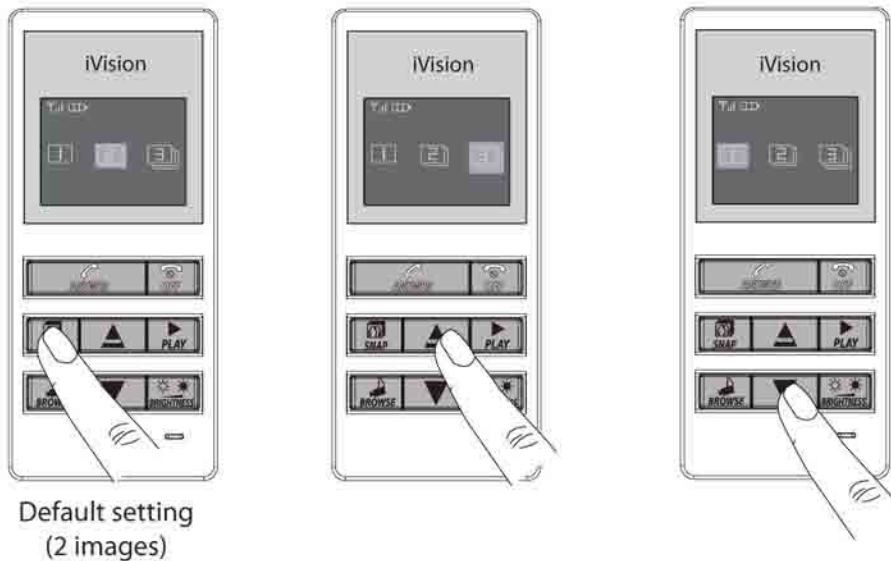
Video images are automatically recorded each time a visitor presses the doorbell pushbutton. Each image has a date and time stamp that indicate when the visit occurred. The system can store a maximum of 163 images; when this limit is reached, the oldest image will be automatically deleted to allow a new image to be stored.

By default, the number of images stored per visit is set to TWO; this can be changed as described below.



Changing the number of images recorded

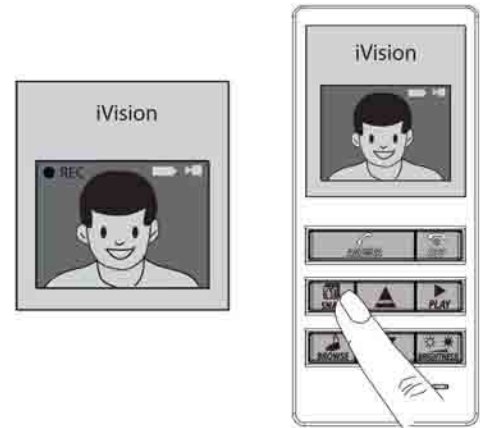
- 1) Press and hold the "SNAP" button for two seconds.
 - The options for number of recorded images will appear.
- 2) Press the "UP" and "DOWN" arrow buttons to select the required number of images (1, 2 or 3).
- 3) Press the "OFF" button to complete the settings and exit.



Using the SNAP feature

The SNAP feature allows you to capture and store an image at any time while live video is on the screen of the LCD monitor. The image along with a time and date stamp is stored.

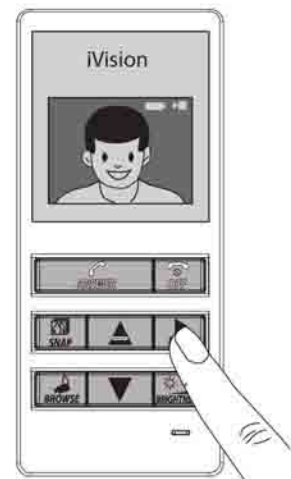
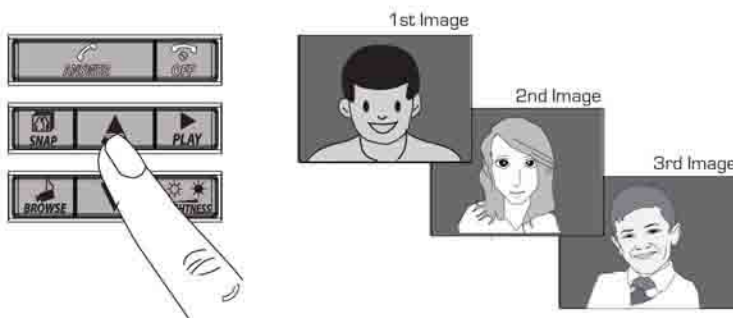
- 1) Press the "SNAP" button during live video.
 - The screen will indicate that recording is taking place.



Viewing the recorded images

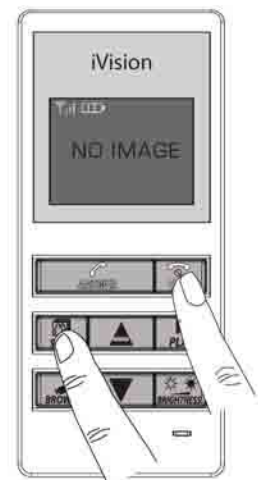
The recorded images can be viewed at any time.

- 1) Press the "PLAY" button.
 - The most recently stored image will be displayed on the screen.
- 2) Press the "UP" and "DOWN" arrow buttons to browse through the images stored.
- 3) Press the "OFF" button to exit playback.



Deleting the recorded images

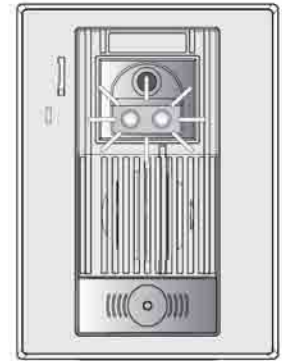
- 1) Press and hold the "OFF" and "SNAP" buttons simultaneously for five seconds.
- 2) "NO IMAGE" message will appear on screen and a beeping sound will be heard - all images are now deleted.
- 3) Release both buttons.



Other functions

Night-time Illumination

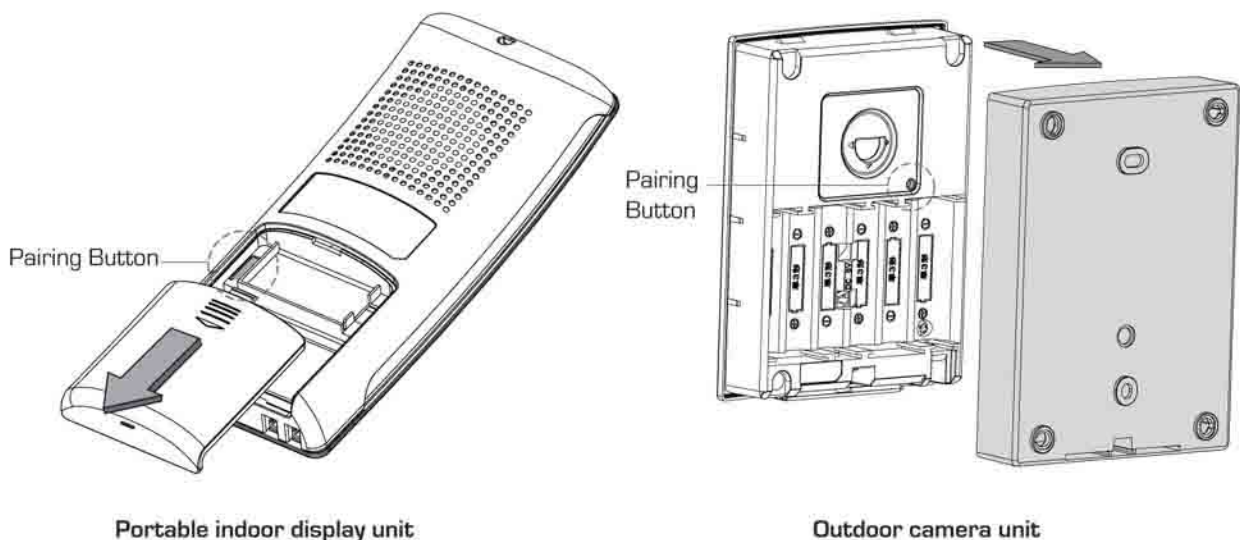
In low light night-time conditions, an infra-red LED light will illuminate on the Camera Door unit to improve the quality of the transmitted image. Note that the image will be displayed in black & white under these conditions.



Pairing

The Door Camera and LCD Monitor are “paired” by a coding system so they will only communicate with each other. This encoding provides a secure system so your video and audio are not shared with others. This pairing is taken care of at the factory for the units contained in your kit, hence no actions are necessary. However, if for some reason you have to replace the Door Camera unit or LCD Monitor, follow the procedure below to “pair” the new units together.

- 1) Remove the Door Camera from it’s mounting bracket to expose the “Pairing” button.
- 2) Remove the battery cover from the LCD Monitor to expose the “Pairing” button.
- 3) Press the “Pairing” button on the Door Camera unit. The LED in the Door Pushbutton will blink for 30 seconds.
- 4) While the LED in the Door Camera unit is blinking, press the “Pairing” button in the LCD Monitor. You will hear five beeps to indicate that “Pairing” is complete.

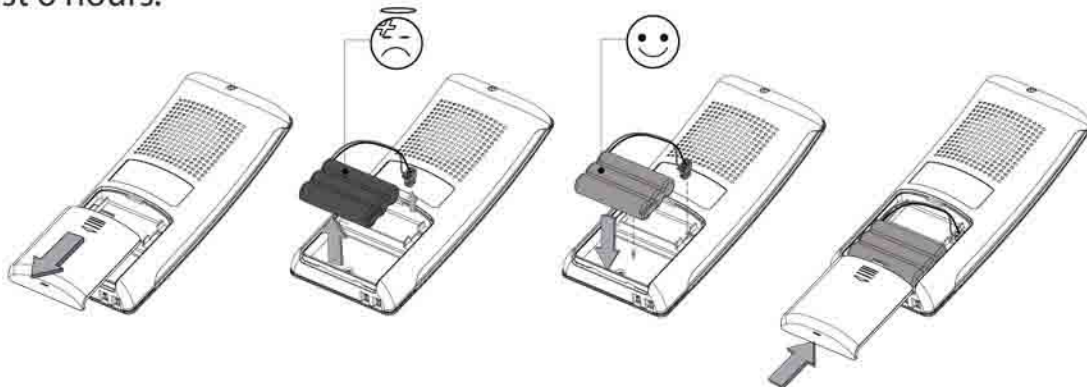
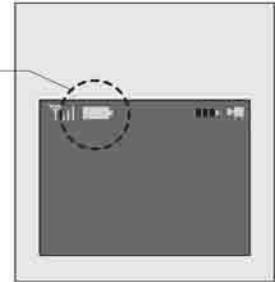


Replacing the rechargeable battery pack

After a prolonged period of use you may have to replace the battery pack. If the battery does not recharge completely or does not hold a charge you will need to replace it. Use a "THB-121" battery for replacement. Follow the procedure below to replace the battery pack.

- 1) Remove the battery cover.
- 2) Unplug and remove the old battery pack. (Follow the instructions below for recycling of the old battery).
- 3) Plug in the new battery pack and position the wires so that they do not obstruct the battery cover.
- 4) Replace the battery cover.
- 5) Place the LCD Monitor in the charging cradle and charge for at least 6 hours.

Low battery



NOTES:

- Specification: Ni-MH battery 3.6V 750Ah.

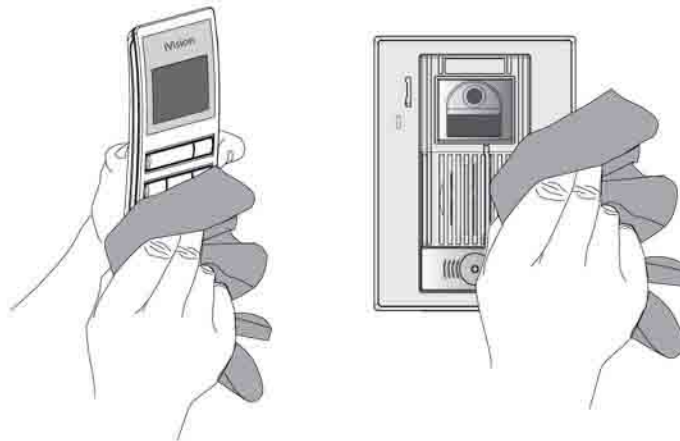


Ni-MH **Recycling your old battery pack**

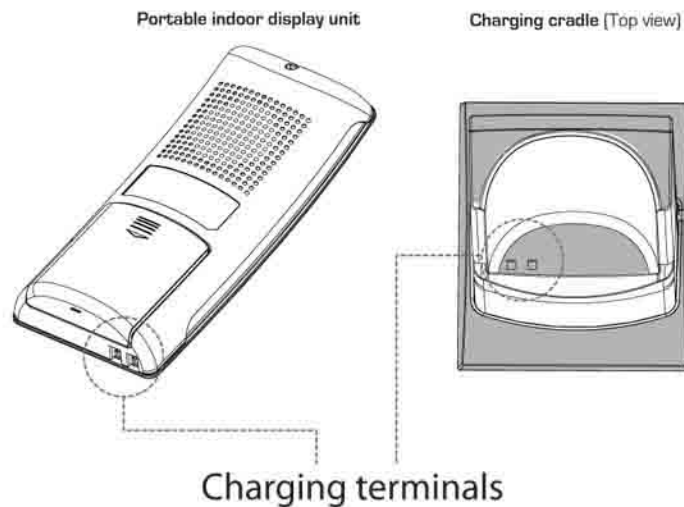
- An Ni-MH battery is supplied for use in this product.
- Ni-MH batteries are a precious recyclable resource.
- At the end of its life, please tape up the used battery pack or place it into a plastic bag, then put it into a rechargeable battery recycling box. See your local authority for information regards the location of such recycling facilities.
- Observe caution when handling the battery.
- Don't let the battery pack short-circuit - it can cause a fire.
- Please don't peel off the outer package (coating and tube etc.).
- Don't disassemble the battery pack.

Caring for your system

- Unplug the charging cradle before cleaning the unit.
- Wipe the surfaces with a soft, dry cloth. Slightly moisten the cloth if required.




- Wipe the charging terminals in the charging cradle with a soft cloth once a month. Charging time may be longer if the terminals are dirty.



Troubleshooting

Symptoms	Probable causes & solutions
Subjects show up in black and white or background is a greenish color.	<p>Is the background dark, such as at night time?</p> <ul style="list-style-type: none"> • Subjects shows up as black and white due to color-dulling when it becomes dark. Also could appear "greenish" in areas covered by outdoor lights. This is normal at night when lighting is provided by the IR LED in the Door Camera unit.
The visitors face is dark in the video image.	<p>If the Door Camera unit is mounted in an area with a bright backlight (either from sunlight or outdoor lighting) the visitor's face may be in silhouette.</p> <ul style="list-style-type: none"> • Adjust the LCD brightness level • Re-locate the camera to a position with no backlight. • Check that the camera lens is not dirty.
The video image shows up unclearly or is out of focus.	<ul style="list-style-type: none"> • Check the lens for condensation
The whole video image shows up whitish or blackish.	<ul style="list-style-type: none"> • Check that the brightness setting is correctly adjusted.
The video image shows up whitish or white lines or rings show up.	<p>It may be difficult to see the image if the camera lens receives strong light such as sunlight.</p> <ul style="list-style-type: none"> • Re-locate the camera to a position with no direct sunlight.
There are small black spots in the background of the image.	<p>Does the sun show up in the image? The center of the sun can appear as black spots if the sun is in view.</p>
The video image flickers.	<p>Fluorescent lights nearby to the Camera Door unit can cause the image to flicker.</p>
The video image is distorted. The voice is cut off.	<p>Is a microwave oven or a wireless LAN device in operation near to the LCD Monitor unit?</p> <ul style="list-style-type: none"> • Re-locate the LCD Monitor away from such equipment.
The display is completely black.	<p>Is the unit in standby?</p> <ul style="list-style-type: none"> • Press any button to energise the display. <p>Has the battery run out of power?</p> <ul style="list-style-type: none"> • Please charge the battery.

Symptoms	Probable causes & solutions
A howling noise distorts the sound.	If the LCD Monitor is too close to the Door Camera unit, a howling sound can occur. • Re-locate the LCD Monitor further away from the Door Camera unit.
The ring tone cannot be heard.	Has the battery run out of power? • Please charge the battery.
The charging lamp does not illuminate when the LCD Monitor unit is placed in the charging cradle.	Is the AC adaptor disconnected from the socket or the charging cradle? • Please check all power connections. Is the LCD Monitor unit placed in the charging cradle correctly? • Remove then replace the LCD Monitor unit The OFF button should blink when correctly inserted. Are the charging terminals dirty? • Clean the charging terminals with a dry cloth. Is the battery pack new or has the battery become completely exhausted? • Leave the unit on charge - normal charging should resume after a short while.
 is displayed after a short period of use even if the battery is charged.	The battery pack requires replacement. • Please purchase and install a new battery pack.
The system does not work in spite of handling/installing correctly. The behavior of the unit is strange.	Please try the following methods. • Manually "Pair" the Camera Door unit and LCD Monitor unit (see page 20). • Remove then re-insert the battery pack(s). If normal operation cannot be achieved, please call Technical Consultation at 1-800-556-7839.

Technical Assistance

If you require technical assistance with regards the installation, operation or use of this product, please call

Technical Support
at

1-800-556-7839

OPTEX, INC. One Year Warranty

This is a "Limited Warranty" which gives you specific legal rights. You may also have other rights which vary from state to state and province to province.

For a period of one year from the date of purchase, any malfunction caused by factory defective parts or workmanship will be corrected at no charge to you. To obtain a refund or a replacement, return the product to the place of purchase.

NOT COVERED: Repair service, adjustment and calibration due to misuse, abuse or negligence. Unauthorized service or modification of the product or of any furnished component will void this warranty. This warranty does not include reimbursement for inconvenience, installation, setup time, loss of use, batteries or unauthorized service.

This warranty covers only products distributed by Optex, Inc. and is not extended to other equipment and components that a customer uses in conjunction with our products.

This warranty is expressly in lieu of all other warranties, express or implied, including any warranty, representation or condition of merchant ability of that the products are fit for any particular purpose or use, and specifically in lieu of all special, indirect or incidental or consequential damages.

Repair or replacement shall be the sole remedy of the customer and there shall be no liability on the part of Optex Inc. for any special, indirect, incidental or consequential damages, including but not limited to any loss of business or profit, whether or not foreseeable. Some states or provinces do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. Retain receipt for warranty claims.

The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

To comply with the FCC RF exposure compliance requirements, this device and its antenna must not be co-located or operating to conjunction with any other antenna or transmitter.

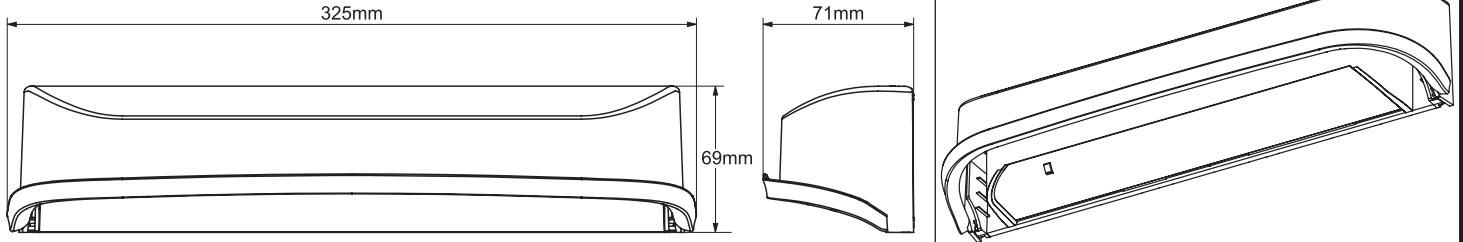
This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

RAIN COVER - 01

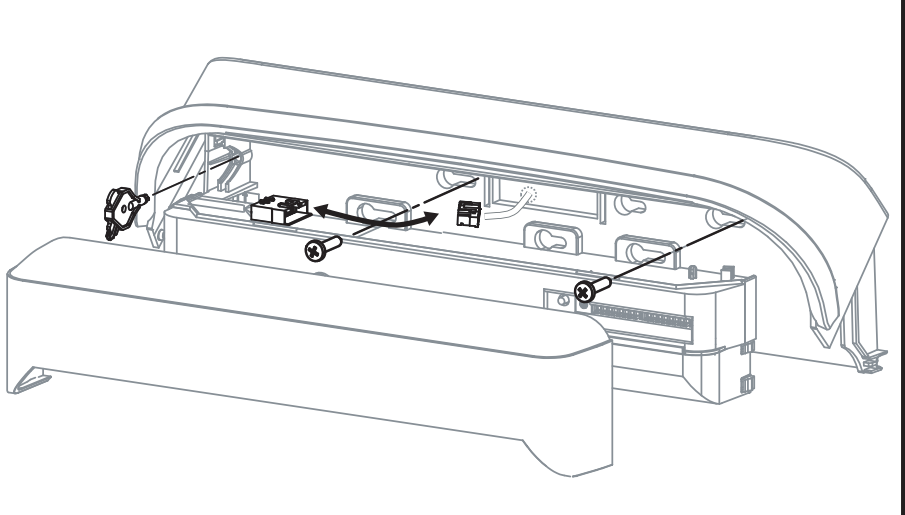
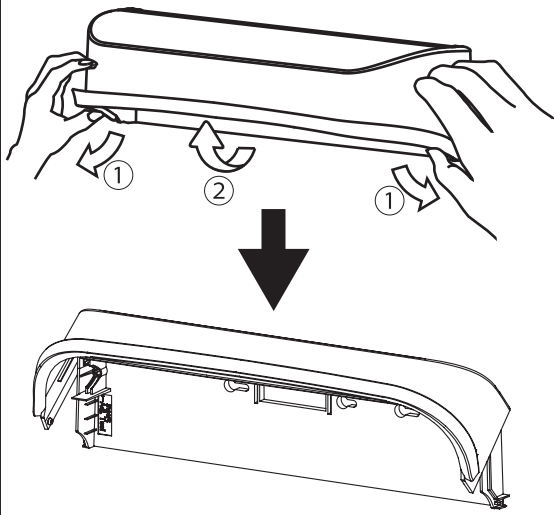
5923791 OCT 2015

Description

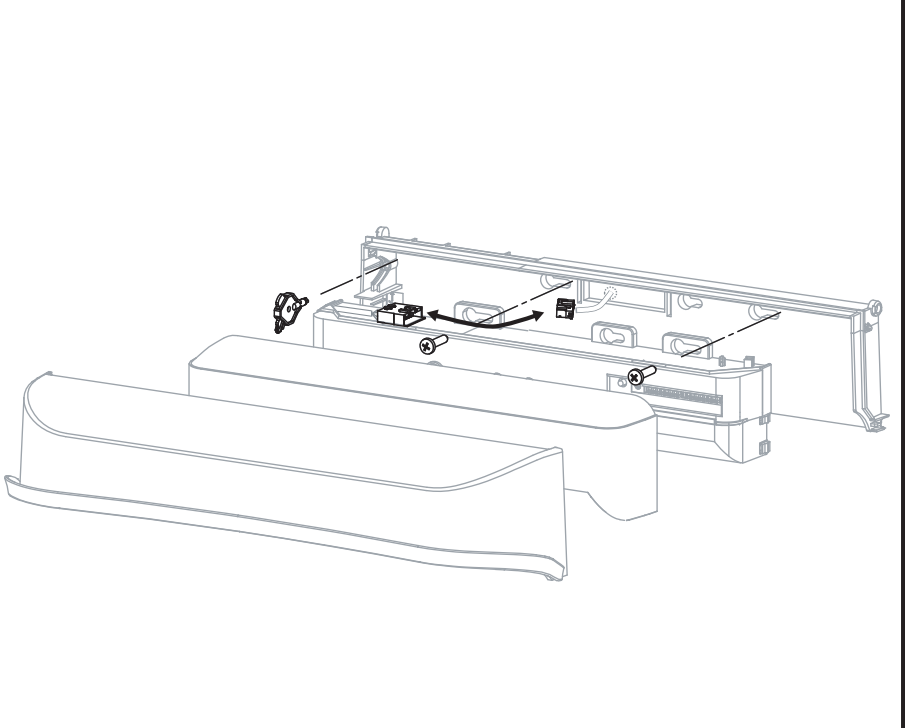
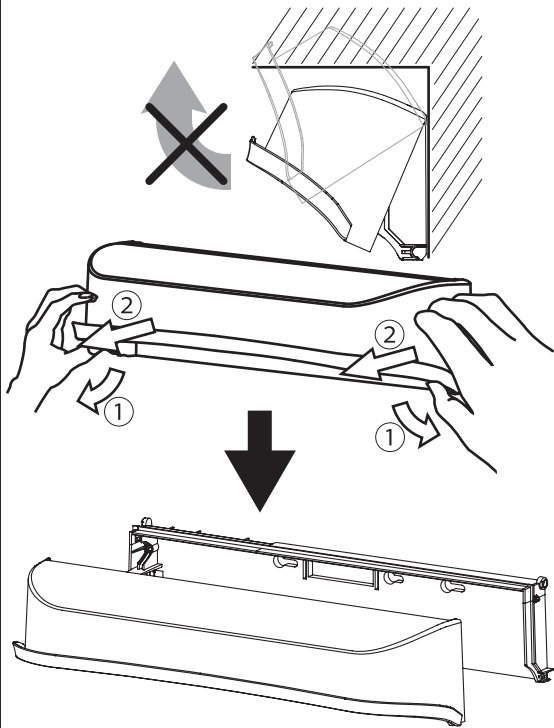
Outer dimensions



Installation



Installation (in case of less space above the hood)



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5910364 Nov. 2010

MANUFACTURER'S STATEMENT

For ease of installation and proper operation read thru this manual (especially **WARNING**, **CAUTION**, **NOTE**) prior to installing and adjusting the sensor system. Failure to read and follow the instructions in this manual may cause improper sensor operation resulting in serious injury or death. This product is a non-contact activating switch intended for mounting on the header of an automatic door. Do not use it for any other applications; otherwise proper operation and safety cannot be guaranteed.

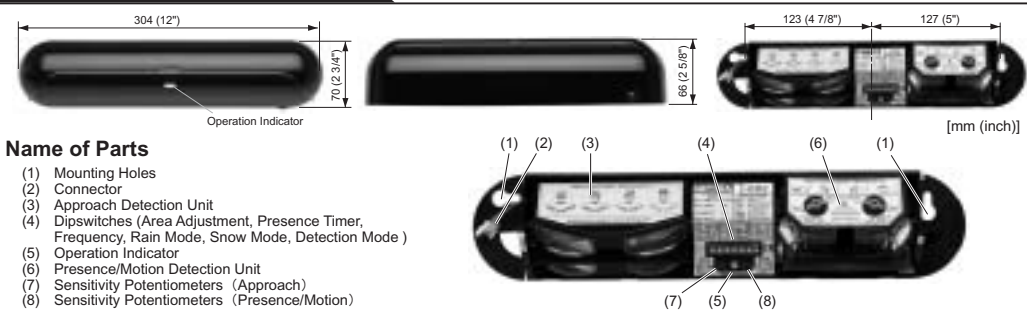
WARNING	Disregard of warning may cause the improper use causing death or serious injury of person.
CAUTION	Disregard of warning may cause the improper use causing injury of person or damage to object.
NOTE	Special attention for the setting and adjustment of section of this symbol is required.

- Set door speeds and verify proper operation of door manufacturer's equipment prior to applying power to the sensor system.
- Do not install the sensor where it might be directly sprayed with rainwater.
- Verify proper wiring prior to applying power to the sensor system to prevent damage to equipment.
- When setting the sensor's area pattern, make sure there is no traffic around the installation site.
- Do not attempt to rebuild or repair sensor heads or control unit. Contact an address in this manual for replacement products.
- Only use the sensor as specified in the supplied instructions.
- Walk test the installation to verify operation is in compliance with all local laws, codes and standards of your country.
- Upon completion of installation and adjustments, instruct the owner/operator on proper operation of the door and sensor system. Identify any switches/breakers that will place the door out of service when unsafe or improper operation is identified.

SPECIFICATIONS

Model	i-one	Current Draw	180mA Max. (AC12V)
Mounting Height	2.1m (6'11") to 3.0m (9'10")	Output Contact	"Form C" relay 50V 0.3A Max. (Resistance Load)
Detection Area	See the chart in "ADJUSTMENT".	Relay Hold Time	0.5 to 2 sec.
Detection Method	Active Infrared Reflection (Presence DetectionType)	Response Time	<0.3 sec.
Detection Angle	Approach Area ±15° (Inside & Outside)	Operating Temperature	-26°C to +55°C (-15°F to +131°F)
Adjustments	Presence/Motion Area -8° to +5° (Inside & Outside)	Weight	400g (14oz.)
Operation Indicator	Green : Stand-by Blinking Red : 1 st Row Detection Active Red : 2 nd Row Detection Active Orange : Motion Detection Active Blinking Orange : Approach Detection Active	Accessories	1 Cable 3m(9'10") 2 Mounting Screws 3 Adjusting Hole Cap 1 Operation Manual 1 Mounting Template
Power Input	12 to 24V AC 12 to 30V DC	The specifications herein are subject to change without prior notice due to improvements.	

EXTERNAL DIMENSIONS



INSTALLATION

- Be sure to install the sensor where it will not be directly sprayed with rainwater.
 - Affix the Mounting Template to the mounting surface.
 - Drill two mounting holes (ø 1/8" or 3.2mm).
 - To carry through the cable to the header, drill (A) (ø 1/4" or 6mm).
 - After drilling the holes, remove the Mounting Template.

- Remove the cover and pass the cable through (B), then put the cable into (A).

WIRING

NOTE
When you face difficulty in threading the cable through (B), break off the cable knockout (as shown in the picture).

Cable Knockout

- Attach the sensor with screws.
- Plug the connector for the sensor to that for the cable.
- Apply power to the sensor. Then, adjust each detection area (See ADJUSTMENT). **CAUTION**
Make sure you connect the cable correctly to the Door Controller before turning the power on.
- Slide the cover from right to left onto the sensor.
- Press the cover firmly to the sensor to attach.
- Lock the cover with the Adjustment Hole Cap, after installation and adjustment completely.

ADJUSTMENT

Be sure to walk-test all of the detection areas. When the Approach Angle and the Presence/Motion Angle are set to 0°, each detection area will be placed as shown on the right.

Detection Areas

	[mm (feet)]		
A	2200 (7'3")	2500 (8'2")	3000 (9'10")
B	100 (4")	110 (4 1/2")	140 (5 3/8")
C	250 (10")	280 (11")	340 (11")
D	600 (2')	680 (2'3")	820 (2'8")
E	1000 (3'3")	1130 (3'9")	1360 (4'6")
F	1450 (4'9")	1650 (5'5")	1980 (6'6")
G	1500 (4'11")	1710 (5'7")	2050 (6'9")
H	2600 (8'6")	2960 (9'9")	3550 (11'8")
I	4500 (14'9")	5110 (16'9")	6140 (20'2")
J	4900 (16'1")	5570 (18'3")	6680 (21'11")

Approach Detection Area
*Mounting Height = 2.2m (7'3")

	-15°	0°	+15°
G	790 (2'7")	1500 (4'11")	2420 (7'11")
H	1520 (5')	2600 (8'6")	4270 (14')
I	3870 (12'8")	4500 (14'9")	5180 (17')
K	2920 (9'7")	3400 (11'2")	3910 (12'10")
L	1900 (6'3")	2200 (7'3")	2530 (8'4")

- Adjusting the Approach Detection Area
 - Adjusting the Area Depth

Adjust the depth of the Approach Detection Area according to the traffic flow of the installed door
 - Approach Detection Area Width Adjustment

The width of the Approach Detection Area can be adjusted by changing the Dipswitches as shown on the right.

- Adjusting the Presence/Motion Detection Area

Measure (B) is the distance from the Sensor mounting surface to the edge of the Infra-red spot. Distance to edge of Infra-red spot and actual point of detection may vary.

*Mounting Height = 2.2m (7'3")

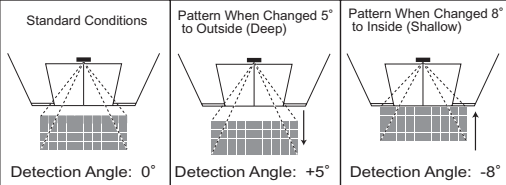
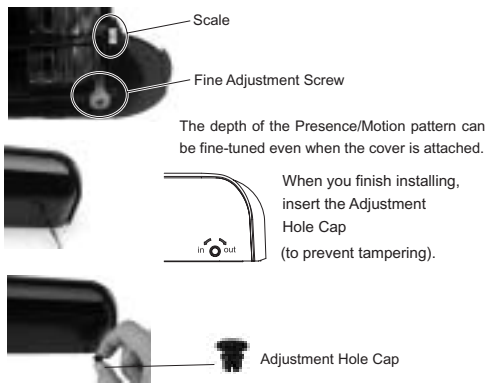
	-8°	0°	+5°
B	-200 (-8")	100 (4")	300 (12")
F	1380 (4'6")	1450 (4'9")	1500 (4'11")

2-1 Adjusting the Pattern Depth

Adjust the depth of the Presence/Motion Detection Area by turning the Fine Adjustment Screw with a screwdriver.

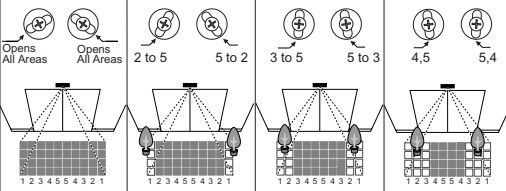
The detection area of Presence/Motion Detection Unit can be shifted closer to the door.

CAUTION
Make sure the detection area **do not** overlap with the door, otherwise ghosting may occur.



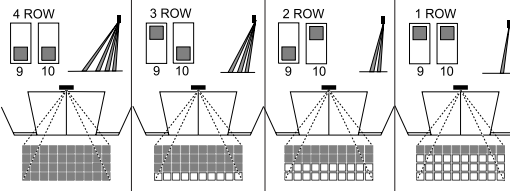
2-2 Adjusting the Pattern Width

Each side can be adjusted independently, allowing for asymmetrical settings. Refer to the sticker between Width Adjustment Shutters.



2-3 Adjusting the Rows

Rows can be eliminated to adjust pattern depth.



NOTE FOR BETTER PRESENCE DETECTION AREA

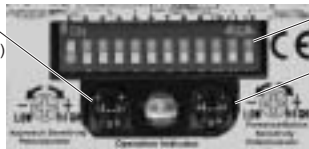
- After installing the sensor, put the cover on the sensor and turn the "Fine Adjustment Screw" Counterclockwise a minimum of 4 full turns(-8degrees). This will adjust the detection area to the maximum negative angle.
- In the case where this adjustment causes the door to cycle (Ghosting), turn the "Fine Adjustment Screw" Clockwise 1/4 turn and move out of the detection area to test. Continue this process of 1/4 turn and test until cycling stops.

CAUTION

During this process, set the presence timer to 2 second re-learn time. Once detection area is properly adjusted, reset the presence timer to allow for ANSI approved presence time.

3 Dipswitch Settings

Approach Sensitivity Potentiometer (Factory setting : Midpoint)



Dipswitches

Presence/Motion Sensitivity Potentiometer (Factory setting : Midpoint)

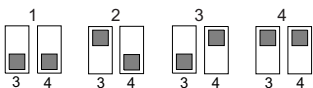
- 1,2: Presence Timer
- 3,4: Frequency
- 5: Rain Mode
- 6: Snow Mode
- 7,8: Approach Detection Area Adjustment
- 9,10: Presence/Motion Detection Area Adjustment
- 11: Detection Mode
- 12: Not Used (Future Development)

3-1 Setting the Sensitivity

Both the Approach Sensitivity Potentiometer and the Presence/Motion Sensitivity Potentiometer are factory-set at the midpoint. Turning them clockwise increases the sensitivity and turning counterclockwise lowers the sensitivity.

3-3 Setting the Frequency Function (Interference Prevention)

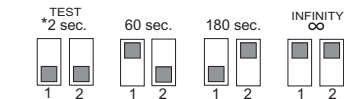
Four different frequencies can be set by adjusting Dipswitches 3 and 4. When two or more sensors are mounted close to each other, they may interfere. When that happens, change Frequency.



3-2 Setting the Presence Timer

The sensor automatically adapts to environmental changes in the pattern, if no movement is detected for the duration of the selected timer cycle. First two rows from the door provide the presence detection.

- Select the presence detection time.
- Turn the power on.
- Do not enter the detection area for 10 seconds.



CAUTION

Use "2 sec." only for testing. Normal Presence Timer is 60 sec. or longer.

3-4

Setting the Rain Mode

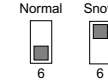
Set this switch to Rain if the sensor is used in a region with a lot of rain.



3-5

Setting the Snow Mode

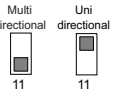
Set this switch to Snow if the sensor is used in a region with snow or a lot of insects.



3-6

Setting the Directional Mode

Setting to Unidirectional allows the door to close more quickly for departing traffic.



4 Checking

Check the entry motion according to the following chart.

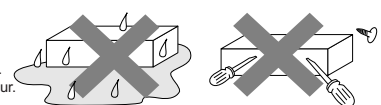
Entry motion (Image)	Outside the Detection Area	Entry into the Approach Detection Area	Entry into the Motion Detection Area	Entry into the 2nd row of Presence Detection Area	Entry into the 1st row of Presence Detection Area	Outside the Detection Area	Power off
Sensor Status	Stand-by	Approach Detection Active	Motion Detection Active	Presence Detection Active	Presence Detection Active	Stand-by	—
Operation Indicator	Green	Blinking Orange	Orange	Red	Blinking Red	Green	—
Output contact	Yellow Green White	Yellow Green White			Yellow Green White	Yellow Green White	Yellow Green White

CAUTION

The response time may differ according to the color of the objects and the color/material of the floor.

Recommendations to building owner / operator

- Do not change the settings on the sensor, as this may cause it to operate incorrectly.
- Contact your local distributor if you want to change the settings.
- Do not wash the sensor with water.
- Always keep the detection window clean. If dirty, wipe the window lightly with a damp cloth.
- Do not disassemble, rebuild or repair the sensor yourself; otherwise electric shock may occur.
- If a Warning Indicator appears (LED warning), contact your local distributor.
- When turning the power on, always walk-test the sensor pattern to ensure proper operation.



TROUBLESHOOTING

Problem	Possible Cause	Sensor Status			
		Stand-by	Detection	Stand-by while Warning Indication is On	Detecting while Warning Indication is On
Hold the door open.	Connection failure				
	Floor condition was changed.				
Do not operate.	Power Input is not adequate.				
	Connection failure				
Do not operate consistently.	Dirty detection window				
	There is a moving object in the detection area. (ex. Plant, Poster etc.)				
Operates by itself (Ghosting).	There was an abrupt condition change in the detection area.				
	Another sensor's detection area is overlapping.				
	Waterdrops on detection window				
	Vibration of the header				
	The Presence/Motion Detection Area overlaps with the door.				

Warning Indication	Sensor Status			
	Stand-by	Detection	Stand-by while Warning Indication is On	Detecting while Warning Indication is On
Mode				
Signal Saturation Either the mounting position is too low or the detection area includes the wall or another.	Green	Orange/Red (Blinking)	Slow Green Blinking	Orange/Red (Blinking)

If the trouble still persists after checking and remedying as described above, contact your installer or the sales engineer.

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OA-603

Swing Door Safety Sensor



MANUFACTURER'S STATEMENT

Read this document and this Operation Manual carefully before use, to ensure proper operation of this Optex sensor. Failure to read this Operation Manual may cause improper sensor operation and may result in serious injury or death. This product is a non-contact activating switch intended for mounting on the header of an automatic door. Do not use it for any other applications; otherwise proper operation and safety cannot be guaranteed.

Cautions :

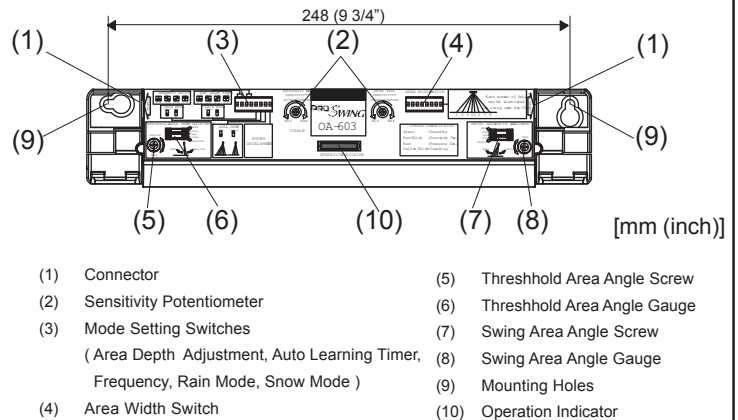
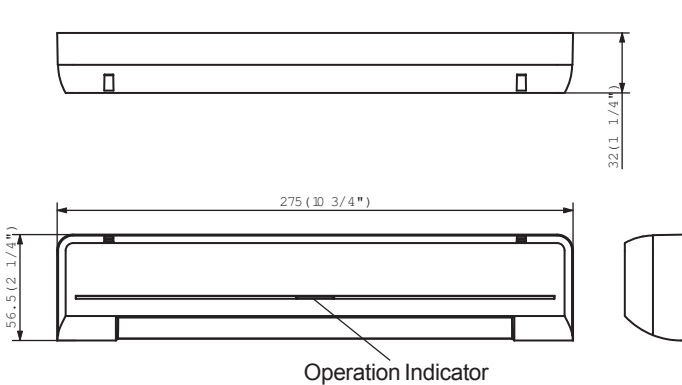
1. Follow the instructions (especially **Note**) in this Operation Manual when installing and adjusting the sensor.
2. When setting the sensor's area pattern, make sure there is no traffic around the installation site.
3. Before turning the power on, check the wiring to prevent damage or malfunction of equipment that is connected to the sensor.
4. Do not disassemble, rebuild or repair the sensor yourself; otherwise it may cause electric shock or breakdown of the sensor.
5. Only use the sensor as specified in the supplied instructions.
6. Be sure to install the sensor in accordance with the local laws and standards of your country.
7. Before leaving the jobsite, be sure this equipment is operating properly and instruct the building owner/operator on proper operation of the door and this sensor.

SPECIFICATIONS

Model	: OA-603	Current Draw	: 120mA Max
Mounting Height	: 2.1m (6'11") to 2.5m (8'2")	Response Time	: < 0.3 second
Detection Area	: See the chart in "ADJUSTMENT".	Operating Temperature	: -20°C to +55°C (-4°F to +131°F)
Detection Method	: Active Infrared Reflection (Presence Detection Type)	Weight	: 230g (8.2oz.)
Detection Angle	: Threshold Area ±5° (Inside & outside)	Accessories	: 1 Sensor Cable (1m) 2 Mounting screws 1 Operation Manual 1 Mounting Template
Adjustments	: Swing Area ±5° (Inside & Outside)		
Operation Indicator	: Green : Stand-by Blinking Red : Threshold Area Detection Active Red : Swing Area Detection Active Blinking Yellow : Teaching		

The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS

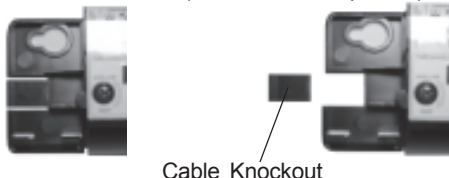


INSTALLATION

1. Be sure to install the sensor where it will not be directly sprayed with rainwater.
 1. Affix the Mounting Template to the mounting surface.
 2. Drill two mounting holes (ϕ 1/8" or 3.2mm).
 3. To carry through the cable to the header, drill (A) (ϕ 3/8" or 10mm).
 4. After drilling the holes, remove the Mounting Template.



2. Break off the cable knockout (as shown in the picture).



3. Attach the sensor with screws.



4

Plug in the sensor cable for the sensor and controller(OC-903C).



5

Apply power to the sensor. Then, adjust each detection area (See ADJUSTMENT).

Warning: Make sure of the wirings between controller(OC-903C) and door **before** turning the power on.

6

Place the cover on the top then fit it on.



7

How to remove the cover

Insert the flathead screw driver and push it down as shown in the picture.



Grab the top and remove the cover.



ADJUSTMENT

Be sure to walk-test all of the detection areas.

When the Threshold Area Angle and the Swing Area Angle are set to 0°, each detection area will be placed as shown on the right.

	[mm (feet)]		
A	2000 (6'7")	2200 (6'11")	2500 (8'3")
B	364 (1'2")	400 (1'4")	455 (1'6")
C	182 (7")	200 (8")	227 (9")
D	23 (1')	25 (1')	28 (1')
E	664 (2'2")	730 (2'5")	830 (2'9")
F	1391 (4'7")	1530 (5'1")	1739 (5'9")
G	682 (2'3")	750 (2'6")	852 (2'10")
H	1318 (4'4")	1450 (4'9")	1648 (5'5")
I	2045 (6'9")	2250 (7'5")	2557 (8'5")
J	2864 (9'5")	3150 (10'4")	3580 (11'9")

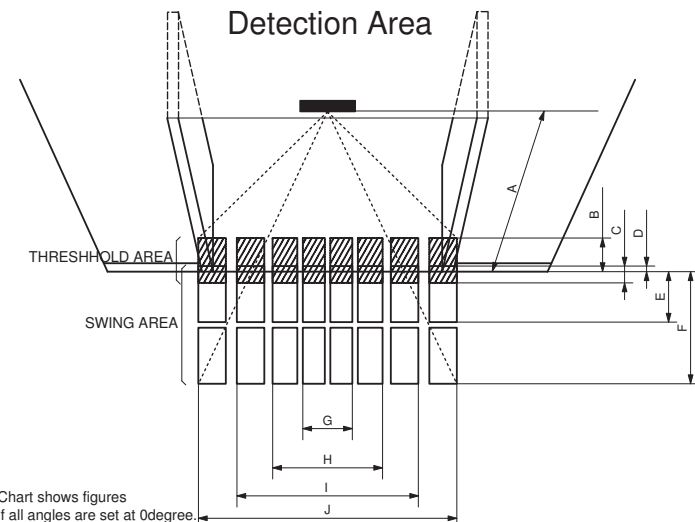
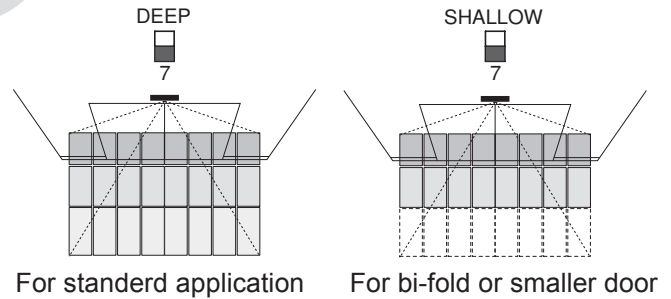


Chart shows figures if all angles are set at 0degree.

1 Adjusting the Detection Area Depth

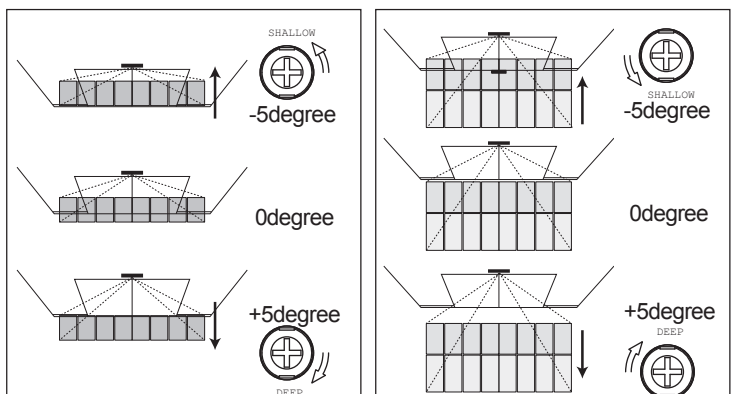


2 Adjusting the Detection Area Angle

Use this function for fine setting.

Swing Area Angle Screw

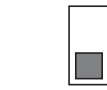
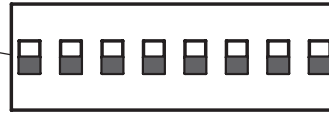
Threshold Area Angle Screw



3 Adjusting the Detection Area Width



Area Width Switch

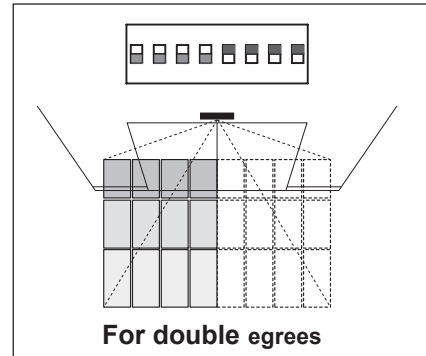
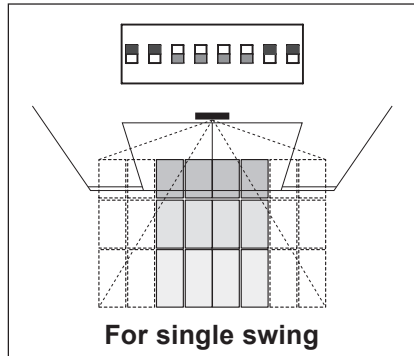
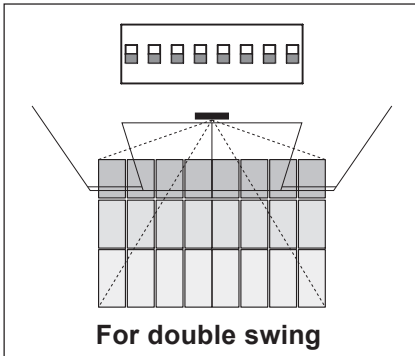


Area Active

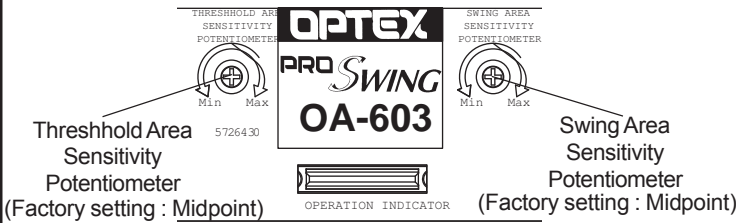


Area Inactive

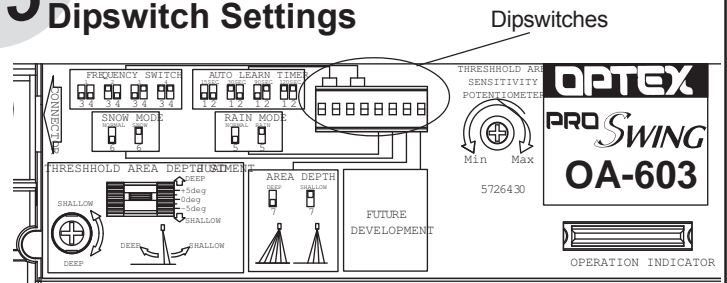
Adjust the width of the Detection Area according to the door width.



4 Adjusting the Sencitivity



5 Dipswitch Settings



1,2: Auto Learning Timer

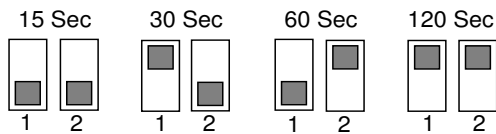
3,4: Frequency

5: Rain Mode

6: Snow Mode

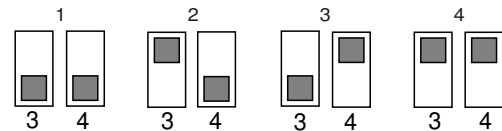
5-1 Setting the Auto Learning Timer

- Select the Auto Learning time.
- Turn the power on.
- Do not enter the detection area for 15 seconds.
(Factory setting : 30sec)



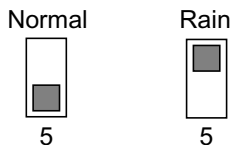
5-2 Setting the Frequency Function (Interference Prevention)

Four different frequencies can be set by adjusting Dipswitches 3 and 4. When two or more sensors are mounted close to each other, they may interfere. When that happens, change Frequency .



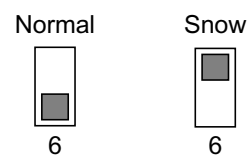
5-3 Setting the Rain Mode

Set this switch to Rain if the sensor is used in a region with a lot of rain.



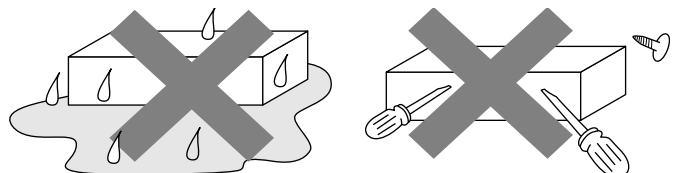
5-4 Setting the Snow Mode

Set this switch to Snow if the sensor is used in a region with snow or a lot of insects.



6 Maintenance

Keep the detection window clean.
If dirty, dip cloth in neutral detergent and wipe the window lightly.
Do not use any organic solvent (thinner, benzine, etc.).



7 Checking

Teaching flow

Status	Turn on the Power		Door opening	Door opened Completely	Start closing	Door closing	Door closed
(Image)							
Sensor Status	1st Teaching	1st Complete Teaching	Lockout	2nd Teaching	Complete Teaching	Lockout	Standby
Operation Indicator	Blinking Yellow	Yellow	Orange	Orange	Green	Orange	Green
Relay Contact	Activate Safety						

Check the entry motion according to the following flow chart.

Door Status	Closed			Opened		Closed
Entry motion	Outside the Detection area	Entry into the Swing Area	Entry into the Threshold Area	Entry into the Swing Area	Entry into the Threshold Area	Outside the Detection Area
(Image)						
Sensor Status	Standby	Swing Area detection Active	Threshold Area detection Active	Swing Area detection Active	Threshold Area detection Active	Standby
Operation Indicator	Green	Red	Blinking Red	Red	Blinking Red	Green
Relay Contact	Activate Safety					

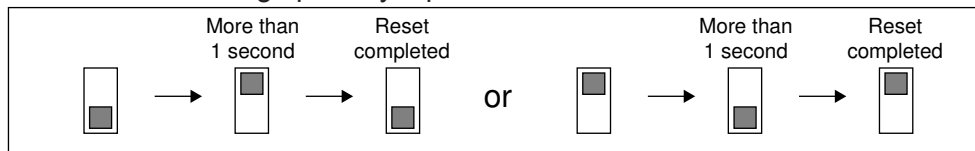
*Note: The response time may differ according to the color of the objects and the color/material of the floor.

TROUBLESHOOTING

Door status	Trouble	Possible cause	Solution	Reference	Door status	Trouble	Possible cause	Solution	Reference
close	Door does not open	OC-903C NO and NC are inverted.	Change the OC-903C Dipswitch	OC-903C ADJUSTMENT	open	The sensor keeps detecting and the door remains open.	There is an object that moves.	Remove the object	OA-603C ADJUSTMENT
		OC-903C Wrong Wiring	Check the OC-903C wiring	OC-903C INSTALLATION			There was an abrupt change in the detection area.	Carry out the teaching again	OA-603C ADJUSTMENT
		OC-903C SAFETY OUTPUT HOLD TIME is set long.	Shorten the OC-903C setting time	OC-903C ADJUSTMENT			Water drops on the sensor.	Keep the sensor free from waterdrops.	OA-603C ADJUSTMENT
	The door does not open while the sensor keeps detection.	Moving object in the detection area	Remove the object	OA-603C ADJUSTMENT			Header Vibration	Secure the header	
		There was an abrupt change in the detection area.	Carry out the teaching again	OA-603C ADJUSTMENT			The detection area overlapping with it of another sensor	Change the Frequency dipswitch.	OA-603C ADJUSTMENT
		Waterdrops on the sensor.	Keep the sensor free from waterdrops.	OA-603C ADJUSTMENT			Does not lock out.	Wrong wiring of motor power voltage	Check the OC-903C wiring
Vibration of the header	Secure the header		The door starts closing while the sensor detects.	OC-903C NO and NC are inverted.	Change the OC-903C Dipswitch	OC-903C INSTALLATION			
The detection area overlapping with it of another sensor	Change the Frequency dipswitch.	OA-603C ADJUSTMENT		OC-903C Wrong Wiring	Check the OC-903C wiring	OC-903C ADJUSTMENT			
Unadequate detection area setting	Reset the detection area	OA-603C ADJUSTMENT		The lock out timer is set long with OC-903C Manual setting.	Change the OC-903C Lockout Timer	OC-903C ADJUSTMENT			
opening	The door starts opening while the sensor detects.	OC-903C NO and NC are inverted.	Change the OC-903C Dipswitch	OC-903C INSTALLATION	No detection	The power supply is not ON.	Make sure that the sensor cable between OA-603 and OC-903C is connected.	Check the OC-903C wiring	OA-603C ADJUSTMENT
		OC-903C Wrong Wiring	Check the OC-903C wiring	OC-903C ADJUSTMENT					
		The lock out timer is set long with OC-903C Manual setting.	Change the OC-903C Lockout Timer	OC-903C ADJUSTMENT					
	Unadequate detection area setting	Reset the detection area	OA-603C ADJUSTMENT						
The door starts opening without the sensor detects.	Wrong Wiring	Check the OC-903C wiring	OC-903C INSTALLATION			Dirty detection window.	Wipe the OA-603 detection window lightly with a damp cloth.	OA-603C ADJUSTMENT	
open	Door remains open	OC-903C NO and NC are inverted.	Change the OC-903C Dipswitch	OC-903C ADJUSTMENT	The lock out timer is set long with OC-903C Manual setting.	Change the door controller setting.	The mounting height is too high.	Adjust the mounting height to the stated height.	OA-603C ADJUSTMENT
		OC-903C Wrong Wiring	Check the OC-903C wiring	OC-903C INSTALLATION					
		OC-903C SAFETY OUTPUT HOLD TIME is set long.	Shorten the OC-903C SAFETY OUTPUT HOLD TIME.	OC-903C ADJUSTMENT					
		Wrong wiring of motor power voltage	Check the OC-903C wiring	OC-903C ADJUSTMENT					

How to reset the sensor

When wish to reset the sensor settings, put any dipSW to ON/OFF for more than 1 second.



Warning Indication

Mode	Self Monitoring Function	Life cycle Notification	Signal Saturation	Communication Error	Setting Error
Operation Indicator	Fast Green Blinking 	Twice Green Blinking 	Slow Green Blinking 	Twice Orange Blinking 	Fast Orange Blinking
Explanation	The sensor is reaching the end of its life cycle.	The relay is reaching the end of its life cycle.	Either the mounting position is too low or the detection area includes the wall or another object. Refer to "ADJUSTMENT".	The sensor cable is connected, but unstable communication. Refer to "ADJUSTMENT".	When all the area width switches are inactive. Refer to "ADJUSTMENT".

If the trouble still persists after checking and remedying as described above, contact your local sales representative.

"Take Care of Environment". This manual uses recycled paper.



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5918770 OCT 2011

MANUFACTURER'S STATEMENT

Read this manual carefully before use to ensure proper operation of this product. Failure to read this manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this manual.

	WARNING	Disregard of warning may cause improper operation causing death or serious injury of a person.
	CAUTION	Disregard of caution may cause improper operation causing injury of a person or damage to objects.
	NOTE	Special attention is required to the section of this symbol.

NOTE

- Premier MK2 version Sensor Heads (OA-613) & Controller (OC-913C) are not compatible with old Premier version Sensor Heads (OA-603) and controller (OC-903C). Do not intermix Old & New versions.
- This sensor is a non-contact switch intended header mount or wall mount for use on automatic swing doors. Do not use for any other application.
- When setting the sensor's detection area, make sure that there is no traffic around the installation site.
- Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the sensor.
- Only use the sensor as specified in the operation manual provided.
- Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
- Before leaving the installation site, make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
- The sensor settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock		

NOTE The following conditions may not be suitable for sensor installation.

- Fog or exhaust emission around the door.
- Moving objects or objects that emit light near the detection area.
- Highly reflecting floor or highly reflecting objects around the door.
- Wet floor.

SPECIFICATIONS

Model (System name) : PREMIER Mk2	Model (Sensor head) : OA-613
Power supply : 12 to 24 VAC ±10% (50 / 60 Hz) 12 to 30 VDC	Cover color : Black
Power consumption : < 2.2W (< 4VA at AC) at 1 OA-613 & 1 OC-913C	Mounting height : 2.0 (6'7") to 2.5m (8'2")
Output * : CMOS. Relay Voltage / 5 VDC	Detection area : See DETECTION AREA
Output hold time : 0.5 sec. fixed (Activate output) 0.5 sec. to 10sec.(Safety output)	Detection method : Active infrared reflection **
Response time : < 0.3 sec.	Depth angle adjustment : 1st row area ±5° 2nd & 3rd row area ±5°
Operating temperature: -20 to +55°C (-4 to 131°F) without dew condensation	IP rate : IP44
Operating humidity : < 80%	Weight : 230g (8.1oz)
Accessories : 1 Spec manual 1 Installation manual 2 Mounting screws 1 Mounting templates for OA-613 1 Communication cable 1m (3'3") 1 Wiring cable 0.6m (2') 1 Velcro tape 2 Wiring shells 1 Connection Matrix	Model (Controller) : OC-913C Weight : 65g (2.3oz)

* : Three type of outputs (Activate , Inhibit , Safety)
** : All rows have the presence detection.

NOTE The specifications herein are subject to change without prior notice due to improvements.

Operation indicator : OA-613

Status	Color	Indicator Pattern
Stand-by	Solid Green	[Solid Green Bar]
1st row area detection	Blinking Red	[Blinking Red Bar]
2nd or 3rd row area detection	Solid Red	[Solid Red Bar]
Waiting for next learning	Solid Yellow	[Solid Yellow Bar]
During learning	Blinking Yellow	[Blinking Yellow Bar]
During opening or closing	Solid Orange	[Solid Orange Bar]
Signal saturation	Slow Green blinking	[Slow Green Blinking Bar]
Sensor failure	Fast Green blinking	[Fast Green Blinking Bar]
Setting error	Slow Orange blinking	[Slow Orange Blinking Bar]
Communication error	Twice Orange blinking	[Twice Orange Blinking Bar]
Mixed version error	Red & Green blinking	[Red & Green Blinking Bar]

Operation indicator : OC-913C

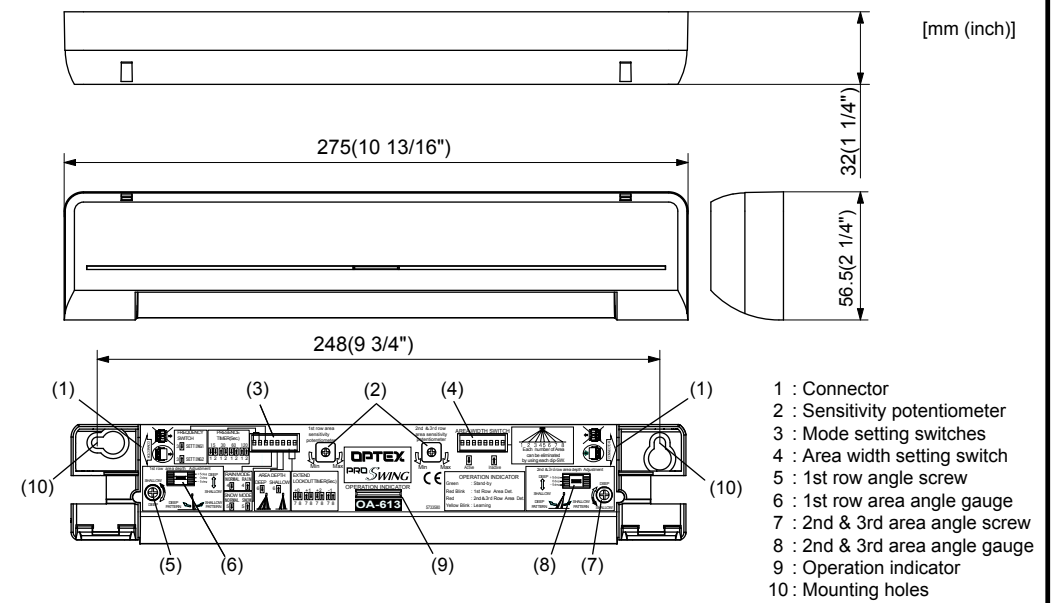
Status	Color	Indicator Pattern
Door fully closed	Solid Green	[Solid Green Bar]
Door closing	Solid Orange	[Solid Orange Bar]
Door fully opened	Solid Red	[Solid Red Bar]
Door Opening	Blinking Red	[Blinking Red Bar]
During Learning	Slow Green blinking	[Slow Green Blinking Bar]
Communication error	Twice Orange blinking	[Twice Orange Blinking Bar]
Mixed version error	Red & Green blinking	[Red & Green Blinking Bar]

Interface LED : OC-913C

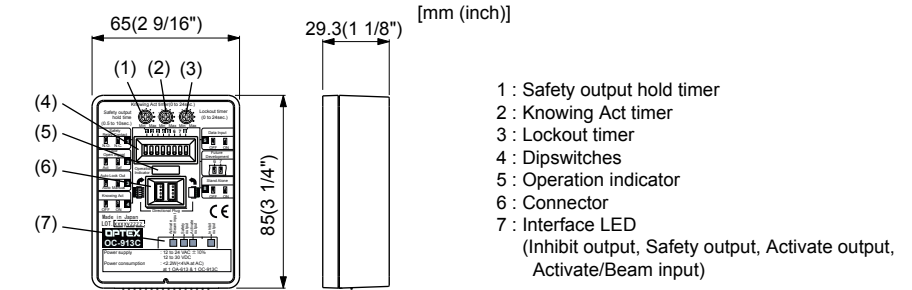
	LED indication	Operation
Inhibit output	Solid Green	When outputting
	OFF	When not outputting
Safety output	Solid Green	When not outputting
	OFF	When outputting
Activate output	Solid Orange	When outputting
	OFF	When not outputting
Activate input / Beam input	Solid Orange	When receiving input
	OFF	When not receiving input

OUTER DIMENSIONS AND PART NAMES

Sensor head: OA-613



Controller: OC-913C



DETECTION AREA

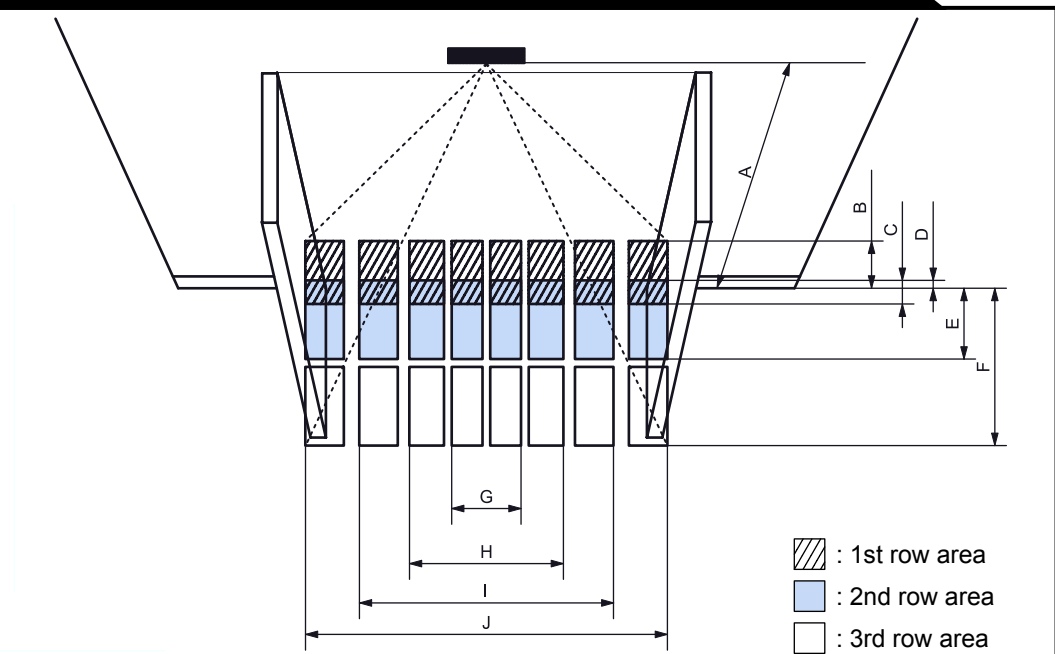
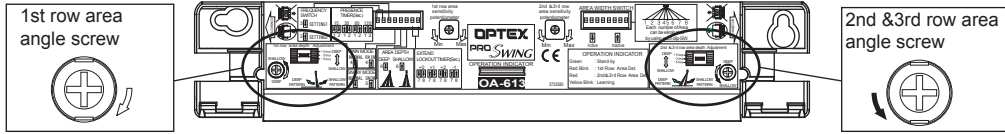


Chart shows figures if all angles are set at 0degree.

	[mm (ft,inch)]		
A	2000 (6'7")	2200 (7'3")	2500 (8'2")
B	364 (1'2")	400 (1'4")	455 (1'6")
C	182 (7")	200 (8")	227 (9")
D	23 (1')	25 (1')	28 (1')
E	664 (2'2")	730 (2'5")	830 (2'9")
F	1391 (4'7")	1530 (5'1")	1739 (5'9")
G	682 (2'3")	750 (2'6")	852 (2'10")
H	1318 (4'4")	1450 (4'9")	1648 (5'5")
I	2045 (6'9")	2250 (7'5")	2557 (8'5")
J	2864 (9'5")	3150 (10'4")	3580 (11'9")

NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object.

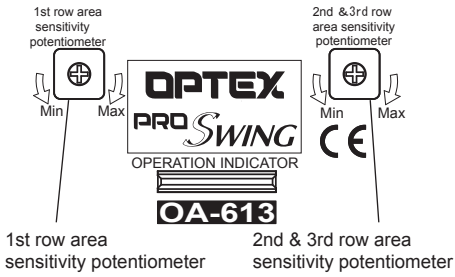
1 Area depth angle adjustment



Start with 1st row area depth angle at -5 degrees (shallow).
If after walk test the pattern is too shallow, adjust towards deep as necessary.

Start with 2nd & 3rd row area depth angle at +5 degrees (deep).
If after walk test the pattern is too deep, adjust towards shallow as necessary.

2 Adjusting the sensitivity



1st row area sensitivity potentiometer
2nd & 3rd row area sensitivity potentiometer

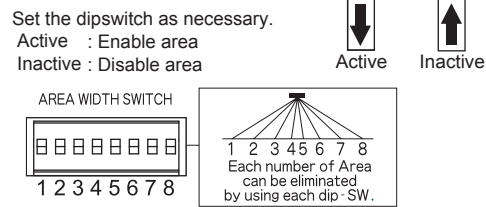
3 Initial setup

This sensor has the function to fit floor condition changes automatically. Therefore, even if objects are put in the detection area, sensor will learn the changes gradually and set back to normal operations automatically after presence timer has expired. To enable a Learn process only, flip any dipswitch on OA-613 sensor head and wait 1 second, then flip it back to the original position.

NOTE

See PREMIER Mk2 installation manual section 6 (Premier Learn process).

4 Area width setting switch (right bank)

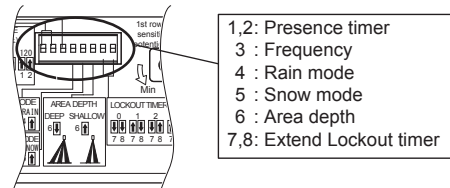


Set the dipswitch as necessary. Active : Enable area, Inactive : Disable area. Each number of Area can be eliminated by using each dip-SW.

NOTE

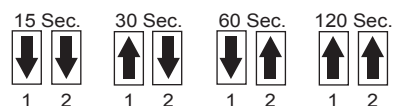
Whenever a Dipswitch is moved a Premier Learn process is enabled, ensure proper completion of process (See step 3).

5 Mode setting switch (left bank)



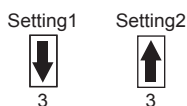
5-1. Setting the presence timer

To comply with ANSI standard, set to "30sec." or longer.



5-2. Setting the frequency

When using more than two sensors close to each other, set the different frequency for each sensor by dipswitch 3.

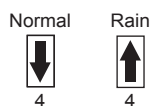


5-3. Setting the rain mode

Set dipswitch 4 to "Rain" if the sensor is used in a region with a lot of rain.

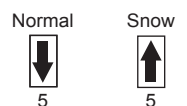
NOTE

When set to "Rain", the actual detection area may become smaller.

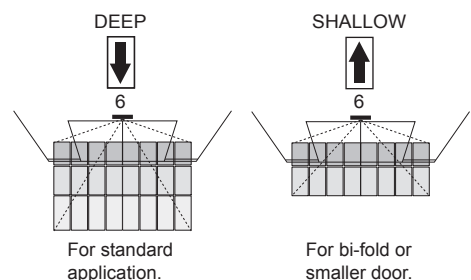


5-4. Setting the snow mode

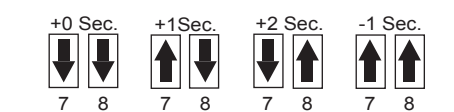
Set dipswitch 5 to "Snow" if the sensor is used in a region with snow or a lot of insects.



5-5. Setting the area depth



5-6. Setting the Extend Lockout timer

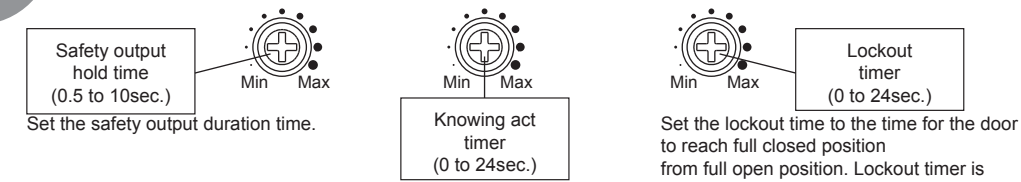


Fine-tune the lockout time after setting the lockout timer on OC-913C by volume (0-24 sec.) Only effective when Dipswitch 3 is set to "Manual" and Dipswitch 5 is set to "OFF" on OC-913C.

NOTE See ADJUSTMENTS for OC-913C

ADJUSTMENTS for OC-913C

1 Timer adjustment



Set the time required for door to close from fully open position to within 10 degrees when uses for Knowing Act application (dipswitch 4: ON).

2 Setting the dipswitches

Set the dipswitches as shown below.

Dipswitch setting	OFF	ON
1 Safety Relay Contact	NO	NC
2 Door Open Signal Switch	Act	Saf
3 Auto Lock Out	Auto	Manual
4 Knowing Act	OFF	ON
5 Data Input	OFF	ON
6 Future Development		
7		
8 Stand Alone	OFF	ON

- Safety Relay Contact : Choose the Relay Contact.
- Door Open Signal Switch : Determines safety output when door is open.
- Auto Lock out : Set the lockout method
ON : Manual (by volume setting on OC-913C)
OFF : Auto (by motor voltage)
- Knowing Act : If uses KnowingAct Function, set to "ON".
- Data Input : If using data output from door control for Lockout, set to "ON".
When Data Input is "ON", setting of Auto Lock Out (dipswitch 3) is ignored.
- 6,7. Future Development (not used)
- Stand Alone : Set to "ON" when door mount sensor and OC-913C are used for Knowing Act application without OA-613.

CAUTION When using OA-613, dipswitch 8 must be set to "OFF".

Knowing Act Function

Use this function when Primary Activation is knowing act (i.e. Push Plate, Card reader, etc.) and a secondary activation sensor (door mount or header mount) is desired. See WIRING in the installation manual when Knowing Act Function is required.

Secondary activation sensor status in Knowing Act Function:

- Full Closed position
Secondary activation sensor is inactive until the knowing act device is initiated. Door can be used manually without activation or reactivation from sensor.
- Door Opening & Full Open
When door is activated by Knowing Act, the secondary activation sensor is active and the door will remain open when the sensor is in detection.
- Door closing
Secondary activation sensor is active and will reactivate the door upon detection until the Knowing Act timer expires. Set the Knowing Act timer on OC-913C control to stay active to within 10 degrees from full closed.

NOTE When using the Knowing Act Function, Push/Pull activation MUST be disabled at the door control.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. (Do not use any cleaner / solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- When the operation indicator blinks Green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE

- After applying power, wait 10 seconds then walk test detection area to ensure proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

TROUBLESHOOTING

Symptom	Operation indicator		Possible cause	Possible countermeasures
	OA-613	OC-913C		
Initial setup can not start.	None	None	Power supply voltage. Wrong wiring cable (Brown & Orange wires) of OC-913C.	Set to the stated voltage. Check the wiring cable.
	Twice Orange blinking or None	Twice Orange blinking	Connection failure from OA-613 to OC-913C.	Check the connector.
	Slow Orange blinking		Defective communication cable. When all the area are inactive. (Right bank dipswitches on OA-613) OC-913C Dip-SW 8 is ON, but OA-613 is also connected to OC-913C.	Replace as necessary. Verify proper settings. See installation manual section 4. If use OA-613, set OC-913C Dip-SW 8 to "OFF". If do not use OA-613, disconnect it.
Incomplete initial setup	Blinking Yellow	Blinking Green	OC-913C dipswitches set wrong.	Check the dipswitch settings.
Door operates when no one is in the detection area. (Ghosting)	Solid Green or Solid Red or Blinking Red	Proper	Improper 1st row or 2nd & 3rd row area angle adjustment.	Set 1st row area angle at -5 degrees (shallow) or 2nd & 3rd row area angle at +5 degrees (deep).
			Stalling caused by traffic just outside of swing path.	Set dipswitch 6 on left bank dipswitch of OA-613 on/up (shallow).
			Moving objects near guide rails.	Remove the objects.
			Area width dipswitches set wrong. (Right bank dipswitches on OA-613)	Verify proper settings. See installation manual section 4.
			Wet floor. The exhaust emission or fog penetrate into the detection area.	Check the installation condition referring to MANUFACTURER'S STATEMENT.
			Reflecting objects in the detection area. Objects that move or emit light (Ex. Plant, illumination, etc.)	Remove the objects.
			Water drops on the detection window.	Use the rain-cover (Separately available). Or install in a place keeping the water drops off.
Door does not operate properly when a person enters the detection area. (Sensor does not detect.)	Solid Green or Slow Green blinking	Proper	Sensitivity is too high.	Adjust the sensitivity lower.
			Sensitivity is too low.	Adjust the sensitivity higher.
			Area width dipswitches set wrong. (Right bank dipswitches on OA-613)	Verify proper settings. See installation manual section 4.
Door remains open.	Solid Green	Proper	Signal saturation.	Remove highly reflecting objects from the detection area. Or lower the sensitivity.
			Dirty detection window. Sensor failure.	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.) Contact your installer or service engineer.
OA-613 detects but door operate.	Red or Blinking Red	Proper	OC-913C dipswitches set wrong.	Check the dipswitch settings. See installation manual section 2.
Door remains open.	Solid Green	Proper	Improper wiring of door equipment on / off / hold switch.	Verify proper wiring of on / off / hold switch.

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MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this operation manual.

	WARNING	Disregard of warning may cause improper operation causing death or serious injury of a person.
	CAUTION	Disregard of caution may cause improper operation causing injury of a person or damage to objects.
	NOTE	Special attention is required to the section of this symbol.

NOTE

1. This sensor is a non-contact switch intended for door mounting and to use on automatic swing doors.
2. When setting the sensor's detection area, make sure that there is no traffic around the installation site.
3. Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the sensor.
4. Only use the sensor as specified in the operation manual provided.
5. Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
6. Before leaving the installation site make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
7. The sensor settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock		

NOTE

- The following conditions are not suitable for sensor installation :
- Fog or exhaust emission around the door.
 - Moving objects or objects that emit light near the detection area.
 - Highly reflecting floor or highly reflecting objects around the door.
 - Wet floor.
 - Grating floor.

SPECIFICATION

Model * : OA-EDGE1 / OA-EDGE2
 Extrusion color : Silver / Black
 Mounting height : 1.5 (4'11") to 3.0m (9'10")
 Detection area : See **DETECTION AREA**
 Detection method : Triangulation
 Min. configuration : 1 master module +1 LED module
 Max. configuration : 4 sensor modules +2 LED modules
 Depth angle adjustment : 0° to +25°
 Power supply : 12 to 24VAC ±10% (50 / 60 Hz)
 12 to 30VDC ±10%
 Power consumption : < 1.3W (< 2VA at AC) at Min. configuration
 < 3.5W (< 4.5VA at AC) at Max. configuration
 LED indicator : See chart below
 Output ** : Form C relay
 Voltage / 42VDC
 Current / 0.3A Max (Resistance load)
 Output hold time : Approx. 0.5 sec.
 Response time : <75msec.
 Operating temperature : -20 to +55°C (-4 to 131°F)
 Operating humidity : <80%
 IP rate : IP54

Accessories
 Silver self tap screw for extrusion ----- 2pcs
 Silver wood screw for extrusion ----- 2pcs
 Black small screw for endcap ----- 4pcs
 Black large screw for wire shroud cover ----- 2pcs (4pcs***)
 Wire shroud ----- 1pcs
 Wire shroud cover ----- 1pcs (2pcs***)
 Power supply cable ----- 1pcs
 Communication cable ----- Refer to matrix
 Manual ----- 1pcs

Model	Sensor length	Cable length			
		105 (4")	250 (10")	480 (19")	900 (35")
OA-EDGE 1	13.5	1pcs	1pcs	-	-
	34.5	-	1pcs	1pcs	-
	40	-	1pcs	-	1pcs
	44	-	1pcs	-	1pcs
OA-EDGE 2	34.5	1pcs	1pcs	1pcs	-
	40	1pcs	1pcs	1pcs	-
	44	1pcs	1pcs	1pcs	-

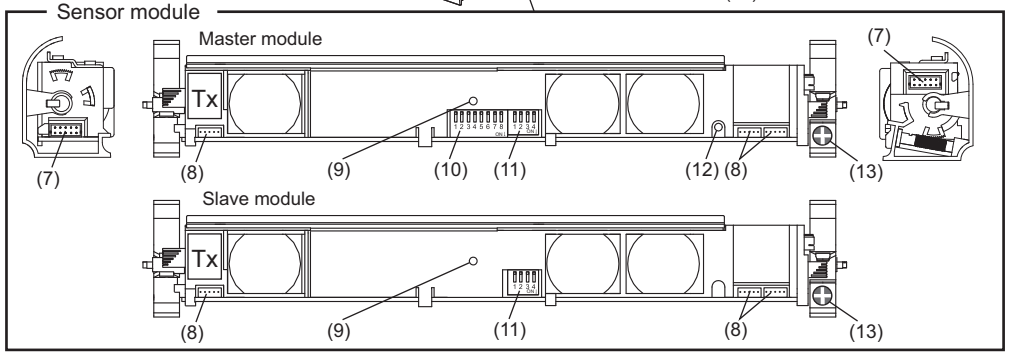
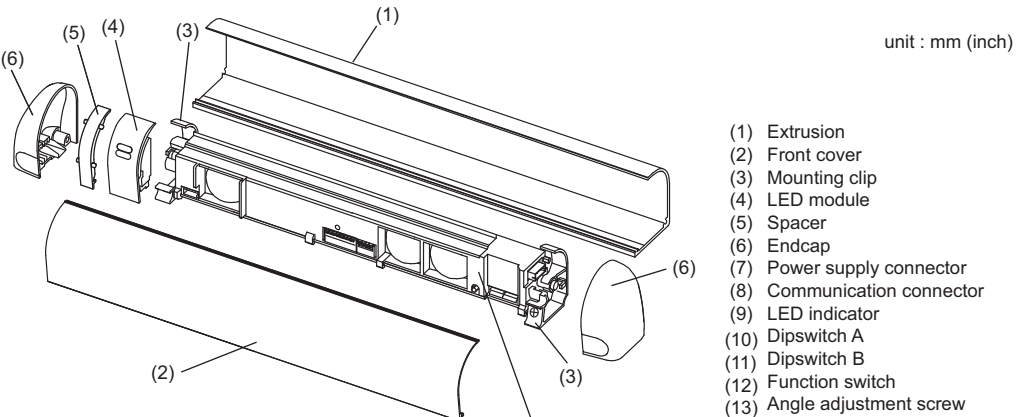
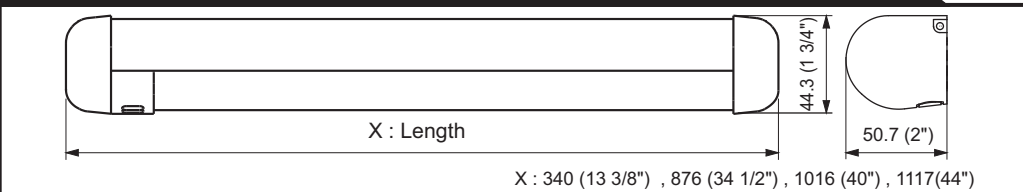
*: OA-EDGE1 have 1 sensor module (Master only).
 OA-EDGE2 have 2 sensor modules (Master + Slave).
 **: There are two types of output. (Reactivate & Stall)
 ***: This is only OA-EDGE1 13.5

LED indicator

Status	Sensor module indicator	LED module indicator
Stand-by	Solid Green	The color depends on the state of the output.
Swing side detection (output 1)	Solid Red	Output 1 (Swing side) OFF : Solid Green
Approach side detection (output 2)	Solid Orange	ON : Solid Red
Incomplete Initialization	Red & Green blinking	Output 2 (Approach side) OFF : Solid Green
Learning	Blinking Yellow	ON : Solid Orange
Incomplete learning	Yellow & Red blinking	
Saturation	Slow Red blinking	
Sensor failure	Fast Red blinking	
Communication error	Twice Orange blinking	

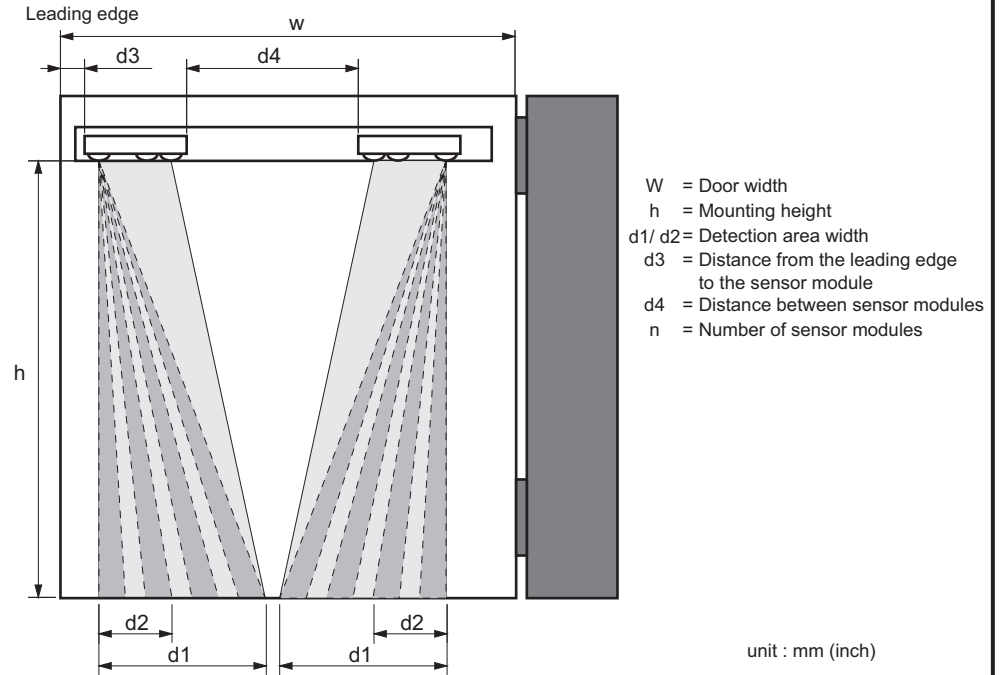
NOTE The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES



DETECTION AREA

Recommended installation position



W		914 (36")		1067 (42")		1219 (48")	
h	d1	d2	d3	n	d4	n	d4
1800 (5'11")	480 (1'7")	280 (1'1")	70 (2 3/4")	2	165 (6 1/2")	2	320 (12 5/8")
1900 (6'3")	510 (1'8")	290 (11 7/16")	70 (2 3/4")	2	170 (6 11/16")	2	320 (12 5/8")
2000 (6'7")	525 (1'9")	300 (11 13/16")	70 (2 3/4")	2	170 (6 11/16")	2	325 (12 13/16")
2100 (6'11")	545 (1'10")	310 (12 3/16")	70 (2 3/4")	2	170 (6 11/16")	2	325 (12 13/16")
2200 (7'3")	560 (1'10")	320 (12 5/8")	70 (2 3/4")	2	175 (6 7/8")	2	330 (13")
2300 (7'7")	590 (1'11")	330 (13")	70 (2 3/4")	2	175 (6 7/8")	2	330 (13")
2400 (7'11")	605 (1'12")	340 (13 3/8")	70 (2 3/4")	2	175 (6 7/8")	2	330 (13")
2500 (8'2")	625 (2'1")	350 (13 3/4")	70 (2 3/4")	2	175 (7 1/16")	2	335 (13 3/16")

NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object and selection of inactive area.

INSTALLATION

1 Mounting the extrusion

1. Take the sensor modules out of the extrusion.
2. If the extrusion is too long for installation cut it down.

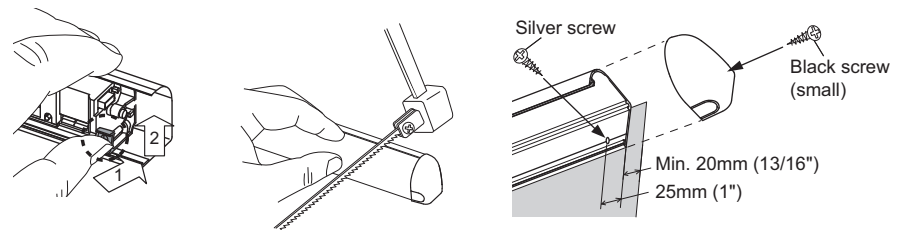
NOTE When cutting the extrusion it is recommended to assemble to the extrusion one end cap. Place the LED module and spacer against the end cap and install the lens cover tight to the LED module. Cut the assembled unit using a miter saw or similar device to ensure proper 90 degree angle. Cut the end opposite the LED module. Ensure the overall length will clear items such as door stops or finger guards.

3. Affix the extrusion on the intended mounting position leaving more than 20mm (13/16") from door edge to attach the endcap.
4. If necessary, drill two mounting holes of ø3.4mm (ø1/8") and fix the extrusion.

NOTE Recommended location for mounting screws is 1" from edge of aluminum extrusion. This will allow proper positioning of LED Module and Sensor modules without obstruction.

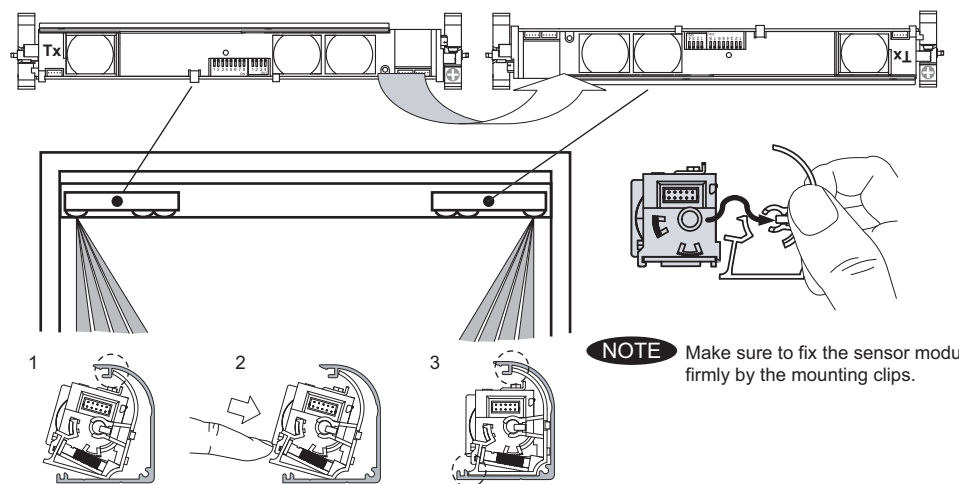
5. When mounting a sensor on each side of the door, it is necessary to drill a wiring hole of ø12mm (ø1/2") to connect the sensor modules. (See chapter 3. Wiring)

NOTE Make sure there is some space between the mounting clips and the mounting screws. Make sure not to scratch the extrusion when making a hole.



2 Inserting the sensor module

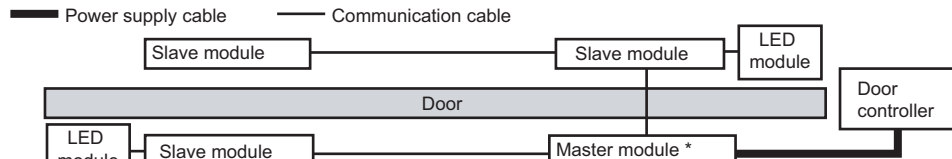
1. **Approach side**
 When installing on approach side (reactivation) refer to values d2 & d3 in chart under **DETECTION AREA** as an initial starting point for location of module. Sensor modules can be moved left or right and angle in or out to achieve desired detection area determined by walk testing door operation.
2. **Swing side**
 When installing on swing side in conjunction with an Overhead Presence Sensor see separate included chart for starting location. Requires two modules for this application to ensure conformance to ANI/BHMA A156.10, Section 8. Must be walk tested and adjusted if necessary to confirm compliance with the standard.



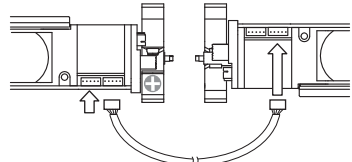
INSTALLATION

3 Wiring

Wire the cable to the door controller as shown below.



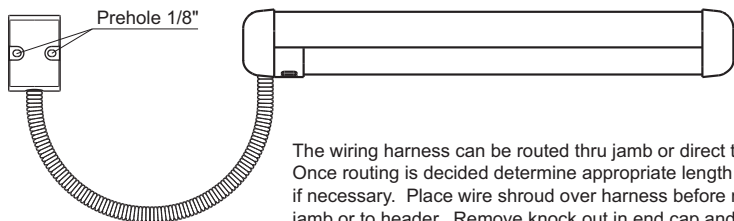
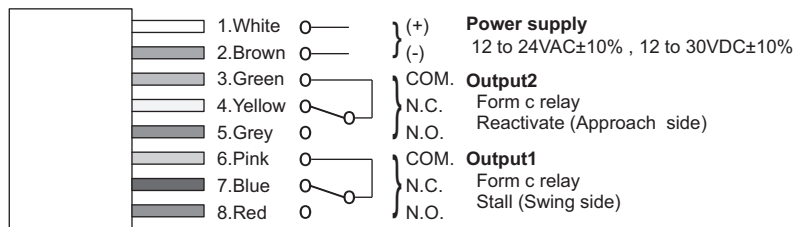
NOTE * When more than 1 master module is installed on the door leaf, make sure that only one power supply cable is connected to the operator otherwise initialization can not be completed. All other master units will automatically function as a slave unit.



Each module has three communication connectors. Use the most convenient connector for the installation site.

NOTE Maximum of three sensor modules can be connected to one master module.

To the power supply connector of the master module



The wiring harness can be routed thru jamb or direct to header. Once routing is decided determine appropriate length of wire shroud and trim if necessary. Place wire shroud over harness before routing harness thru jamb or to header. Remove knock out in end cap and attach wire shroud to profile. Attach other end of wire shroud at jamb or header using wire shroud cover if necessary. When installing wire shroud cover mark and predrill two 1/8 inch holes (see picture).



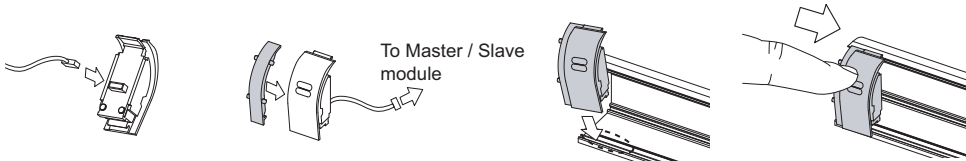
WARNING

Danger of electric shock

Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield otherwise it may cause electric shock or breakdown of the sensor.

4 Inserting LED module

Connect the communication cable to the LED module then to the sensor module and install LED module and spacer. Select the length of communication cable appropriate for your application (4", 10", 19" or 35") Attach the spacer on the endcap side. Insert the LED module to the extrusion. The LED module can be inserted to both side of the extrusion.



NOTE For LED status see SPECIFICATION

5 Placing the front cover

After ADJUSTMENTS are completed, place the front cover and endcaps.

NOTE When the front cover is installed inactive height will increase slightly.

ADJUSTMENTS

1 Dipswitch settings

Each Master module is equipped with Dipswitch A and Dipswitch B and each Slave module is equipped with only Dipswitch B. Only dipswitch A of the master module connected to the door controller is applicable and will reflect the settings to all connected master and slave units automatically.

Dipswitch A	Setting	Description
A1	ON	Non detection zone (A)
A2	ON	Frequency
A3	ON	Immunity
A4	ON	Presence timer
A5	ON	Presence timer
A6	ON	For future use
A7	ON	For future use
A8	ON	For future use

Dipswitch B	Setting	Description
B1	ON	Non detection zone (B)
B2	ON	Area width
B3	ON	For future use
B4	ON	Sensor side (Output select)

NOTE Make sure to finish initialization properly to reflect the dipswitch settings otherwise the setting can not be changed. (see chapter 2. Function switch)

1-1. Setting the Non detection zone

The Non detection zone is the height measured from the floor up to the position where the sensor starts to detect. The zone can be set by a combination with Dipswitch A1 & B1. [Non detection zone value] = [Dipswitch A1 value] + [Dipswitch B1 value]

Dipswitch A1	Dipswitch B1	Total Non detection zone
OFF : 5 7/8"	OFF : +0"	15cm (5 7/8")
OFF : 5 7/8"	ON : +3 15/16"	25cm (9 13/16")
ON : 13 3/4"	OFF : +0"	35cm (13 3/4")
ON : 13 3/4"	ON : +3 15/16"	45cm (17 11/16")

NOTE The value is approximate for mounting height of 1.8 to 2.5m (5' 11" to 8' 2").

1-2. Setting the frequency

When installing the sensors on a double swing door make sure that the frequency on each sensor is set differently.

Setting1	Setting2
↑ A2	↓ A2
OFF	ON

1-3. Setting the immunity

Set Dipswitch A3 to ON when the sensor operates by itself (ghosting).

NOTE When Dipswitch A3 is set to ON, the actual detection area may become smaller than Immunity off.

Immunity off	Immunity on
↑ A3	↓ A3
OFF	ON

1-4. Setting the presence timer

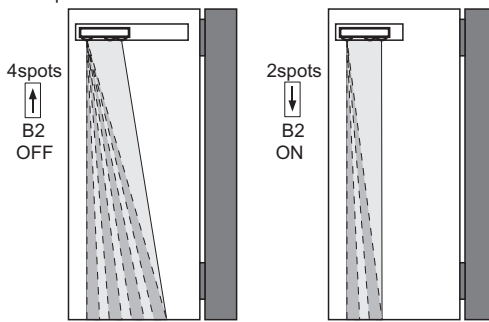
The presence timer can be set by Dipswitch A4 & A5.

NOTE If an object remains in the detection area longer than the setting, LED indicator may blink fast Red. In this case, it is not Sensor failure. After an object is removed, LED indicator will show solid Green.

30sec.	60sec.	180sec.	∞
↑ A4 ↓ A5	↓ A4 ↑ A5	↑ A4 ↓ A5	↓ A4 ↓ A5
OFF OFF	ON OFF	OFF ON	ON ON

1-5. Setting the area width

Set dipswitch B2 to "2 spots" when a narrow detection area is required.



1-6. Setting the sensor side (output select)

Set dipswitch B4 according to the sensor side. Output and LED indicator will function as shown below :

Dipswitch B4	Output	LED indicator
OFF : "Swing side (output 1)"	Output1 (Stall)	Solid Red (detection)
ON : "Approach side (output 2)"	Output2 (Reactivate)	Solid Orange (detection)

2 Function switch

Only the master module is equipped with a function switch. The function switch of the master module that is connected to the door controller is only applicable to reflect settings to all sensor modules connected.

NOTE Make sure to use the function switch when the door is in the fully closed position.

2-1. Initialization

After a dipswitch setting change or when the power is supplied for the first time, the LED blinks red & green. Push the function switch for **MORE THAN 2 SEC.** and then the LED indicator on the master unit will switch off. The LED indicator will start to blink green to indicate the number of connected sensor modules. The LED indicator will start to blink alternate yellow and red indicating initialization is complete. You **MUST** now perform a Learn Cycle (see 2-2).

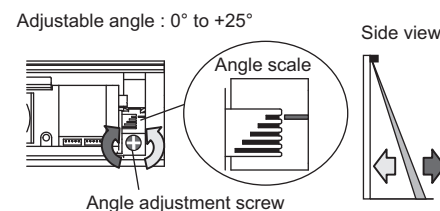
2-2. Learning

Push the function switch for **LESS THAN 2 SEC.** and then the LED indicator will start to blink yellow. The sensor will learn the Non detection zone.

NOTE Do not enter the detection area when the sensor is performing a learning cycle. When the initialization and the learning cycle is completed, the sensor will be in stand-by mode and the LED will show solid green.

3 Area depth angle adjustment

The angle of each sensor module must be adjusted so that the door stops before it comes into contact with an obstacle. After area angle adjustments, start the learning as described in chapter 2. Function switch.



NOTE After the adjustment, check the detection area.

CHECKING

Check the operation according to the chart below.

NOTE The door movement might become unstable right after the learning. The movement becomes stabilized after several openings and closings. Always walk-test the detection area to ensure the proper operation.

Entry	Power OFF	Outside of detection area	Entry into swing side detection area	Entry into approach side detection area
Status	-	Stand-by	Detection active	Detection active
LED indicator	None	Solid Green	Solid Red	Solid Orange
Output1 (Stall)	COM. N.O. N.C.	COM. N.O. N.C.	COM. N.O. N.C.	COM. N.O. N.C.
Output2 (Reactivate)	COM. N.O. N.C.	COM. N.O. N.C.	COM. N.O. N.C.	COM. N.O. N.C.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the front cover clean. If dirty, wipe it with a damp cloth. (Do not use any cleaner / solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- When LED indicator blinks Fast Red without any object in the detection area, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the front cover.

NOTE 1. After applying power, wait 10 seconds then walk test detection area to ensure proper operation.
2. Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

TROUBLESHOOTING

Problem	Possible cause	Possible countermeasures
Sensor does not operate	Wrong power supply voltage Wrong wiring or connection failure	Set to the stated voltage. Check the wiring and connectors.
Incomplete initialization (Red & Green blinking)	Initialization has not been conducted. Dipswitch setting is changed.	Push the function switch for more than 2 sec. for initialization.
Initialization is not finished (Red & Green blinking continuous)	More than 2 master modules are connected with power supply wire.	Connect the power supply cable to only one master module.
Incomplete learning (Yellow & Red blinking)	Initialization has not been conducted.	Push the function switch for less than 2 sec. for learning.
Learning does not start (Twice Orange blinking)	Communication error	Check the communication cable or change wires.
Sensor operates by itself. (Ghosting) or learning is not finished. (Yellow & Red blinking continuous)	Objects that move or emit light in the detection area. (Ex.Plant, illumination, etc.) Same frequency setting on double swing door application. The modules are affecting each other. Signal saturation. The floor pattern is not plain or, the door movement is irregular.	Remove the objects. Set the different frequencies. (Dipswitch A2) Change the module positions or adjust angles or adjust the area width (Dipswitch B2). Set the immunity (Dipswitch A3) to "ON". Extend the Non detection zone.
Sensor operates by itself. (Ghosting)	Waterdrops on the front cover	Install in a place keeping the waterdrops off.
The sensor functions without the front cover but not with it.	The module angle is changed. The front cover is dirty. The front cover is scratched	Check the module angles. Wipe the front cover with a damp cloth. (Do not use any cleaner or solvent.) Replace the front cover.
Sensor operation is not linked to door movement.	Connection error or wrong mounting side setting.	Check the wiring or sensor side setting. (Dipswitch B4)
Door remains open or closed without any object in the detection area.	Presence timer set to infinity and sudden change in the detection area. Signal saturation. (Slow Red blinking)	Push the function switch for less than 2 sec. for learning. Or change presence timer setting. (Dipswitch A4) Change the module positions or adjust angles or adjust the area width (Dipswitch B2).
	The sensor is affected by the floor color.	Push the function switch for less than 2 sec. for learning. Or extend the Non detection zone.
	Communication error. (Twice Orange blinking)	Check the communication cable.
	The front cover on inner or outer side is dirty.	Wipe the front cover with a damp cloth. (Do not use any cleaner or solvent.)
	Sensor failure. (Fast Red blinking)	Contact your installer or service engineer.

Manufacturer

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PRO SWING OA-EDGE EU

5916270 JUN 2010

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this operation manual.

	WARNING	Disregard of warning may cause improper operation causing death or serious injury of a person.
	CAUTION	Disregard of caution may cause improper operation causing injury of a person or damage to objects.
	NOTE	Special attention is required to the section of this symbol.

NOTE

1. This sensor is a non-contact switch intended for door mounting and to use on automatic swing doors.
2. When setting the sensor's detection area, make sure that there is no traffic around the installation site.
3. Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the sensor.
4. Only use the sensor as specified in the operation manual provided.
5. Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
6. Before leaving the installation site make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
7. The sensor settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock		

NOTE

- The following conditions are not suitable for sensor installation :
- Fog or exhaust emission around the door.
 - Moving objects or objects that emit light near the detection area.
 - Highly reflecting floor or highly reflecting objects around the door.
 - Wet floor.
 - Grating floor.

SPECIFICATION

Model	: OA-EDGE EU	Noise level	: <70dBA
Profile color	: Silver / Black	Output hold time	: Approx. 0.5 sec.
Mounting height	: 1.5 (4'11") to 3.0m (9'10")	Response time	: <75msec.
Detection area	: See DETECTION AREA	Operating temperature	: -20 to +55°C (-4 to 131°F)
Detection method	: Triangulation	Operating humidity	: <80%
Min. configuration	: 1 master module +1 LED module	IP rate	: IP54
Max. configuration	: 4 sensor modules +2 LED modules		
Depth angle adjustment	: 0° to +25°		
Power supply *	: 12 to 24VAC ±10% (50 / 60 Hz) 12 to 30VDC ±10%		
Power consumption	: < 1.3W (< 2VA at AC) at Min. configuration < 3.5W (< 4.5VA at AC) at Max. configuration		
LED indicator	: See chart below		
Test input	: Opto coupler 10 to 30VDC Current / 6mA Max.		
Safety / Test output 1	: Form C relay Voltage / 42VDC		
Safety / Test output 2	: Current / 0.3A Max (Resistance load) Output : see INSTALLATION chapter 3. Wiring		

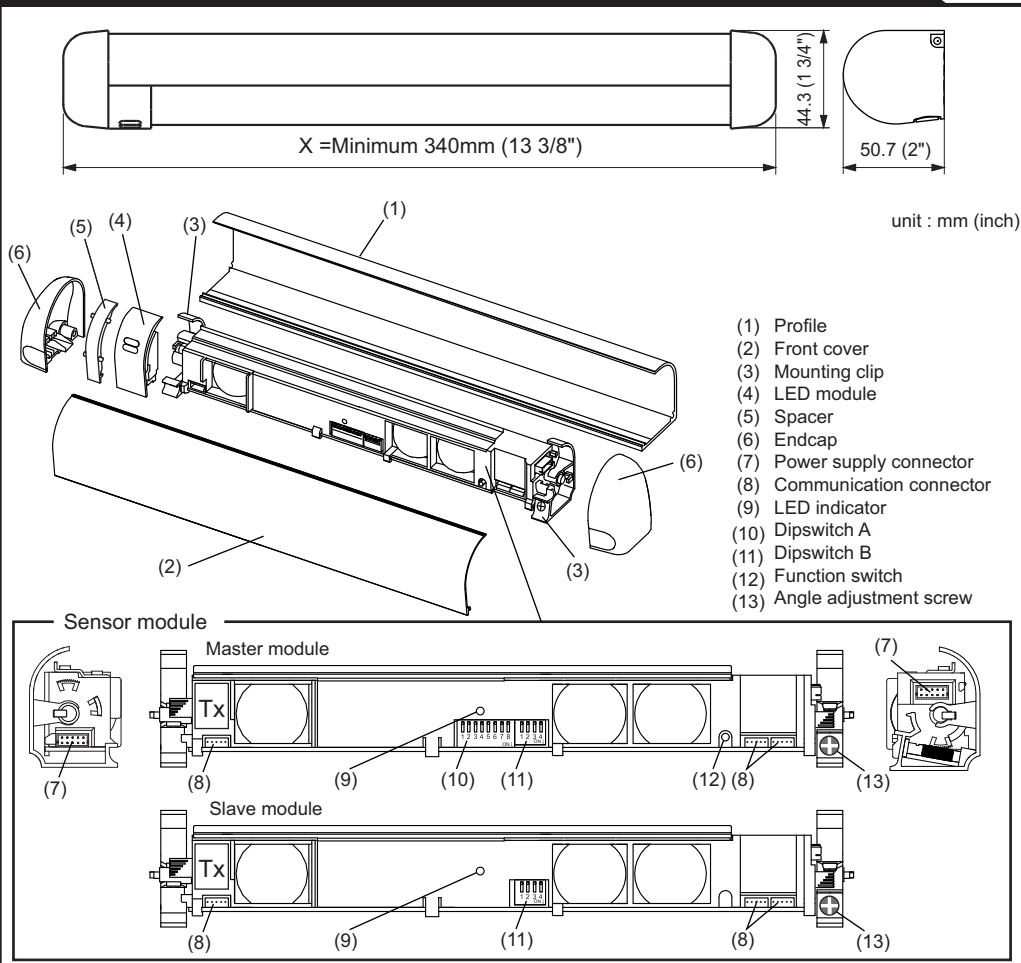
* : The sensor has to be connected to a door system is equipped with a SELV circuit. The overcurrent protection of power supply cable has to be less than 2A.

LED indicator

Status	Sensor module indicator	LED module indicator
Stand-by	Solid Green	The color depends on the state of the output.
Opening side detection (output 1)	Solid Red	Safety / Test output 1 OFF : Solid Green
Closing side detection (output 2)	Solid Orange	ON : Solid Red
Incomplete Initialization	Red & Green blinking	Safety / Test output 2 OFF : Solid Green
Learning	Blinking Yellow	ON : Solid Orange
Incomplete learning	Yellow & Red blinking	
Saturation	Slow Red blinking	
Sensor failure	Fast Red blinking	
Communication error	Twice Orange blinking	

NOTE The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES



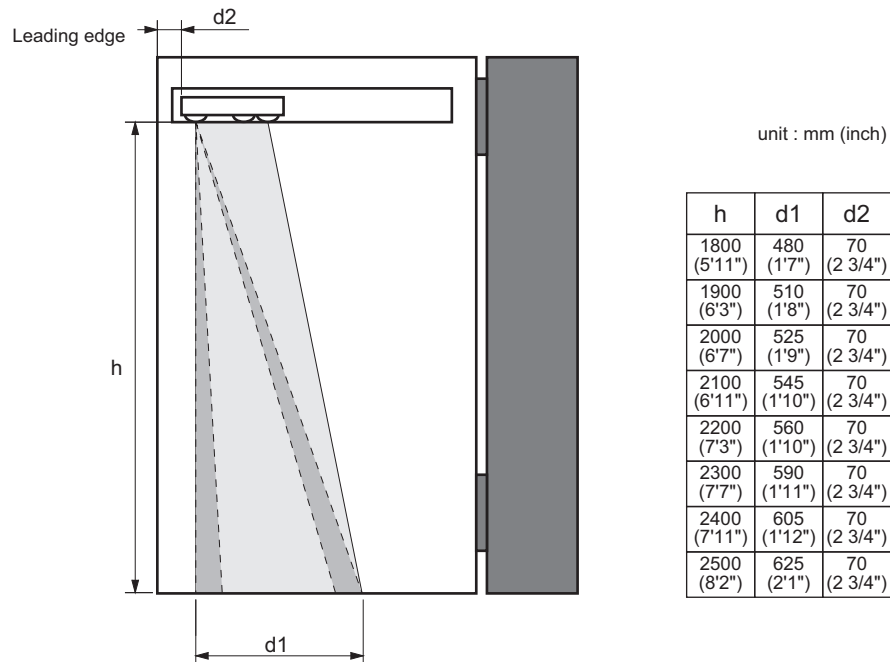
DETECTION AREA

Detection area at 2200mm (7' 2 5/8") : Depth 140 (5 1/2") x Width 560 (1' 10")

Emitting area at 2200mm (7' 2 5/8") : Depth 140 (5 1/2") X Width 440 (1' 5 1/2")

NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object.

Recommended installation position

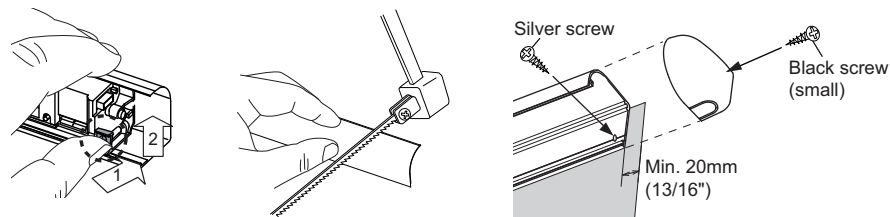


W = Door width
h = Mounting height
d1 = Detection area width
d2 = Distance from the leading edge to the sensor module

INSTALLATION

1 Mounting the profile

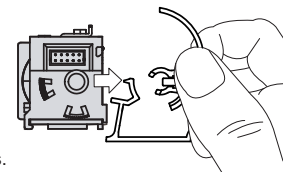
1. Take the sensor modules out of the profile.
2. If the profile is longer than the door width, cut the profile. Make sure not to scratch the front cover.
3. Affix the profile on the intended mounting position leaving more than 20mm (13/16") from door edge to attach the endcap.
4. If necessary, drill two mounting holes of ø3.4mm (ø1/8") and fix the profile.
5. When mounting a sensor on each side of the door, it is necessary to drill a wiring hole of ø12mm (ø1/2") to connect the sensor modules. (See chapter 3. **Wiring**)



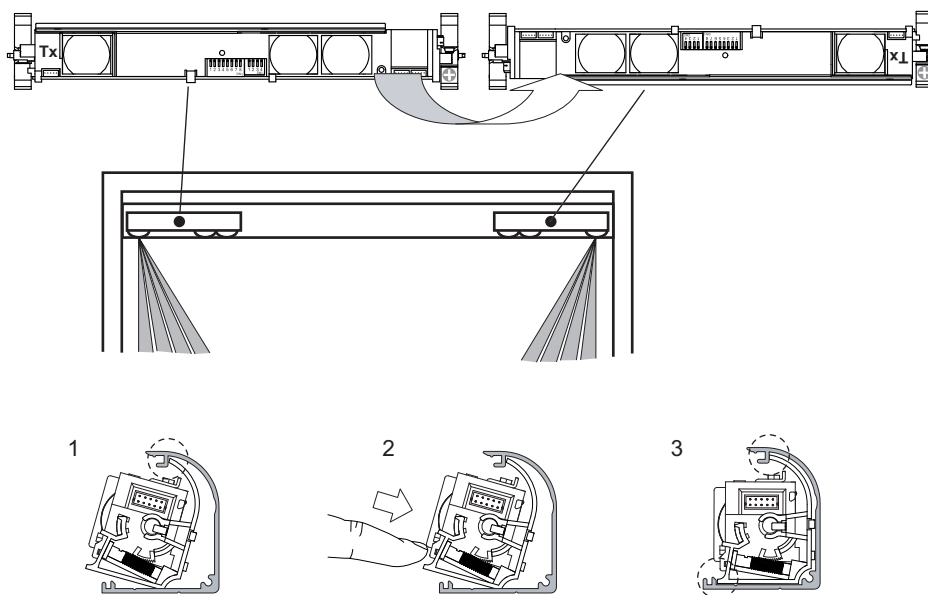
NOTE Make sure there is some space between the mounting clips and the mounting screws. Make sure not to scratch the profile when making a hole.

2 Inserting the sensor module

The lens that is marked "Tx" must be positioned onto the corresponding door edge. Refer to **DETECTION AREA** for the sensor module position. The sensor module can be inserted in reverse as shown below. To do this, detach the mounting clip and rotate the sensor module by 180° and reattach the mounting clips.



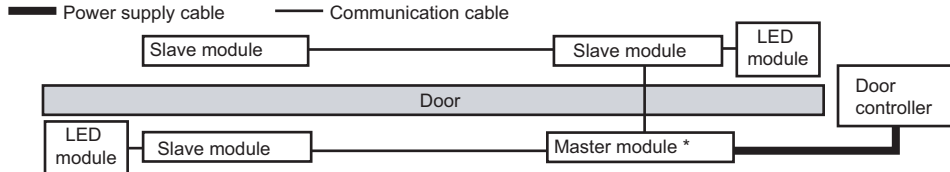
NOTE Make sure to fix the sensor modules firmly by the mounting clips.



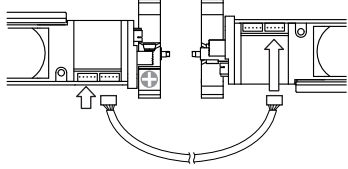
INSTALLATION

3 Wiring

Wire the cable to the door controller as shown below.



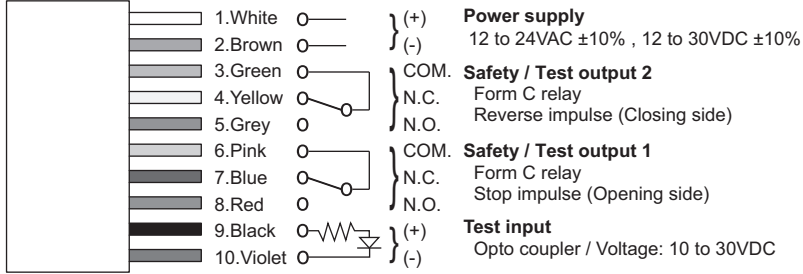
NOTE * When more than 1 master module is installed on the door leaf, make sure that only one power supply cable is connected to the operator otherwise initialization can not be completed. All other master units will automatically function as a slave unit.



Each module has three communication connectors. Use the most convenient connector for the installation site.

NOTE Maximum of three sensor modules can be connected to one master module.

To the power supply connector of the master module



Power supply
12 to 24VAC ±10% , 12 to 30VDC ±10%

Safety / Test output 2
Form C relay
Reverse impulse (Closing side)

Safety / Test output 1
Form C relay
Stop impulse (Opening side)

Test input
Opto coupler / Voltage: 10 to 30VDC

NOTE When a test input is not required, set the dipswitch A7 to OFF.

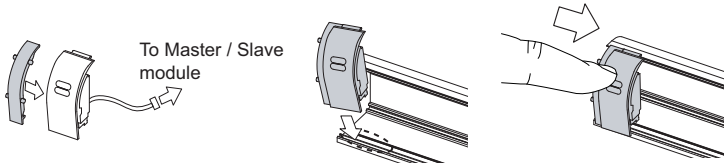
WARNING

Danger of electric shock

Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield otherwise it may cause electric shock or breakdown of the sensor.

4 Inserting LED module

Connect the communication cable of the LED module to the master or slave module. Attach the spacer on the endcap side. Insert the LED module to the profile as shown below. The LED module can be inserted to both side of the profile.



NOTE For LED status see SPECIFICATION

5 Placing the front cover

After **ADJUSTMENTS** are completed, place the front cover and endcaps.

ADJUSTMENTS

1 Dipswitch settings

Each Master module is equipped with Dipswitch A and Dipswitch B and each Slave module is equipped with only Dipswitch B. Only dipswitch A of the master module connected to the door controller is applicable and will reflect the settings to all connected master and slave units automatically.

Dipswitch A	A1	A2	A3	A4	A5	A6	A7	A8
1	Non detection zone (A)	Frequency	Immunity	Presence timer	For future use	Test input	Test input delay	

Dipswitch B	B1	B2	B3	B4
1	Non detection zone (B)	Area width	Self monitoring	Mounting side (Output select)

NOTE Make sure to finish initialization properly to reflect the dipswitch settings otherwise the setting can not be changed. (see chapter 2. Function switch)

1-1. Setting the non detection zone

The non detection zone is the height measured from the floor up to the position where the sensor starts to detect. The zone can be set by a combination with Dipswitch A1 & B1.
[Non detection zone value] = [Dipswitch A1 value] + [Dipswitch B1 value]

Side view	Dipswitch A1	Dipswitch B1	Non detection zone
	OFF : "15cm"	OFF : "+0cm"	15cm (5 7/8")
	OFF : "15cm"	ON : "+10cm"	25cm (9 13/16")
	ON : "35cm"	OFF : "+0cm"	35cm (13 3/4")
	ON : "35cm"	ON : "+10cm"	45cm (17 11/16")

NOTE The value is a reference for a mounting height of 1.8 to 2.5m (5' 11" to 8' 2").

1-2. Setting the frequency

When installing the sensors on a double swing door make sure that the frequency on each sensor is set differently.

Setting1	Setting2
<input type="radio"/> OFF	<input type="radio"/> ON

1-3. Setting the immunity

Set Dipswitch A3 to ON when the sensor operates by itself (ghosting).

NOTE When Dipswitch A3 is set to ON, the actual detection area may become smaller than Immunity off.

Immunity off	Immunity on
<input type="radio"/> OFF	<input type="radio"/> ON

1-4. Setting the presence timer

The presence timer can be set by Dipswitch A4.

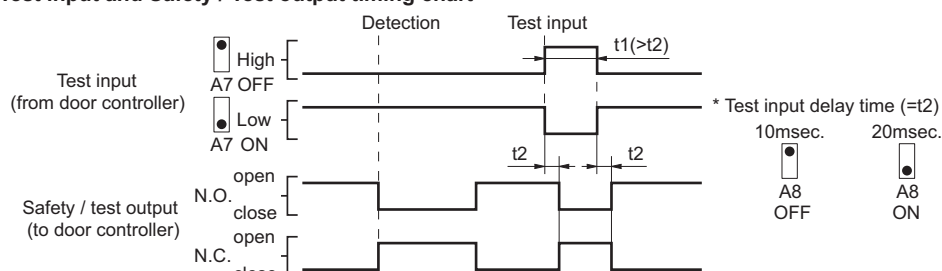
NOTE If an object remains in the detection area longer than the setting, LED indicator may blink fast Red. In this case, it is not Sensor failure. After an object is removed, LED indicator will show solid Green.

60sec.	∞
<input type="radio"/> OFF	<input type="radio"/> ON

1-5. Setting the test input and test input delay time

Set dipswitches A7 & A8 according to the instructions from the door controller.

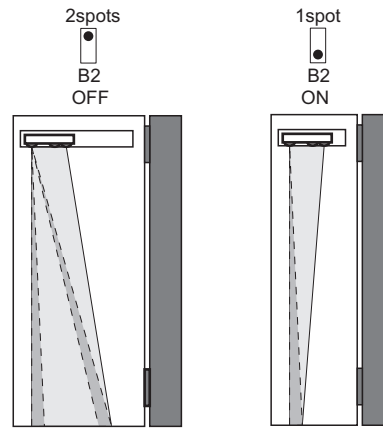
Test input and Safety / Test output timing chart



* The test input delay time is the time period between the test input and Safety / Test output.

1-6. Setting the area width

Set dipswitch B2 to "1 spot" when a narrow detection area is required.



1-7. Setting the self monitoring

When the door remains open or closed, please refer to the **TROUBLESHOOTING** section. If the door still remains open or closed, set dipswitch B3 to "Disable"

Enable	Disable
<input type="radio"/> OFF	<input type="radio"/> ON

1-8. Setting the mounting side (output select)

By selecting the sensor position the outputs & LED indicator will function as shown below :

Dipswitch B4	Output	LED indicator
OFF : "Opening side (output 1)"	Safety / Test output1 (stop impulse)	Solid Red (detection)
ON : "Closing side (output 2)"	Safety / Test output2 (reverse impulse)	Solid Orange (detection)

2 Function switch

Only the master module is equipped with a function switch. The function switch of the master module that is connected to the door controller is only applicable to reflect settings to all sensor modules connected.

NOTE Make sure to use the function switch when the door is in the fully closed position.

2-1. Initialization

After a dipswitch setting change or when the power is supplied for the first time, the LED blinks red & green. Push the function switch for more than 2 sec. and then the LED indicator on the master unit will switch off. The LED indicator will start to blink green to indicate the number of connected sensor modules. The LED indicator will start to blink yellow and red and the initialization is completed. The LED is now indicating that you have to proceed a learning cycle.

2-2. Learning

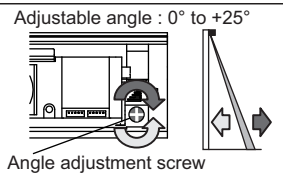
Push the function switch for less than 2 sec. and then the LED indicator will start to blink yellow. The sensor will learn the non detection zone.

NOTE Do not enter the detection area when the sensor is performing a learning cycle. When the initialization and the learning cycle is completed, the sensor will be in stand-by mode and the LED will show solid green.

3 Area depth angle adjustment

The angle of each sensor module must be adjusted so that the door stops before it comes into contact with an obstacle. After area angle adjustments, start the learning as described in **chapter 2. Function switch**.

NOTE After the adjustment, check the detection area.



CHECKING

Check the operation according to the chart below.

NOTE The door movement might become unstable right after the learning. The movement becomes stabilized after several openings and closings. Always walk-test the detection area to ensure the proper operation.

Entry	Power OFF	Outside of detection area	Entry into opening side detection area	Entry into closing side detection area
Status	-	Stand-by	Detection active	Detection active
LED indicator	None	Solid Green	Solid Red	Solid Orange
Safety / Test output1 (Stop impulse)	COM. <input type="radio"/> N.O. <input type="radio"/> N.C. <input type="radio"/>	COM. <input type="radio"/> N.O. <input type="radio"/> N.C. <input type="radio"/>	COM. <input type="radio"/> N.O. <input type="radio"/> N.C. <input type="radio"/>	COM. <input type="radio"/> N.O. <input type="radio"/> N.C. <input type="radio"/>
Safety / Test output2 (Reverse impulse)	COM. <input type="radio"/> N.O. <input type="radio"/> N.C. <input type="radio"/>	COM. <input type="radio"/> N.O. <input type="radio"/> N.C. <input type="radio"/>	COM. <input type="radio"/> N.O. <input type="radio"/> N.C. <input type="radio"/>	COM. <input type="radio"/> N.O. <input type="radio"/> N.C. <input type="radio"/>

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the front cover clean. If dirty, wipe it with a damp cloth. (Do not use any cleaner / solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- When LED indicator blinks Fast Red without any object in the detection area, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the front cover.

NOTE 1. After applying power, wait 10 seconds then walk test detection area to ensure proper operation. 2. Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

TROUBLESHOOTING

Problem	Possible cause	Possible countermeasures
Sensor does not operate	Wrong power supply voltage Wrong wiring or connection failure	Set to the stated voltage. Check the wiring and connectors.
Incomplete initialization (Red & Green blinking)	Initialization has not been conducted. Dipswitch setting is changed.	Push the function switch for more than 2 sec. for initialization.
Initialization is not finished (Red & Green blinking continuous)	More than 2 master modules are connected with power supply wire.	Connect the power supply cable to only one master module.
Incomplete learning (Yellow & Red blinking)	Initialization has not been conducted.	Push the function switch for less than 2 sec. for learning.
Learning does not start (Twice Orange blinking)	Communication error	Check the communication wires or change wires.
Sensor operates by itself. (Ghosting) or learning is not finished. (Yellow & Red blinking continuous)	Objects that move or emit light in the detection area. (Ex.Plant, illumination, etc.) Same frequency setting on double swing door application. The modules are affecting each other. Signal saturation. The floor pattern is not plain or , the door movement is irregular.	Remove the objects. Set the different frequencies. (Dipswitch A2) Change the module positions or adjust angles or adjust the area width (Dipswitch B2). Set the immunity (Dipswitch A3) to "ON". Extend the non detection zone.
Sensor operates by itself. (Ghosting)	Waterdrops on the front cover	Install in a place keeping the waterdrops off.
The sensor functions without the front cover but not with it.	The module angle is changed. The front cover is dirty. The front cover is scratched	Check the module angles. Wipe the front cover with a damp cloth. (Do not use any cleaner or solvent.) Replace the front cover.
Sensor operation is not linked to door movement.	Connection error or wrong mounting side setting.	Check the wiring or mounting side setting. (Dipswitch B4)
Door remains open or closed without any object in the detection area.	Presence timer set to infinity and sudden change in the detection area. Signal saturation. (Slow Red blinking)	Push the function switch for less than 2 sec. for learning. Or change presence timer setting. (Dipswitch A4) Change the module positions or adjust angles or adjust the area width (Dipswitch B2).
	The sensor is affected by the floor color.	Push the function switch for less than 2 sec. for learning. Or extend the non detection zone.
	Communication error. (Twice Orange blinking)	Check the communication wires.
	The front cover on inner or outer side is dirty.	Wipe the front cover with a damp cloth. (Do not use any cleaner or solvent.)
	Sensor failure. (Fast Red blinking)	Contact your installer or service engineer.

Manufacturer

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MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this operation manual.

	WARNING Disregard of warning may cause improper operation causing death or serious injury of a person.
	CAUTION Disregard of caution may cause improper operation causing injury of a person or damage to objects.
	NOTE Special attention is required to the section of this symbol.
	It is required to check the operation manual if this symbol is shown on the product.
	Setting to meet the requirements by DIN18650

- NOTE**
- This sensor is a non-contact switch intended for door mounting and to use on automatic swing doors.
 - When setting the sensor's detection area, make sure that there is no traffic around the installation site.
 - Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the sensor.
 - Only use the sensor as specified in the operation manual provided.
 - Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
 - Before leaving the installation site make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
 - The sensor settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING Do not wash, disassemble, rebuild or repair the sensor otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock	

- NOTE** The following conditions are not suitable for sensor installation :
- Fog or exhaust emission around the door.
 - Moving objects or objects that emit light near the detection area.
 - Highly reflecting floor or highly reflecting objects around the door.
 - Wet floor.
 - Grating floor.

SPECIFICATION

Model	: OA-EDGE T	Noise level	: <70dBA
Profile color	: Silver / Black	Output hold time	: Approx. 0.5 sec.
Mounting height	: 1.5 (4'11") to 3.0m (9'10")	Response time	: <75msec.
Detection area	: See DETECTION AREA	Operating temperature	: -20 to +55°C (-4 to 131°F)
Detection method	: Triangulation	Operating humidity	: <80%
Min. configuration	: 1 master module +1 LED module	IP rate	: IP54
Max. configuration	: 4 sensor modules +2 LED modules	Category	: 2 (EN ISO13849-1 : 2008)
Depth angle adjustment	: 0° to +25°	Performance level	: d (EN ISO13849-1 : 2008)
Power supply *	: 12 to 24VAC ±10% (50 / 60 Hz) 12 to 30VDC ±10%		

Power consumption : < 1.3W (< 2VA at AC) at Min. configuration
< 3.5W (< 4.5VA at AC) at Max. configuration

LED indicator : See chart below
Test input : Opto coupler 10 to 30VDC
Current / 6mA Max.

Safety / Test output 1: Form C relay
Voltage / 42VDC
Current / 0.3A Max (Resistance load)
Output : see **INSTALLATION** chapter 3. Wiring

* : The sensor has to be connected to a door system is equipped with a SELV circuit. The overcurrent protection of power supply cable has to be less than 2A.

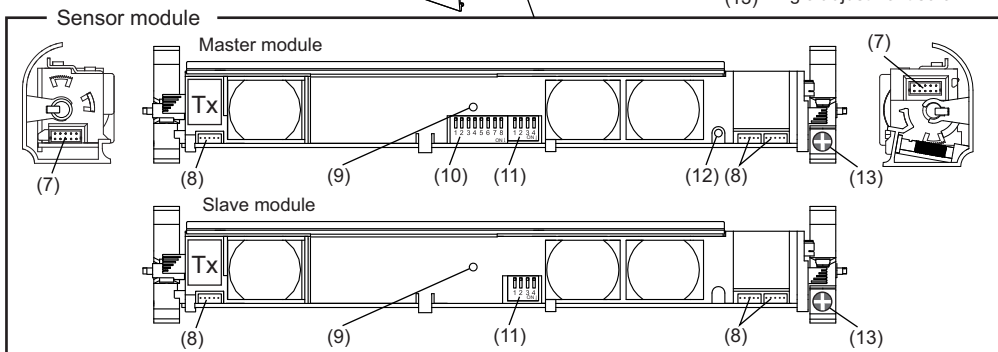
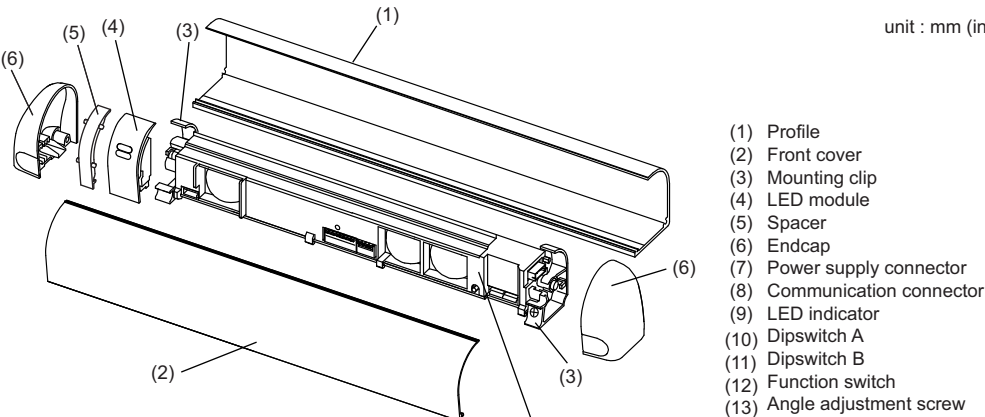
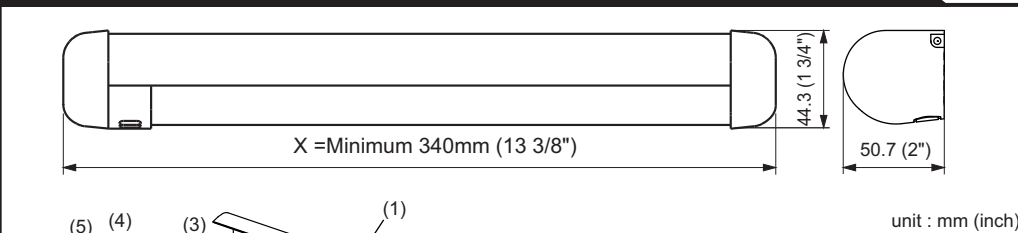
DIN Install the sensor at 1.8m (5'11") to 2.5m (8'2").

LED indicator

Status	Sensor module indicator	LED module indicator
Stand-by	Solid Green	The color depends on the state of the output.
Opening side detection (output 1)	Solid Red	Safety / Test output 1 OFF : Solid Green
Closing side detection (output 2)	Solid Orange	ON : Solid Red
Incomplete Initialization	Red & Green blinking	Safety / Test output 2 OFF : Solid Green
Learning	Blinking Yellow	ON : Solid Orange
Incomplete learning	Yellow & Red blinking	
Saturation	Slow Red blinking	
Sensor failure	Fast Red blinking	
Communication error	Twice Orange blinking	

NOTE The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES



COMPLIED STANDARDS

DIN 18650-1:2010 Chapter 5.7.4 DIN 18650-2:2010 EN 12978:2003 +A1:2009 Machinery Directive 2006/42/EC
EMC Directive 2004/108/EC EN ISO 13849-1:2008 EN ISO 13849-2:2008 prEN 16005:2009
EN 61696-3:2001 clause 4. 3. 5 and 5. 4. 7. 3
Notified Body : TÜV NORD CERT GmbH Langemarckstr. 20 45141 Essen Germany
EC-type examination certificate No. 44 205 10 555775

DETECTION AREA

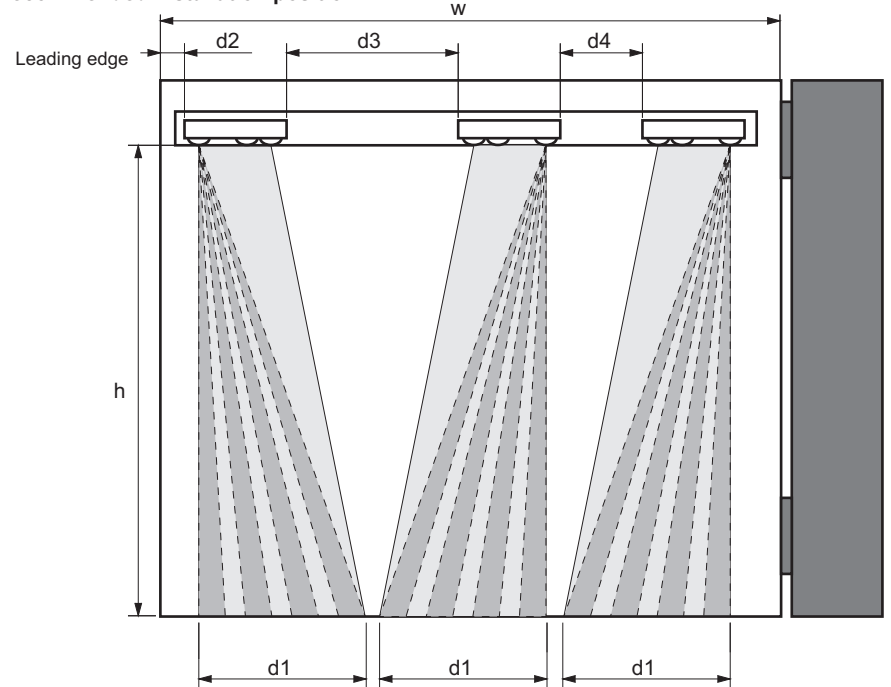
Detection area at 2200mm (7' 2 5/8") : Depth 140 (5 1/2") x Width 560 (1' 10")

Test conditions required by DIN 18650 Detection object : DIN 18650 Test body CA

Emitting area at 2200mm (7' 2 5/8") : Depth 140 (5 1/2") X Width 440 (1' 5 1/2")

NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object.

Recommended installation position



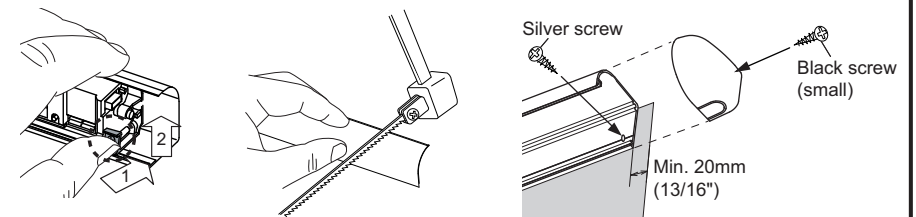
W = Door width d2 = Distance from the leading edge to the sensor module
h = Mounting height d3 / d4 = Distance between sensor modules
d1 = Detection area width n = Number of sensor modules unit : mm (inch)

h	W			900 (2'12")			1100 (3'7")			1200 (3'11")		
	d1	d2	n	d3	d4	n	d3	d4	n	d3	d4	
1800 (5'11")	480 (1'7")	70 (2 3/4")	2	150 (5 7/8")	-	2	350 (1'2")	-	3	90 (3 5/8")	90 (3 5/8")	
1900 (6'3")	510 (1'8")	70 (2 3/4")	2	155 (6 1/8")	-	2	355 (1'2")	-	3	90 (3 5/8")	90 (3 5/8")	
2000 (6'7")	525 (1'9")	70 (2 3/4")	2	155 (6 1/8")	-	2	355 (1'2")	-	3	90 (3 5/8")	90 (3 5/8")	
2100 (6'11")	545 (1'10")	70 (2 3/4")	2	160 (6 3/8")	-	2	360 (1'2")	-	3	90 (3 5/8")	90 (3 5/8")	
2200 (7'3")	560 (1'10")	70 (2 3/4")	2	160 (6 3/8")	-	2	360 (1'2")	-	2	460 (1'6")	-	
2300 (7'7")	590 (1'11")	70 (2 3/4")	2	165 (6 1/2")	-	2	365 (1'2")	-	2	460 (1'6")	-	
2400 (7'11")	605 (1'12")	70 (2 3/4")	2	165 (6 1/2")	-	2	365 (1'2")	-	2	465 (1'6")	-	
2500 (8'2")	625 (2'1")	70 (2 3/4")	2	170 (6 3/4")	-	2	370 (1'3")	-	2	470 (1'7")	-	

INSTALLATION

1 Mounting the profile

- Take the sensor modules out of the profile.
- If the profile is longer than the door width, cut the profile. Make sure not to scratch the front cover.
- Affix the profile on the intended mounting position leaving more than 20mm (13/16") from door edge to attach the endcap.
- If necessary, drill two mounting holes of ø3.4mm (ø1/8") and fix the profile.
- When mounting a sensor on each side of the door, it is necessary to drill a wiring hole of ø12mm (ø1/2") to connect the sensor modules. (See chapter 3. Wiring)

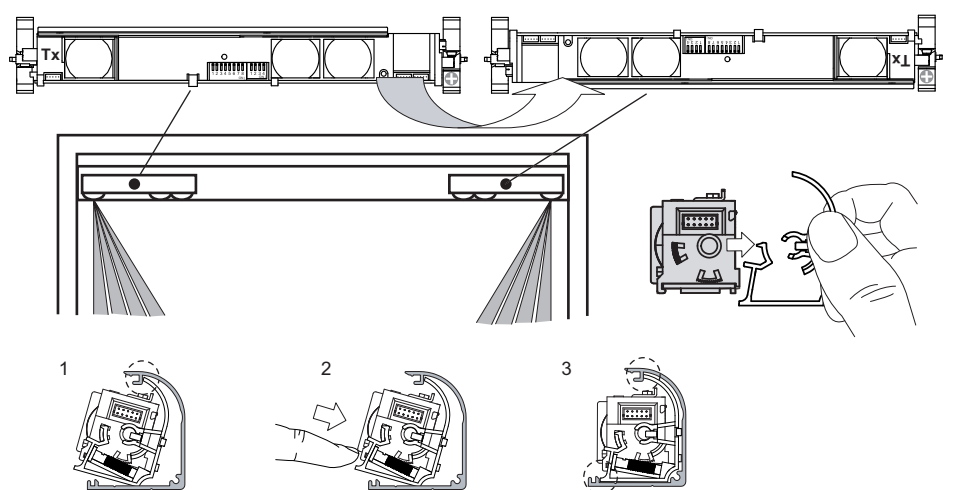


NOTE Make sure there is some space between the mounting clips and the mounting screws. Make sure not to scratch the profile when making a hole.

2 Inserting the sensor module

The lens that is marked "Tx" must be positioned onto the corresponding door edge. Refer to **DETECTION AREA** for the sensor module position. The sensor module can be inserted in reverse as shown below. To do this, detach the mounting clip and rotate the sensor module by 180° and reattach the mounting clips.

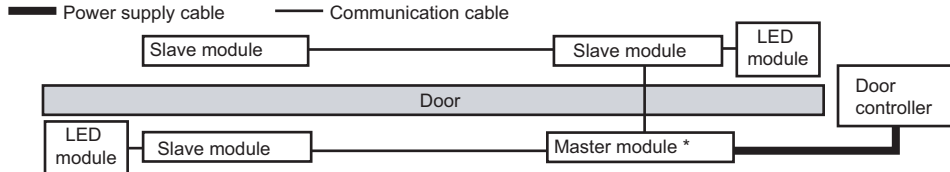
NOTE Make sure to fix the sensor modules firmly by the mounting clips.



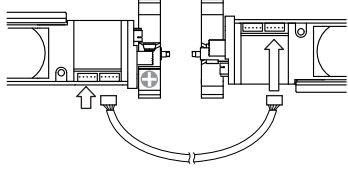
INSTALLATION

3 Wiring

Wire the cable to the door controller as shown below.



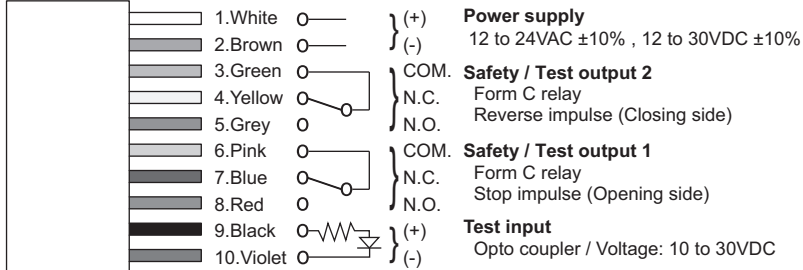
NOTE * When more than 1 master module is installed on the door leaf, make sure that only one power supply cable is connected to the operator otherwise initialization can not be completed. All other master units will automatically function as a slave unit.



Each module has three communication connectors. Use the most convenient connector for the installation site.

NOTE Maximum of three sensor modules can be connected to one master module.

To the power supply connector of the master module



Power supply
12 to 24VAC ±10% , 12 to 30VDC ±10%

Safety / Test output 2
Form C relay
Reverse impulse (Closing side)

Safety / Test output 1
Form C relay
Stop impulse (Opening side)

Test input
Opto coupler / Voltage: 10 to 30VDC

NOTE When a test input is not required, set the dipswitch A7 to OFF.

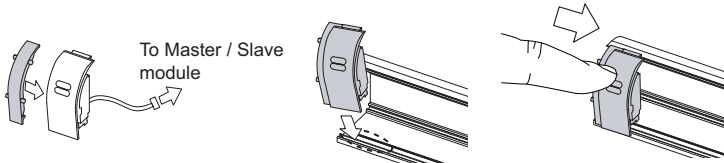
WARNING

Danger of electric shock

Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield otherwise it may cause electric shock or breakdown of the sensor.

4 Inserting LED module

Connect the communication cable of the LED module to the master or slave module. Attach the spacer on the endcap side. Insert the LED module to the profile as shown below. The LED module can be inserted to both side of the profile.



NOTE For LED status see SPECIFICATION

5 Placing the front cover

After **ADJUSTMENTS** are completed, place the front cover and endcaps.

ADJUSTMENTS

1 Dipswitch settings

Each Master module is equipped with Dipswitch A and Dipswitch B and each Slave module is equipped with only Dipswitch B. Only dipswitch A of the master module connected to the door controller is applicable and will reflect the settings to all connected master and slave units automatically.

Dipswitch A	Setting	Description
A1	ON	Non detection zone (A)
A2	ON	Frequency
A3	ON	Immunity
A4	ON	Presence timer
A5	OFF	For future use
A6	ON	Test input
A7	OFF	Test input delay
A8	ON	Test input delay

Dipswitch B	Setting	Description
B1	ON	Non detection zone (B)
B2	ON	Area width
B3	ON	Self monitoring
B4	ON	Mounting side (Output select)

NOTE Make sure to finish initialization properly to reflect the dipswitch settings otherwise the setting can not be changed. (see chapter 2. Function switch)

1-1. Setting the non detection zone

The non detection zone is the height measured from the floor up to the position where the sensor starts to detect. The zone can be set by a combination with Dipswitch A1 & B1.

[Non detection zone value] = [Dipswitch A1 value] + [Dipswitch B1 value]

Side view	Dipswitch A1	Dipswitch B1	Non detection zone
	OFF : "15cm"	OFF : "+0cm"	15cm (5 7/8")
	OFF : "15cm"	ON : "+10cm"	25cm (9 13/16")
	ON : "35cm"	OFF : "+0cm"	35cm (13 3/4")
	ON : "35cm"	ON : "+10cm"	45cm (17 11/16")

DIN Set the Dipswitch A1 to "15cm" and B1 to "+0cm".

NOTE The value is a reference for a mounting height of 1.8 to 2.5m (5' 11" to 8' 2").

1-2. Setting the frequency

When installing the sensors on a double swing door make sure that the frequency on each sensor is set differently.

Setting1	Setting2
A2 OFF	A2 ON

1-3. Setting the immunity

Set Dipswitch A3 to ON when the sensor operates by itself (ghosting).

NOTE When Dipswitch A3 is set to ON, the actual detection area may become smaller than Immunity off.

Immunity off	Immunity on
A3 OFF	A3 ON

1-4. Setting the presence timer

The presence timer can be set by Dipswitch A4.

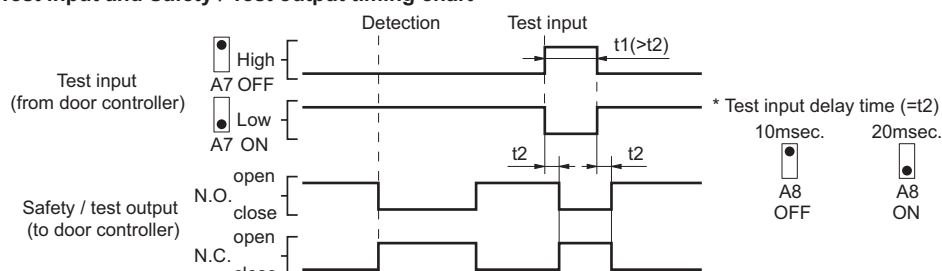
NOTE If an object remains in the detection area longer than the setting, LED indicator may blink fast Red. In this case, it is not Sensor failure. After an object is removed, LED indicator will show solid Green.

60sec.	∞
A4 OFF	A4 ON

1-5. Setting the test input and test input delay time

Set dipswitches A7 & A8 according to the instructions from the door controller.

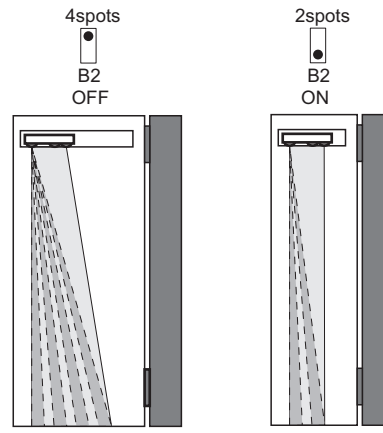
Test input and Safety / Test output timing chart



* The test input delay time is the time period between the test input and Safety / Test output.

1-6. Setting the area width

Set dipswitch B2 to "2 spots" when a narrow detection area is required.



1-7. Setting the self monitoring

When the door remains open or closed, please refer to the TROUBLESHOOTING section. If the door still remains open or closed, set dipswitch B3 to "Disable"

DIN	Enable	Disable
Set Dipswitch B3 to "Enable".	B3 OFF	B3 ON

1-8. Setting the mounting side (output select)

By selecting the sensor position the outputs & LED indicator will function as shown below :

Dipswitch B4	Output	LED indicator
OFF : "Opening side (output 1)"	Safety / Test output1 (stop impulse)	Solid Red (detection)
ON : "Closing side (output 2)"	Safety / Test output2 (reverse impulse)	Solid Orange (detection)

2 Function switch

Only the master module is equipped with a function switch. The function switch of the master module that is connected to the door controller is only applicable to reflect settings to all sensor modules connected.

NOTE Make sure to use the function switch when the door is in the fully closed position.

2-1. Initialization

After a dipswitch setting change or when the power is supplied for the first time, the LED blinks red & green. Push the function switch for more than 2 sec. and then the LED indicator on the master unit will switch off. The LED indicator will start to blink green to indicate the number of connected sensor modules. The LED indicator will start to blink yellow and red and the initialization is completed. The LED is now indicating that you have to proceed a learning cycle.

2-2. Learning

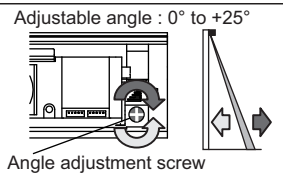
Push the function switch for less than 2 sec. and then the LED indicator will start to blink yellow. The sensor will learn the non detection zone.

NOTE Do not enter the detection area when the sensor is performing a learning cycle. When the initialization and the learning cycle is completed, the sensor will be in stand-by mode and the LED will show solid green.

3 Area depth angle adjustment

The angle of each sensor module must be adjusted so that the door stops before it comes into contact with an obstacle. After area angle adjustments, start the learning as described in chapter 2. Function switch.

DIN After the adjustment, check the detection area.



CHECKING

Check the operation according to the chart below.

NOTE The door movement might become unstable right after the learning. The movement becomes stabilized after several openings and closings. Always walk-test the detection area to ensure the proper operation.

Entry	Power OFF	Outside of detection area	Entry into opening side detection area	Entry into closing side detection area
Status	-	Stand-by	Detection active	Detection active
LED indicator	None	Solid Green	Solid Red	Solid Orange
Safety / Test output1 (Stop impulse)	COM. N.O. N.C.	COM. N.O. N.C.	COM. N.O. N.C.	COM. N.O. N.C.
Safety / Test output2 (Reverse impulse)	COM. N.O. N.C.	COM. N.O. N.C.	COM. N.O. N.C.	COM. N.O. N.C.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the front cover clean. If dirty, wipe it with a damp cloth. (Do not use any cleaner / solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- When LED indicator blinks Fast Red without any object in the detection area, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the front cover.

NOTE 1. After applying power, wait 10 seconds then walk test detection area to ensure proper operation. 2. Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

TROUBLESHOOTING

Problem	Possible cause	Possible countermeasures
Sensor does not operate	Wrong power supply voltage Wrong wiring or connection failure	Set to the stated voltage. Check the wiring and connectors.
Incomplete initialization (Red & Green blinking)	Initialization has not been conducted. Dipswitch setting is changed.	Push the function switch for more than 2 sec. for initialization.
Initialization is not finished (Red & Green blinking continuous)	More than 2 master modules are connected with power supply wire.	Connect the power supply cable to only one master module.
Incomplete learning (Yellow & Red blinking)	Initialization has not been conducted.	Push the function switch for less than 2 sec. for learning.
Learning does not start (Twice Orange blinking)	Communication error	Check the communication wires or change wires.
Sensor operates by itself. (Ghosting) or learning is not finished. (Yellow & Red blinking continuous)	Objects that move or emit light in the detection area. (Ex.Plant, illumination, etc.) Same frequency setting on double swing door application. The modules are affecting each other. Signal saturation. The floor pattern is not plain or, the door movement is irregular.	Remove the objects. Set the different frequencies. (Dipswitch A2) Change the module positions or adjust angles or adjust the area width (Dipswitch B2). Set the immunity (Dipswitch A3) to "ON". Extend the non detection zone.
Sensor operates by itself. (Ghosting)	Waterdrops on the front cover	Install in a place keeping the waterdrops off.
The sensor functions without the front cover but not with it.	The module angle is changed. The front cover is dirty. The front cover is scratched	Check the module angles. Wipe the front cover with a damp cloth. (Do not use any cleaner or solvent.) Replace the front cover.
Sensor operation is not linked to door movement.	Connection error or wrong mounting side setting.	Check the wiring or mounting side setting. (Dipswitch B4)
Door remains open or closed without any object in the detection area.	Presence timer set to infinity and sudden change in the detection area. Signal saturation. (Slow Red blinking)	Push the function switch for less than 2 sec. for learning. Or change presence timer setting. (Dipswitch A4) Change the module positions or adjust angles or adjust the area width (Dipswitch B2).
	The sensor is affected by the floor color.	Push the function switch for less than 2 sec. for learning. Or extend the non detection zone.
	Communication error. (Twice Orange blinking)	Check the communication wires.
	The front cover on inner or outer side is dirty.	Wipe the front cover with a damp cloth. (Do not use any cleaner or solvent.)
	Sensor failure. (Fast Red blinking)	Contact your installer or service engineer.

Manufacturer

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TEL.: +81(0)77 579 8700 FAX.: +81(0)77 579 7030
WEBSITE: www.optex.co.jp

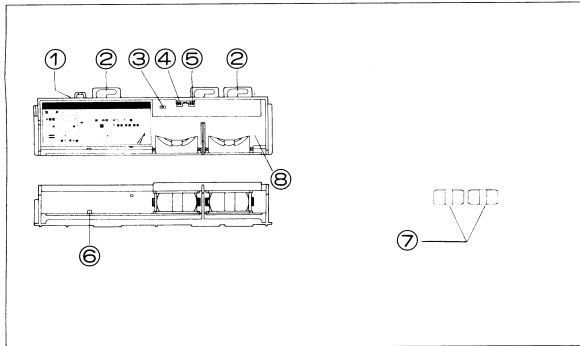
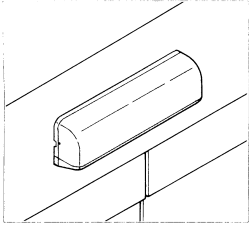
European Subsidiary

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PRO SWING
ACTIVE INFRARED
PRESENCE SENSOR

OA-601CS (Silver)
OA-601CBL (Black)
OA-601CW (White)

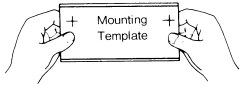
PATENT PENDING



1. PARTS IDENTIFICATION

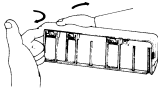
- ① Connector
- ② Screw Hole 4.9inch (125mm)
- ③ Presence Detection Timer (2 sec., 60 sec. or 180 sec.)
- ④ Frequency Switch (2 bit 4 channels)
- ⑤ Area Depth Adjust Switch
- ⑥ Power/Operating Indicator
- ⑦ Prism Lens (4 Pair Prism Lenses)
- ⑧ Lens Holder

2. MOUNTING AND WIRING

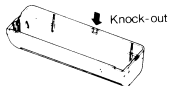


- ① Apply Mounting Template to transom and make holes.
(Be sure to read precautions on Mounting Template.)
* Screw hole $\phi 0.14$ inch ($\phi 3.5$ mm) (8-32inch screws).
* If concealed wiring is necessary, make another hole for wiring $\phi 0.31$ inch ($\phi 8$ mm).

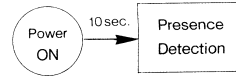
- ② Remove Mounting Template.



- ③ Separate Housing Cover from Sensor Body.

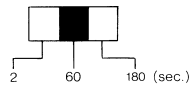


- ④ Fasten unit with mounting screws and connect wiring.
(For exposed wiring, remove the wire knock-out.)

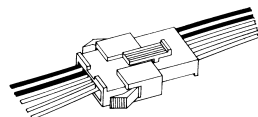


- ⑤ Upon application of power, it will initially only detect motion. After 10 sec. it will detect presence.

- ⑥ Adjust Detection Area.
See "ADJUSTING THE DETECTION AREA" and "INSTALLATION HINTS".



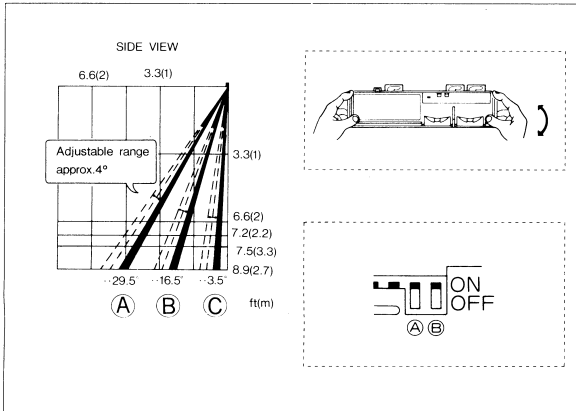
- ⑦ Change Presence Detection Period by adjusting Presence Detection Timer. Presence Detection Period is adjustable for 2sec., 60 sec. or 180sec..



(WIRING)

- Grey — Power Supply
- Grey — 12~24V AC/DC
- White — COM
- Yellow — N.O.
- Green — N.C.

3. ADJUSTING THE DETECTION AREA



① AREA DEPTH ADJUSTMENT

A/B/C = Presence detection area

Adjustable range approx. 4°

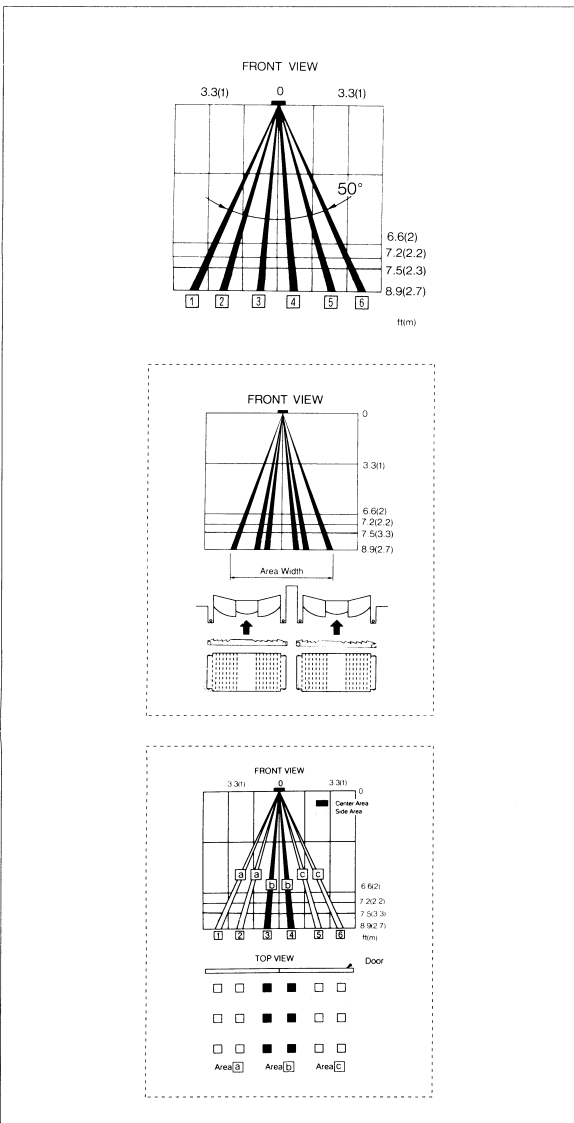
How to adjust angle of detection area

Push upper edges or lower edges of Lens Holder.

How to eliminate area A and/or B

To eliminate area A and/or B, turn off Area Depth Adjust Switch.

Use proper prism lens and mount unit at the requested height to assure proper pattern for ANSI 156. 10 compliance



② AREA WIDTH ADJUSTMENT

Area width can be easily adjusted by using Prism Lens or Area Adjusting Masking.

Using Prism Lens to narrow the detection area

- 4 unique pair of Prism Lenses are provided in each box.
- Choose the Prism Lens pair according to the door's width. (See following chart)

Make sure that the 2 Prism Lenses selected have the same marking. (●, ▲, ■, ♥)

- Be sure to install the Prism Lenses so that the unmarked side faces the Primary Lenses.
- Be sure to install both of the selected Prism Lenses.

(NOTICE)

ex. Mounting Height 7.2ft

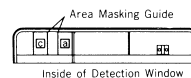
To find the correct mounting location for a 36" (42") door, measure 15.6" (18.6") from leading edge (latch side) toward the door's center. Do not place in center of single door, because sensor may be misactivated. Place the mounting template's center line over your mark.

[ft(mm)]

Mounting Height	Door width : 42inch		Door width : 36inch	
	● Double door	▲ Single door	■ Double door	♥ Single door
7.2(2190)	6.36(1940)	3.22(980)	5.38(1640)	2.72(830)
7.5(2290)	6.53(1990)	3.35(1020)	5.54(1690)	2.85(870)

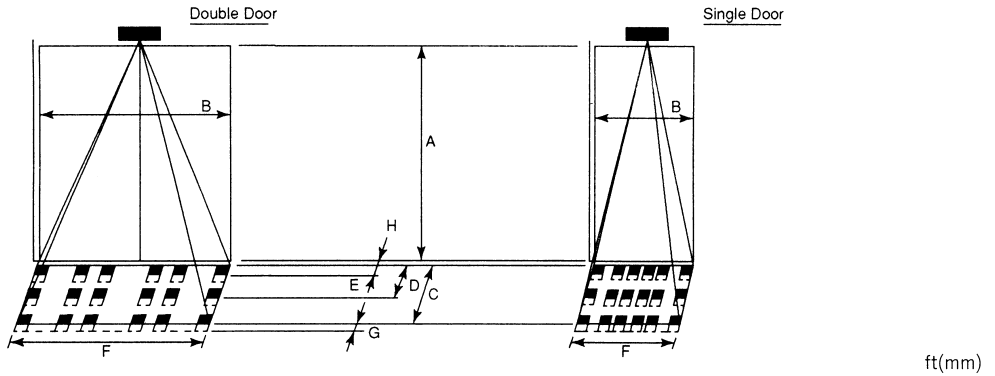
Using Area Adjusting Masking to eliminate side area

- (1) To eliminate Area [a], apply Area Adjusting Masking on [a] position of inside of Detection Window.
- (2) To eliminate Area [c], apply Area Adjusting Masking on [c] position of inside of Detection Window.



REMARKS : Avoid using Prism Lens and Area Adjusting Masking together.

4. DETECTION AREA CHART



A	Mounting Height	7.2(2190)				7.5(2290)			
	Correct Prism	▲	●	♥	■	▲	●	♥	■
B	Door Width	42"(single)	42"×2(double)	36"(single)	36"×2(double)	42"(single)	42"×2(double)	36"(single)	36"×2(double)
C	Area Depth	3.94(1200)				4.1(1250)			
D	Area Depth	1.97(600)				2.03(620)			
E	Area Depth	0.23(70)				0.24(73)			
F	Area Width	3.22(980)	6.36(1940)	2.72(830)	5.38(1640)	3.35(1020)	6.53(1990)	2.85(870)	5.54(1690)
G	Adjustable Range	0.72(220)				0.75(230)			
H	Distance from Mounting Surface	0.30(90)				0.31(93)			

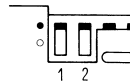
5. INSTALLATION HINTS

Mounting height 8.9ft (2.7m)max.

Avoid placing swaying objects such as posters, curtains and potted plants in the detection area.

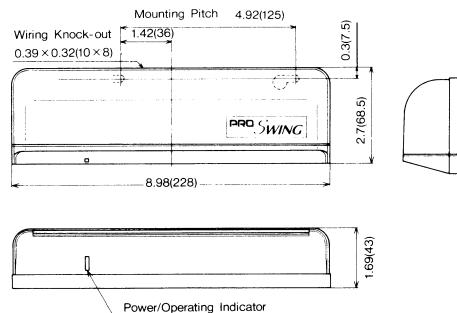
Do not use without the Housing Cover.

When the detection area is adjusted after power-up, OA-601 will sense presence and hold the door open for the specified presence detection period (2 sec., 60 sec., or 180 sec.). When the timer period expires, the door will close.



Change the Frequency Switch when the detection area of another sensor is overlapping. 4 Frequency Combinations are available with the use of 2 channel Frequency Switch.

6. EXTERNAL DIMENSIONS



[inch(mm)]

7. TROUBLE SHOOTING

No operation	Intermittent operation	Operation when there is no person within area
① Disconnection ⇒ Check wiring and correct to normal. ② Unsuitable voltage (Low voltage) ⇒ Use rated voltage.	① Detection window is covered with dust, water drops, etc.. ⇒ Clean it with soapy water. (Do not wipe it with thinner, benzine or alcohol.)	① Swaying objects within area ⇒ Adjust area or remove the object. ② Strong EMI source in area ⇒ Keep the source away from door. ③ Activation by dogs or cats ⇒ Normal ④ The detection area of another sensor is overlapping. ⇒ Change the Frequency setting. ⑤ The floor within area became dirty. ⇒ A footprint or object of some kind was put on the floor within the area and the door remains open due to an increased presence detection time. If this happens, simply reduce the presence timer to 2 sec..

8. SPECIFICATIONS

Detection Range	8.86ft (2.7m) Max.
Detection Area	See the chart
Detection Method	Near Infrared Reflection Method
Power Input	12~24 V AC/DC
Current Draw	120mA Max. (at 12V DC)
Power/Operating Indicator	LED ON when stand by LED OFF when detecting
Output Contact	Form C Relay 50V 0.3A (Resistive Load)
Output Hold	0.5 sec. Delay
Operating Temperature	-20°C ~ +55°C (-4°F ~ +131°F)
Weight	260g (9.2oz)
Accessories	2m Wire with Plug, 2 Mounting Screws, Mounting Template, 4 Pair Prism Lenses.

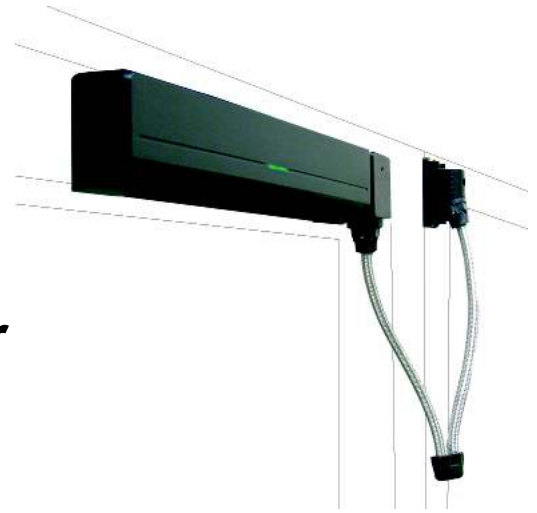
* Specification subject to change without prior notice.



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Swing Door Door Mounting Sensor

CE 5913003 2011.3

MANUFACTURER'S STATEMENT

For ease of installation and proper operation read thru this manual (especially **WARNING**, **CAUTION**, **NOTE**) prior to installing and adjusting the sensor system. Failure to read and follow the instructions in this manual may cause improper sensor operation resulting in serious injury or death. This product is a non-contact activating switch intended for door mounted of an automatic door. Do not use it for any other applications; otherwise proper operation and safety cannot be guaranteed.

WARNING	Disregard of warning may cause the improper use causing death or serious injury of person.
CAUTION	Disregard of caution may cause the improper use causing injury of person or damage to object.
NOTE	Special attention for the setting and adjustment of section of this symbol is required.

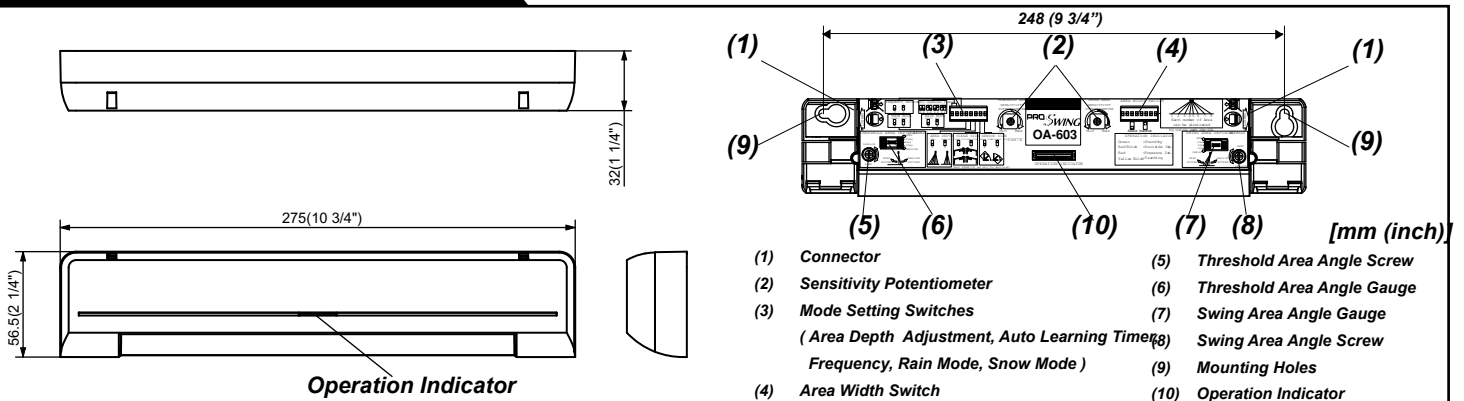
1. Set door speeds and verify proper operation of door manufacturer's equipment prior to applying power to the sensor system.
2. Do not install the sensor where it might be directly sprayed with rainwater.
3. Verify proper wiring prior to applying power to the sensor system to prevent damage to equipment.
4. When setting the sensor's area pattern, make sure there is no traffic around the installation site.
5. Do not attempt to rebuild or repair sensor heads or control unit. Contact an address in this manual for replacement products.
6. Only use the sensor as specified in the supplied instructions.
7. Walk test the installation to verify operation is in compliance with all local laws, codes and standards of your country.
8. Upon completion of installation and adjustments, instruct the owner/operator on proper operation of the door and sensor system. Identify any switches/breakers that will place the door out of service when unsafe or improper operation is identified.

SPECIFICATIONS

Model	: OA-603	Current Draw	: 120mA Max
Cover color type	: Black , Silver	Response Time	: < 0.3 second
Mounting Height	: 2.0m (6'7") to 2.5m (8'2")	Operating Temperature	: -20°C to +55°C (-4°F to +131°F)
Detection Area	: See the chart in "ADJUSTMENT".	Weight	: 230g (8.2oz.)
Detection Method	: Active Infrared Reflection (Presence Detection Type)	Accessories	: 1 Sensor Cable 0.2m(7") 9 Mounting screws 1 Operation Manual 3 Mounting Template
Detection Angle	: Threshold Area ±5° (Inside & outside)		
Adjustments	: Swing Area ±5° (Inside & Outside)		
Operation Indicator	: Green : Stand-by Blinking Red : Threshold Area Detection Active Red : Swing Area Detection Active Blinking Yellow : Learning		

Insure proper setting of Mode switch #8 indicating Approach side or Swing side sensor.

OUTER DIMENSIONS



INSTALLATION

Top View

Simultaneous Pair Shown in Diagram

Single Swing Sensor Settings:

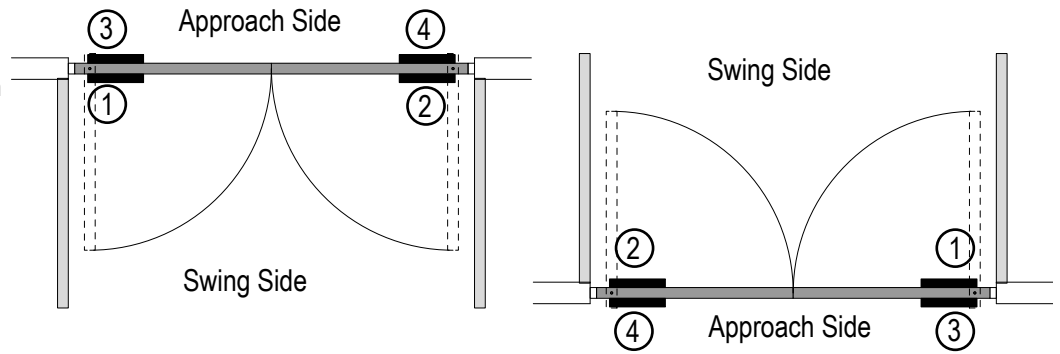
RH swing = 1 & 3

LH swing = 2 & 4

Double Egress Sensor Settings:

Both RH swings = 1 & 3 both door leaves

Both LH swings = 2 & 4 both door leaves



Sensor Setting

Please refer to the following for the setting of the DipSwitch.

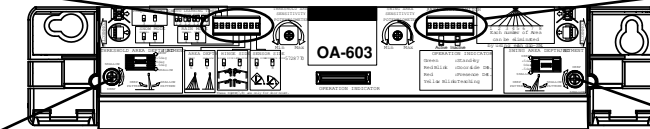
MODE SETTING SW
(LEFT DIPSWITCH)

AREA WIDTH SW
(RIGHT DIPSWITCH)

Set +5degrees



Threshold Area
Angle Screw



Adjust both angle screws (threshold and swing) **CLOCKWISE** to achieve **maximum angle for all door mount sensor**.

The screws will continue to turn even though maximum angle is reached as indicated by the angle gauges.

Set +5degrees



Swing Area
Angle Screw

WARNING Insure proper setting of Mode switch #8 indicating Approach side or Swing side sensor.

DipSwitch Setting1

①

MODE SETTING SW (LEFT DIPSWITCH)	AREA WIDTH SW (RIGHT DIPSWITCH)	DOOR SIZE
		36 inch
		42 inch
		48 inch

DipSwitch Setting2

②

MODE SETTING SW (LEFT DIPSWITCH)	AREA WIDTH SW (RIGHT DIPSWITCH)	DOOR SIZE
		36 inch
		42 inch
		48 inch

DipSwitch Setting3

③

MODE SETTING SW (LEFT DIPSWITCH)	AREA WIDTH SW (RIGHT DIPSWITCH)	DOOR SIZE
		36 inch
		42 inch
		48 inch

DipSwitch Setting4

④

MODE SETTING SW (LEFT DIPSWITCH)	AREA WIDTH SW (RIGHT DIPSWITCH)	DOOR SIZE
		36 inch
		42 inch
		48 inch

Step 1

1. Determine which side of door (swing or non-swing) door loop is to be installed. Align template to pivot edge of door accordingly. Affix template. Template height can be between 6'-7" to 8'-2" from floor to top of template.

NOTE When templates are aligned properly the 3/8" pass thru hole ("A" on template) will be aligned with each other on both sides of door.



2. On side of door the door loop is to be installed, drill two 1/8"(3.2mm) holes for position sensor mounting plate as indicated by template (one side of door leaf only).



3. Drill four sensor mounting holes (two on each side of door leaf, 1/8" or 3.2 mm) as indicated by templates.

4. Drill 3/8" holes for pass thru cable as indicated on templates.

NOTE Hole "A" on approach side template should be perfectly in line with hole "A" on swing side template.



Step 2

1. On the side of the door where the door loop is to be installed take a 603 sensor head and adjust the left and right dipswitch settings as indicated by the corresponding template. Verify Threshold and Swing angle adjustments are set to Deep (+5 degrees).

NOTE EACH TEMPLATE LOCATION WILL HAVE DIFFERENT DIPSWITCH SETTINGS.

2. Remove the template and attach the sensor head loosely to the door leaf with two of the nine supplied screws.

3. Align the position sensor mounting plate with the appropriate mounting holes and securely fasten to the door leaf with two mounting screws.

4. Go back and tighten the screws securing the 603 sensor head to the door.

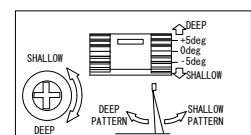
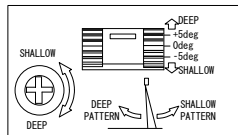
5. On the opposite side of the door leaf, take a 603 sensor head and set the left and right dipswitch settings as indicated by the corresponding template. Verify Threshold and Swing angle adjustments are set to Deep (+5 degrees).

6. Remove the template and securely fasten the sensor head to the door using two mounting screws.

7. Repeat this process for each door leaf.

NOTE

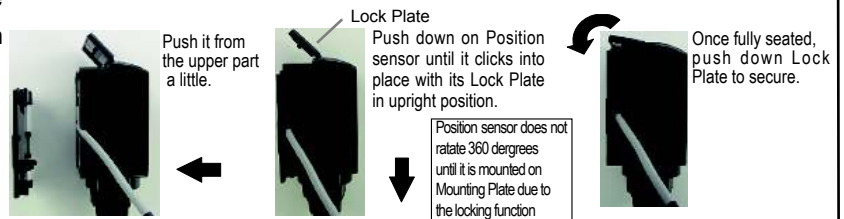
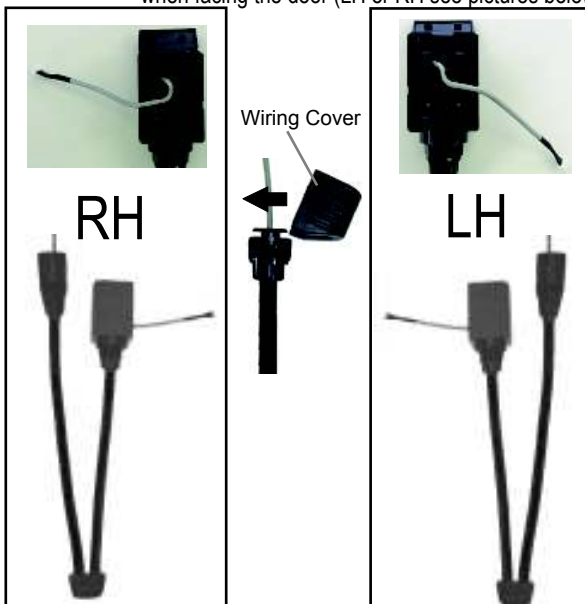
These settings are optimal for most applications. However, operating conditions, environmental conditions and traffic flow may require changes to these settings. For in depth explanations of adjustments and dipswitch settings refer to the adjustment section (page 1-5) of this manual.



Step 3

1. To attach the position sensor/door loop to the base plate, route the sensor connector wire and change the direction of the wiring cover based on hinge location when facing the door (LH or RH see pictures below).

2. To attach to base plate locate the position sensor slightly high and to the side of the plate. Slide in horizontally and then down vertically



Step 4

1. To properly locate the door jamb wiring base, slide the wiring cover on to the wiring base and center it from top to bottom.

2. Hold wiring base on jamb rotate door from closed to full open. Ensure no excessive stretching or binding of the loop occurs (may need to move base up or down to achieve.) Mark top of wiring base to align mounting template later.



Step 5

1. Align and affix top of template with mark achieved in step 4.

2. Drill two 1/8" (3.2mm) mounting holes. Drill 3/8" (10mm) hole if routing cable thru jamb for concealed wiring (3/8" hole not required for surface wiring applications).

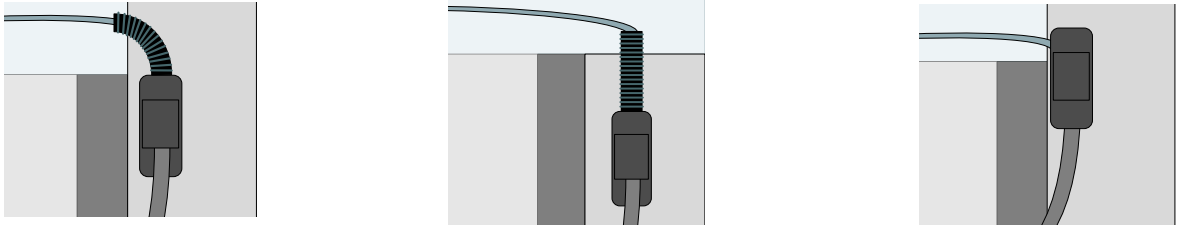


Step 6

1. For concealed wiring feed the connector thru the wiring base and then the 3/8" cable hole and into the header. For surface wiring (see note below) do not route wire thru the wiring base.
2. Properly position and securely fasten the wiring base to the jamb (small screw located on side of wiring base indicates bottom of base).
3. Feed the remainder of the cable thru the base and into the header then slide the wiring cover onto the wiring base from the top down.



NOTE Examples of surface wiring. Supplied flexible wire shroud is cut to fit on site.



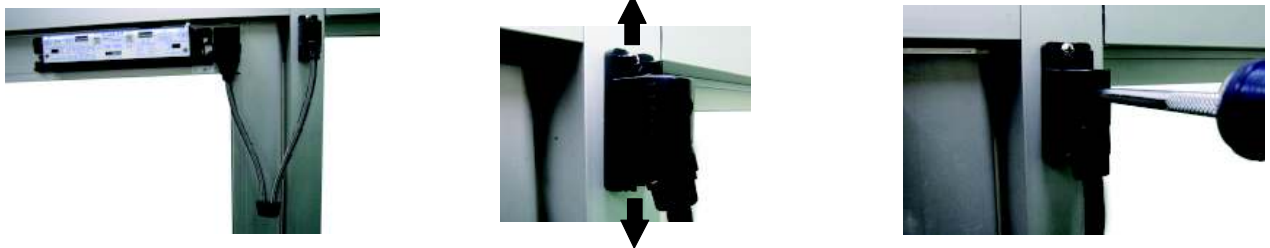
Step 7

1. Temporarily position the wiring cover on the center of the base vertically.



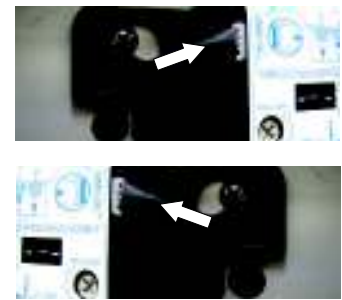
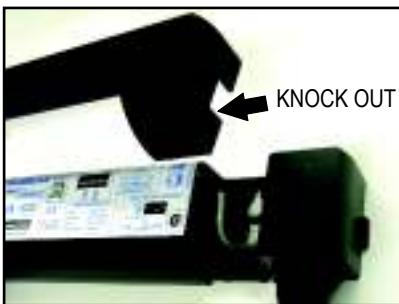
Step 8

1. Open and close the door leaf to determine the best location for the wiring cover on the base plate. On applications where the loop is mounted on the swing side, make sure the loop does not touch the door panel throughout the door travel.
2. Once the ideal position is determined, turn the screw in the back of the cover clockwise to secure the cover in place.



Step 9

1. Remove knockouts for OA 603 sensor cover on loop side only!
2. Connect the cable from position sensor to the OA-603.
3. Connect pass thru cable to both OA-603 sensor heads.



Step 10

Complete wiring of OC-904 and perform initial setup. Refer to OC-904 instruction manual and Wiring Matrix for wiring details. Refer to Elite manual (page 1-6) for initial setup details. Once complete return to step 11.

Step 11 Place the cover on the top then fit it on. How to remove the cover

Hold the top and remove the cover.



Insert the flathead screw driver and push it down as shown in the picture.



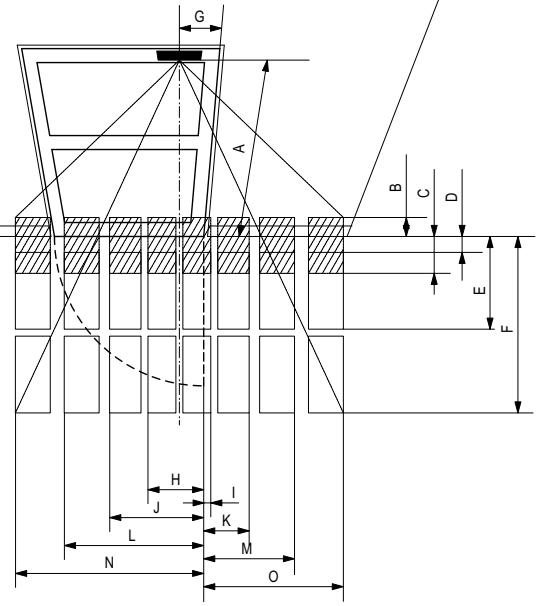
NOTE If desired, sensor covers can be left off until initial setup and final adjustments are performed.

ADJUSTMENTS

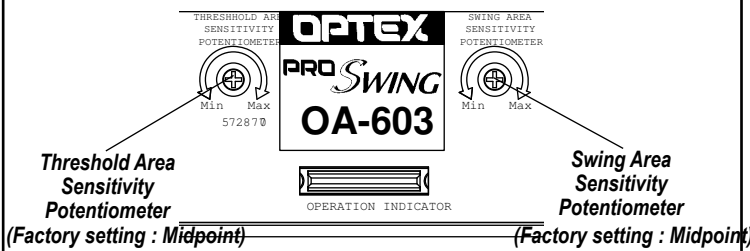
The sensor pattern shown is when the Swing & Threshold area depth adjustments are set to 5 degrees. When the sensor system performs an initial setup to its operating environment detection areas may vary slightly from this chart.

A	2000 (6'7")	2300 (7'6")
B	186 (7")	214 (8")
C	360 (1'2")	414 (1'4")
D	152 (6")	175 (7")
E	840 (2'9")	966 (3'2")
F	1650 (5'5")	1898 (6'2")
G	252 (10")	
H	593 (1'11")	645 (2'1")
I	89 (3")	141 (6")
J	911 (3')	1010 (3'4")
K	407 (1'4")	506 (1'8")
L	1275 (4'2")	1428 (4'8")
M	770 (2'6")	924 (3')
N	1684 (5'6")	1900 (6'3")
O	1180 (3'10")	1395 (4'7")

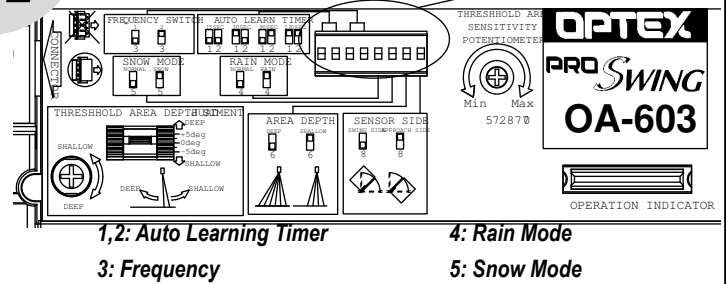
Sensor Pattern



1 Adjusting the Sensitivity

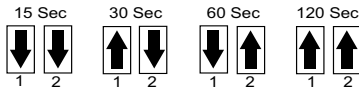


2 Mode Dipswitch Settings (Left Bank)



2-1 Setting the Auto Learning Timer

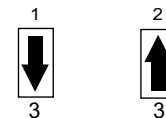
- Select the Auto re-learning time.
- Turn the power on.
- Wait for 15 seconds to complete the initial setting.
(Factory setting : 30sec)



NOTE Prior to initial set up set learn time to 30seconds or longer.

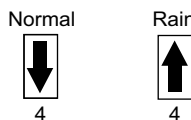
2-2 Setting the Frequency Function (Interference Prevention)

Two different frequencies can be set by adjusting Dipswitches 3. When two or more sensors are mounted close to each other, they may interfere. When that happens, change Frequency.



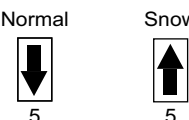
2-3 Setting the Rain Mode

Set this switch to Rain if the sensor is used in a region with a lot of rain.



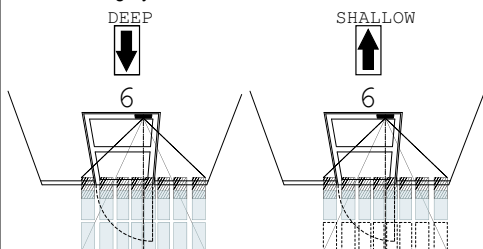
2-4 Setting the Snow Mode

Set this switch to Snow if the sensor is used in a region with snow or a lot of insects.



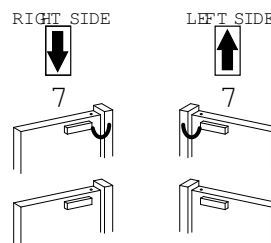
2-5 Setting the Area Depth

Change this switch to SHALLOW if false detections occur from cross traffic/side traffic/or close by objects. In SHALLOW Mode the shallow pattern is applied only during the opening and closing cycles.



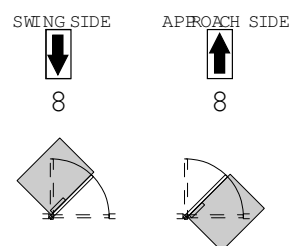
2-6 Setting the Hinge Side

When facing the OA-603 sensor head, if the hinge is to the right of the sensor set dipswitch to "RIGHT SIDE". If hinge is to the left of the sensor set the dipswitch to "LEFT SIDE".



2-7 Setting the Sensor Side

If you install the OA-603 sensor head on swing side, choose 'SWING SIDE', if non-swing side, choose 'APPROACH SIDE'.



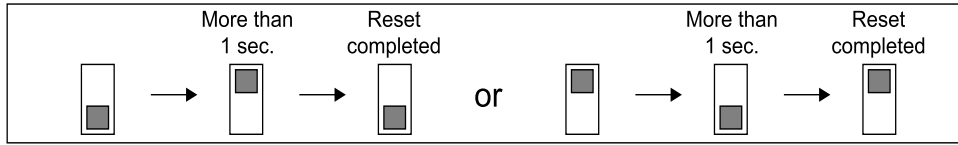
CAUTION Sensor system does not operate when these Dipswitches are set the same on both sides of door.

Auto learning function

This sensor has the function to fit floor condition changes **automatically**. Therefore, even if objects are put in the detection area, sensor will learn the changes gradually and set back to normal operations automatically after several detections.

How to initiate a setup

When changing sensor settings, put any OA-603 DipSW to ON/OFF for more than 1 second.



CHECKING

Setup Process

This sequence must occur when power is applied for the first time or when initiating setup.

Door Status	Sensor Status	Operation Indicator		OC-904 Operation Indicator
		Swing Side	Approach Side	
	Initial Setup door closed	Yellow Blinking ↓ Solid Yellow	Yellow Blinking ↓ Aproximately 8sec.	Blinking Green ↓ Solid Green
 Do not enter the detection area, until indicator turn to solid yellow.	Waiting for next learning	Solid Yellow	Solid Yellow	Solid Green
	Activate door to learn opening cycle	Blinking Yellow	Solid Orange	Blinking Green
	Learning Full Opened Cycle	Blinking Yellow	Solid Orange ↓ Blinking Red ↓ Blinking Yellow ↓ Aproximately 8sec.	Blinking Green ↓ Solid Orange
	Learning Closing Cycle	Blinking Yellow	Blinking Yellow	Solid Orange
	Setup complete approximately 3sec. after full closed	Solid Green (See Note)	Solid Green (See Note)	Solid Green

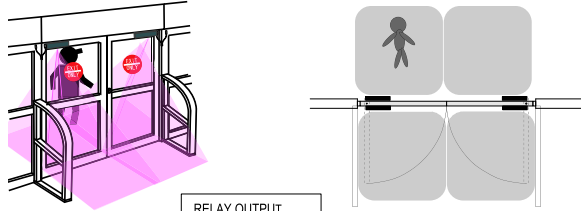
NOTE At full closed if setup does not complete in less than 5 seconds initiate setup again.

CHECKING

Operation Check

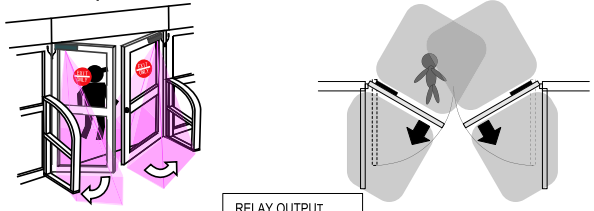
Before leaving the site, check five items in the right table.

Entering to approach side at full closed position.



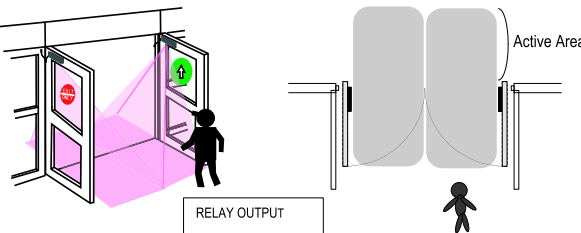
RELAY OUTPUT
ACTIVATE : ON
SAFETY : OFF
STALL : OFF

Doors open.



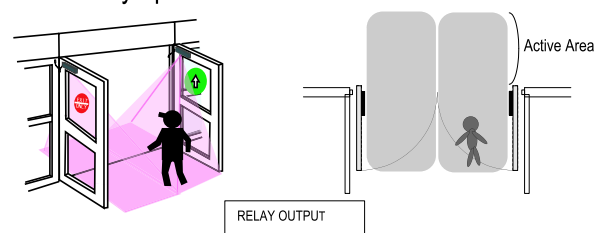
RELAY OUTPUT
ACTIVATE : ON
SAFETY : OFF
STALL : OFF

Entering to the door at full open position.



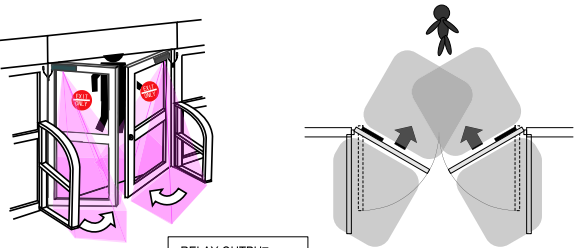
RELAY OUTPUT
ACTIVATE : ON
SAFETY : OFF
STALL : OFF

Doors stay opened.



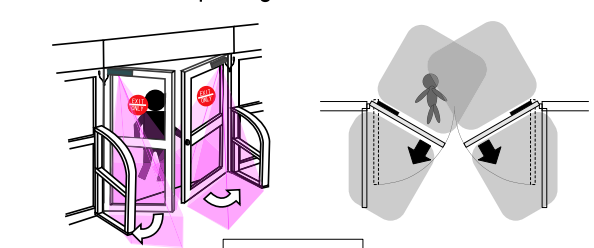
RELAY OUTPUT
ACTIVATE : ON
SAFETY : OFF
STALL : OFF

Entering to approach side during closing cycle.



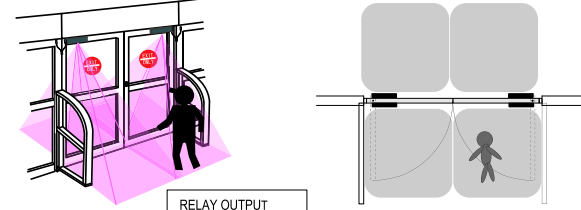
RELAY OUTPUT
ACTIVATE : OFF
SAFETY : OFF
STALL : OFF

Doors start re-opening.



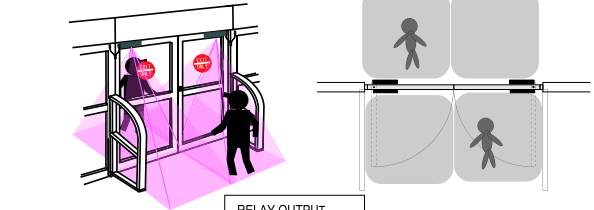
RELAY OUTPUT
ACTIVATE : ON
SAFETY : OFF
STALL : OFF

Entering to swing side at full closed position.



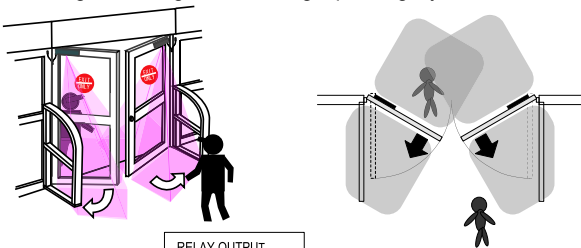
RELAY OUTPUT
ACTIVATE : OFF
SAFETY : ON
STALL : ON

Doors do not open.



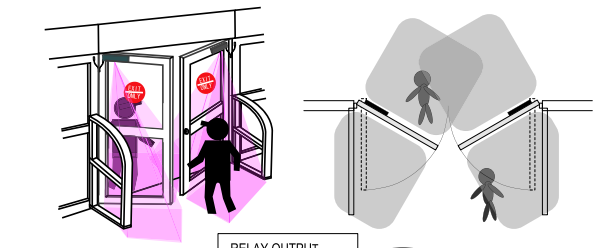
RELAY OUTPUT
ACTIVATE : ON
SAFETY : ON
STALL : ON

Entering to swing side during opening cycle.



RELAY OUTPUT
ACTIVATE : ON
SAFETY : OFF
STALL : OFF

Doors stall.



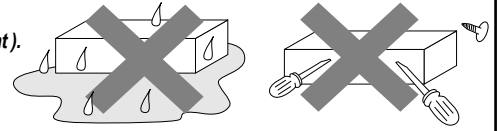
RELAY OUTPUT
ACTIVATE : ON
SAFETY : ON
STALL : ON

NOTE

Once the door reverses, swing side door will be active again.

Advise the building owner/operator of the following items

1. When turning the power on, stay clear of detection area for a minimum of 10 seconds then walk test detection area to ensure proper operation.
2. Always keep the detection window clean. If dirty, wipe the window with a damp cloth (Do not use any cleaner or solvent).
3. Do not wash the sensor with water.
4. Do not disassemble, rebuild or repair the sensor yourself; otherwise electric shock may occur.
5. Contact your installer or the sales engineer if you want to change the settings.
6. Do not place an object that moves or emits light in the detection area.(ex. Plant, illumination etc..)
7. Do not paint the Detection Window.



TROUBLE SHOOTING

Symptom	Possible cause	Solution	
CANNOT INITIATE SETUP Moving dipswitch on OA-603 does not result in OA-603 LED fast flash yellow.	OC-904C no LED indication	Improper power supply Bad connection on Orange and Brown wires of OC-904	Correct power problem Repair bad connection
	OC-904C LED double orange flashing & no LED indication on OA-603	Bad connection at OC-904	Reseat 4 pin connector from Loop assy to OC-904
		Bad connection from loop assy To OA-603 sensor head	Reseat 4 pin connector from loop assy to OA-603 sensor head
		Bad connection with 7" pass thru cable	Reseat connection of 7" cable to both OA-603 sensor heads
OC-904 LED double orange flashing & erratic LED on OA-603 sensors	Bad 7" cable	Replace as necessary	
WILL NOT COMPLETE INITIAL SETUP	Switches 7 & 8 of left dipswitches on OA-603 sensors set wrong	Correct dipswitch settings see pg 1-2	
	OC-904 dipswitches set wrong	Check Connection Matrix for proper dipswitch settings	
	Poor or improper connection of yellow wires from OC-904 to door control	Check Connection Matrix for proper connection of yellow wires	
INTERMITTENT RECYCLE (ghosting) OR INTERMITTENT STALLING	Improper voltage on red & black wire of OC-904	Ensure positive voltage on red wire at hold open and 0 voltage at closed position	
	After initial setup door ghosts several times on first activation	Happens on 15% of installations If stops after first activation, system is OK	
	OA-603 sensor head not mounted flush on door	Head may be resting on top of loop mounting bracket Reposition head flush on panel	
	Improper threshold or swing area angle adjustment	Set threshold and swing area angles at +5 degrees (deep)	
	Improper voltage on red & black wire of OC-904	Ensure positive voltage on red wire at hold open and 0 voltage at closed position	
	Stalling caused by traffic just outside of swing path or objects near guide rails	Set switch 6 on left bank dipswitch of OA-603 on/up (shallow) Note: moving the dipswitch will initiate a setup	
	Area width dipswitches set wrong (right bank dipswitches on OA-603)	Verify proper settings (page 1-2)	
NO ACTIVATION AND/OR NO REACTIVATION ON CLOSING CYCLE	Inconsistent data from position sensor/loop assy	Position the loop assy so loop center coupler does not rest on door at any point of door travel	
	OC-904 yellow wires poor or improper connection to door control or on/off/hold switch	Verify proper connection and output of yellow wires. (see Elite Connection Matrix)	
	OC-904 dipswitches set improperly	Verify proper settings(see Elite Connection Matrix)	
	On knowing act applications poor or improper connection of purple wires from OC-904 to activation device	Verify good and proper connection (see OC-904 install manual)	
NO SAFETY ON SWING SIDE AT FULL CLOSED	OA-603 sensor detects (solid or flashing red LED) but door opens anyway	Poor or improper connection of Blue wires from OC-904 to door control	Verify good and proper connection of blue wires (see Elite Connection matrix)
	OA-603 no detection (solid green LED)	OC-904 dipswitches set improperly	Verify proper settings (see Elite Connection Matrix)
NO STALL ON SWING SIDE WHILE DOOR IS OPENING	Area width dipswitches set wrong (right bank dipswitches on OA-603)	Verify proper settings (page 1-2)	
	OA-603 sensor detects (solid or flashing red LED) but door does not slow or stop	Poor or improper connection of green wires from OC-904 to door control	Verify good and proper connection of Green wires (see Elite Connection matrix)
	OA-603 no detection (solid green LED)	OC-904 dipswitches set improperly	Verify proper settings (see Elite Connection Matrix)
DOOR REMAINS OPEN	Area width dipswitches set wrong (right bank dipswitches on OA-603)	Verify proper settings (page 1-2)	
	OC-904 dipswitches set improperly	Verify proper settings (see Elite Connection Matrix)	
	On knowing act applications poor or improper connection of purple wires from OC-904 to activation device	Verify good and proper connection (see OC-904 install manual)	
	Improper wiring of door equipment on/off/hold switch	Verify proper wiring of on/off/hold switch	

Warning Indication (OA-603 Sensor head)

Mode	Self Monitoring Function	Life cycle Notification	Signal Saturation	Communication Error	Setting Error
Operation Indicator	Fast Green Blinking 	Twice Green Blinking 	Slow Green Blinking 	Twice Orange Blinking 	Fast Orange Blinking
Explanation	The sensor is reaching the end of its life cycle.	The relay is reaching the end of its life cycle.	Either the mounting position is too low or the detection area includes the wall or another object. OA-603 threshold angle may be set to less than +5 degrees deep. Refer to "ADJUSTMENT".	The sensor cable is connected, but unstable communication. A sensor cable may be disconnected or OA-603 mode switches 7 & 8 may be set wrong. Refer to "ADJUSTMENT"	When all the area width switches are inactive. Refer to "ADJUSTMENT".

Contact your installer or the sales engineer if:
 - you need to change the settings or replace the sensor.
 - the trouble still persists after checking and remedying as described above.

"Take Care of Environment". This manual uses recycled paper.



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 WEBSITE: www.optex.nl



OC-904C

CE 5913003 2011.3

Swing Door Sensor Controller



MANUFACTURER'S STATEMENT

For ease of installation and proper operation read thru this manual (especially **WARNING**, **CAUTION**, **NOTE**) prior to installing and adjusting the sensor system. Failure to read and follow the instructions in this manual may cause improper sensor operation resulting in serious injury or death.

This product is a non-contact activating switch intended for door mounted of an automatic door.

Do not use it for any other applications; otherwise proper operation and safety cannot be guaranteed.

WARNING	Disregard of warning may cause the improper use causing death or serious injury of person.
CAUTION	Disregard of caution may cause the improper use causing injury of person or damage to object.
NOTE	Special attention for the setting and adjustment of section of this symbol is required.

1. Set door speeds and verify proper operation of door manufacturer's equipment prior to applying power to the sensor system.
2. Do not install the sensor where it might be directly sprayed with rainwater.
3. Verify proper wiring prior to applying power to the sensor system to prevent damage to equipment.
4. When setting the sensor's area pattern, make sure there is no traffic around the installation site.
5. Do not attempt to rebuild or repair sensor heads or control unit. Contact an address in this manual for replacement products.
6. Only use the sensor as specified in the supplied instructions.
7. Walk test the installation to verify operation is in compliance with all local laws, codes and standards of your country.
8. Upon completion of installation and adjustments, instruct the owner/operator on proper operation of the door and sensor system. Identify any switches/breakers that will place the door out of service when unsafe or improper operation is identified.

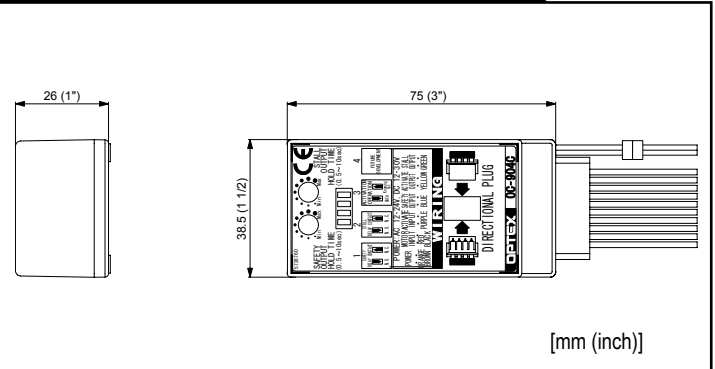
SPECIFICATIONS

Power Supply	12 - 24V AC, 12 - 30V DC
Current Draw	500mA max.*
Output	Activate Output : Form A Relay 50V, 0.1A(Resistance Load) Safety Output : Form C Relay 50V, 0.1A (Resistance Load) Stall Output : Form C Relay 50V, 0.1A (Resistance Load)
Relay Hold Time(Safety&Stall Output only)	0.5 to 10s
Response Time	< 0.3s
Operation Indicator	Green: Standby Red: Door Opening Orange: Lockout
Operating Temperature	-20 - +55degrees (-4F - +131Fdegrees)
Weight	50g (1.8oz.)
Accessories	1 Two sided tape 2 T-tap connector

*When a unit of the 2 OA-603 and 1 OC-904C used.

The specifications herein are subject to change without prior notice due to improvements.

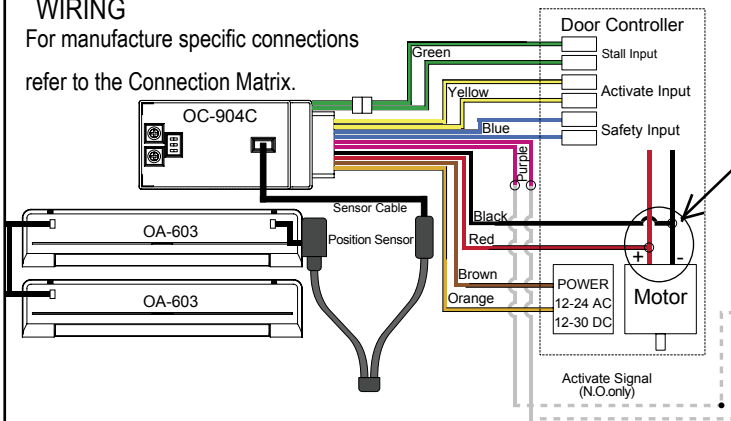
OUTER DIMENSIONS



INSTALLATION

WIRING

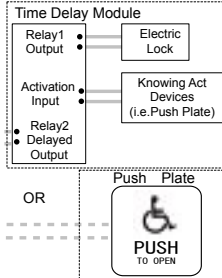
For manufacture specific connections refer to the Connection Matrix.



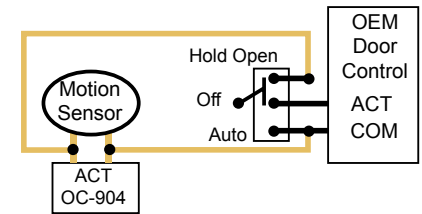
How to use T-tap connector



NOTE For Knowing Act application, Connect purple wire to Activate output from push button.

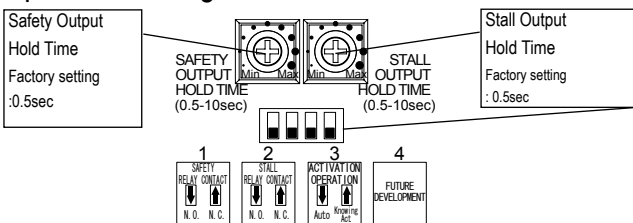


Standard Optional On / Off / Hold Switch



ADJUSTMENT

Dipswitch Settings



1 SAFETY RELAY CONTACT (factory setting:NO)
Choose the Relay Contact.



2 STALL RELAY CONTACT (factory setting:NO)
Choose the Relay Contact.



3 ACTIVATION OPERATION (factory setting:Auto)
If uses push button for activate,select the knowing act.

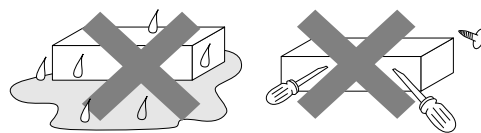


NOTE The approach side sensor will be inactive on full-closed position with this function.

4 FUTURE DEVELOPMENT(NOT USED)

Advise the building owner/operator of the following items

1. When turning the power on, stay clear of detection area for a minimum of 10 seconds then walk test detection area to ensure proper operation.
2. Always keep the detection window clean. If dirty, wipe the window with a damp cloth (Do not use any cleaner or solvent).
3. Do not wash the sensor with water.
4. Do not disassemble, rebuild or repair the sensor yourself; otherwise electric shock may occur.
5. Contact your installer or the sales engineer if you want to change the settings.
6. Do not place an object that moves or emits light in the detection area.(ex. Plant, illumination etc..)
7. Do not paint the Detection Window.



TROUBLESHOOTING

Symptom	Possible cause	Solution	
CANNOT INITIATE SETUP Moving dipswitch on OA-603 does not result in OA-603 LED fast flash yellow.	OC-904C no LED indication	Improper power supply Bad connection on Orange and Brown wires of OC-904	Correct power problem Repair bad connection
	OC-904C LED double orange flashing & no LED indication on OA-603	Bad connection at OC-904	Reseat 4 pin connector from Loop assy to OC-904
		Bad connection from loop assy To OA-603 sensor head	Reseat 4 pin connector from loop assy to OA- 603 sensor head
		Bad connection with 7" pass thru cable	Reseat connection of 7" cable to both OA-603 sensor heads
OC-904 LED double orange flashing & erratic LED on OA-603 sensors	Bad 7" cable	Replace as necessary	
WILL NOT COMPLETE INITIAL SETUP	Switches 7 & 8 of left dipswitches on OA-603 sensors set wrong	Correct dipswitch settings see pg 1-2	
	OC-904 dipswitches set wrong	Check Connection Matrix for proper dipswitch settings	
INTERMITTENT RECYCLE (ghosting) OR INTERMITTENT STALLING	Poor or improper connection of yellow wires from OC-904 to door control	Check Connection Matrix for proper connection of yellow wires	
	Improper voltage on red & black wire of OC-904	Ensure positive voltage on red wire at hold open and 0 voltage at closed position	
	After initial setup door ghosts several times on first activation	Happens on 15% of installations If stops after first activation, system is OK	
NO ACTIVATION AND/OR NO REACTIVATION ON CLOSING CYCLE	OA-603 sensor head not mounted flush on door	Head may be resting on top of loop mounting bracket Reposition head flush on panel	
	Improper threshold or swing area angle adjustment	Set threshold and swing area angles at +5 degrees (deep)	
	Improper voltage on red & black wire of OC-904	Ensure positive voltage on red wire at hold open and 0 voltage at closed position	
	Stalling caused by traffic just outside of swing path or objects near guide rails	Set switch 6 on left bank dipswitch of OA-603 on/up (shallow) Note: moving the dipswitch will initiate a setup	
	Area width dipswitches set wrong (right bank dipswitches on OA-603)	Verify proper settings (page 1-2)	
	Inconsistent data from position sensor/loop assy	Position the loop assy so loop center coupler does not rest on door at any point of door travel	
NO SAFETY ON SWING SIDE AT FULL CLOSED	OC-904 yellow wires poor or improper connection to door control or on/off/hold switch	Verify proper connection and output of yellow wires. (see Elite Connection Matrix)	
	OC-904 dipswitches set improperly	Verify proper settings(see Elite Connection Matrix)	
	On knowing act applications poor or improper connection of purple wires from OC-904 to activation device	Verify good and proper connection (see OC-904 install manual)	
NO STALL ON SWING SIDE WHILE DOOR IS OPENING	OA -603 sensor detects (solid or flashing red LED) but door opens anyway	Poor or improper connection of Blue wires from OC-904 to door control OC-904 dipswitches set improperly	Verify good and proper connection of blue wires (see Elite Connection matrix) Verify proper settings (see Elite Connection Matrix)
	OA-603 no detection (solid green LED)	Area width dipswitches set wrong (right bank dipswitches on OA-603)	Verify proper settings (page 1-2)
DOOR REMAINS OPEN	OA -603 sensor detects (solid or flashing red LED) but door does not slow or stop	Poor or improper connection of green wires from OC-904 to door control OC-904 dipswitches set improperly	Verify good and proper connection of Green wires (see Elite Connection matrix) Verify proper settings (see Elite Connection Matrix)
	OA-603 no detection (solid green LED)	Area width dipswitches set wrong (right bank dipswitches on OA-603)	Verify proper settings (page 1-2)
	OC-904 dipswitches set improperly	Verify proper settings (see Elite Connection Matrix)	
DOOR REMAINS OPEN	On knowing act applications poor or improper connection of purple wires from OC-904 to activation device	Verify good and proper connection (see OC-904 install manual)	
	Improper wiring of door equipment on/off/hold switch	Verify proper wiring of on/off/hold switch	

Warning Indication (OC-904C Controller)

Mode	Life cycle Notification	Communication Error
Operation Indicator	Twice Green Blinking 	Twice Orange Blinking
Explanation	The relay is reaching the end of its life cycle.	The sensor cable is connected, but unstable communication. A sensor cable may be disconnected or OA-603 mode switches 7 & 8 may be set wrong. Refer to "ADJUSTMENT"

Contact your installer or the sales engineer if:

- you need to change the settings or replace the sensor.
- the trouble still persists after checking and remedying as described above.

"Take Care of Environment". This manual uses recycled paper.



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Beam Switch OS-12C / OS-12C (HT0.1) Single / Double Beams

MANUFACTURER'S STATEMENT

When using this apparatus, please read this manual thoroughly to operate correctly. In this manual, a variety of illustrations and expressions are shown to prevent you and other people from undergoing any injury or damage of property during the use of the apparatus. The meanings of the expressions are as follows: Please learn the following first and then read the contents of this manual.

	Indicates that the disregard of the warning may result in serious injury or death.
	Indicates that the disregard of the caution may result in injury or physical damages.

- Note**
- When the equipment is in failure, the door is held open. (This is the function to secure the safety of traffic.)
 - Only use the sensor as specified in the supplied instructions.
 - Be sure to install the sensor in accordance with the local laws and standards of your country.
 - Before leaving the jobsite, be sure that this sensor is operating properly and instruct the building owner/operator on proper operation of this sensor.

Warning Danger of electric shock.
Be sure to turn off the power supply when carrying out electrical works. Do not wash, disassemble, rebuild or repair the sensor by yourself.

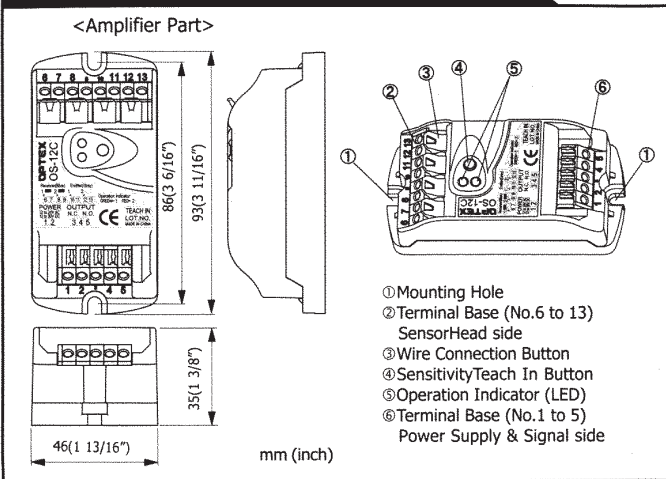
Warning Danger of getting caught between the door.
(Please explain to the building owner/operator)
Even when someone steps on the threshold, the door closes unless the light beam is cut off (The beam switch outputs the signal only when the light beam is cut off). The beam switch is not designed as an apparatus to prevent accidents. It should be used strictly for the purpose of an auxiliary apparatus for safety.

SPECIFICATIONS

Model	OS-12C / OS-12C (HT0.1)	
Installation Distance	Less than 10m (32' 10")	
Detection Method	Point to Point Near Infrared Light Beam	
Power Supply	12 to 24V AC / 12 to 30V DC	
Current Draw	160mA MAX	
Operation Indicator	Stand-by	BEAM1 / BEAM2
	Detection Active	: GREEN ON / RED ON
	Insufficient sensitivity	: GREEN BLINK / RED BLINK
Output Contact	N.O. / N.C. 50V 0.3A (Resistance Load)	
Response Time	Approx. 0.1 sec (from the moment of beam cut-off)	
Relay Hold Time	Approx. 0.5 sec / OS-12C, 0.1 sec / OS-12C (HT0.1) (from the moment of beam input)	
Operating Temperature	-20°C to +55°C (-4°F to +131°F)	
Weight	Amplifier: 65g (2.3oz)	
Component	1 Amplifier, 2 Mounting screws, 1 Manual (Optional sensor head is necessary for operation)	

- Note 1) It is possible to use OS-12C as an amplifier for 1 or 2 beam use by attaching a separately sold SensorHead.
Note 2) The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS



SEPARATELY SOLD OPTIONAL ITEMS

<SensorHead unit>

SH-7MC : 7m (22' 11 1/16")
SH-10MC: 10m (32' 9 11/16")

SensorHead

One push installation type
Mounting hole: $\phi 12\text{mm}$ (1/2") (1/16") 2 13 (1/2")

Plate installation type
Mounting hole: $\phi 12$ to 13mm (1/2") (1/16") 2 13 (1/2")

M10P 0.75

<Mounting Plate>
Silver or Bronze

<One push outer plate>
Mirror surface or Chrome

INSTALLATION

1 Mounting the SensorHeads (Option)

① One push installation type
Drill a mounting hole $\phi 12\text{mm}$ (1/2") on the door jamb. Put the sensor heads into the mounting hole.

② Plate installation type
Drill a mounting hole $\phi 12$ to 13mm (1/2") and two screw hole $\phi 3.5\text{mm}$ (1/8") on the door jamb.

Remove one push plate and head holder from sensor head. Affix the main body to the plate. Screw the plate to the door jamb.

◆ On drilling the mounting holes ◆

- Be sure to drill holes so that the SensorHeads faces each other.
- After drilling the holes, remove the flashes around the holes. Otherwise, the apparatus may not operate properly as the SensorHead rides on the flashes causing tilts.

◆ Installation Site Environment ◆
Do not place any swaying object which cuts off the beam path. Otherwise the door may be held open.

◆ On setting of one push plate ◆
Be sure to push the SensorHeads in securely. If the SensorHeads are not secured, it may cause an unnecessary activation signal.

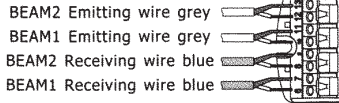
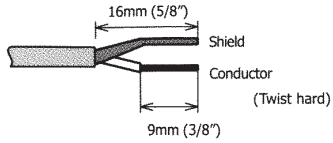
◆ Distance between the SensorHeads ◆
Be sure to set the distance to less than 10m (32' 10"). If the distance is more than 10m (32' 10"), the door may be held open.

INSTALLATION (CONTINUED)

3 Wiring SensorHeads

◆Cutting the wires◆

When cutting the wires, prepare the tip of the wires as follows:



◆Prohibition of extending wires◆

Do not extend the wires. Otherwise, the apparatus may be influenced by noises causing malfunction.

Warning Danger of electric shock.

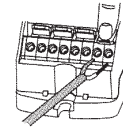
Before starting the procedure, be sure to turn off the power supply.

Caution Risk of breaking the apparatus.

When cutting the wires, be sure to prepare the tip of the wires as shown on the left: If the covers of the shielding wires are peeled off too long, the adjacent tips can easily contact each other causing breakdown of the apparatus.

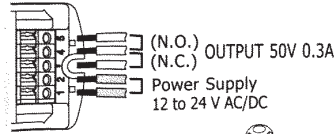
Insert the wires to Terminal Block 6-13 as shown on the left.

Insert the wire as you press the Wire Connection Button. Then, release the finger. Be sure to insert both the shield and the conductor.

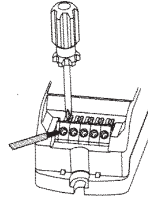


4 Connecting power supply wires and output signal wires

Insert the wires to Terminal Block 1-5 as shown below.



Press the Wire Connection Button of the power supply signal side and insert the wires. Be sure that all the wires are securely connected.



Caution Risk of breaking down the apparatus.

Be sure to connect the power supply wires to terminal 1 and 2. If wired wrongly, the apparatus may break down.

◆ Stated connection capacity ◆

- Solid(Rigid) $\phi 0.4\text{-}\phi 1.2\text{mm}$ (AWG26-18)
- Stranded(Flexible) $0.3\text{mm}^2\text{-}0.75\text{mm}^2$ (AWG22-20) (Strand diameter shall be more than 0.18mm)

◆ Warning about wiring ◆

Do not connect more than 2 wires to one terminal.

ADJUSTMENT & CHECKING

1 Sensitivity Adjustment

- Press Sensitivity Teach In Button for more than one second. When the green and red LED blinking becomes green and red (no blinking), the setting is completed. The proper sensitivity is adjusted automatically.
- Check the auto-set adjustment with the table below.



LED	State
Green/Red ON	The sensitivity has been set correctly. The adjustment is completed. (When using two beam)
Green ON	The sensitivity has been set correctly. The adjustment is completed. (When using one beam)
Green/Red Blink alternately	The sensitivity is insufficient. Check the followings.

Checking Item

If there is no person or object in the detection area.
If the lens surface is clean.
If the wire connections are done properly.
If the emitting/receiving SensorHeads are mounted straight. (They should not be tilted.)

◆Sensitivity Adjustment◆

Set the sensitivity in the environment same as the actual regular use. Also, be sure that there is no swaying object in the area.

◆When changing the number of Sensor Head◆

Be sure to press the Teach In Button. All SensorHeads can be adjusted at once. The apparatus does not operate properly if Teach In Button is not pressed.

◆Re-setup of sensitivity◆

For the maintenance, press Sensitivity Teach In Button to readjust. The sensitivity is set automatically.

2 Checking the operation

Check the operation of the apparatus according to the following chart.

Entry motion (Image)	OFF	ON (Green/Red)	OFF	ON (Green/Red)
Operation Indicator	OFF	ON (Green/Red)	OFF	ON (Green/Red)
Status	Power OFF *Failure of the apparatus	Stand-by status No person or object exists between the SensorHeads	While a person or object is passing in the beam path	After the traffic has passed, the status becomes stand-by.
Output	N.O.	CLOSE	OPEN	CLOSE
	N.C.	OPEN	CLOSE	OPEN

Inform the following items to the building owner/operator

- When turning the power on, always walk-test the sensor to ensure proper operation.
- Always keep the Lens surface clean. If dirty, wipe the lens with a damp cloth (Do not use any cleaner or solvent).
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself; otherwise electric shock may occur.
- Contact your installer or the sales engineer if you want to change the settings.
- Do not place an object that moves or emits light in the detection area. (Ex. Plant, illumination etc.)
- Do not paint the Lens surface.

TROUBLESHOOTING

Trouble	Possible Cause	Solution
Does not operate	Irregular supply voltage	Adjust to the stated voltage.
	Wire cut or bad connection	Check the wiring.
	Inappropriate installation distance or condition	Check the installation distance and condition.
Operates by itself (Ghosting)	Inappropriate installation distance or condition	Check the installation distance and condition.
	Something swaying between the SensorHeads cutting off the beam.	Remove the obstruction.
	Dirty lens.	Remove the dirt.

Contact your installer or the sales engineer if:

- you need to change the settings or replace the sensor.
- the trouble still persists after checking and remedying as described above.

FCC STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning:

This equipment has been tested and found to comply with the limits for a Class B device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.



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X-ZONE



5919220 MAR 2012

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

	WARNING	Disregard of the warning symbol can cause improper operation which may cause death or serious injury.
	CAUTION	Disregard of the caution symbol can cause improper operation which may cause injury of a person or damage the object.
	NOTE	Special attention is required to the section of this symbol.

NOTE

- This product is a non-contact switch intended for header mount or wall mount for use on an automatic sliding door. Do not use for any other applications.
- When setting the sensor's detection area, make sure that there is no traffic around the installation site.
- Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
- Only use the product as specified in the operation manual provided.
- Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
- Before leaving the installation site make sure that the product is operating properly and instruct the building owner/operator on proper operation of the door and the product.
- The product settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock		

NOTE

- The following conditions are not suitable for sensor installation.
- Fog or exhaust emission around the door
 - Wet floor
 - Vibrating header or mounting surface
 - Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity
 - Highly reflecting floor or highly reflecting objects around the door
 - Grating floor

SPECIFICATIONS

Model	: X-ZONE	Safety output	: Form C relay
Cover color	: Black		: 50V 0.3A Max.(Resistance load)
Mounting height	: 2.0 (6'6") to 3.5m (11'6")	Output hold time	: <0.5 sec.
Detection area	: See DETECTION AREA	Response time	: <0.3 sec.
Detection method	: Active infrared reflection*1 Microwave doppler effect	Operating temperature	: -35 to +55°C (-31 to 131°F)
Depth angle adjustment	: AIR area -6 to +6° Microwave area +25 to +45°	Operating humidity	: <80%
Power supply	: 12 to 24VAC ±10% (50 / 60 Hz) 12 to 30VDC ±10%	IP rate	: IP54
Power consumption	: < 2.5W (< 4VA at AC)	Weight	: 320g (11.2oz)
Operation indicator	: See Operation indicator table	Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Cable 3m (9'10") 1 Narrow lens
Activation output	: Form C relay 50V 0.3A Max.(Resistance load)		

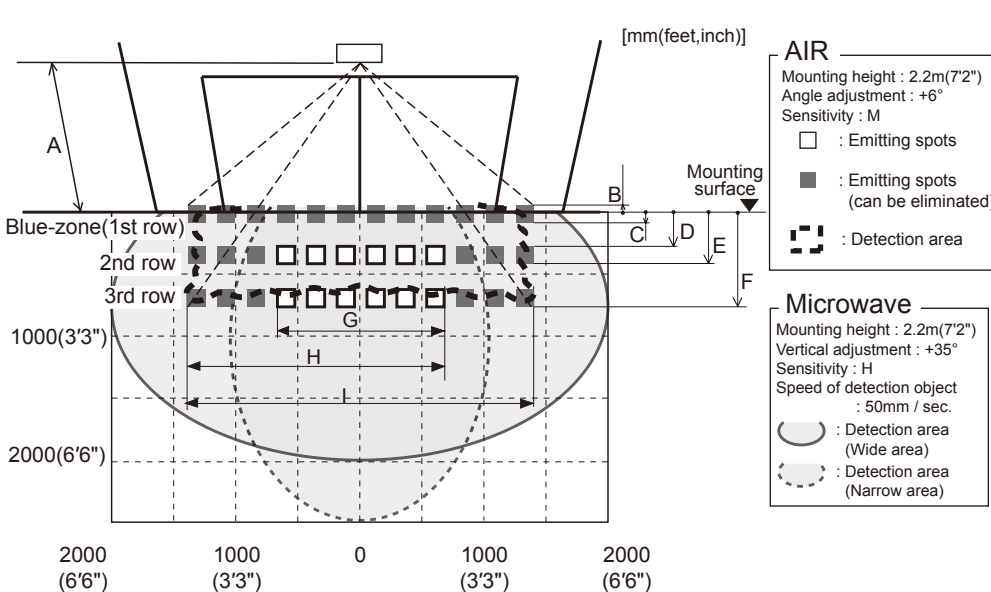
Operation indicator table

Status	Operation indicator color	1sec.	1sec.
Set-up	Yellow blinking	[Yellow bar]	
Stand-by (installation mode)	Yellow	[Yellow bar]	
Stand-by (operation mode)	Green	[Green bar]	
Blue-zone (1st row) detection*2	Blue	[Blue bar]	
2nd row detection	Red blinking	[Red bar]	
3rd row detection	Red	[Red bar]	
Microwave detection	Orange	[Orange bar]	
Signal saturation	Slow green blinking	[Green bar]	
Sensor failure	Fast green blinking	[Green bar]	

NOTE The specifications herein are subject to change without prior notice due to improvements.

- *1 : Active infrared reflection has a presence detection function.
- *2 : See **BLUE-ZONE**

DETECTION AREA



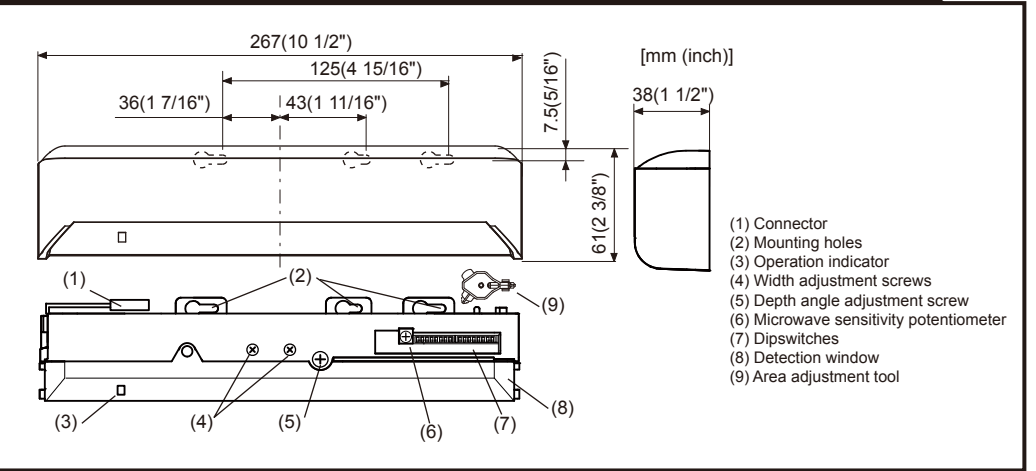
AIR emitting area

The chart shows the values at depth angle +6°

	[m(feet,inch)]					
A	2.00 (6'6")	2.20 (7'2")	2.50 (8'2")	2.70 (8'10")	3.00 (9'10")	3.50 (11'6")
B	0.05(2")	0.06 (2")	0.07 (3")	0.074(3")	0.08 (3")	0.09 (4")
C	0.07(3")	0.08 (3")	0.09 (4")	0.10 (4")	0.11 (4")	0.12 (5")
D	0.23 (9")	0.25 (10")	0.28 (11")	0.31 (1')	0.34 (1'1")	0.39 (1'4")
E	0.35 (1'2")	0.39 (1'3")	0.44 (1'5")	0.48(1'7")	0.53 (1'9")	0.61 (2')
F	0.59 (1'11")	0.65 (2'2")	0.74 (2'5")	0.80 (2'8")	0.89 (2'11")	1.38 (3'5")
G	1.21 (3'12")	1.33 (4'4")	1.51(4'11")	1.63 (5'4")	1.81 (5'11")	2.11 (5'11")
H	1.86 (6'1")	2.05 (6'9")	2.32 (7'7")	2.51 (8'3")	2.79 (9'2")	3.25 (10'8")
I	2.52(8'3")	2.78 (9'1")	3.15 (10'4")	3.40 (11'2")	3.79 (12'5")	4.42 (14'6")

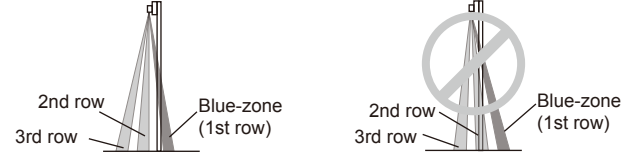
NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object. The sensor may not be activated when the entering speed of the object or a person is slower than 50mm / sec. or faster than 1500mm / sec.

OUTER DIMENSIONS AND PART NAMES



BLUE-ZONE

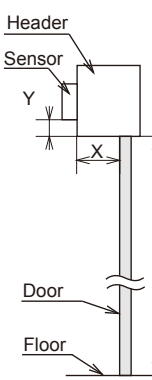
When dipswitch 15 is set to ON, the blue-zone area, that provides extra safety over the threshold, is activated. In case the blue-zone function is not required, set dipswitch 15 to OFF. Do not set the 2nd row overlapping the threshold regardless of the setting of dipswitch 15.



INSTALLATION

1

- Affix the mounting template at the desired mounting position. Refer to the chart in below.
- Drill two mounting holes of $\phi 3.4\text{mm}$ ($\phi 1/8"$).
- To pass the cable through the header, drill a wiring hole of $\phi 8\text{mm}$ ($\phi 5/16"$).
- Remove the mounting template.
- Remove the housing cover. Fix the sensor to the mounting surface with the two mounting screws.



H : Height from the floor to the bottom of the header
Y : Distance between the bottom of the header and the sensor
X : Distance between the door and the mounting surface

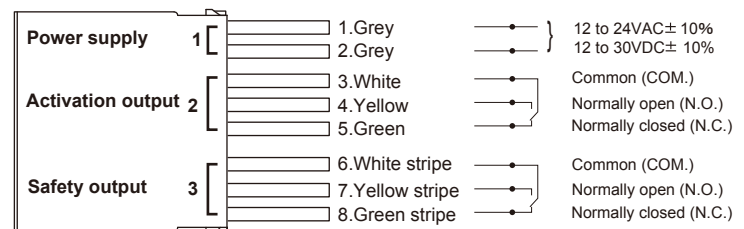
X	Maximum distance (Y)						
	H	2.00 (6' 6")	2.30 (7' 6")	2.50 (8' 2")	2.80 (9' 2")	3.00 (9' 10")	3.50 (11' 6")
0		No limit					
0.05 (2")		0.13 (5")	0.13 (5")	0.13 (5")	0.14 (6")	0.14 (6")	0
0.10 (4")		0.11 (4")	0.12 (5")	0.12 (5")	0.12 (5")	0.12 (5")	0
0.15 (6")		0.10 (4")	0.10 (4")	0.11 (4")	0.11 (4")	0.11 (4")	0
0.20 (8")		-	0.09 (4")	0.10 (4")	0.10 (4")	0.10 (4")	0
0.25 (10")		-	-	0.09 (4")	0.09 (4")	0.09 (4")	0
0.30 (12")		-	-	-	-	-	-

NOTE Make sure not to mount the sensor lower than the bottom of header.

	CAUTION	Make sure to affix the mounting template as described in the above chart, otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible on the header.
Risk of getting caught		

2

Wire the cable to the door controller as shown below.



	WARNING	Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield otherwise it may cause electric shock or breakdown of the sensor.
Danger of electric shock		

3

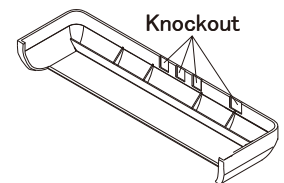
- Plug the connector.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **ADJUSTMENTS 4. Dipswitch settings**)

NOTE

Make sure to connect the cable correctly to the door controller before turning the power ON. When turning the power ON or after adjusting the settings, do not enter the detection area for more than 10 seconds in order to enable the presence detection.

4

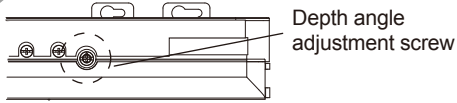
- Place the housing cover. If wiring is to be exposed, break the knockout.



	WARNING	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain cover (separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock		

ADJUSTMENTS

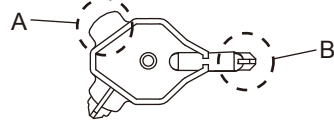
1 Area depth angle adjustment



When adjusting the 2nd row close to the door, follow **Table1** dipswitch16 for the easier adjustment.

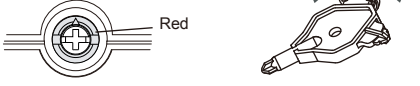
NOTE Make sure that the detection area does not overlap with the door / header, and there is no highly reflecting object near the detection area otherwise ghosting / signal saturation may occur.

Area adjustment tool

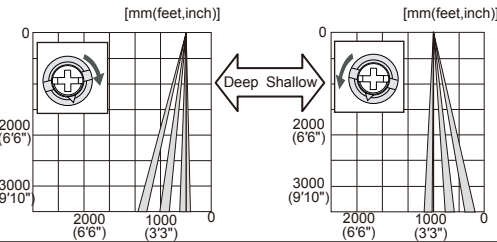


1-1 AIR adjustment

Depth angle adjustment screw for the AIR area



Use the area adjustment tool (A) as shown above to change the area depth angle.

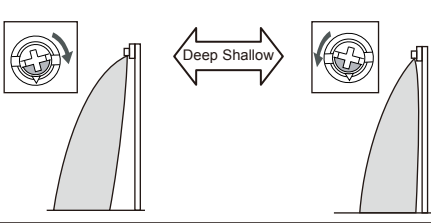


1-2 Microwave adjustment

Depth angle adjustment screw for the microwave area



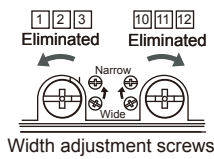
Use the area adjustment tool (B) as shown above to change the area depth angle.



2 Area width adjustment

2-1 AIR adjustment

To adjust the AIR detection area width, use the adjustment screws as shown in the picture below.

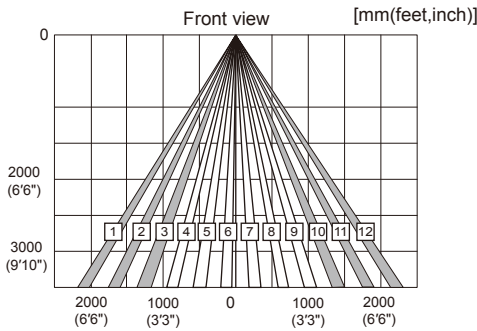


Width adjustment screws

NOTE

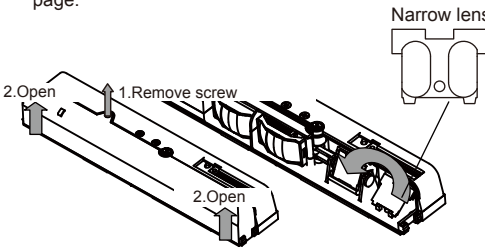
When setting the detection area width, make sure to turn the adjustment screws until it clicks.

1, 2, 3 cannot be eliminated separately, neither can 10, 11, 12



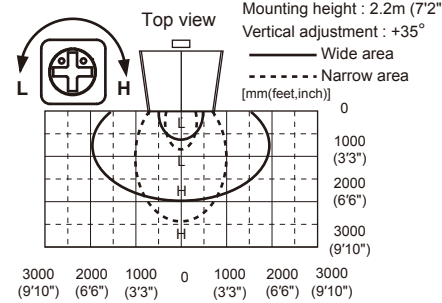
2-2 Microwave adjustment

To adjust the microwave detection area width, use the narrow lens as shown in the picture below, referring to the following procedures. For detection area, See **DETECTION AREA** in the front page.



3 Microwave sensitivity

Adjust the microwave detection area with potentiometer. Turning it clockwise increases the sensitivity and turning counterclockwise lowers the sensitivity.



4 Dipswitch settings

Table1

AIR settings Microwave settings Other settings

Dipswitch	Function	Setting				Comment
		Low	Middle	High	S-High	
Dipswitch 1	Sensitivity	Low 1 2	Middle 1 2	High 1 2	S-High 1 2	Set the sensitivity according to the mounting height. Values below dipswitch are reference only.
Dipswitch 2		2.0 to 3.0m	2.0 to 3.0m	2.5 to 3.2m	3.0 to 3.5m	
Dipswitch 3	Presence timer	30sec 3 4	60sec 3 4	180sec 3 4	600sec 3 4	All rows have the presence detection function. The presence detection timer can be selected from 4 settings.
Dipswitch 4						
Dipswitch 5	Frequency	Setting1 5 6	Setting2 5 6	Setting3 5 6	Setting4 5 6	When using more than two sensors close to each other, set the frequency different for each sensor.
Dipswitch 6						
Dipswitch 7	Rain mode	Normal 7	Rain 7			Set this switch to Rain if the sensor is used in a region with a lot of rain.
Dipswitch 8	Snow mode	Normal 8	Snow 8			Set this switch to Snow if the sensor is used in a region with snow or a lot of insects.
Dipswitch 9	Direction	Bi 9	Uni 9			When dipswitch 9 is set to uni-directional, this setting enables the door to close earlier when a person walks away from the door.
Dipswitch 10	Auto caution	OFF 10	ON 10			When dipswitch 10 is set to ON, a person wavering in the activation detection area can be detected. This is only effective when dipswitch 9 is set to uni-directional.
Dipswitch 11	Immunity	OFF 11	ON 11			Set dipswitch 11 to ON when the sensor operates by itself (ghosting). When dipswitch 11 is set to ON the actual detection area may occur smaller.
Dipswitch 12	For future use					
Dipswitch 13	AIR output	Safety 13	Safety + Activation 13			When dipswitch 13 is ON, the sensor outputs safety and activation simultaneously.
Dipswitch 14	For future use					
Dipswitch 15	Blue-zone	OFF 15	ON 15			When dipswitch 15 is set to ON, the blue-zone (1st row) is active and looks through the threshold.
Dipswitch 16	Installation mode	OFF 16	ON 16			Set dipswitch 16 to ON to adjust the 2nd row. After setting the row switch dipswitch 16 OFF. During the installation mode only the 2nd row remains active and the operation indicator shows yellow.

*Please refer to **Table 2** for the details.

Table 2

Bi-direction (Bi)		Uni-direction (Uni)		
Bi OFF 9 10		Uni OFF 9 10		→ Detection
Bi ON 9 10		Uni ON 9 10		→ Non-Detection

When Dipswitch 9 is set to Bi, Bi-direction mode is effective, regardless of Dipswitch 10 setting.

Uni-direction with Auto caution mode

CHECKING

Check the operation in the operation mode according to the chart below. ① White : COM. ④ White Str. : COM.
② Yellow : N.O. ⑤ Yellow Str. : N.O.
③ Green : N.C. ⑥ Green Str. : N.C.

Entry	Power OFF	Outside of detection area	Entry into microwave area	Entry into 3rd row	Entry into 2nd row	Entry into blue-zone (1st row)
Status	-	Stand-by	Motion detection active	Motion/Presence detection active		
Operation indicator	None	Green	Orange	Red	Red Blinking	Blue
Safety 13	Safety output					
	Activation output					
Safety & Activation 13	Safety output					
	Activation output					

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. Do not use any cleaner / solvent.
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise an electric shock may occur.
- When the operation indicator blinks green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE

- When turning the power ON, always walk-test the detection area to ensure the proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. plant, illumination, etc.)

TROUBLESHOOTING

Door operation	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Wrong power supply voltage. Wrong wiring or connection failure.	Set to the stated voltage. Check the wires and connector.
	Unstable	Wrong detection area positioning. Sensitivity is too low. Short presence detection timer. Dirty detection window.	Check ADJUSTMENTS 1, 2, 3 & 4 . Set the sensitivity higher. Set the presence timer longer. Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
		Proper	Wrong wiring or connection failure.
Door opens when no one is in the detection area. (ghosting)	Unstable	Objects that move or emit light in the detection area.	Remove the objects.
		The detection area overlaps with another sensor.	Check Table1 dipswitch 5, 6.
		Waterdrops on the detection window.	Wipe the detection window with a damp cloth. Use the rain-cover (Separately available).
		Detection area overlaps with door / header.	Adjust the detection area (AIR or MW) to "deep". Or set dipswitch 11 to ON.
		Sensitivity is too high. Raining or snowing(AIR) Raining or snowing(Microwave) Others	Set the sensitivity lower. Set dipswitch 7 and / or dipswitch 8 to ON. Set dipswitch 9 and / or dipswitch 11 to ON. Set dipswitch 11 to ON.
Door remains open	Proper	Sudden change in the detection area	Check Table1 dipswitch 1 to 4. If the problem still persists, hard-reset the sensor.(Turn the power OFF and ON again)
		Wrong wiring or connection failure.	Check the wiring.
Proper operation	Yellow	Installation mode is set to ON.	Set dipswitch 16 to OFF.
	Fast green blinking	Sensor failure	Contact your installer or service engineer.
	Slow green blinking	Sensitivity is too low. Dirty detection window	Set the sensitivity higher. Set AIR area width to "wide". Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
		The detection area overlaps with the door / header. Signal saturation (AIR)	Adjust the detection area to "deep". Remove highly reflecting objects from the detection area or lower the sensitivity or change the area depth angle for AIR area.

FCC WARNING(For USA)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

-NOTICE-

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

-NOTICE-

- The antennas cannot be exchanged.
- To comply with FCC RF exposure compliance requirements, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.

IC(For CANADA)

Operation is subject to the following two conditions:

- this device may not cause interference, and
- this device must accept any interference received, including interference that may cause undesired operation of the device.

Manufacturer

OPTEX Co.,LTD.

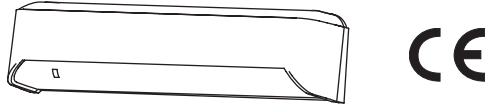
5-8-12 Ogoto Otsu 520-0101, Japan
TEL.: +81(0)77-579-8700
FAX.: +81(0)77-579-7030
WEBSITE:
www.optex.co.jp/as/eng/index.html

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WEBSITE: www.optextechnologies.com

East coast office
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Charlotte, NC 28211 U.S.A.
TEL.: +1-800-877-6656
FAX.: +1(704)365-0818
WEBSITE: www.optextechnologies.com



5915030 MAY 2008

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of the sensor. Failure to read this operation manual may cause improper sensor operation and may result in serious injury or death of person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this operation manual.

WARNING	Disregard of warning may cause the improper operation causing death or serious injury of person.
CAUTION	Disregard of caution may cause the improper operation causing injury of person or damage to objects.
NOTE	Special attention is required to the section of this symbol.

NOTE

- This sensor is a non-contact switch intended for header mount / wall mount of an automatic door. Do not use for any other applications. This sensor cannot be used for industrial doors or shutters, when used, proper operation and safety cannot be guaranteed.
- When setting the sensor's detection area, make sure there is no traffic around the installation site.
- Before turning the power on, check the wiring to prevent damage or malfunction of equipments that are connected to the sensor.
- Only use the sensor as specified in the operation manual provided.
- Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
- Before leaving the job site make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
- The sensor setting can only be changed by an installer or service engineer. When changed, register the changed setting and dates in the maintenance logbook accompanying the door.

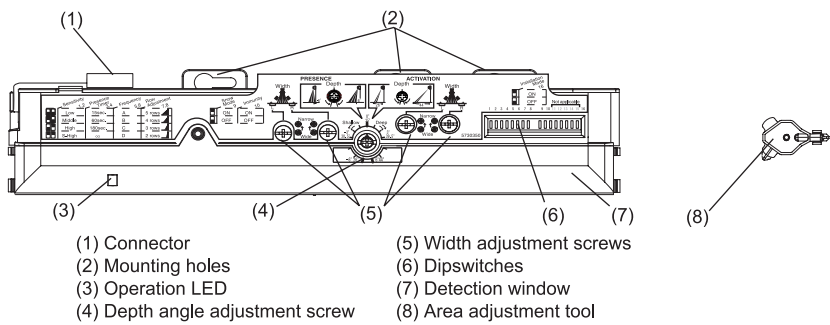
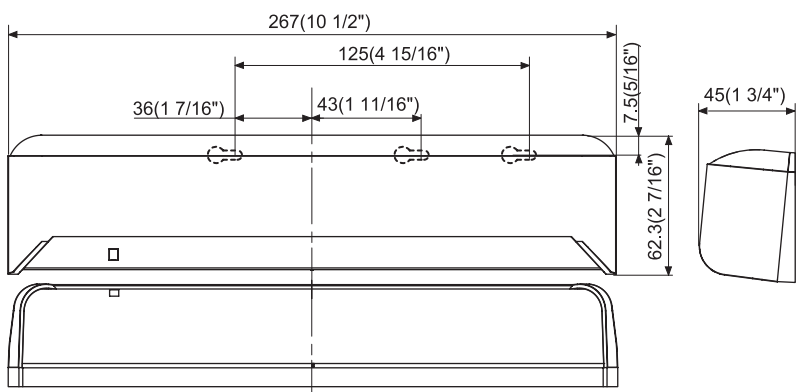
WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of equipments.
Danger of electric shock.	

SPECIFICATIONS

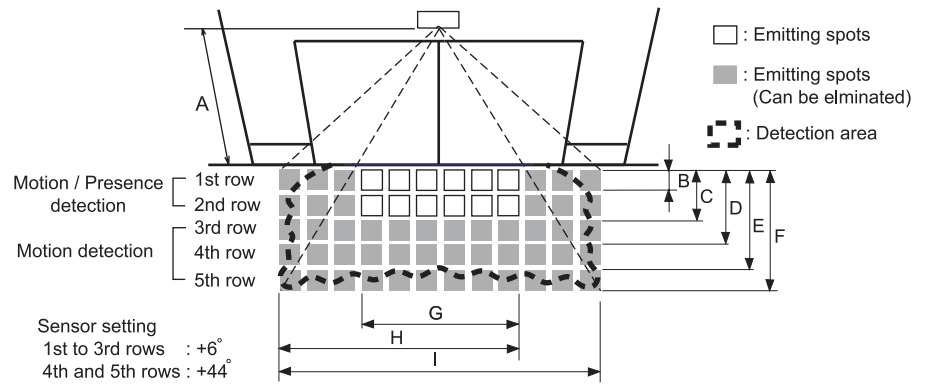
Model	: OA-AXIS I / OA-AXIS II	Output	: OA-AXIS I / Form C relay
Cover color	: Silver / Black		: 50V 0.3A Max. (Resistance load)
Mounting height	: 2.0 (6'7") to 3.5m (11'5")		: OA-AXIS II / 1st to 3rd rows / Form C relay
Detection area	: See DETECTION AREA		: 50V 0.3A Max. (Resistance load)
Detection method	: Active Infrared Reflection		: 3rd to 5th rows / Form C relay
Depth angle adjustment	: 1st to 3rd rows / -6° to +6° 4th and 5th rows / +26° to +44°	Output hold time	: Approx. 0.5 sec.
Power supply	: 12 to 24VAC(±10%) 12 to 30VDC(±10%)	Response time	: <0.3 sec.
Power consumption	: OA-AXIS I < 3VA OA-AXIS II < 4VA	Operating temperature	: -20 to +55°C(-4 to 131°F)
Operation LED	: Green / Stand-by Blinking Red / 1st row detection Red / 2nd row detection Orange / 3rd to 5th rows detection	IP rate	: IP44
		Weight	: 320g (11.2oz)
		Accessories	: 1 Cable 3m (9'10") 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool

NOTE The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES



DETECTION AREA



	[m(feet,inch)]				
A	2.20(7'2 5/8")	2.50(8'2 7/16")	2.70(8'10 5/16")	3.00(9'10 1/8")	3.50(11'5 13/16")
B	0.14(5 1/2")	0.16(6 5/16")	0.18(7 1/16")	0.20(7 7/8")	0.23(9 1/16")
C	0.42(1'4 9/16")	0.48(1'6 7/8")	0.52(1'8 1/8")	0.58(1'10 13/16")	0.67(2'2 3/8")
D	0.82(2'8 5/16")	0.93(3' 5/8")	1.00(3'3 3/8")	1.10(3'7 5/16")	1.30(4'3 3/16")
E	1.35(4'5 1/8")	1.54(5' 5/8")	1.66(5'5 3/8")	1.85(6' 13/16")	2.16(7'1 1/16")
F	1.90(6'2 13/16")	2.17(7'1 7/16")	2.34(7'8 1/8")	2.60(8'6 3/8")	3.03(9'11 5/16")
G	1.33(4'4 3/8")	1.51(4'11 7/16")	1.63(5'4 3/16")	1.81(5'11 1/4")	2.11(6'11 1/16")
H	2.05(6'8 11/16")	2.32(7'7 5/16")	2.51(8'2 13/16")	2.79(9'1 13/16")	3.26(10'8 3/8")
I	2.78(9'1 7/16")	3.15(10'4")	3.40(11'1 7/8")	3.79(12'5 3/16")	4.42(14'6")

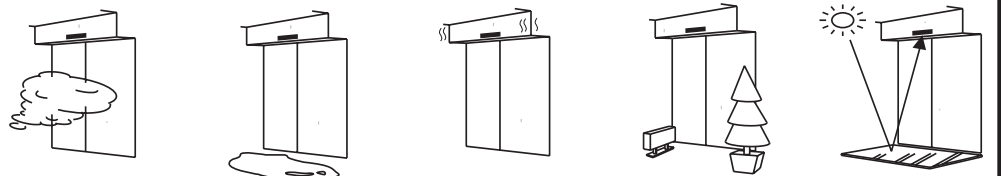
NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object.

*The values of the chart above is of the emitting spots, but not of the detection area.

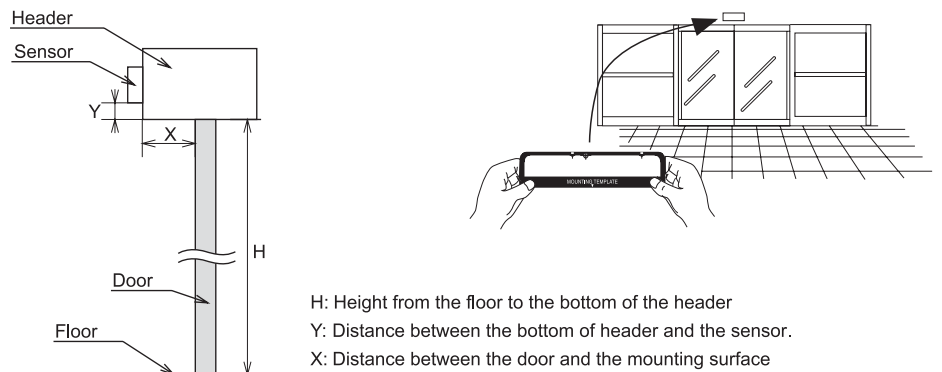
INSTALLATION

NOTE The following conditions are not suitable for the sensor installation.

- Fog or exhaust emission around the door.
- Wet floor
- Vibrating header or mounting surface.
- Moving objects or a heating radiator in the detection area.
- Highly reflecting floor or the presence of highly reflecting objects around the door.



- Affix the mounting template at the desired mounting position.
- Drill two mounting holes of ø3.4mm (ø1/8").
- To pass the cable through to the header, drill a wiring hole of ø8mm (ø5/16").
- Remove the mounting template.
- Remove the housing cover. Attach the sensor to the mounting surface with two mounting screws.



H: Height from the floor to the bottom of the header
Y: Distance between the bottom of header and the sensor.
X: Distance between the door and the mounting surface

Maximum mounting distance (Y) [mm(feet,inch)]

X \ H	2,000 (6' 6")	2,200 (7' 2")	2,500 (8' 2")	3,000 (9' 10")
0	No limit			
50 (1 15/16")	200 (7 7/8")	200 (7 7/8")	200 (7 7/8")	200 (7 7/8")
100 (3 15/16")	200 (7 7/8")	200 (7 7/8")	200 (7 7/8")	200 (7 7/8")
150 (5 7/8")	130 (5 1/8")	150 (5 7/8")	170 (6 11/16")	200 (7 7/8")
200 (7 7/8")	-	110 (4 5/16")	130 (5 1/8")	150 (5 7/8")
250 (9 13/16")	-	-	-	120 (4 3/4")
300 (11 13/16")	-	-	-	-

CAUTION Make sure to affix the mounting template as described in the above chart. Otherwise, it can be dangerous since there may be no presence detection area around the threshold. Install the sensor as low as possible on the header.

NOTE The sensor mounting position may be limited depending on the header thickness and the mounting height.

- Wire the cable to the door controller properly as shown in the drawing below.

OA-AXIS I



Grey	Power supply
Grey	12 to 24VAC ±10%
Grey	12 to 30VDC ±10%
White	Common (COM.)
Yellow	Normally open (N.O.)
Green	Normally closed (N.C.)

OA-AXIS II



Grey	Power supply	
Grey	12 to 24VAC ±10%	
Grey	12 to 30VDC ±10%	
White	Common (COM.)	
Yellow	Normally open (N.O.)	3rd to 5th * rows output
Green	Normally closed (N.C.)	
White Str.	Common (COM.)	1st to 3rd * rows output
Yellow Str.	Normally open (N.O.)	
Green Str.	Normally closed (N.C.)	

*The outputs from the 3rd row overlaps.

WARNING Before starting the procedure, ensure that the power is turned OFF. When passing through the cable to the hole, make sure not to tear the shield, otherwise it may cause electric shock or breakdown of the sensor.

- Plug the connector of the sensor.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See ADJUSTMENTS)

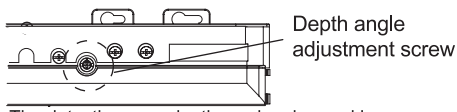
NOTE Make sure to connect the cable correctly to the door controller before turning the power ON. To enable the presence detection, do not enter the detection area for 10 seconds after supplying the power.

- Place the housing cover . If wiring is to be exposed, break the knockout.

WARNING Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.

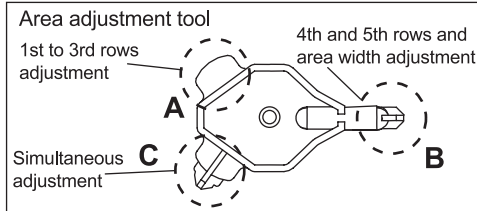
ADJUSTMENTS

1 Area depth angle adjustment



The detection area depth can be changed by the area adjustment tool.

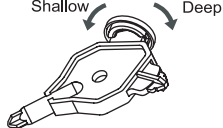
When adjusting the 1st to 3rd rows close to the door, follow 3-7 Installation mode.



1-1. Independent adjustment

1st to 3rd rows

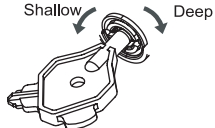
Depth angle adjustment screw for 1st to 3rd rows



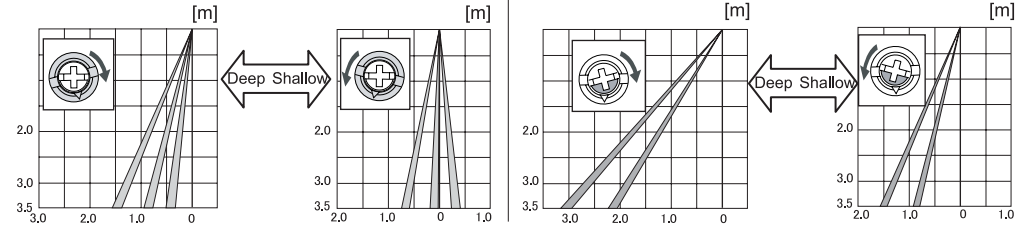
Use the area adjustment tool (A) as shown above and change the depth of the detection area by turning the depth angle adjustment screw.

4th and 5th rows

Depth angle adjustment screw for 4th and 5th rows



Use the area adjustment tool (B) as shown above and change the depth of the detection area by turning the depth angle adjustment screw.

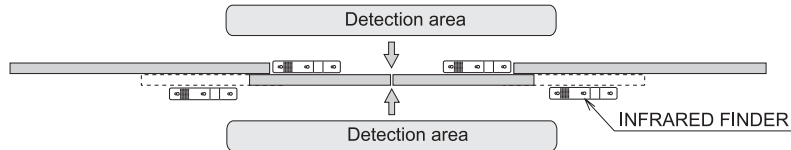


Check the area position with Red LED of the Operation LED using a tool such as a reflecting mirror.

NOTE Make sure the detection area does not overlap with the door / header, otherwise ghosting / signal saturation may occur.
Do not place any highly reflecting objects in the detection area, otherwise signal saturation may occur.

REFERENCE Area depth adjustment with INFRARED FINDER (Separately available)

- Turn the depth adjustment screw to the right (Deep) to place the area most away from the door.
- Set INFRARED FINDER sensitivity to "H" (High) and place it on the floor as shown below.



- Turn the depth adjustment screw to the left (Shallow) until the emitting area is placed at the position where INFRARED FINDER is in the low detection status (Slow Red blinking).

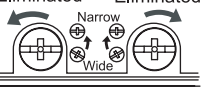
1-2. Simultaneous adjustment

For the simultaneous adjustment of 1st to 5th rows, use the adjustment tool (C).

2 Width detection area adjustment

1st to 3rd rows

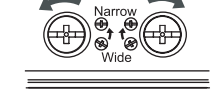
Eliminated



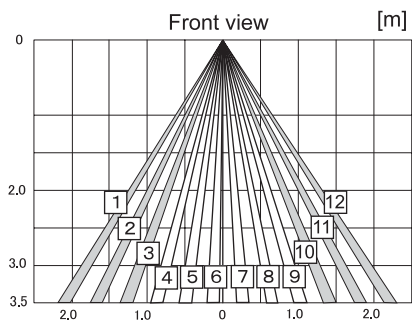
Width adjustment screw (Left)

4th and 5th rows

Eliminated

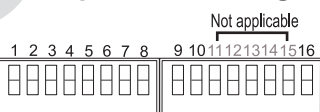


Width adjustment screw (Right)



NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object and the floor as well as the entry speed of the object.

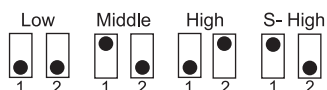
3 Dipswitch settings



- Not applicable
- | | |
|---------------------------------|---------------------------|
| 1, 2 : Sensitivity | 9 : Snow mode |
| 3, 4 : Presence detection timer | 10 : Immunity |
| 5, 6 : Frequency | 11 to 15 : Not applicable |
| 7, 8 : Row adjustment | 16 : Installation mode |

3-1 Setting the sensitivity

Normally set to "Middle". "Low" decreases the sensitivity and "High / S-High" increases the sensitivity.



3-2 Setting the presence detection timer

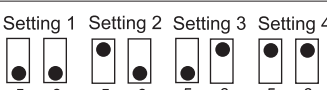
The 1st and 2nd rows have the presence detection function. The presence detection timer can be selected from 4 settings.



NOTE To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.

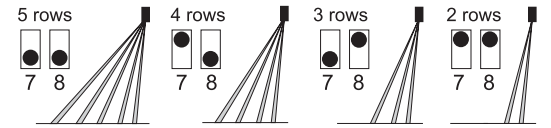
3-3 Setting the frequency

When using more than two sensors close to each other, set the different frequency for each sensor by combining dipswitch 5 and 6.



3-4 Setting the area depth

The 5th, 4th, and 3rd rows can be eliminated by combining dipswitches 7 and 8.

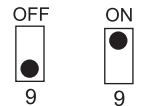


*When 2 rows setting is selected, only the presence detection area remains.

NOTE Always check the area according to the expected entry speed and determine the appropriate number of rows.
When setting motion and motion / presence detection area separately, make sure that there is no gap between two areas.

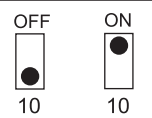
3-5 Setting the snow mode

Set this switch to ON, if the sensor is used in a region with snow.



3-6 Setting the immunity

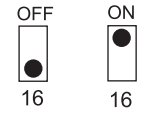
Set this switch to ON, when less influence by the header vibration is required.



3-7 Installation mode

Use this switch to ON when adjusting the presence detection area close to the door face.

- * During the installation mode, only the 1st row remain.
- * Door open state
- * Operation LED glows yellow.



CHECKING

Check the operation according to the chart below.

- | | |
|-----------------|----------------------|
| ① White : COM. | ④ White Str. : COM. |
| ② Yellow : N.O. | ⑤ Yellow Str. : N.O. |
| ③ Green : N.C. | ⑥ Green Str. : N.C. |

Entry	Power off	Outside of detection area	Entry into 4th or 5th row	Entry into 3rd row	Entry into 2nd row	Entry into 1st row
Status	-	Stand-by	Motion detection active	Motion/Presence detection active	Presence detection	
Operation LED	None	Green	Orange		Red	Blinking Red
OA-AXIS I	Output	① ② ③	① ② ③	① ② ③		
OA-AXIS II	Output from 1st to 3rd rows*	④ ⑤ ⑥	④ ⑤ ⑥	④ ⑤ ⑥		
	Output from 3rd to 5th rows*	① ② ③	① ② ③	① ② ③	① ② ③	

*The outputs from the 3rd row overlaps.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window lightly with a damp cloth. (Do not use any cleaner or solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- When an operation LED blinks green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE

- When turning the power on, always walk-test the detection area to ensure proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

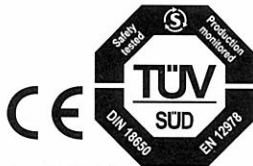
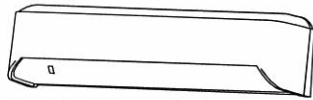
TROUBLESHOOTING

Problem	Operation LED	Possible cause	Possible countermeasures	
Door does not open when a person enters the detection area.	None	Power supply voltage.	Set to the stated voltage.	
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.	
		Wrong detection area positioning.	Check ADJUSTMENTS 1 & 2 .	
		Sensitivity is too low.	Set the sensitivity higher.	
Door opens when no one is in the detection area. (Ghosting)	Unstable	Short presence detection timer.	Set the presence detection timer longer.	
		Dirty detection window.	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)	
		Vibration of the header.	Set the sensitivity lower or the immunity to ON.	
		Water drops on the detection window.	Use the rain-cover (Separately available). Or install in a place keeping the waterdrops off.	
		The detection area overlaps with that of another sensor.	Check ADJUSTMENTS 3-3 .	
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside).	
		Reflecting objects in the detection area. Or reflecting light on the floor.	Remove the objects.	
		Sensitivity is too high.	Set the sensitivity lower.	
		It snows and pours.	Set the snow mode to ON.	
		Objects that move or emit light in the detection area. (Ex. Plant, illumination, etc.)	Remove the objects.	
Door remains open	Red or Orange	Wet floor.	Check the installation condition referring to INSTALLATION on the reverse side.	
		The exhaust emission or fog penetrate into the detection area.		
		Sudden change in the detection area.	Check ADJUSTMENTS 3-1 & 3-2 . If the problem still persists, hard-reset the sensor. (Turn the power OFF and ON again.)	
		Wrong wiring or connection failure.	Check the wires and connector.	
Door remains closed	Proper	Twice Green blinking	The relay is reaching the end of its life cycle.	
		Slow Green blinking	Signal saturation	Remove highly reflecting objects from the detection area. Or lower the sensitivity. Or change the area angle.
			The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside).
Door remains closed	Proper	Wrong wiring or connection failure.	Check the wires and connector.	

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5914951 OCT 2008

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

	WARNING Disregard of warning may cause the improper operation causing death or serious injury of a person.
	CAUTION Disregard of caution may cause the improper operation causing injury of a person or damage to objects.
	NOTE Special attention is required to the section of this symbol.
	It is required to check the operation manual if this symbol is shown on the product.

- NOTE**
- This product is a non-contact switch intended for header mount or wall mount for use on an automatic sliding door. Do not use for any other applications.
 - When setting the sensor's detection area, make sure that there is no traffic around the installation site.
 - Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
 - Only use the product as specified in the operation manual provided.
 - Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
 - Before leaving the installation site make sure that the product is operating properly and instruct the building owner/operator on proper operation of the door and the product.
 - The product settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock.	

- NOTE** The following conditions are not suitable for sensor installation.
- Fog or exhaust emission around the door.
 - Wet floor.
 - Vibrating header or mounting surface.
 - Moving objects or objects that emit light near the detection area.
 - Highly reflecting floor or highly reflecting objects around the door.



SPECIFICATION

Model : OA-AXIS T	Safety / Test output : When 1st or 2nd row detects.
Cover color : Silver / Black	Opto coupler (NPN)
Mounting height : 2.0 (6'6") to 3.0m (9'10")	Voltage / 5 to 50VDC
Detection area : See DETECTION AREA	Current / 100mA Max.
Detection method : Active infrared reflection (*1)	Dark current / 600nA Max.
Depth angle : 1st to 3rd rows / -6 to +6°	(Resistance load)
adjustment : 4th and 5th rows / +26 to +44°	Output hold time : Approx. 0.5 sec.
Power supply (*2) : 12 to 24VAC ±10% (50 / 60 Hz)	Response time : <0.3 sec.
12 to 30VDC ±10%	Operating temperature : -20 to +55°C (-4 to 131°F)
Power consumption : < 2.5W (< 4VA at AC)	Operating humidity : <80%
Operation indicator : See chart below	IP rate : IP44
Test input : Opto coupler	Category : 2 (ISO 13849-2 : 2003)
Voltage / 5 to 30VDC	Weight : 320g (11.2oz)
Current / 6mA Max. (30VDC)	Accessories : 1 Operation manual
Activation output : When 3rd, 4th or 5th row detects.	2 Mounting screws
Form A relay	1 Mounting template
50V 0.3A Max. (Resistance load)	1 Area adjustment tool
	1 Cable 3m (9'10")
	(8 × 0.29mm ² AWG24) (*3)

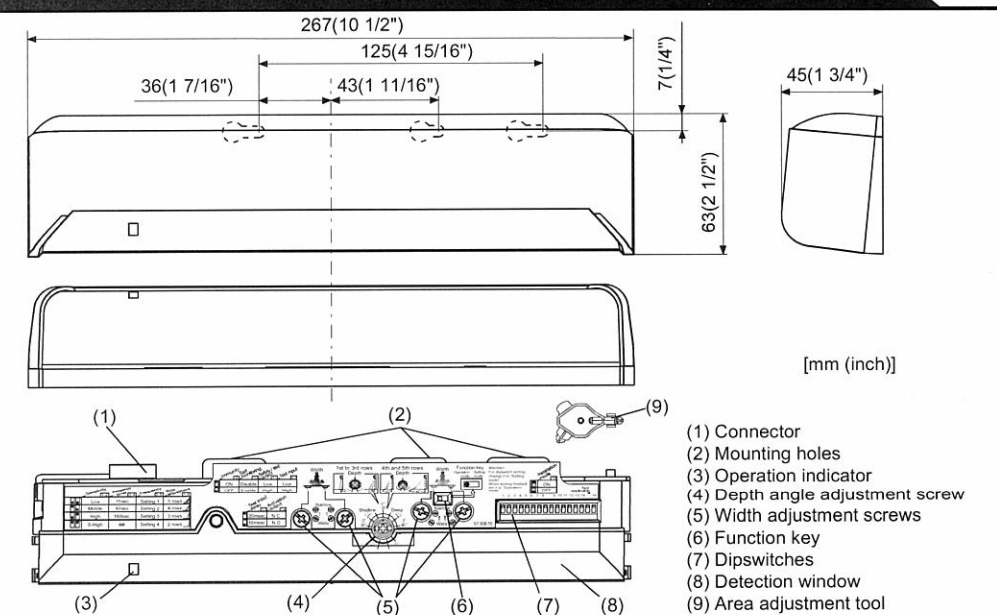
*1 : The 1st and 2nd rows have presence detection function.
 *2 : When using this sensor, the sensor has to be connected to a door system which has the SELV circuit.
 *3 : Overcurrent protection with less than 2A.

Operation indicator

Status	Operation indicator color	Indicator Pattern
Stand-by (Setting mode)	Blinking Blue	[Blinking Blue]
Stand-by (Installation mode)	Yellow	[Yellow]
Stand-by (Operation mode)	Green	[Green]
1st row detection	Blinking Red	[Blinking Red]
2nd row detection	Red	[Red]
3rd, 4th or 5th row detection	Orange	[Orange]
Wrong dipswitch setting	Red & Green blinking	[Red & Green Blinking]
Signal saturation	Slow Green blinking	[Slow Green Blinking]
Sensor failure	Fast Green blinking	[Fast Green Blinking]
Life cycle notification	Twice Green blinking	[Twice Green Blinking]

NOTE The specifications herein are subject to change without prior notice due to improvements.

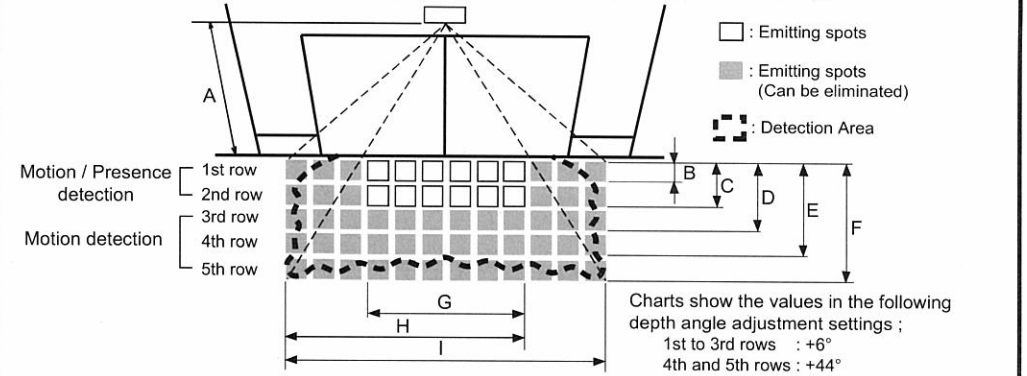
OUTER DIMENSIONS AND PART NAMES



COMPLIED STANDARDS

DIN 18650-1:2005	DIN 18650-2:2005	EN 12978:2003
EN 954-1:1997	ISO 13849-2:2003	prEN 12650-1:1999
		prEN 12650-2:1999

DETECTION AREA



Emitting area

	[m(feet,inch)]				
A	2.00 (6'6")	2.20 (7'2")	2.50 (8'2")	2.70 (8'10")	3.00 (9'10")
B	0.13 (5")	0.14 (6")	0.16 (6")	0.18 (7")	0.20 (8")
C	0.38 (1' 3")	0.42 (1' 5")	0.48 (1' 7")	0.52 (1' 8")	0.58 (1' 11")
D	0.74 (2' 5")	0.82 (2' 8")	0.93 (3' 1")	1.00 (3' 3")	1.10 (3' 7")
E	1.23 (4' 1")	1.35 (4' 5")	1.54 (5' 1")	1.66 (5' 5")	1.85 (6' 1")
F	1.74 (5' 9")	1.90 (6' 3")	2.17 (7' 1")	2.34 (7' 8")	2.60 (8' 6")
G	1.06 (3' 6")	1.33 (4' 4")	1.51 (4' 11")	1.63 (5' 4")	1.81 (5' 11")
H	1.86 (6' 1")	2.05 (6' 9")	2.32 (7' 7")	2.51 (8' 3")	2.79 (9' 2")
I (*)	2.52 (8' 3")	2.78 (9' 2")	3.15 (10' 4")	3.40 (11' 2")	3.79 (12' 5")
X	0.19 (8")	0.21 (8")	0.24 (9")	0.26 (10")	0.28 (11")

X is the distance between the 1st row and the mounting surface.

Detection area

To comply with DIN 18650, make sure that the detection area is within the values in the chart below.

	2.00 (6'6")	2.20 (7'2")
A	2.00 (6'6")	2.20 (7'2")
C	0.23 (9")	0.24 (10")
G	1.02 (3' 4")	1.10 (3' 7")
I	2.41 (7' 11")	2.54 (8' 4")

Test conditions required by DIN 18650
 Floor : Kodak Grey card
 Detection object :
 DIN 18650 Test body (Mat black)

The values above are when the sensitivity is set to "Middle" and speed of detection object is 50mm / sec..

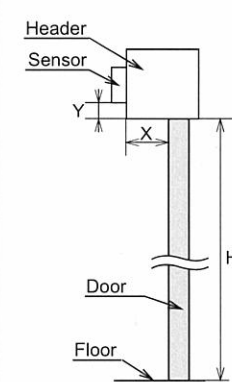
The values above are those of the detection area when tested referring to the test conditions of DIN 18650. (The emitting area is as shown in **Emitting area** above.)

*: When installed at higher than 2.35m(7'8"), DIN 18650 requirements are fulfilled only within the area width "I" of 3m(9'10").

NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object. The sensor may not be activated when the entering speed of the object or a person is slower than 50mm / sec. or faster than 1500mm / sec.

INSTALLATION

- Affix the mounting template at the desired mounting position.
- Drill two mounting holes of ø3.4mm (ø1/8").
- To pass the cable through the header, drill a wiring hole of ø8mm (ø5/16").
- Remove the mounting template.
- Remove the housing cover. Fix the sensor to the mounting surface with the two mounting screws.

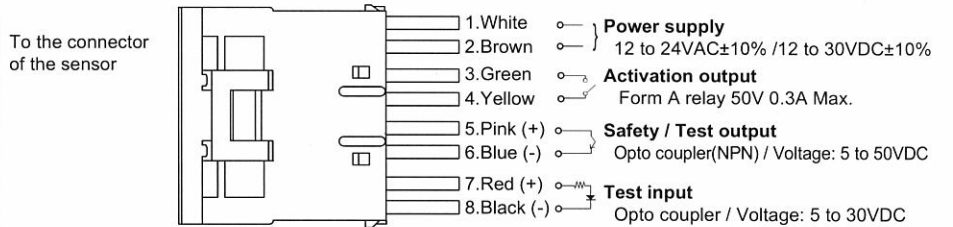


		[m (feet,inch)]			
X	H	2.00 (6' 6")	2.30 (7' 6")	2.50 (8' 2")	2.80 (9' 2")
0		No limit			
0.05 (2")		0.20 (7")	0.20 (7")	0.20 (7")	0.20 (7")
0.10 (4")		0.20 (7")	0.20 (7")	0.20 (7")	0.20 (7")
0.15 (6")		0.13 (5")	0.15 (5")	0.19 (7")	0.20 (7")
0.20 (8")		-	0.12 (4")	0.14 (5")	0.15 (5")
0.25 (10")		-	-	0.11 (4")	0.12 (4")
0.30 (12")		-	-	-	-

	CAUTION Risk of getting caught.	Make sure to affix the mounting template as described in the above chart, otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible on the header.
--	---	---

NOTE The sensor mounting position may be limited depending on the header thickness and the mounting height. To comply with DIN 18650, make sure that the sensor is installed within the values in the above chart.

- Wire the cable to the door controller as shown below.



	WARNING Danger of electric shock.	Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield, otherwise it may cause electric shock or breakdown of the sensor.
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- Plug the connector of the sensor.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **ADJUSTMENTS**)

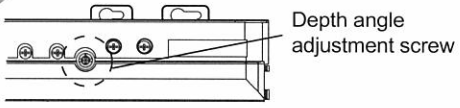
NOTE Make sure to connect the cable correctly to the door controller before turning the power ON. When turning the power ON or after adjusting the settings, do not enter the detection area for more than 10 seconds in order to enable the presence detection. Do not touch the dipswitches before turning the power ON, otherwise an error occurs. When changing the settings of dipswitch, see **ADJUSTMENTS 3 Dipswitch settings**.

- Place the housing cover. If wiring is to be exposed, break the knockout.

	WARNING Danger of electric shock.	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.
--	---	--

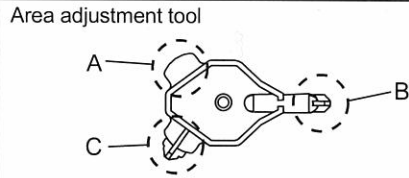
ADJUSTMENTS

1 Area depth angle adjustment



When adjusting the 1st row close to the door, follow 3-9 Installation mode for the easier adjustment.

NOTE Make sure that the detection area does not overlap with the door / header, and there is no highly reflecting object near the detection area otherwise ghosting / signal saturation may occur.



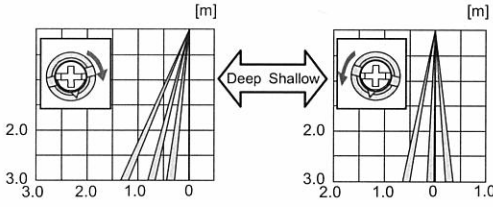
1-1.Independent adjustment

1st to 3rd rows

Depth angle adjustment screw for the 1st to 3rd rows



Use the area adjustment tool (A) as shown above to change the area depth angle for the 1st to 3rd rows.

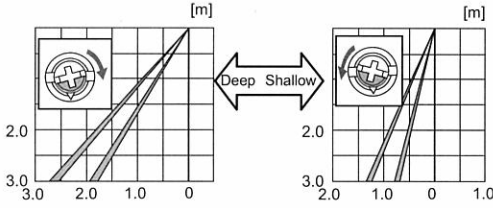


4th and 5th rows

Depth angle adjustment screw for the 4th and 5th rows



Use the area adjustment tool (B) as shown above to change the area depth angle for the 4th and 5th rows.

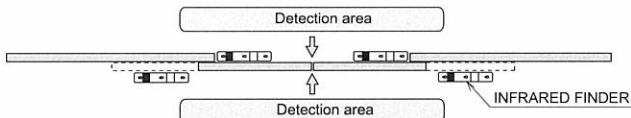


1-2.Simultaneous adjustment

For the simultaneous adjustment of the 1st to 5th rows, use the adjustment tool (C).

REFERENCE Area depth adjustment with INFRARED FINDER (Separately available)

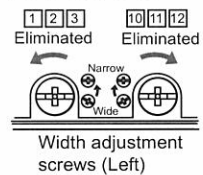
- Turn the depth angle adjustment screw to the right (Deep) to place the detection area most away from the door.
- Set INFRARED FINDER sensitivity to "H" (High) and place it on the floor as shown below.



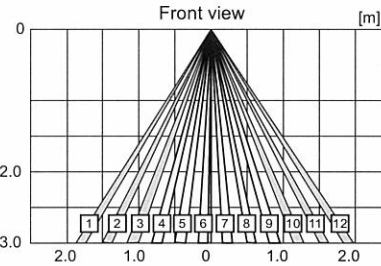
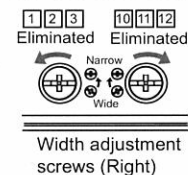
- Turn the depth angle adjustment screw to the left (Shallow) until the emitting area is placed at the position where INFRARED FINDER is in the low detection status (Slow Red blinking).

2 Area width adjustment

1st to 3rd rows



4th and 5th rows

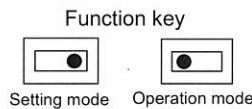


NOTE When adjusting the width adjustment screws, make sure to turn until it clicks otherwise the proper operation may not be obtained.
[1][2][3] cannot be eliminated separately, neither can [10][11][12].

3 Dipswitch settings

Follow these steps to change the settings of dipswitches.

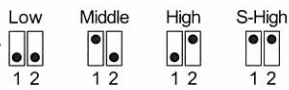
- Change the function key from the "Operation mode" to the "Setting mode". During the "Setting mode", the operation indicator is blinking Blue (only when stand-by status) and the door remains open.
- Change the dipswitch settings.
- When the setting is finished, change the function key back to the "Operation mode".



NOTE When the above procedures (1-3) are not followed, an error (Red & Green blinking) occurs. Make sure to use the sensor only in the "Operation mode". The sensor does not operate properly in the "Setting mode".

3-1.Setting the sensitivity

Refer to the chart below for the suitable sensitivity to your installation environment.

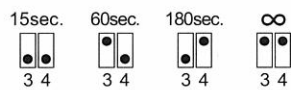


		Mounting height [m (feet,inch)]				For example
		2.0 (6' 6")	2.2 (7' 2")	2.5 (8' 2")	3.0 (9' 10")	
Floor condition	Low reflection	Middle	Middle	High	S-High	-Carpet -Dark color floor
	Middle reflection	Low	Middle	Middle	S-High	-Concrete
	High reflection	Low	Low	Middle	High	-Tile -Marble

NOTE Special attention to the setting is required when the door is used often by the elderly or children. Please adjust the sensitivity and the presence detection timer according to your risk assessment.

3-2.Setting the presence detection timer

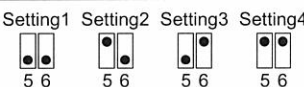
The 1st and 2nd rows have the presence detection function. To comply with DIN 18650, set the timer to "60sec." or more.



NOTE To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.

3-3.Setting the frequency

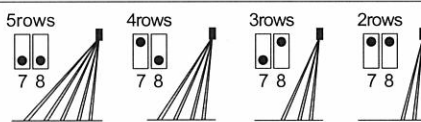
When using more than two sensors close to each other, set the different frequency for each sensor by dipswitches 5 and 6.



3-4.Setting the row adjustment

Set the depth rows with dipswitches 7 and 8.

NOTE When "2rows" are selected, the activation output is disabled.



3-5.Setting the immunity

Set dipswitch 9 to ON when the sensor operates by itself (Ghosting).

NOTE When dipswitch 9 is set to ON, the actual detection area may become smaller.

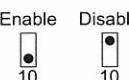


3-6.Setting the self monitoring

Set dipswitch 10 to "Disable" when the self monitoring is not required.

When set to "Disable", the sensor does not respond to the test input from the door operator.

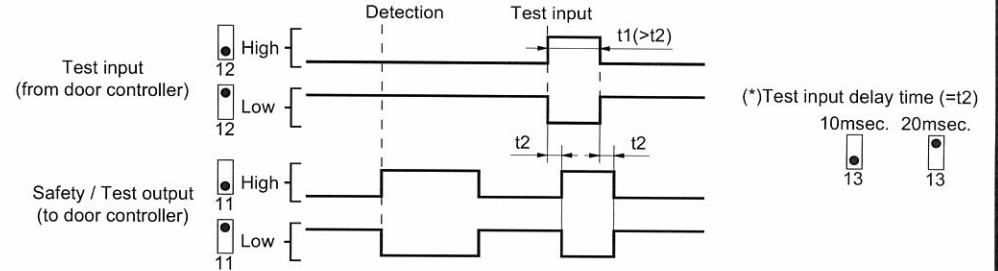
NOTE To comply with DIN 18650, set the self monitoring to "Enable".



3-7.Setting the test input, safety / test output and test input delay time

Set dipswitches 11 to 13 according to the door controller.

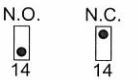
Test input and Safety / Test output timing chart



*: The test input delay time is the time period between the test input and safety / test output.

3-8.Setting the activation output

Set dipswitch 14 to "N.O." (Normally Open) or "N.C." (Normally Closed).

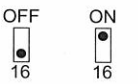


3-9.Installation mode

Set dipswitch 16 to ON when adjusting the 1st row close to the door.

When the setting is finished, set to OFF.

During the installation mode, only the 1st row remains, and the operation indicator glows Yellow.



NOTE If the function key is set back to the "Operation mode" while the installation mode is still ON, an error occurs.

CHECKING

Check the operation in the operation mode according to the chart below.

Entry	Power OFF	Outside of detection area	Entry into 3rd to 5th row	Entry into 2nd row	Entry into 1st row	Outside of detection area
Status	-	Stand-by	Motion detection active	Motion / Presence detection active		Stand-by
Operation indicator	None	Green	Orange	Red	Blinking Red	Green
Activation output	14 N.O.	—	—	—	—	—
	14 N.C.	—	—	—	—	—
Safety / Test output	11 High	OFF	ON	—	OFF	ON
	11 Low	OFF	OFF	—	ON	OFF

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. (Do not use any cleaner / solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- When the operation indicator blinks Green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE

- When turning the power ON, always walk-test the detection area to ensure the proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

TROUBLESHOOTING

Door operation	Operation indicator	Possible cause	Possible countermeasures	
Door does not open when a person enters the detection area.	None	Wrong power supply voltage	Set to the stated voltage.	
	Unstable	Wrong wiring or connection failure	Check the wires and connector.	
		Wrong detection area positioning	Check ADJUSTMENTS 1, 2 & 3.(*)	
		Sensitivity is too low.	Set the sensitivity higher.(*)	
Door opens when no one is in the detection area. (Ghosting)	Unstable	Short presence detection timer	Set the presence detection timer longer.(*)	
		Dirty detection window	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)	
		Objects that move or emit light in the detection area.	Remove the objects.	
		The detection area overlaps with that of another sensor.	Check ADJUSTMENTS 3-3.(*)	
		Waterdrops on the detection window	Use the rain-cover (Separately available). Or install in a place keeping the waterdrops off.	
		Detection area overlaps with door / header.	Adjust the detection area to "Deep" (Outside).	
	Proper	Sudden change in the detection area.	Sensitivity is too high.	Set the sensitivity lower.(*)
			Others	Set the immunity to ON.(*)
		Yellow	Sudden change in the detection area.	Check ADJUSTMENTS 3-1 & 3-2.(*) If the problem still persists, hard-reset the sensor. (Turn the power OFF and ON again.)
			Wrong wiring or connection failure	Check the wires and connector.
Blinking Blue	Self monitoring is set to "Disable".	Set dipswitch 10 to "Enable".(*)		
	Wrong setting of dipswitches.	Check ADJUSTMENTS 3-6, 7 & 8.(*)		
	Installation mode is set to ON.	Set installation mode to OFF.(*)		
	Wrong setting of function key	Set to the "Operation mode".		
Fast Green blinking	Sensitivity is too low.	Set the sensitivity higher.(*)		
	Dirty detection window	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)		
	Sensor failure	Contact your installer or service engineer.		
Slow Green blinking	Signal saturation (1st or 2nd row)	Remove highly reflecting objects from the detection area. Or lower the sensitivity.(*) Or change the area depth angle for 1st to 3rd rows.		
	The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside).		
Red & Green blinking	Wrong setting of dipswitch	1. Set the function key to the "Setting mode". 2. Change the dipswitch 16 setting (ON → OFF or OFF → ON → OFF). 3. Set the function key back to "Operation mode".		
Door remains closed.	Proper	Wrong wiring or connection failure	Check the wires and connector.	
Proper operation	Twice Green blinking	Life cycle notification	Contact your installer or service engineer.	
	Slow Green blinking	Signal saturation (3rd, 4th or 5th row)	Remove highly reflecting objects from the detection area. Or lower the sensitivity.(*) Or change the area depth angle.	

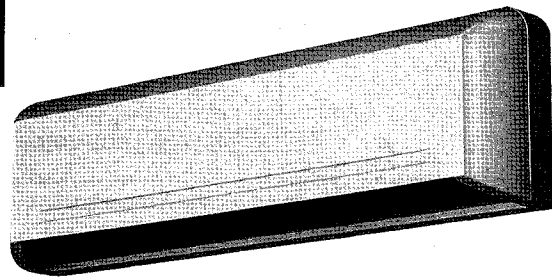
*: Before changing these settings, set the function key to the "Setting mode". When finished, set back to the "Operation mode".

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OPTEX
PROSAFE English
OA-203C



MANUFACTURER'S STATEMENT

5911184 AUG 2008

Read this Operation Manual carefully before use, to ensure proper operation of this Optex sensor. Failure to read this Operation Manual may cause improper sensor operation and may result in serious injury or death. This product is a non-contact activating switch intended for mounting on the header of an automatic door. Do not use it for any other applications; otherwise proper operation and safety cannot be guaranteed.

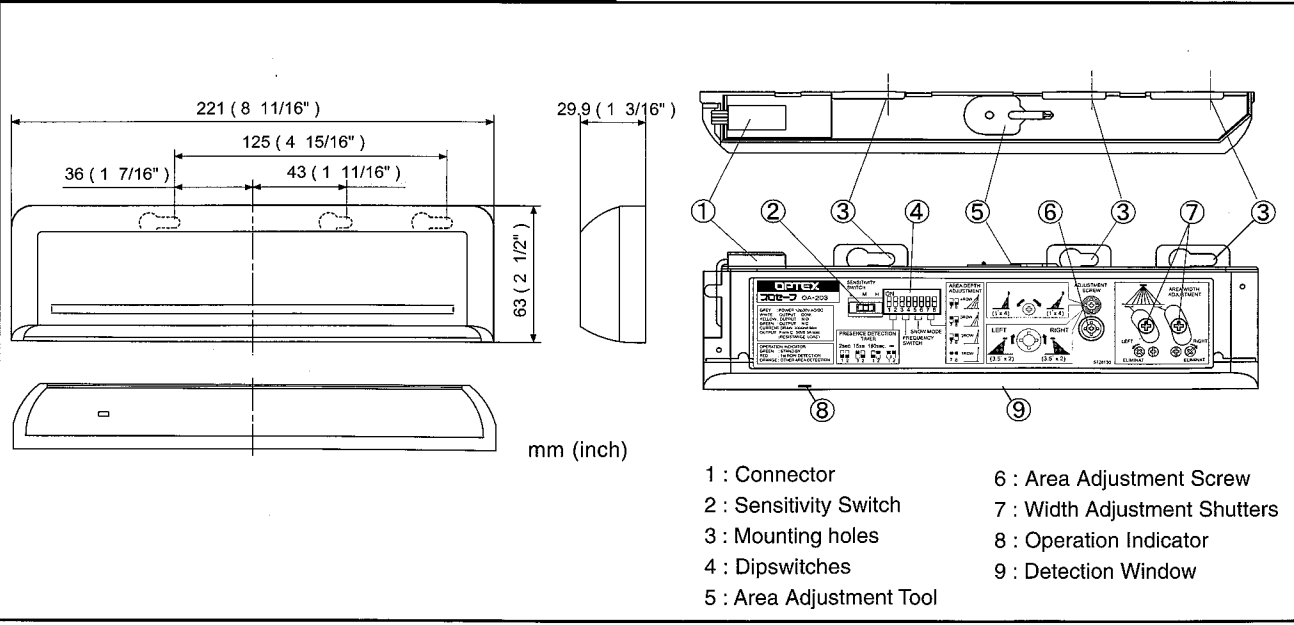
- Cautions:**
1. Follow the instructions (especially **Note**) in this Operation Manual when installing and adjusting the sensor.
 2. When setting the sensor's area pattern, make sure there is no traffic around the installation site.
 3. Before turning the power on, check the wiring to prevent damage or malfunction of equipment that is connected to the sensor.
 4. Do not wash, disassemble, rebuild or repair the sensor by yourself; otherwise it may cause electric shock or breakdown of the sensor.
 5. Only use the sensor as specified in the supplied instructions.
 6. Be sure to install the sensor in accordance with the local laws and standards of your country.
 7. Before leaving the jobsite, be sure that this sensor is operating properly and instruct the building owner/operator on proper operation of the door and this sensor.

SPECIFICATIONS

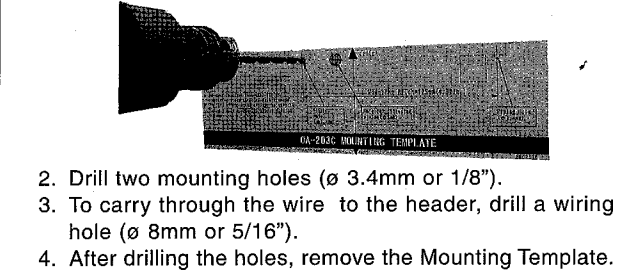
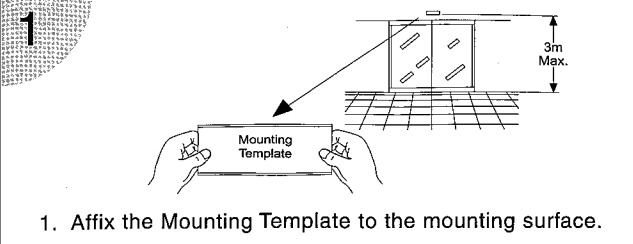
Model : OA-203C	Output : "Form C" relay 50V 0.3A Max. (Resistance Load)
Cover color type : Silver / Black / White	Relay Hold Time : 0.5 sec.
Mounting Height : 3.0m (9'10") Max.	Response Time : < 0.3 sec.
Detection Area : See "Detection Area"	Operating Temperature : -20°C to +55°C (-4°F to +131°F)
Detection Method : Active Infrared Reflection Method	Weight : 200g (7.1oz)
Detection Angle : ±4° adjustable by 1° every one click	Accessories : 1 Cable 3m (9'10")
Adjustments (Deep / Shallow)	2 Mounting Screws
Detection Width : ±7° adjustable by 3.5° every one click	1 Operation Manual
Adjustments (Right / Left)	1 Mounting Template
Power Supply : 12 to 30V AC / DC	1 Area Adjustment Tool
Current Draw : 160mA Max. (at 12V AC)	
Operation Indicator: Green / Stand-by	
Red / 1st Row Detection Active	
Orange / Other Row Detection Active	

*The specifications herein are subject to change without prior notice due to improvements.

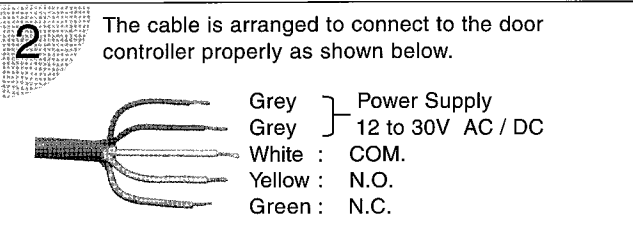
OUTER DIMENSIONS



INSTALLATION

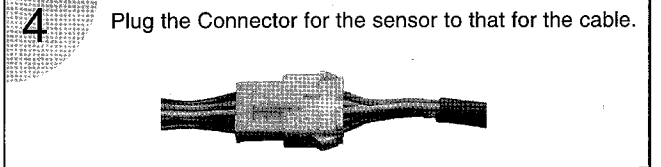
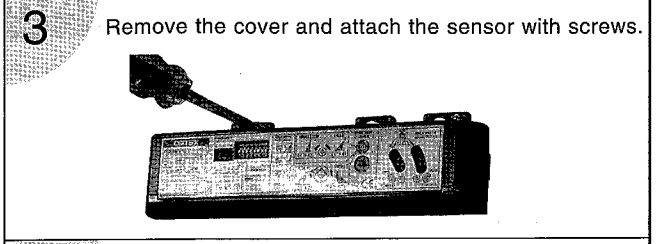


Note
 Be sure that the mounting height is within the value of those in "SPECIFICATION."



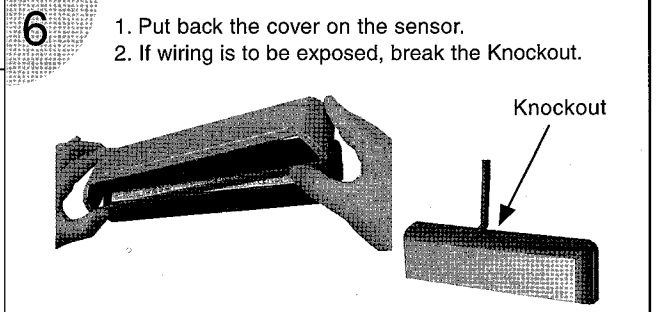
Note
 Connect the cable when main power is turned off.

Note
 When passing through the cable to the hole, make sure not to tear shield: otherwise it may cause electric shock or breakdown of sensor.



5 Supply power to the sensor. Adjust the detection area and set the various Switches. (See "ADJUSTMENT.")

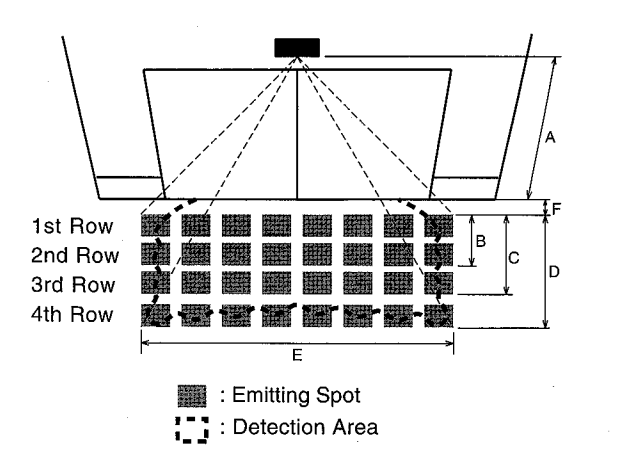
Note
 Make sure that you connect the cable correctly to the Control Unit of the door before turning the power on.



Note
 Do not use the sensor without the cover. Install the sensor indoors or use the rain-cover (Optional), when using the Cable Knockout, otherwise it may cause electric shock or breakdown of sensor.

DETECTION AREA

Detection Areas are shown in the figure below.



After adjustment, turn the power off and on again, be sure to walk-test all of detection areas.

*The values of the chart blow is of the Emitting Spots, but not of the Detection Area. The actual Detection Area may become smaller depending on the ambience light and the colour / material of object and the floor as well as the entry speed of object.

	[m]				
A	2.00	2.20	2.50	2.70	3.00
B	0.28	0.31	0.35	0.38	0.41
C	0.68	0.75	0.85	0.92	1.02
D	1.18	1.30	1.48	1.59	1.77
E	2.10	2.30	2.60	2.80	3.10
F	0.16	0.18	0.20	0.22	0.25

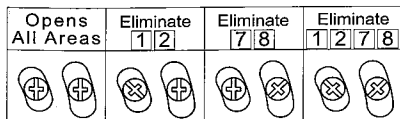
	[feet , inch]				
A	6' 6 3/4"	7' 2 5/8"	8' 2 7/16"	8' 10 5/16"	9' 10 1/8"
B	11"	1' 3 1/16"	1' 1 3/4"	1' 2 15/16"	1' 4 9/16"
C	2' 2 3/4"	2' 5 1/2"	2' 9 9/16"	3' 1/4"	3' 4 3/16"
D	3' 10 7/16"	4' 3 3/16"	4' 10 1/4"	5' 2 5/8"	5' 9 11/16"
E	6' 10 11/16"	7' 6 9/16"	8' 6 3/8"	9' 2 1/4"	10' 2 1/16"
F	6 5/16"	7 1/16"	7 7/8"	8 11/16"	9 13/16"

Provided Detection Row type	1st	2nd	3rd	4th
Presence Detection	○	○	×	×
Motion Detection	○	○	○	○

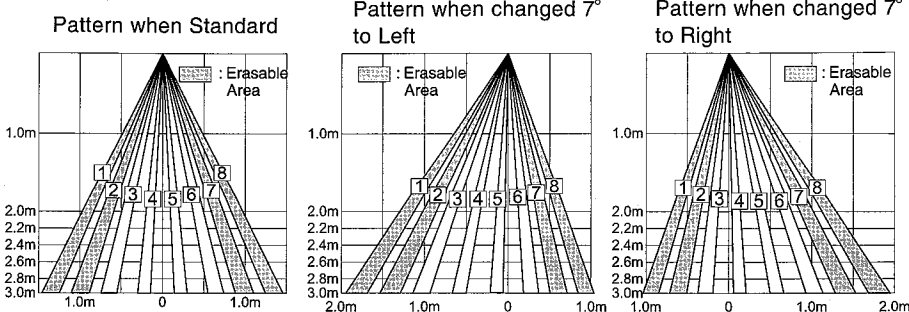
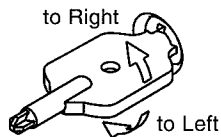
ADJUSTMENT

1 Adjusting the Pattern Width

Setting the Width adjustment shutters



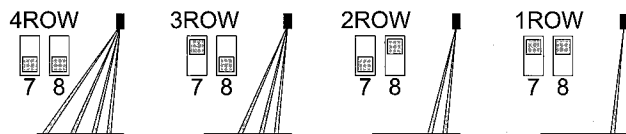
Adjusting the Width Angle Left or Right : between 0° to 7° (3.5° per click)



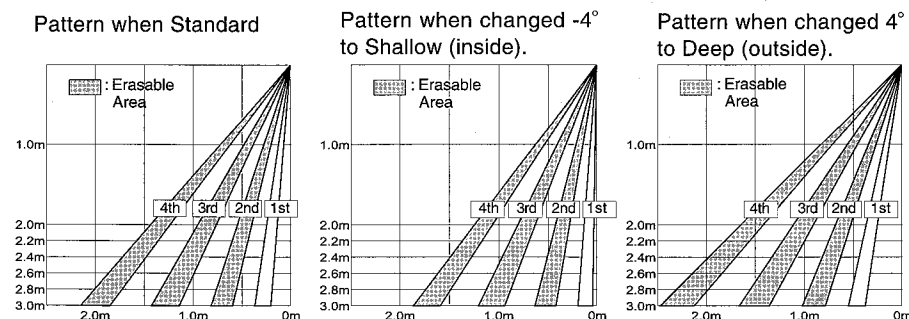
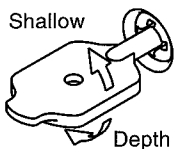
Note Setting the pattern for exact door opening may give a slow response to side approaching traffic.

2 Adjusting the Pattern Depth

Setting the Row with the Dipswitch 7 & 8.

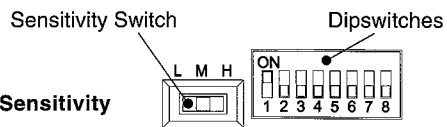


Adjusting the Depth Angle between -4° to 4° (1° per click).



Note Set the pattern for actual traffic. It may cause slow activation for the traffic from the front, when the Row is eliminated.

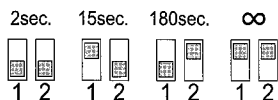
3 Setting of Sensitivity Switch and Dipswitches



Setting the Sensitivity

Normally set to "M."
"H" increases the sensitivity and "L" lowers the sensitivity.

Setting the Presence timer

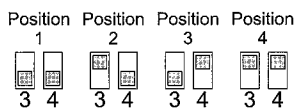


1st Row and 2nd Row from door provide the presence detection.

- (1) Select the presence detection time.
- (2) Turn the power off and on again. Otherwise it may leave door open for the duration of the presence time set.
- (3) After making sure that the door closes, wait for 10 seconds before entering the detection area to set the Presence timer.

Setting the Frequency Function (Interference Prevention)

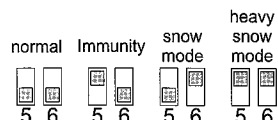
Four different frequencies can be set by adjusting the Dipswitch 3 and 4.



Note When two or more sensors are installed close to each other, it is possible that they interfere. When that happens, change the Frequency.

Setting the Snow mode

Set the Dipswitch 5 and 6 to snow mode, if the sensor is used in a region with snow or a lot of insects.



CHECKING

Check the operation according to the chart below.

Entry motion (image)	Power OFF	Outside the Detection area	Entry into 3rd or 4th Row	Entry into 2nd Row	Entry into 1st Row	Outside the Detection area
Sensor status	Power OFF	Stand-by	Motion Detection Active	Motion or Presence Detection Active		Stand-by
Operation indicator	OFF	Green	Orange		Red	Green
Output	Yellow Green White	Yellow Green White	Yellow Green White		Yellow Green White	Yellow Green White

Note The door may open once after the power is switched on.

Inform the following items to the building owner/operator

1. When turning the power on, always walk-test the sensor pattern to ensure proper operation.
2. Always keep the detection window clean. If dirty, wipe the window with a damp cloth. (Do not use any cleaner or solvent.)
3. Do not wash the sensor with water.
4. Do not disassemble, rebuild or repair the sensor yourself; otherwise electric shock may occur.
5. Contact your installer or the sales engineer if you want to change the settings.
6. Do not place an object that moves or emits light in the detection area. (Ex. Plant, illumination, etc.)
7. Do not paint the Detection Window.

TROUBLESHOOTING

Trouble	Possible Cause	Solution
Does not operate	Power supply is not adequate. Connection Failure.	Adjust to stated voltage. Check the wiring and the connector.
Dose not operate consistently	Dirty detection window. Sensitivity is Low.	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.) Set the Sensitivity Switch "H."
Operates by itself (Ghosting)	There is an object that moves or emits light in the detection area. (Ex. plant, illumination, etc.)	Remove the object.
	Vibration of the header.	Secure the header. Or set the Sensitivity Switch "L."
	Sensitivity is high.	Set the Sensitivity Switch "L."
	Waterdrops on detection window.	Install in a place keeping the waterdrops off. OR use a rain-cover (Optional).
	Detection area has interfered the area of another sensor.	Set the different frequency position each other.
	The detection 1st row spots are overlapping with the door / header.	Adjust the detection area to deep (outside).
Door stay open or closed	There is an reflected object in the detection area. Solar light reflects.	Remove the object.
	There was a puddle left by rain or snow. The floor has gotten wet.	This sensor is equipped with the anti-malfunction. However, pay attention when installing as malfunction may occur under the left conditions.
	The exhaust of the car and the fog penetrate into the detection area.	
Door stay open or closed	Presence timer is Infinity. There was an abrupt condition change in the detection area.	Turn the power off and on again.

Contact your installer or the sales engineer if:

- you need to change the settings or replace the sensor.
- the trouble still persists after checking and remedying as described above.

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Air-Slide

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of the sensor. Failure to read this operation manual may cause improper sensor operation and may result in serious injury or death of person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this operation manual.

	WARNING	Disregard of warning may cause the improper operation causing death or serious injury of person.
	CAUTION	Disregard of caution may cause the improper operation causing injury of person or damage to objects.
	NOTE	Special attention is required to the section of this symbol.

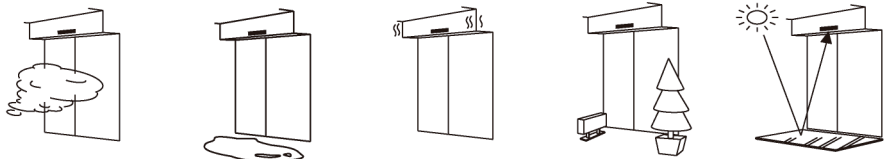
NOTE

- This sensor is a non-contact switch intended for header mount of an automatic door. Do not use for any other applications. This sensor cannot be used for industrial doors or shutters, when used, proper operation and safety cannot be guaranteed.
- When setting the sensor's detection area, make sure there is no traffic around the installation site.
- Before turning the power on, check the wiring to prevent damage or malfunction of equipments that are connected to the sensor.
- Only use the sensor as specified in the operation manual provided.
- Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
- Before leaving the job site make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
- The sensor setting can only be changed by an installer or service engineer. When changed, register the changed setting and dates in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of equipments.
Danger of electric shock.		

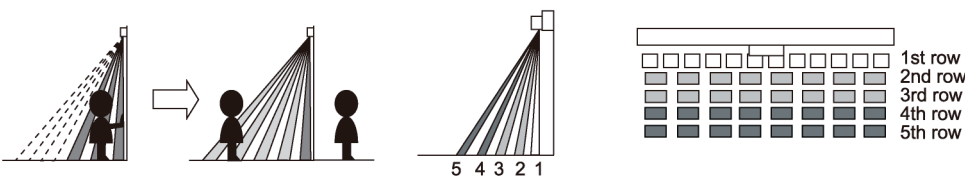
NOTE

- The following conditions are not suitable for the sensor installation.
- Fog or exhaust emission around the door.
 - Wet floor
 - Vibrating header or mounting surface.
 - Moving objects or a heating radiator in the detection area.
 - Highly reflecting floor or the presence of highly reflecting objects around the door.



WORKING PRINCIPLE

This sensor is designed to detect a hand approaching to a touchless plate as a knowingact activation device. Please make sure to understand the following working principle. This sensor sends primary activation output when "1st and 2nd row" or "1st and 3rd row" detects an object. After the detection until the door fully closes, 2nd to 5th rows work as a presence / secondary activation output.

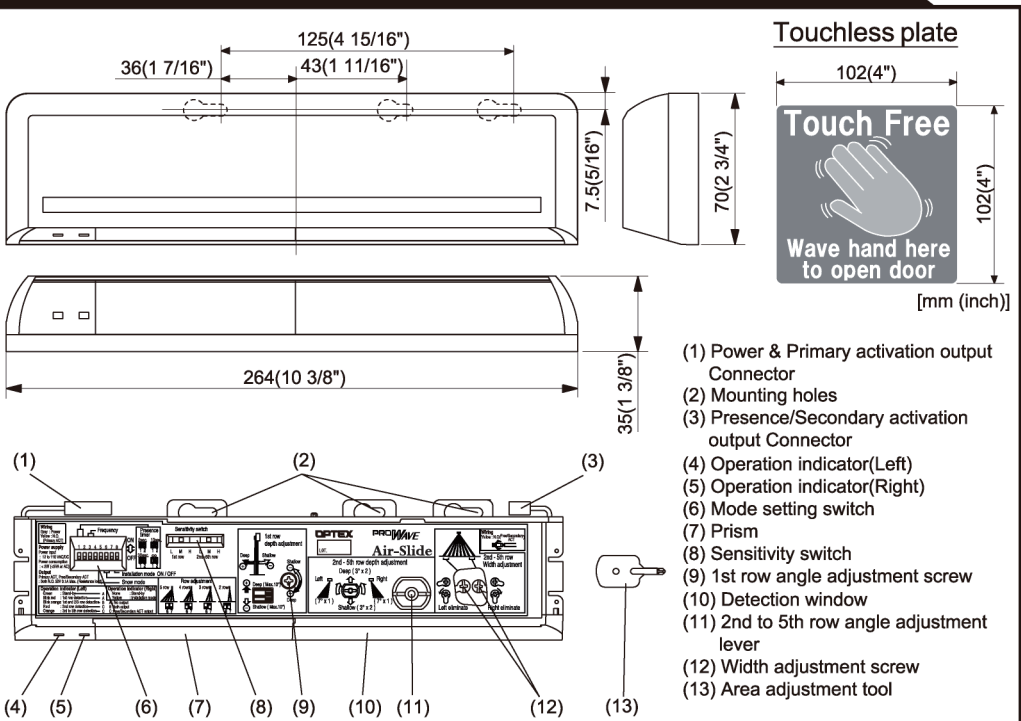


SPECIFICATIONS

Model	: Air-Slide	Operation indicator(right)	: None / Stand-by
Cover color	: Black	Output	: Yellow / 1st row adjustment mode
Mounting height	: 2.0 (6'7") to 3.0m (9'10")		: Form A relay
Detection area	: See ADJUSTMENTS		: 50V 0.1A Max. (Resistance load)
Detection method	: Active Infrared Reflection	Output hold time	: Approx. 0.5 sec.
Depth angle adjustment:	1st row / -10° to +10°	Response time	: <0.3 sec.
	2nd to 5th rows / +1° to +13°	Operating temperature	: -20 to +55°C (-4 to 131°F)
Width angle adjustment:	1st row / selected prism	IP rate	: IP44
	2nd to 5th rows / ±7°	Weight	: 320g (11.2oz)
Power supply	: 12 to 24V AC (±10%)	Accessories	: 1 Power & Primary activation output cable 2.5m (8'2")
	12 to 30V DC (±10%)		: 1 Presence / Secondary activation output cable 2.5m (8'2")
Power consumption	: <1.5W (<3VA at AC)		: 1 Operation manual
Operation indicator(left)	: Green / Stand-by		: 2 Mounting screws
	Blinking Red / 1st row detection		: 1 Mounting template
	Blinking Orange / "1st and 2nd row" or "1st and 3rd row" detection		: 1 Area adjustment tool
	Red / 2nd row detection		: 1 Middle prism
	Orange / 3rd to 5th rows detection		: 1 Right prism
			: 1 Left prism
			: 1 Touchless plate

NOTE The specifications herein are subject to change without prior notice due to improvements.

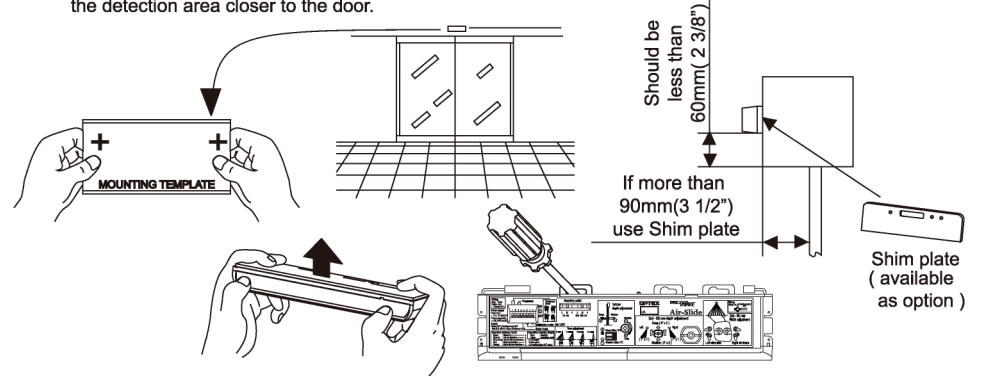
OUTER DIMENSIONS AND PART NAMES



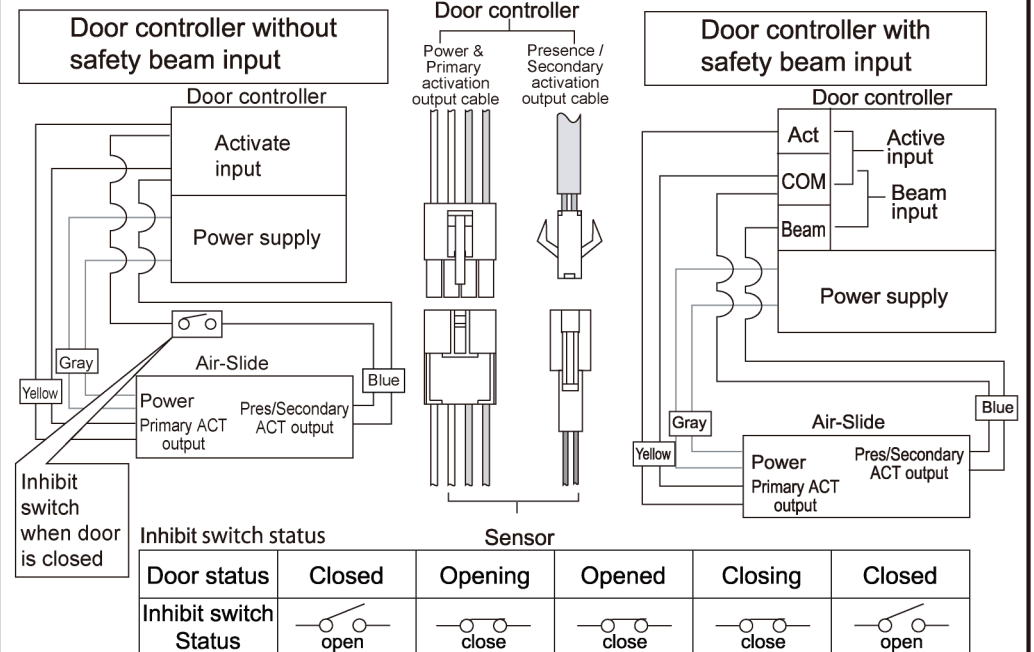
INSTALLATION

- Affix the mounting template at the desired mounting position.*
- Drill two mounting holes of $\phi 3.4\text{mm}$ ($\phi 1/8"$).
- To pass the cable through to the header, drill a wiring hole of $\phi 8\text{mm}$ ($\phi 5/16"$).
- Remove the mounting template.
- Remove the housing cover. Attach the sensor to the mounting surface with two mounting screws.

NOTE Make sure to install the sensor within 60mm (2 1/2") from the bottom of header. Use shim plate (available as option) when the reveal is deeper than 90mm (3 1/2") to make the detection area closer to the door.



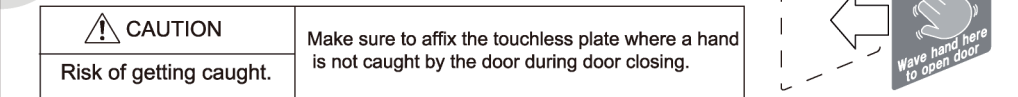
- Wire the Power & Primary activation output cable and Presence / Secondary activation output cable to the door controller properly as shown in the drawing below. The Presence / Secondary activation output requires an input at the door control that is inhibited (ignored) when the door controller has a safety beam input. If not then install a position / inhibit switch in series with the blue wire output (see drawing below).



WARNING Before starting the procedure, ensure that the power is turned OFF. When passing through the cable to the hole, make sure not to tear the shield, otherwise it may cause electric shock or breakdown of the sensor.

NOTE Make sure to connect the cable correctly to the door controller before turning the power ON. To enable the presence detection, do not enter the detection area for 10 seconds after supplying the power.

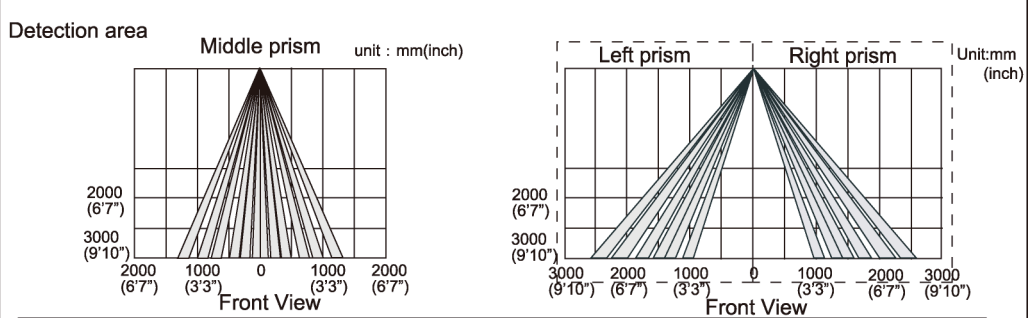
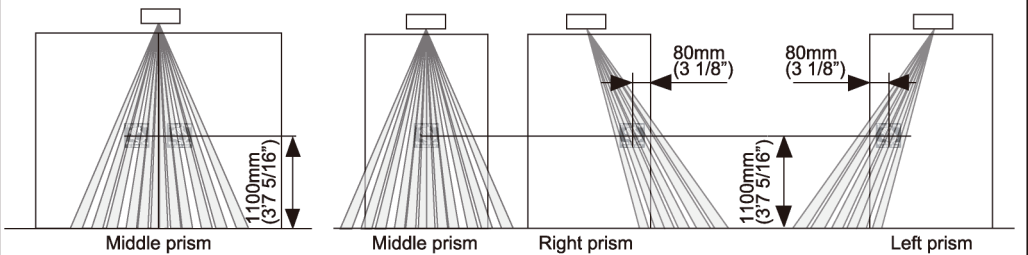
- Affix the touchless plate on the appropriate position after adjusting the detection area.



ADJUSTMENT

1. 1st row area adjustment

- Prism selection**
Make sure to select the prism depending on the door type and the intended touchless plate position; otherwise the sensor does not send an output when a hand approaches.



Prism change
Select the prism depending on the door type and the touchless plate position. Factory setting : Middle prism

How to distinguish the prism
Check the engraved mark on the back of prism

2. Angle adjustment

- Adjust the 1st row angle to detect a hand at touchless plate intended position.
- To set the 1st row, follow the procedures below.
- Switch dipswitch 8 to "ON". Only the first row of detection area becomes active. (Door open state, Operation indicator (right) glows yellow.)
 - Turn the 1st row angle adjustment screw to "-(minus)" or "+(plus)" to detect a waving hand. The sensor status can be checked by operation indicator(left).*
 - Set dioswitch 8 to "OFF".
- *1st row detection : blinking red.
The sensor might detect a hand where touch plate is not affixed.
-

ADJUSTMENTS

2 Area adjustment (2nd to 5th row)

The 2nd to 5th rows work as a 2nd activation area to detect people who enter after the door opening by hand. The 2nd activation area becomes effective at the same time as the door opening.

	unit[mm]				
Mounting height	2000 (6'7")	2200 (7'3")	2500 (8'2")	2700 (8'10")	3000 (9'10")
A	200 (8")	220 (9")	250 (10")	270 (11")	300 (12")
B	420 (15")	460 (16")	520 (19")	560 (21")	630 (24")
C	780 (27")	860 (28")	970 (32")	1050 (35")	1180 (39")
D	1210 (39")	1330 (44")	1510 (49")	1630 (54")	1820 (59")
E	2230 (74")	2450 (78")	2780 (91")	3000 (99")	3350 (110")
F	1600 (53")	1760 (59")	2000 (67")	2160 (71")	2400 (79")
G	1010 (34")	1110 (38")	1260 (42")	1360 (46")	1520 (50")

The detection chart is when the pattern is changed to the shallowest.

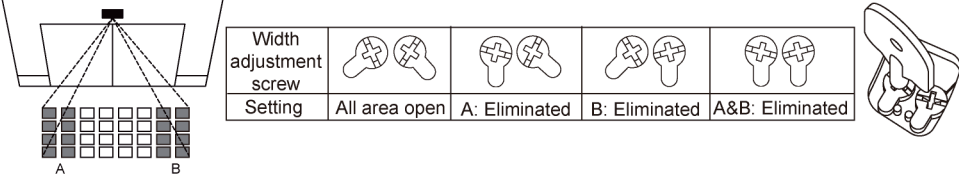
NOTE

The actual detection area may become smaller depending on the ambient light, the color / material of the object and the floor as well as the entry speed of the object.

1 Adjusting the pattern width

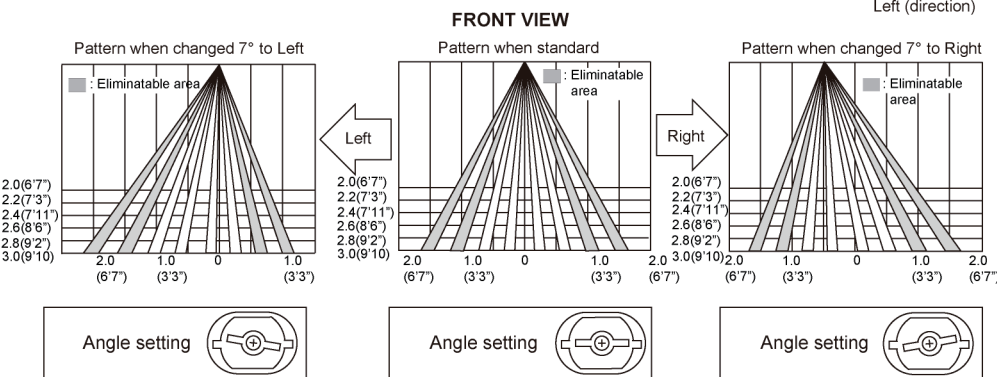
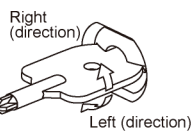
1-1 Row adjustment

The right & left detection area can be eliminated by width adjustment screw.



1-2 Angle adjustment

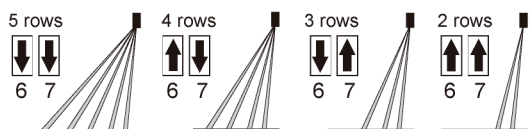
The width of the activation detection area (rows 3, 4 and 5) can both be moved at the same time 7° either left or right in 1 step.



2 Depth adjustment

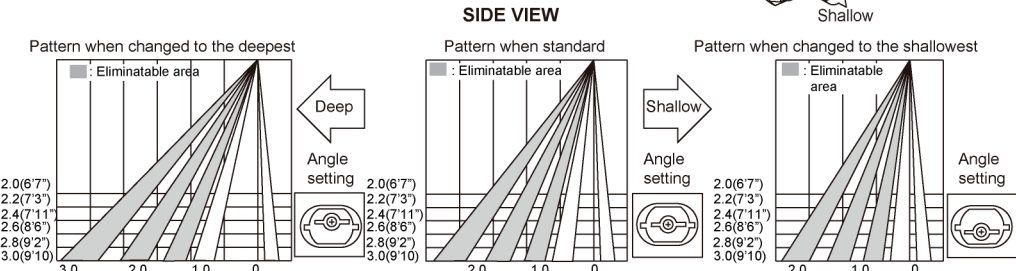
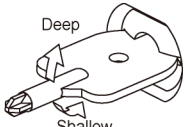
2-1 Row adjustment

The 5th, 4th, and 3rd rows can be eliminated by combining dipswitches 6 and 7.



2-2 Angle adjustment

The area depth can be changed in 3 °*2 steps by moving the activation angle adjustment lever up and down.



NOTE Always check the area according to the expected entry speed and determine the appropriate number of rows. Make sure not to create a gap between the 1st row and the 2nd row.

3

Mode setting switch

1	2	3	4	5	6	7	8
1, 2	3, 4	5	6, 7	8			
: Presence detection timer		: Frequency		: Snow mode	: Row adjustment		: 1st row adjustment mode

Sensitivity switch

1st row	2nd to 5th row
L M H	L M H

Sensitivity switch

1st row	2nd to 5th row		
L M H	L M H		
30 sec.	60 sec.	180 sec.	∞
1 2	1 2	1 2	1 2

Setting 1 Setting 2 Setting 3 Setting 4

3	4	3	4	3	4	3	4
---	---	---	---	---	---	---	---

OFF ON

5	5
---	---

1 Setting the sensitivity

Normally set to "Middle". "Low" decreases the sensitivity and "H" increases the sensitivity.

2 Setting the presence detection timer

The 2nd and 3rd rows have the presence detection function. The presence detection timer can be selected from 4 settings.

NOTE To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.

3 Setting the frequency

When using more than two sensors close to each other, set the different frequency for each sensor by combining dipswitch 3 and 4.

1st row and 2nd to 5th row setting can be adjusted individually.

4 Setting the snow mode

Set this switch to ON, if the sensor is used in a region with snow.

5 Setting the Row adjustment

See ADJUSTMENT 2 2-1. Row adjustment

6 Setting the 1st row adjustment mode

See ADJUSTMENT 1 2. Angle adjustment

CHECKING

Check the operation according to the chart below.

Entry	Power off	Outside of detection area	Entry to 3rd to 5th row	Entry to 2nd row	Entry to *1st and 2nd row* or *1st and 3rd row*	Entry to 1st row	Outside of detection area
Image							
Operation indicator(left)	None	Green	Orange	Red	Blinking Orange	Blinking Red	Green
Primary activation output	OFF	OFF	OFF	ON	OFF	OFF	OFF
Pres/Secondary ACT output	ON	OFF	ON	OFF	OFF	OFF	OFF

NOTE No output is made when sensor detects an object in the 1st row.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window lightly with a damp cloth. (Do not use any cleaner or solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE

- When turning the power on, always walk-test the detection area to ensure proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

Alarm display

Refer to the TROUBLESHOOTING below when the following status shows.

Status	Replacement notification	Life cycle notification	Saturation signal
Operation indicator (left)	Flashing green blinking	Twice green blinking	Slow green blinking

TROUBLESHOOTING

Problem	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area and wave a hand.	None	Power supply voltage. Wrong wiring or connection failure.	Set to the stated voltage. Check the wires and connector. Check INSTALLATION 2 .
	Unstable	Wrong detection area positioning. Sensitivity is too low. Short presence detection timer. Dirty detection window.	Check ADJUSTMENT . Set the sensitivity higher. Check ADJUSTMENT 3 1 . Set the presence detection timer longer. Check ADJUSTMENT 3 2 . Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)
	Blinking Orange	Miss-wiring for Power & Primary activation output.	Make sure the inhibit switch is open when door is on closed position. Check INSTALLATION 2 .
Door does not open when people wave the hand.	Red/Orange	Miss-adjustment for 1st Row.	Make sure the choice of prism for 1st Row is correct. Check ADJUSTMENT 1 . Increase the sensitivity of 1st Row. Check ADJUSTMENT 3 1 . Adjust the depth of 1st Row. Check ADJUSTMENT 1 .
Door closes when people are in the 2nd to 5th row after the primary activation.	Red/Orange	Miss-wiring for Pres/Secondary ACT output.	Make sure Pres/Secondary ACT output is connected to the proper input. Check INSTALLATION 2 .
Door opens when people are in the 2nd to 5th row despite people did not activate the door by hand.	Red/Orange	Miss-adjustment for inhibit switch when door controller is without safety beam input. Miss-wiring for Pres/Secondary ACT output.	Make sure the inhibit switch is open when door is on closed position. Check INSTALLATION 2 . Make sure Pres/Secondary ACT output is connected to the proper input. Check INSTALLATION 2 .
	Red	The 2nd row overlaps with the door.	Adjust the 2nd row to "Deep" (Outside). Check ADJUSTMENT 2 2-2 .
Door opens when no one is in the detection area. (Ghosting)	Unstable	Vibration of the header.	Set the sensitivity lower. Check ADJUSTMENT 3 1 .
		Water drops on the detection window.	Use the rain-cover (available as option). Or install in a place keeping the waterdrops off.
		The detection area overlaps with that of another sensor.	Select the different setting of frequency switch. Check ADJUSTMENT 3 3 .
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside). Check ADJUSTMENT 1 and 2 2-2 .
		Reflecting objects in the detection area. Or reflecting light on the floor.	Remove the objects.
		Sensitivity is too high.	Set the sensitivity lower. Check ADJUSTMENT 3 1 .
It snows and pours.	Yellow	Sensitivity is too high.	Set the snow mode to ON. Check ADJUSTMENT 3 4 .
		Objects that move or emit light in the detection area. (Ex. Plant, illumination, etc.)	Remove the objects.
		Wet floor. The exhaust emission or fog penetrate into the detection area.	Check the installation condition.
Door remains open	Yellow	The 1st row adjustment mode is on.	Turn off dipswitch 8 switch. Check ADJUSTMENT 1 2 .
	Proper	Wrong wiring or connection failure. Presence timer is Infinite and sudden change in the detection area happened.	Check the wires and connector. Check INSTALLATION 2 . Check ADJUSTMENTS 3 2 . If the problem still persists, hard-reset the sensor. (Turn the power OFF and ON again.)
Door remains closed	Proper	Wrong wiring or connection failure.	Check the wires and connector. Check INSTALLATION 2 .
Indication	Fast Green blinking	The sensor failure.	Contact OPTEX tech support or the sales rep.
	Twice Green blinking	The relay is reaching the end of its life cycle.	Contact OPTEX tech support or the sales rep.
	Slow Green blinking	Signal saturation	Remove highly reflecting objects from the detection area. Change the area angle.
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside). Check INSTALLATION 1 , ADJUSTMENT 1 .

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5910364 Nov. 2010

MANUFACTURER'S STATEMENT

For ease of installation and proper operation read thru this manual (especially **WARNING**, **CAUTION**, **NOTE**) prior to installing and adjusting the sensor system. Failure to read and follow the instructions in this manual may cause improper sensor operation resulting in serious injury or death. This product is a non-contact activating switch intended for mounting on the header of an automatic door. Do not use it for any other applications; otherwise proper operation and safety cannot be guaranteed.

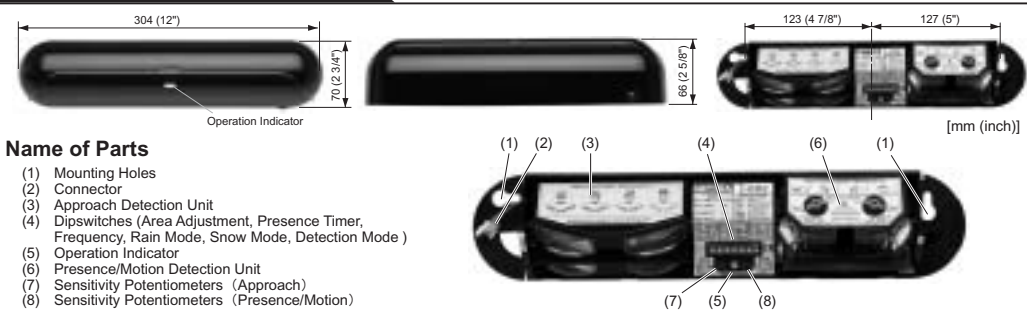
WARNING	Disregard of warning may cause the improper use causing death or serious injury of person.
CAUTION	Disregard of warning may cause the improper use causing injury of person or damage to object.
NOTE	Special attention for the setting and adjustment of section of this symbol is required.

- Set door speeds and verify proper operation of door manufacturer's equipment prior to applying power to the sensor system.
- Do not install the sensor where it might be directly sprayed with rainwater.
- Verify proper wiring prior to applying power to the sensor system to prevent damage to equipment.
- When setting the sensor's area pattern, make sure there is no traffic around the installation site.
- Do not attempt to rebuild or repair sensor heads or control unit. Contact an address in this manual for replacement products.
- Only use the sensor as specified in the supplied instructions.
- Walk test the installation to verify operation is in compliance with all local laws, codes and standards of your country.
- Upon completion of installation and adjustments, instruct the owner/operator on proper operation of the door and sensor system. Identify any switches/breakers that will place the door out of service when unsafe or improper operation is identified.

SPECIFICATIONS

Model	i-one	Current Draw	180mA Max. (AC12V)
Mounting Height	2.1m (6'11") to 3.0m (9'10")	Output Contact	"Form C" relay 50V 0.3A Max. (Resistance Load)
Detection Area	See the chart in "ADJUSTMENT".	Relay Hold Time	0.5 to 2 sec.
Detection Method	Active Infrared Reflection (Presence DetectionType)	Response Time	<0.3 sec.
Detection Angle	Approach Area ±15° (Inside & Outside)	Operating Temperature	-26°C to +55°C (-15°F to +131°F)
Adjustments	Presence/Motion Area -8° to +5° (Inside & Outside)	Weight	400g (14oz.)
Operation Indicator	Green : Stand-by Blinking Red : 1 st Row Detection Active Red : 2 nd Row Detection Active Orange : Motion Detection Active Blinking Orange : Approach Detection Active	Accessories	1 Cable 3m(9'10") 2 Mounting Screws 3 Adjusting Hole Cap 1 Operation Manual 1 Mounting Template
Power Input	12 to 24V AC 12 to 30V DC	The specifications herein are subject to change without prior notice due to improvements.	

EXTERNAL DIMENSIONS



INSTALLATION

- Be sure to install the sensor where it will not be directly sprayed with rainwater.
 - Affix the Mounting Template to the mounting surface.
 - Drill two mounting holes (ø 1/8" or 3.2mm).
 - To carry through the cable to the header, drill (A) (ø 1/4" or 6mm).
 - After drilling the holes, remove the Mounting Template.

- Remove the cover and pass the cable through (B), then put the cable into (A).

WIRING

Grey	Power Supply
Grey	12 to 24V AC
White	12 to 30V DC
White	COM.
Yellow	N.O.
Green	N.C.

NOTE
When you face difficulty in threading the cable through (B), break off the cable knockout (as shown in the picture).

- Attach the sensor with screws.
- Plug the connector for the sensor to that for the cable.
- Apply power to the sensor. Then, adjust each detection area (See ADJUSTMENT). **CAUTION**
Make sure you connect the cable correctly to the Door Controller before turning the power on.
- Slide the cover from right to left onto the sensor.
- Press the cover firmly to the sensor to attach.
- Lock the cover with the Adjustment Hole Cap, after installation and adjustment completely.

ADJUSTMENT

Be sure to walk-test all of the detection areas. When the Approach Angle and the Presence/Motion Angle are set to 0°, each detection area will be placed as shown on the right.

Detection Areas

	[mm (feet)]		
A	2200 (7'3")	2500 (82")	3000 (9'10")
B	100 (4")	110 (4 1/2")	140 (5 3/8")
C	250 (10")	280 (11")	340 (11")
D	600 (2')	680 (2'3")	820 (2'8")
E	1000 (3'3")	1130 (3'9")	1360 (4'6")
F	1450 (4'9")	1650 (5'5")	1980 (6'6")
G	1500 (4'11")	1710 (5'7")	2050 (6'9")
H	2600 (8'6")	2960 (9'9")	3550 (11'8")
I	4500 (14'9")	5110 (16'9")	6140 (20'2")
J	4900 (16'1")	5570 (18'3")	6680 (21'11")

Approach Detection Area
*Mounting Height = 2.2m (7'3")

	-15°	0°	+15°
G	790 (2'7")	1500 (4'11")	2420 (7'11")
H	1520 (5')	2600 (8'6")	4270 (14')
I	3870 (12'8")	4500 (14'9")	5180 (17')
K	2920 (9'7")	3400 (11'2")	3910 (12'10")
L	1900 (6'3")	2200 (7'3")	2530 (8'4")

- Adjusting the Approach Detection Area
 - Adjusting the Area Depth

Adjust the depth of the Approach Detection Area according to the traffic flow of the installed door
 - Approach Detection Area Width Adjustment

The width of the Approach Detection Area can be adjusted by changing the Dipswitches as shown on the right.

- Adjusting the Presence/Motion Detection Area

Measure (B) is the distance from the Sensor mounting surface to the edge of the Infra-red spot. Distance to edge of Infra-red spot and actual point of detection may vary.

*Mounting Height = 2.2m (7'3")

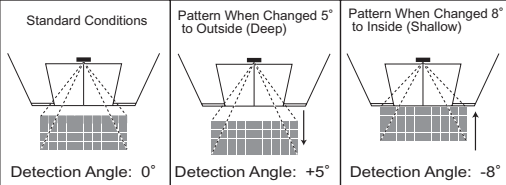
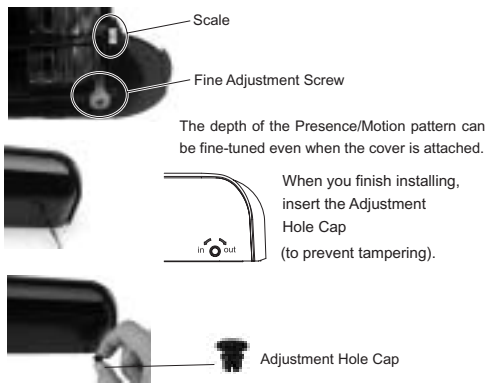
	-8°	0°	+5°
B	-200 (-8")	100 (4")	300 (12")
F	1380 (4'6")	1450 (4'9")	1500 (4'11")

2-1 Adjusting the Pattern Depth

Adjust the depth of the Presence/Motion Detection Area by turning the Fine Adjustment Screw with a screwdriver.

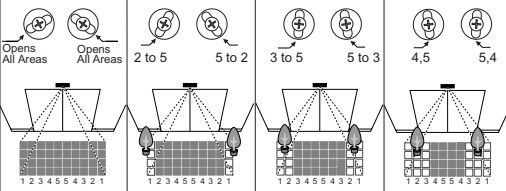
The detection area of Presence/Motion Detection Unit can be shifted closer to the door.

CAUTION
Make sure the detection area **do not** overlap with the door, otherwise ghosting may occur.



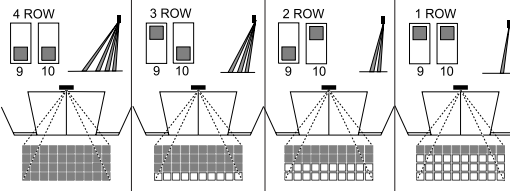
2-2 Adjusting the Pattern Width

Each side can be adjusted independently, allowing for asymmetrical settings. Refer to the sticker between Width Adjustment Shutters.



2-3 Adjusting the Rows

Rows can be eliminated to adjust pattern depth.



NOTE FOR BETTER PRESENCE DETECTION AREA

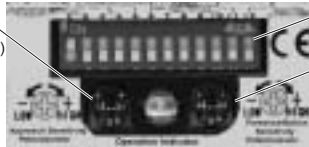
- After installing the sensor, put the cover on the sensor and turn the "Fine Adjustment Screw" Counterclockwise a minimum of 4 full turns(-8degrees). This will adjust the detection area to the maximum negative angle.
- In the case where this adjustment causes the door to cycle (Ghosting), turn the "Fine Adjustment Screw" Clockwise 1/4 turn and move out of the detection area to test. Continue this process of 1/4 turn and test until cycling stops.

CAUTION

During this process, set the presence timer to 2 second re-learn time. Once detection area is properly adjusted, reset the presence timer to allow for ANSI approved presence time.

3 Dipswitch Settings

Approach Sensitivity Potentiometer (Factory setting : Midpoint)



Dipswitches

Presence/Motion Sensitivity Potentiometer (Factory setting : Midpoint)

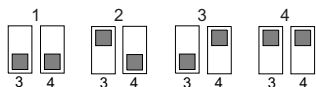
- 1,2: Presence Timer
- 3,4: Frequency
- 5: Rain Mode
- 6: Snow Mode
- 7,8: Approach Detection Area Adjustment
- 9,10: Presence/Motion Detection Area Adjustment
- 11: Detection Mode
- 12: Not Used (Future Development)

3-1 Setting the Sensitivity

Both the Approach Sensitivity Potentiometer and the Presence/Motion Sensitivity Potentiometer are factory-set at the midpoint. Turning them clockwise increases the sensitivity and turning counterclockwise lowers the sensitivity.

3-3 Setting the Frequency Function (Interference Prevention)

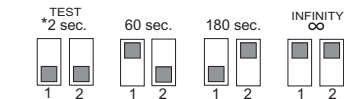
Four different frequencies can be set by adjusting Dipswitches 3 and 4. When two or more sensors are mounted close to each other, they may interfere. When that happens, change Frequency.



3-2 Setting the Presence Timer

The sensor automatically adapts to environmental changes in the pattern, if no movement is detected for the duration of the selected timer cycle. First two rows from the door provide the presence detection.

- (1) Select the presence detection time.
- (2) Turn the power on.
- (3) Do not enter the detection area for 10 seconds.



CAUTION

Use "2 sec." only for testing. Normal Presence Timer is 60 sec. or longer.

3-4

Setting the Rain Mode

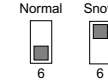
Set this switch to Rain if the sensor is used in a region with a lot of rain.



3-5

Setting the Snow Mode

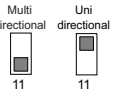
Set this switch to Snow if the sensor is used in a region with snow or a lot of insects.



3-6

Setting the Directional Mode

Setting to Unidirectional allows the door to close more quickly for departing traffic.



4 Checking

Check the entry motion according to the following chart.

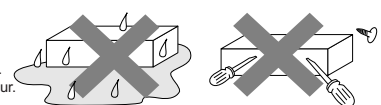
Entry motion (Image)	Outside the Detection Area	Entry into the Approach Detection Area	Entry into the Motion Detection Area	Entry into the 2nd row of Presence Detection Area	Entry into the 1st row of Presence Detection Area	Outside the Detection Area	Power off
Sensor Status	Stand-by	Approach Detection Active	Motion Detection Active	Presence Detection Active	Presence Detection Active	Stand-by	—
Operation Indicator	Green	Blinking Orange	Orange	Red	Blinking Red	Green	—
Output contact	Yellow Green White	Yellow Green White	Yellow Green White	Yellow Green White	Yellow Green White	Yellow Green White	Yellow Green White

CAUTION

The response time may differ according to the color of the objects and the color/material of the floor.

Recommendations to building owner / operator

- Do not change the settings on the sensor, as this may cause it to operate incorrectly.
- Contact your local distributor if you want to change the settings.
- Do not wash the sensor with water.
- Always keep the detection window clean. If dirty, wipe the window lightly with a damp cloth.
- Do not disassemble, rebuild or repair the sensor yourself; otherwise electric shock may occur.
- If a Warning Indicator appears (LED warning), contact your local distributor.
- When turning the power on, always walk-test the sensor pattern to ensure proper operation.



TROUBLESHOOTING

Problem	Possible Cause	Sensor Status			
		Stand-by	Detection	Stand-by while Warning Indication is On	Detecting while Warning Indication is On
Hold the door open.	Connection failure				
	Floor condition was changed.				
Do not operate.	Power Input is not adequate.				
	Connection failure				
Do not operate consistently.	Dirty detection window				
	There is a moving object in the detection area. (ex. Plant, Poster etc.)				
Operates by itself (Ghosting).	There was an abrupt condition change in the detection area.				
	Another sensor's detection area is overlapping.				
	Waterdrops on detection window				
	Vibration of the header				
	The Presence/Motion Detection Area overlaps with the door.				

If the trouble still persists after checking and remedying as described above, contact your installer or the sales engineer.

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X-ZONE



5919220 MAR 2012

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

	WARNING	Disregard of the warning symbol can cause improper operation which may cause death or serious injury.
	CAUTION	Disregard of the caution symbol can cause improper operation which may cause injury of a person or damage the object.
	NOTE	Special attention is required to the section of this symbol.

NOTE

- This product is a non-contact switch intended for header mount or wall mount for use on an automatic sliding door. Do not use for any other applications.
- When setting the sensor's detection area, make sure that there is no traffic around the installation site.
- Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
- Only use the product as specified in the operation manual provided.
- Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
- Before leaving the installation site make sure that the product is operating properly and instruct the building owner/operator on proper operation of the door and the product.
- The product settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock		

NOTE

- The following conditions are not suitable for sensor installation.
- Fog or exhaust emission around the door
 - Wet floor
 - Vibrating header or mounting surface
 - Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity
 - Highly reflecting floor or highly reflecting objects around the door
 - Grating floor

SPECIFICATIONS

Model	: X-ZONE	Safety output	: Form C relay
Cover color	: Black		: 50V 0.3A Max.(Resistance load)
Mounting height	: 2.0 (6'6") to 3.5m (11'6")	Output hold time	: <0.5 sec.
Detection area	: See DETECTION AREA	Response time	: <0.3 sec.
Detection method	: Active infrared reflection*1 Microwave doppler effect	Operating temperature	: -35 to +55°C (-31 to 131°F)
Depth angle adjustment	: AIR area -6 to +6° Microwave area +25 to +45°	Operating humidity	: <80%
Power supply	: 12 to 24VAC ±10% (50 / 60 Hz) 12 to 30VDC ±10%	IP rate	: IP54
Power consumption	: < 2.5W (< 4VA at AC)	Weight	: 320g (11.2oz)
Operation indicator	: See Operation indicator table	Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Cable 3m (9'10") 1 Narrow lens
Activation output	: Form C relay 50V 0.3A Max.(Resistance load)		

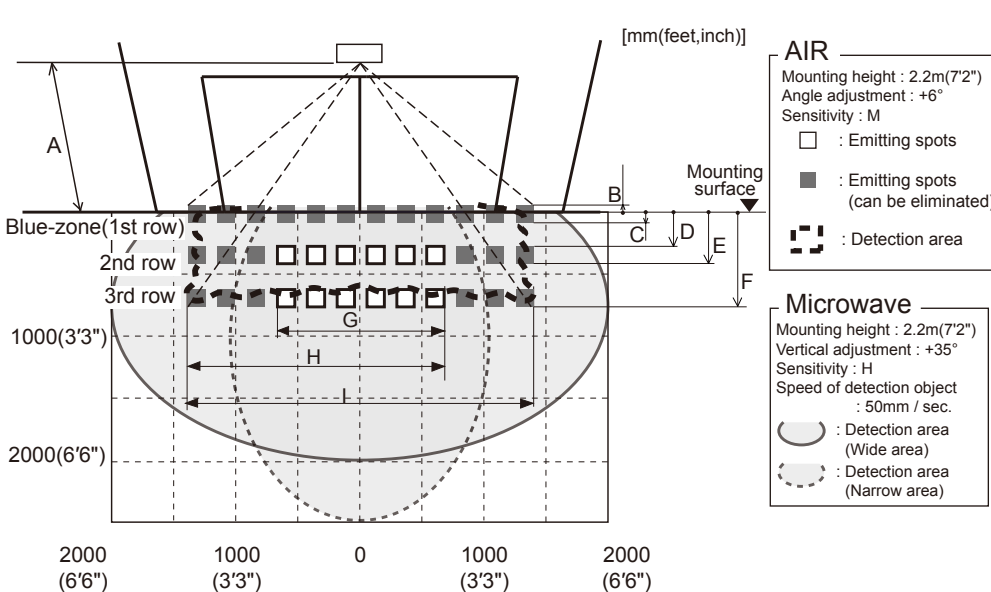
Operation indicator table

Status	Operation indicator color	1sec.	1sec.
Set-up	Yellow blinking	[Yellow bar]	
Stand-by (installation mode)	Yellow	[Yellow bar]	
Stand-by (operation mode)	Green	[Green bar]	
Blue-zone (1st row) detection*2	Blue	[Blue bar]	
2nd row detection	Red blinking	[Red bar]	
3rd row detection	Red	[Red bar]	
Microwave detection	Orange	[Orange bar]	
Signal saturation	Slow green blinking	[Green bar]	
Sensor failure	Fast green blinking	[Green bar]	

NOTE The specifications herein are subject to change without prior notice due to improvements.

- *1 : Active infrared reflection has a presence detection function.
- *2 : See **BLUE-ZONE**

DETECTION AREA



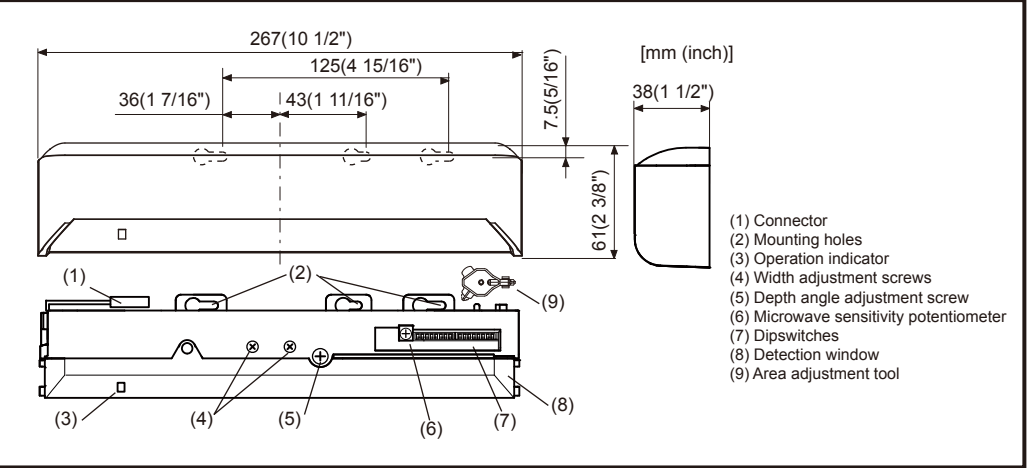
AIR emitting area

The chart shows the values at depth angle +6°

	[m(feet,inch)]					
	2.00 (6'6")	2.20 (7'2")	2.50 (8'2")	2.70 (8'10")	3.00 (9'10")	3.50 (11'6")
A	0.05(2")	0.06 (2")	0.07 (3")	0.074(3")	0.08 (3")	0.09 (4")
B	0.07(3")	0.08 (3")	0.09 (4")	0.10 (4")	0.11 (4")	0.12 (5")
C	0.23 (9")	0.25 (10")	0.28 (11")	0.31 (1')	0.34 (1'1")	0.39 (1'4")
D	0.35 (1'2")	0.39 (1'3")	0.44 (1'5")	0.48(1'7")	0.53 (1'9")	0.61 (2')
E	0.59 (1'11")	0.65 (2'2")	0.74 (2'5")	0.80 (2'8")	0.89 (2'11")	1.38 (3'5")
F	1.21 (3'12")	1.33 (4'4")	1.51(4'11")	1.63 (5'4")	1.81 (5'11")	2.11 (5'11")
G	1.86 (6'1")	2.05 (6'9")	2.32 (7'7")	2.51 (8'3")	2.79 (9'2")	3.25 (10'8")
H	2.52(8'3")	2.78 (9'1")	3.15 (10'4")	3.40 (11'2")	3.79 (12'5")	4.42 (14'6")
I						

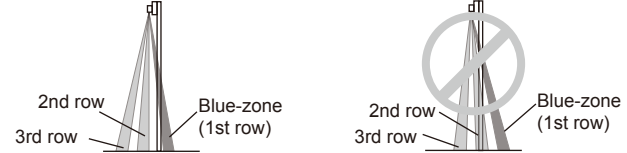
NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object. The sensor may not be activated when the entering speed of the object or a person is slower than 50mm / sec. or faster than 1500mm / sec.

OUTER DIMENSIONS AND PART NAMES



BLUE-ZONE

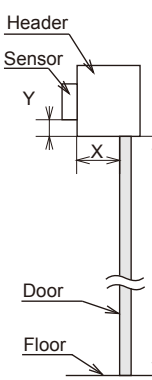
When dipswitch 15 is set to ON, the blue-zone area, that provides extra safety over the threshold, is activated. In case the blue-zone function is not required, set dipswitch 15 to OFF. Do not set the 2nd row overlapping the threshold regardless of the setting of dipswitch 15.



INSTALLATION

1

- Affix the mounting template at the desired mounting position. Refer to the chart in below.
- Drill two mounting holes of $\phi 3.4\text{mm}$ ($\phi 1/8"$).
- To pass the cable through the header, drill a wiring hole of $\phi 8\text{mm}$ ($\phi 5/16"$).
- Remove the mounting template.
- Remove the housing cover. Fix the sensor to the mounting surface with the two mounting screws.



H : Height from the floor to the bottom of the header
Y : Distance between the bottom of the header and the sensor
X : Distance between the door and the mounting surface

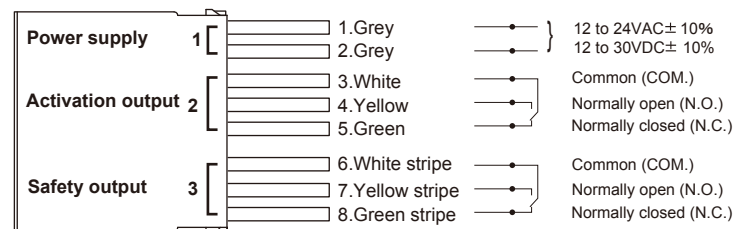
Maximum distance (Y)		[m (feet,inch)]					
X	H	2.00 (6' 6")	2.30 (7' 6")	2.50 (8' 2")	2.80 (9' 2")	3.00 (9' 10")	3.50 (11' 6")
0		No limit					
0.05 (2")		0.13 (5")	0.13 (5")	0.13 (5")	0.14 (6")	0.14 (6")	0
0.10 (4")		0.11 (4")	0.12 (5")	0.12 (5")	0.12 (5")	0.12 (5")	0
0.15 (6")		0.10 (4")	0.10 (4")	0.11 (4")	0.11 (4")	0.11 (4")	0
0.20 (8")		-	0.09 (4")	0.10 (4")	0.10 (4")	0.10 (4")	0
0.25 (10")		-	-	0.09 (4")	0.09 (4")	0.09 (4")	0
0.30 (12")		-	-	-	-	-	-

NOTE Make sure not to mount the sensor lower than the bottom of header.

	CAUTION	Make sure to affix the mounting template as described in the above chart, otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible on the header.
Risk of getting caught		

2

Wire the cable to the door controller as shown below.



	WARNING	Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield otherwise it may cause electric shock or breakdown of the sensor.
Danger of electric shock		

3

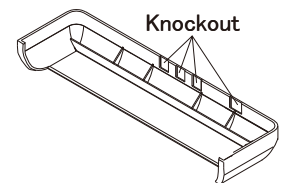
- Plug the connector.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **ADJUSTMENTS 4. Dipswitch settings**)

NOTE

Make sure to connect the cable correctly to the door controller before turning the power ON. When turning the power ON or after adjusting the settings, do not enter the detection area for more than 10 seconds in order to enable the presence detection.

4

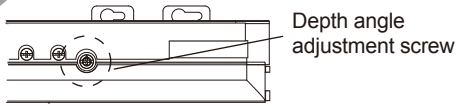
- Place the housing cover. If wiring is to be exposed, break the knockout.



	WARNING	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain cover (separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock		

ADJUSTMENTS

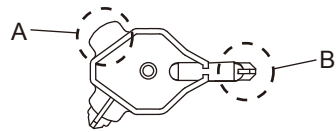
1 Area depth angle adjustment



When adjusting the 2nd row close to the door, follow **Table1** dipswitch16 for the easier adjustment.

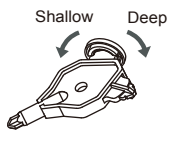
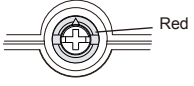
NOTE Make sure that the detection area does not overlap with the door / header, and there is no highly reflecting object near the detection area otherwise ghosting / signal saturation may occur.

Area adjustment tool

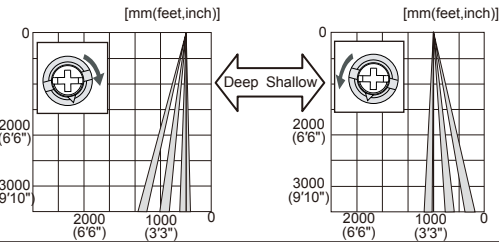


1-1 AIR adjustment

Depth angle adjustment screw for the AIR area

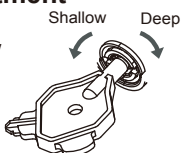


Use the area adjustment tool (A) as shown above to change the area depth angle.

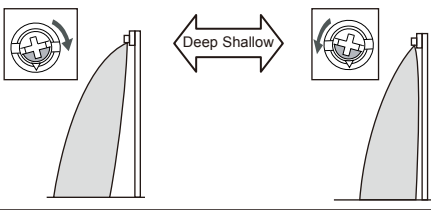


1-2 Microwave adjustment

Depth angle adjustment screw for the microwave area



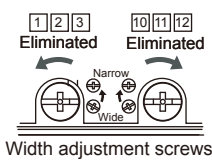
Use the area adjustment tool (B) as shown above to change the area depth angle.



2 Area width adjustment

2-1 AIR adjustment

To adjust the AIR detection area width, use the adjustment screws as shown in the picture below.



Width adjustment screws

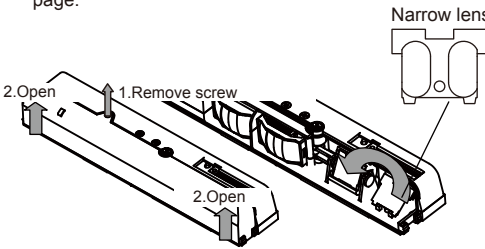
NOTE

When setting the detection area width, make sure to turn the adjustment screws until it clicks.

1, 2, 3 cannot be eliminated separately, neither can 10, 11, 12

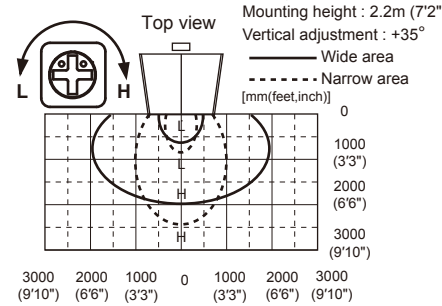
2-2 Microwave adjustment

To adjust the microwave detection area width, use the narrow lens as shown in the picture below, referring to the following procedures. For detection area, See **DETECTION AREA** in the front page.



3 Microwave sensitivity

Adjust the microwave detection area with potentiometer. Turning it clockwise increases the sensitivity and turning counterclockwise lowers the sensitivity.



4 Dipswitch settings

Table1

AIR settings Microwave settings Other settings

Dipswitch	Function	Setting				Comment
		Low	Middle	High	S-High	
Dipswitch 1	Sensitivity	Low 1 2	Middle 1 2	High 1 2	S-High 1 2	Set the sensitivity according to the mounting height. Values below dipswitch are reference only.
Dipswitch 2		2.0 to 3.0m	2.0 to 3.0m	2.5 to 3.2m	3.0 to 3.5m	
Dipswitch 3	Presence timer	30sec 3 4	60sec 3 4	180sec 3 4	600sec 3 4	All rows have the presence detection function. The presence detection timer can be selected from 4 settings.
Dipswitch 4						
Dipswitch 5	Frequency	Setting1 5 6	Setting2 5 6	Setting3 5 6	Setting4 5 6	When using more than two sensors close to each other, set the frequency different for each sensor.
Dipswitch 6						
Dipswitch 7	Rain mode	Normal 7	Rain 7			Set this switch to Rain if the sensor is used in a region with a lot of rain.
Dipswitch 8	Snow mode	Normal 8	Snow 8			Set this switch to Snow if the sensor is used in a region with snow or a lot of insects.
Dipswitch 9	Direction	Bi 9	Uni 9			When dipswitch 9 is set to uni-directional, this setting enables the door to close earlier when a person walks away from the door.
Dipswitch 10	Auto caution	OFF 10	ON 10			When dipswitch 10 is set to ON, a person wavering in the activation detection area can be detected. This is only effective when dipswitch 9 is set to uni-directional.
Dipswitch 11	Immunity	OFF 11	ON 11			Set dipswitch 11 to ON when the sensor operates by itself (ghosting). When dipswitch 11 is set to ON the actual detection area may occur smaller.
Dipswitch 12	For future use					
Dipswitch 13	AIR output	Safety 13	Safety + Activation 13			When dipswitch 13 is ON, the sensor outputs safety and activation simultaneously.
Dipswitch 14	For future use					
Dipswitch 15	Blue-zone	OFF 15	ON 15			When dipswitch 15 is set to ON, the blue-zone (1st row) is active and looks through the threshold.
Dipswitch 16	Installation mode	OFF 16	ON 16			Set dipswitch 16 to ON to adjust the 2nd row. After setting the row switch dipswitch 16 OFF. During the installation mode only the 2nd row remains active and the operation indicator shows yellow.

*Please refer to **Table 2** for the details.

Table 2

Bi-direction (Bi)		Uni-direction (Uni)		
Bi OFF 9 10		Uni OFF 9 10		→ Detection
Bi ON 9 10		Uni ON 9 10		→ Non-Detection

CHECKING

Check the operation in the operation mode according to the chart below. ① White : COM. ④ White Str. : COM.
② Yellow : N.O. ⑤ Yellow Str. : N.O.
③ Green : N.C. ⑥ Green Str. : N.C.

Entry	Power OFF	Outside of detection area	Entry into microwave area	Entry into 3rd row	Entry into 2nd row	Entry into blue-zone (1st row)
Status	-	Stand-by	Motion detection active	Motion/Presence detection active		
Operation indicator	None	Green	Orange	Red	Red Blinking	Blue
Safety 13	Safety output					
	Activation output					
Safety & Activation 13	Safety output					
	Activation output					

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. Do not use any cleaner / solvent.
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise an electric shock may occur.
- When the operation indicator blinks green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE

- When turning the power ON, always walk-test the detection area to ensure the proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. plant, illumination, etc.)

TROUBLESHOOTING

Door operation	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Wrong power supply voltage. Wrong wiring or connection failure.	Set to the stated voltage. Check the wires and connector.
	Unstable	Wrong detection area positioning. Sensitivity is too low. Short presence detection timer. Dirty detection window.	Check ADJUSTMENTS 1, 2, 3 & 4 . Set the sensitivity higher. Set the presence timer longer. Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
		Proper	Wrong wiring or connection failure.
Door opens when no one is in the detection area. (ghosting)	Unstable	Objects that move or emit light in the detection area.	Remove the objects.
		The detection area overlaps with another sensor.	Check Table1 dipswitch 5, 6.
		Waterdrops on the detection window.	Wipe the detection window with a damp cloth. Use the rain-cover (Separately available).
		Detection area overlaps with door / header.	Adjust the detection area (AIR or MW) to "deep". Or set dipswitch 11 to ON.
		Sensitivity is too high. Raining or snowing(AIR) Raining or snowing(Microwave) Others	Set the sensitivity lower. Set dipswitch 7 and / or dipswitch 8 to ON. Set dipswitch 9 and / or dipswitch 11 to ON. Set dipswitch 11 to ON.
Door remains open	Proper	Sudden change in the detection area	Check Table1 dipswitch 1 to 4. If the problem still persists, hard-reset the sensor.(Turn the power OFF and ON again)
	Yellow	Wrong wiring or connection failure. Installation mode is set to ON.	Check the wiring. Set dipswitch 16 to OFF.
Proper operation	Fast green blinking	Sensor failure	Contact your installer or service engineer.
	Fast green blinking	Sensitivity is too low. Dirty detection window	Set the sensitivity higher. Set AIR area width to "wide". Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
		Slow green blinking	The detection area overlaps with the door / header.
	Slow green blinking	Signal saturation (AIR)	Remove highly reflecting objects from the detection area or lower the sensitivity or change the area depth angle for AIR area.

FCC WARNING(For USA)

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

-NOTICE-

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

-NOTICE-

- The antennas cannot be exchanged.
- To comply with FCC RF exposure compliance requirements, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.

IC(For CANADA)

Operation is subject to the following two conditions:

- this device may not cause interference, and
- this device must accept any interference received, including interference that may cause undesired operation of the device.

Manufacturer

OPTEX Co.,LTD.

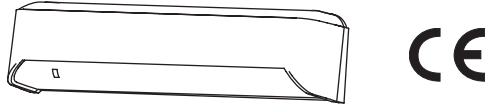
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5915030 MAY 2008

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of the sensor. Failure to read this operation manual may cause improper sensor operation and may result in serious injury or death of person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this operation manual.

WARNING	Disregard of warning may cause the improper operation causing death or serious injury of person.
CAUTION	Disregard of caution may cause the improper operation causing injury of person or damage to objects.
NOTE	Special attention is required to the section of this symbol.

NOTE

- This sensor is a non-contact switch intended for header mount / wall mount of an automatic door. Do not use for any other applications. This sensor cannot be used for industrial doors or shutters, when used, proper operation and safety cannot be guaranteed.
- When setting the sensor's detection area, make sure there is no traffic around the installation site.
- Before turning the power on, check the wiring to prevent damage or malfunction of equipments that are connected to the sensor.
- Only use the sensor as specified in the operation manual provided.
- Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
- Before leaving the job site make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
- The sensor setting can only be changed by an installer or service engineer. When changed, register the changed setting and dates in the maintenance logbook accompanying the door.

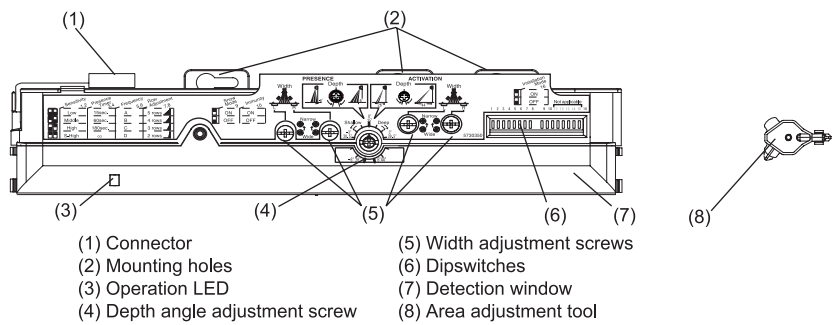
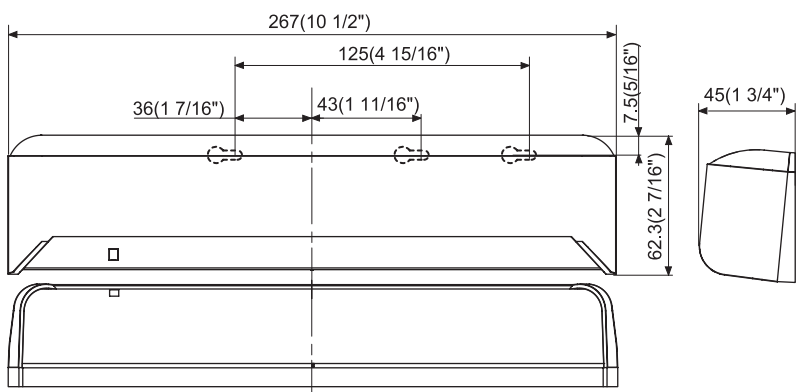
WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of equipments.
Danger of electric shock.	

SPECIFICATIONS

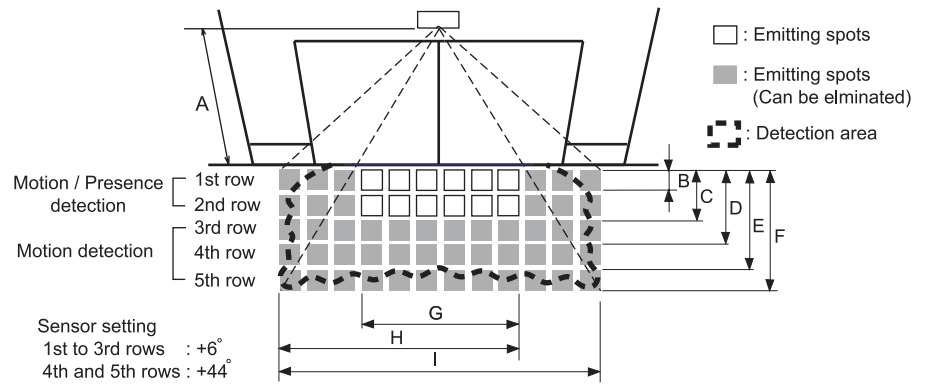
Model	: OA-AXIS I / OA-AXIS II	Output	: OA-AXIS I / Form C relay
Cover color	: Silver / Black		: 50V 0.3A Max. (Resistance load)
Mounting height	: 2.0 (6'7") to 3.5m (11'5")		: 50V 0.3A Max. (Resistance load)
Detection area	: See DETECTION AREA		: 50V 0.3A Max. (Resistance load)
Detection method	: Active Infrared Reflection		: 50V 0.3A Max. (Resistance load)
Depth angle adjustment	: 1st to 3rd rows / -6° to +6° 4th and 5th rows / +26° to +44°		
Power supply	: 12 to 24VAC(±10%) 12 to 30VDC(±10%)	Output hold time	: Approx. 0.5 sec.
Power consumption	: OA-AXIS I < 3VA OA-AXIS II < 4VA	Response time	: <0.3 sec.
Operation LED	: Green / Stand-by Blinking Red / 1st row detection Red / 2nd row detection Orange / 3rd to 5th rows detection	Operating temperature	: -20 to +55°C(-4 to 131°F)
		IP rate	: IP44
		Weight	: 320g (11.2oz)
		Accessories	: 1 Cable 3m (9'10") 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool

NOTE The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES



DETECTION AREA



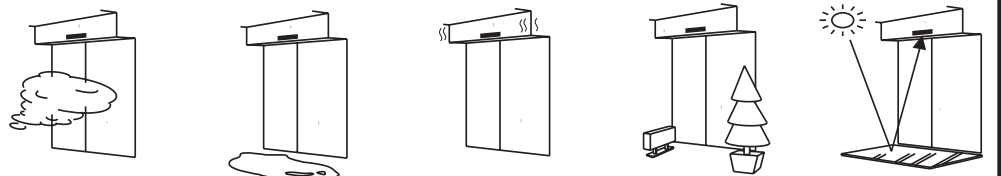
	[m(feet,inch)]				
A	2.20(7'2 5/8")	2.50(8'2 7/16")	2.70(8'10 5/16")	3.00(9'10 1/8")	3.50(11'5 13/16")
B	0.14(5 1/2")	0.16(6 5/16")	0.18(7 1/16")	0.20(7 7/8")	0.23(9 1/16")
C	0.42(1'4 9/16")	0.48(1'6 7/8")	0.52(1'8 1/8")	0.58(1'10 13/16")	0.67(2'2 3/8")
D	0.82(2'8 5/16")	0.93(3' 5/8")	1.00(3'3 3/8")	1.10(3'7 5/16")	1.30(4'3 3/16")
E	1.35(4'5 1/8")	1.54(5' 5/8")	1.66(5'5 3/8")	1.85(6' 13/16")	2.16(7'1 1/16")
F	1.90(6'2 13/16")	2.17(7'1 7/16")	2.34(7'8 1/8")	2.60(8'6 3/8")	3.03(9'11 5/16")
G	1.33(4'4 3/8")	1.51(4'11 7/16")	1.63(5'4 3/16")	1.81(5'11 1/4")	2.11(6'11 1/16")
H	2.05(6'8 11/16")	2.32(7'7 5/16")	2.51(8'2 13/16")	2.79(9'1 13/16")	3.26(10'8 3/8")
I	2.78(9'1 7/16")	3.15(10'4")	3.40(11'1 7/8")	3.79(12'5 3/16")	4.42(14'6")

NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object.

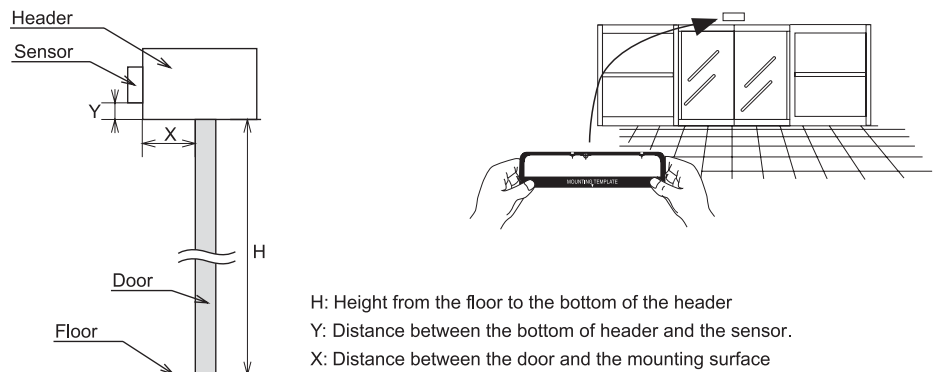
*The values of the chart above is of the emitting spots, but not of the detection area.

INSTALLATION

- NOTE** The following conditions are not suitable for the sensor installation.
- Fog or exhaust emission around the door.
 - Wet floor
 - Vibrating header or mounting surface.
 - Moving objects or a heating radiator in the detection area.
 - Highly reflecting floor or the presence of highly reflecting objects around the door.



- Affix the mounting template at the desired mounting position.
- Drill two mounting holes of ø3.4mm (ø1/8").
- To pass the cable through to the header, drill a wiring hole of ø8mm (ø5/16").
- Remove the mounting template.
- Remove the housing cover. Attach the sensor to the mounting surface with two mounting screws.



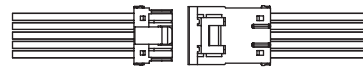
Maximum mounting distance (Y)		[mm(feet,inch)]			
X	H	2,000 (6' 6")	2,200 (7' 2")	2,500 (8' 2")	3,000 (9' 10")
0		No limit			
50 (1 15/16")	200 (7 7/8")	200 (7 7/8")	200 (7 7/8")	200 (7 7/8")	200 (7 7/8")
100 (3 15/16")	200 (7 7/8")	200 (7 7/8")	200 (7 7/8")	200 (7 7/8")	200 (7 7/8")
150 (5 7/8")	130 (5 1/8")	150 (5 7/8")	170 (6 11/16")	200 (7 7/8")	200 (7 7/8")
200 (7 7/8")	-	110 (4 5/16")	130 (5 1/8")	150 (5 7/8")	200 (7 7/8")
250 (9 13/16")	-	-	-	120 (4 3/4")	-
300 (11 13/16")	-	-	-	-	-

CAUTION Risk of getting caught. Make sure to affix the mounting template as described in the above chart. Otherwise, it can be dangerous since there may be no presence detection area around the threshold. Install the sensor as low as possible on the header.

NOTE The sensor mounting position may be limited depending on the header thickness and the mounting height.

- Wire the cable to the door controller properly as shown in the drawing below.

OA-AXIS I



Grey	Power supply
Grey	12 to 24VAC ±10%
Grey	12 to 30VDC ±10%
White	Common (COM.)
Yellow	Normally open (N.O.)
Green	Normally closed (N.C.)

OA-AXIS II



Grey	Power supply	
Grey	12 to 24VAC ±10%	
Grey	12 to 30VDC ±10%	
White	Common (COM.)	
Yellow	Normally open (N.O.)	3rd to 5th * rows output
Green	Normally closed (N.C.)	
White Str.	Common (COM.)	1st to 3rd * rows output
Yellow Str.	Normally open (N.O.)	
Green Str.	Normally closed (N.C.)	

*The outputs from the 3rd row overlaps.

WARNING Danger of electric shock. Before starting the procedure, ensure that the power is turned OFF. When passing through the cable to the hole, make sure not to tear the shield, otherwise it may cause electric shock or breakdown of the sensor.

- Plug the connector of the sensor.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See ADJUSTMENTS)

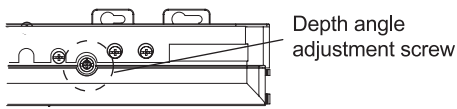
NOTE Make sure to connect the cable correctly to the door controller before turning the power ON. To enable the presence detection, do not enter the detection area for 10 seconds after supplying the power.

- Place the housing cover . If wiring is to be exposed, break the knockout.

WARNING Danger of electric shock. Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.

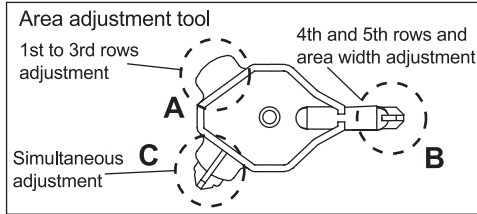
ADJUSTMENTS

1 Area depth angle adjustment



The detection area depth can be changed by the area adjustment tool.

When adjusting the 1st to 3rd rows close to the door, follow 3-7 Installation mode.



1-1. Independent adjustment

1st to 3rd rows

Depth angle adjustment screw for 1st to 3rd rows



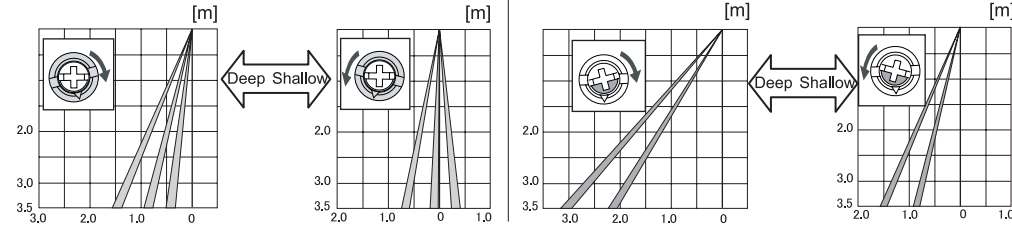
Use the area adjustment tool (A) as shown above and change the depth of the detection area by turning the depth angle adjustment screw.

4th and 5th rows

Depth angle adjustment screw for 4th and 5th rows



Use the area adjustment tool (B) as shown above and change the depth of the detection area by turning the depth angle adjustment screw.

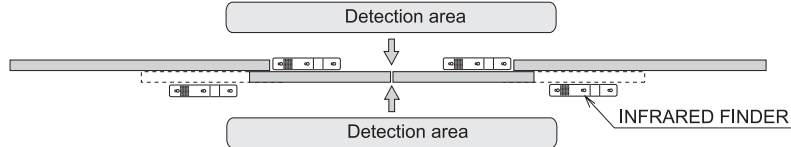


Check the area position with Red LED of the Operation LED using a tool such as a reflecting mirror.

NOTE Make sure the detection area does not overlap with the door / header, otherwise ghosting / signal saturation may occur.
Do not place any highly reflecting objects in the detection area, otherwise signal saturation may occur.

REFERENCE Area depth adjustment with INFRARED FINDER (Separately available)

- Turn the depth adjustment screw to the right (Deep) to place the area most away from the door.
- Set INFRARED FINDER sensitivity to "H" (High) and place it on the floor as shown below.



- Turn the depth adjustment screw to the left (Shallow) until the emitting area is placed at the position where INFRARED FINDER is in the low detection status (Slow Red blinking).

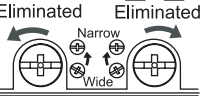
1-2. Simultaneous adjustment

For the simultaneous adjustment of 1st to 5th rows, use the adjustment tool (C).

2 Width detection area adjustment

1st to 3rd rows

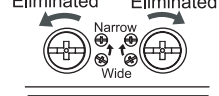
1-3 Eliminated 10-12 Eliminated



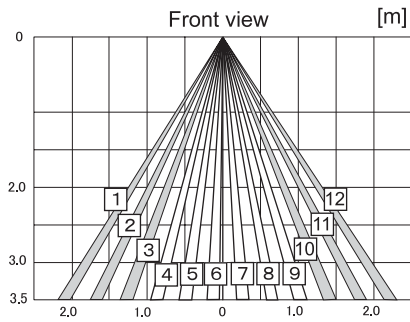
Width adjustment screw (Left)

4th and 5th rows

1-3 Eliminated 10-12 Eliminated

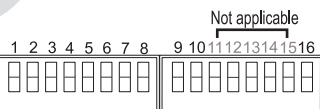


Width adjustment screw (Right)



NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object and the floor as well as the entry speed of the object.

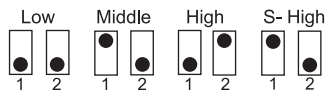
3 Dipswitch settings



- Not applicable
- 1,2 : Sensitivity
 - 3,4 : Presence detection timer
 - 5,6 : Frequency
 - 7,8 : Row adjustment
 - 9 : Snow mode
 - 10 : Immunity
 - 11 to 15 : Not applicable
 - 16 : Installation mode

3-1 Setting the sensitivity

Normally set to "Middle". "Low" decreases the sensitivity and "High / S-High" increases the sensitivity.



3-2 Setting the presence detection timer

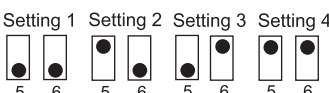
The 1st and 2nd rows have the presence detection function. The presence detection timer can be selected from 4 settings.



NOTE To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.

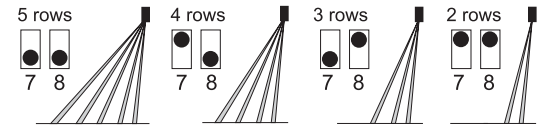
3-3 Setting the frequency

When using more than two sensors close to each other, set the different frequency for each sensor by combining dipswitch 5 and 6.



3-4 Setting the area depth

The 5th, 4th, and 3rd rows can be eliminated by combining dipswitches 7 and 8.

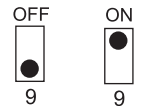


*When 2 rows setting is selected, only the presence detection area remains.

NOTE Always check the area according to the expected entry speed and determine the appropriate number of rows. When setting motion and motion / presence detection area separately, make sure that there is no gap between two areas.

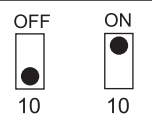
3-5 Setting the snow mode

Set this switch to ON, if the sensor is used in a region with snow.



3-6 Setting the immunity

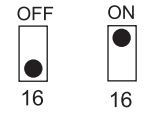
Set this switch to ON, when less influence by the header vibration is required.



3-7 Installation mode

Use this switch to ON when adjusting the presence detection area close to the door face.

- * During the installation mode, only the 1st row remain.
- * Door open state
- * Operation LED glows yellow.



CHECKING

Check the operation according to the chart below.

- ① White : COM.
- ② Yellow : N.O.
- ③ Green : N.C.
- ④ White Str. : COM.
- ⑤ Yellow Str. : N.O.
- ⑥ Green Str. : N.C.

Entry	Power off	Outside of detection area	Entry into 4th or 5th row	Entry into 3rd row	Entry into 2nd row	Entry into 1st row
Status	-	Stand-by	Motion detection active	Motion/Presence detection active	Presence detection	
Operation LED	None	Green	Orange		Red	Blinking Red
OA-AXIS I	Output	① ② ③	① ② ③	① ② ③		
OA-AXIS II	Output from 1st to 3rd rows*	④ ⑤ ⑥	④ ⑤ ⑥	④ ⑤ ⑥		
	Output from 3rd to 5th rows*	① ② ③	① ② ③	① ② ③	① ② ③	

*The outputs from the 3rd row overlaps.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window lightly with a damp cloth. (Do not use any cleaner or solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- When an operation LED blinks green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE

- When turning the power on, always walk-test the detection area to ensure proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

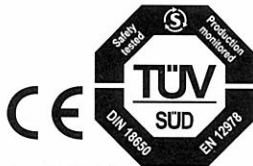
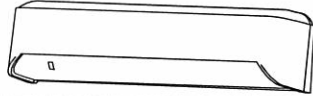
TROUBLESHOOTING

Problem	Operation LED	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Power supply voltage.	Set to the stated voltage.
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.
		Wrong detection area positioning.	Check ADJUSTMENTS 1 & 2 .
		Sensitivity is too low.	Set the sensitivity higher.
Door opens when no one is in the detection area. (Ghosting)	Unstable	Short presence detection timer.	Set the presence detection timer longer.
		Dirty detection window.	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)
		Vibration of the header.	Set the sensitivity lower or the immunity to ON.
		Water drops on the detection window.	Use the rain-cover (Separately available). Or install in a place keeping the waterdrops off.
		The detection area overlaps with that of another sensor.	Check ADJUSTMENTS 3-3 .
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside).
		Reflecting objects in the detection area. Or reflecting light on the floor.	Remove the objects.
		Sensitivity is too high.	Set the sensitivity lower.
		It snows and pours.	Set the snow mode to ON.
		Objects that move or emit light in the detection area. (Ex. Plant, illumination, etc.)	Remove the objects.
Door remains open	Red or Orange	Wet floor.	Check the installation condition referring to INSTALLATION on the reverse side.
		The exhaust emission or fog penetrate into the detection area.	
		Sudden change in the detection area.	Check ADJUSTMENTS 3-1 & 3-2 . If the problem still persists, hard-reset the sensor. (Turn the power OFF and ON again.)
		Wrong wiring or connection failure.	Check the wires and connector.
Door remains closed	Proper	Twice Green blinking	The relay is reaching the end of its life cycle.
		Slow Green blinking	Signal saturation
Door remains closed	Proper	The detection area overlaps with the door / header.	Remove highly reflecting objects from the detection area. Or lower the sensitivity. Or change the area angle.
		Wrong wiring or connection failure.	Adjust the detection area to "Deep" (Outside). Check the wires and connector.

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5914951 OCT 2008

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

	WARNING Disregard of warning may cause the improper operation causing death or serious injury of a person.
	CAUTION Disregard of caution may cause the improper operation causing injury of a person or damage to objects.
	NOTE Special attention is required to the section of this symbol.
	It is required to check the operation manual if this symbol is shown on the product.

- NOTE**
- This product is a non-contact switch intended for header mount or wall mount for use on an automatic sliding door. Do not use for any other applications.
 - When setting the sensor's detection area, make sure that there is no traffic around the installation site.
 - Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
 - Only use the product as specified in the operation manual provided.
 - Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
 - Before leaving the installation site make sure that the product is operating properly and instruct the building owner/operator on proper operation of the door and the product.
 - The product settings can only be changed by an installer or service engineer. When changed, the changed settings and the date shall be registered in the maintenance logbook accompanying the door.

	WARNING Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.
Danger of electric shock.	

- NOTE** The following conditions are not suitable for sensor installation.
- Fog or exhaust emission around the door.
 - Wet floor.
 - Vibrating header or mounting surface.
 - Moving objects or objects that emit light near the detection area.
 - Highly reflecting floor or highly reflecting objects around the door.



SPECIFICATION

Model : OA-AXIS T	Safety / Test output : When 1st or 2nd row detects.
Cover color : Silver / Black	Opto coupler (NPN)
Mounting height : 2.0 (6'6") to 3.0m (9'10")	Voltage / 5 to 50VDC
Detection area : See DETECTION AREA	Current / 100mA Max.
Detection method : Active infrared reflection (*1)	Dark current / 600nA Max.
Depth angle : 1st to 3rd rows / -6 to +6°	(Resistance load)
adjustment : 4th and 5th rows / +26 to +44°	Output hold time : Approx. 0.5 sec.
Power supply (*2) : 12 to 24VAC ±10% (50 / 60 Hz)	Response time : <0.3 sec.
12 to 30VDC ±10%	Operating temperature : -20 to +55°C (-4 to 131°F)
Power consumption : < 2.5W (< 4VA at AC)	Operating humidity : <80%
Operation indicator : See chart below	IP rate : IP44
Test input : Opto coupler	Category : 2 (ISO 13849-2 : 2003)
Voltage / 5 to 30VDC	Weight : 320g (11.2oz)
Current / 6mA Max. (30VDC)	Accessories : 1 Operation manual
Activation output : When 3rd, 4th or 5th row detects.	2 Mounting screws
Form A relay	1 Mounting template
50V 0.3A Max. (Resistance load)	1 Area adjustment tool
	1 Cable 3m (9'10")
	(8 × 0.29mm ² AWG24) (*3)

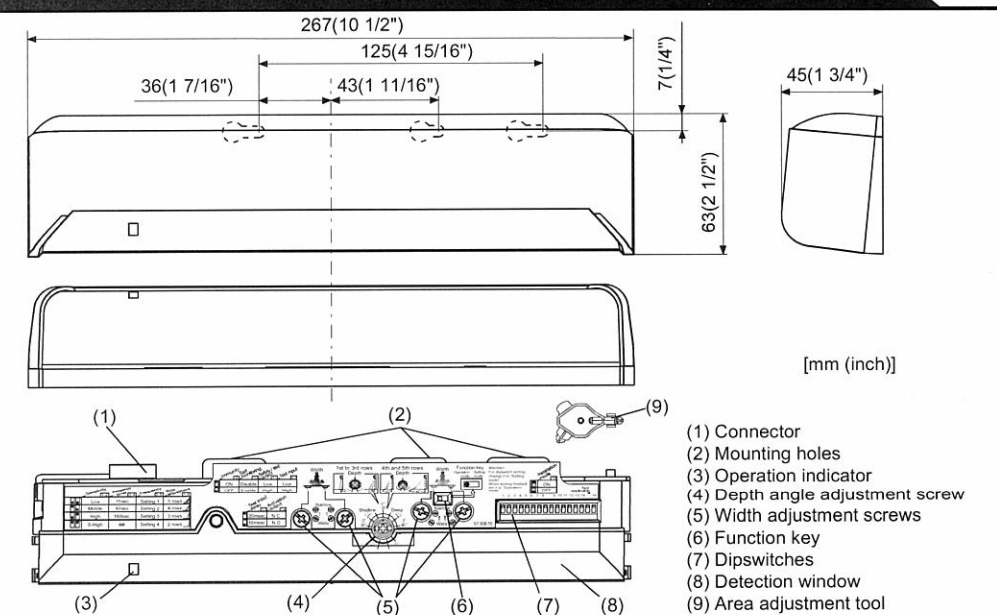
*1 : The 1st and 2nd rows have presence detection function.
 *2 : When using this sensor, the sensor has to be connected to a door system which has the SELV circuit.
 *3 : Overcurrent protection with less than 2A.

Operation indicator

Status	Operation indicator color	Indicator Pattern
Stand-by (Setting mode)	Blinking Blue	[Blinking Blue]
Stand-by (Installation mode)	Yellow	[Yellow]
Stand-by (Operation mode)	Green	[Green]
1st row detection	Blinking Red	[Blinking Red]
2nd row detection	Red	[Red]
3rd, 4th or 5th row detection	Orange	[Orange]
Wrong dipswitch setting	Red & Green blinking	[Red & Green Blinking]
Signal saturation	Slow Green blinking	[Slow Green Blinking]
Sensor failure	Fast Green blinking	[Fast Green Blinking]
Life cycle notification	Twice Green blinking	[Twice Green Blinking]

NOTE The specifications herein are subject to change without prior notice due to improvements.

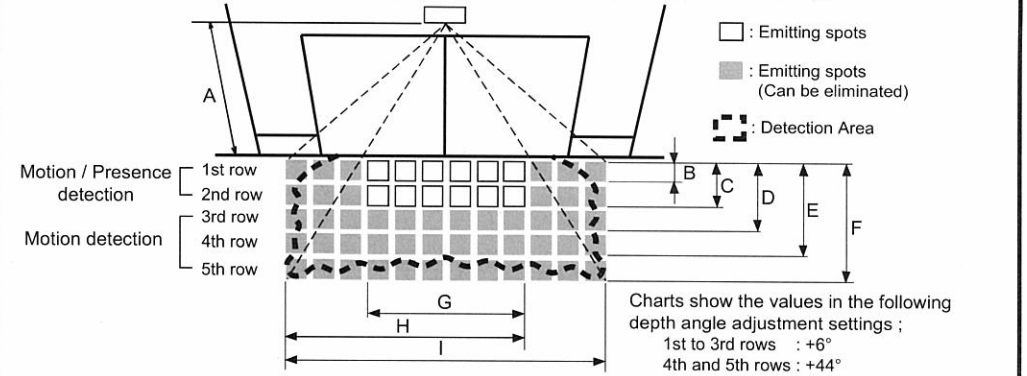
OUTER DIMENSIONS AND PART NAMES



COMPLIED STANDARDS

DIN 18650-1:2005	DIN 18650-2:2005	EN 12978:2003
EN 954-1:1997	ISO 13849-2:2003	prEN 12650-1:1999
		prEN 12650-2:1999

DETECTION AREA



Emitting area [m(feet,inch)]

	2.00 (6'6")	2.20 (7'2")	2.50 (8'2")	2.70 (8'10")	3.00 (9'10")
A	2.00 (6'6")	2.20 (7'2")	2.50 (8'2")	2.70 (8'10")	3.00 (9'10")
B	0.13 (5")	0.14 (6")	0.16 (6")	0.18 (7")	0.20 (8")
C	0.38 (1' 3")	0.42 (1' 5")	0.48 (1' 7")	0.52 (1' 8")	0.58 (1' 11")
D	0.74 (2' 5")	0.82 (2' 8")	0.93 (3' 1")	1.00 (3' 3")	1.10 (3' 7")
E	1.23 (4' 1")	1.35 (4' 5")	1.54 (5' 1")	1.66 (5' 5")	1.85 (6' 1")
F	1.74 (5' 9")	1.90 (6' 3")	2.17 (7' 1")	2.34 (7' 8")	2.60 (8' 6")
G	1.06 (3' 6")	1.33 (4' 4")	1.51 (4' 11")	1.63 (5' 4")	1.81 (5' 11")
H	1.86 (6' 1")	2.05 (6' 9")	2.32 (7' 7")	2.51 (8' 3")	2.79 (9' 2")
I (*)	2.52 (8' 3")	2.78 (9' 2")	3.15 (10' 4")	3.40 (11' 2")	3.79 (12' 5")
X	0.19 (8")	0.21 (8")	0.24 (9")	0.26 (10")	0.28 (11")

X is the distance between the 1st row and the mounting surface.

Detection area

To comply with DIN 18650, make sure that the detection area is within the values in the chart below.

	2.00 (6'6")	2.20 (7'2")
A	2.00 (6'6")	2.20 (7'2")
C	0.23 (9")	0.24 (10")
G	1.02 (3' 4")	1.10 (3' 7")
I	2.41 (7' 11")	2.54 (8' 4")

Test conditions required by DIN 18650
 Floor : Kodak Grey card
 Detection object :
 DIN 18650 Test body (Mat black)

The values above are when the sensitivity is set to "Middle" and speed of detection object is 50mm / sec..

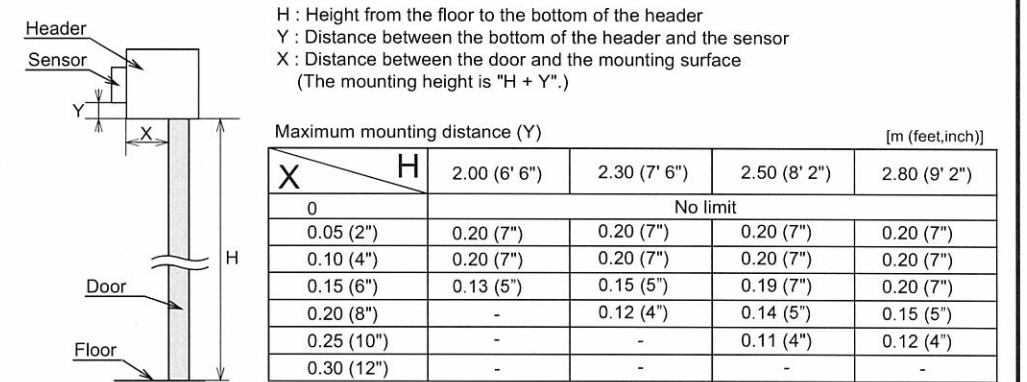
The values above are those of the detection area when tested referring to the test conditions of DIN 18650. (The emitting area is as shown in **Emitting area** above.)

*: When installed at higher than 2.35m(7'8"), DIN 18650 requirements are fulfilled only within the area width "I" of 3m(9'10").

NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object. The sensor may not be activated when the entering speed of the object or a person is slower than 50mm / sec. or faster than 1500mm / sec.

INSTALLATION

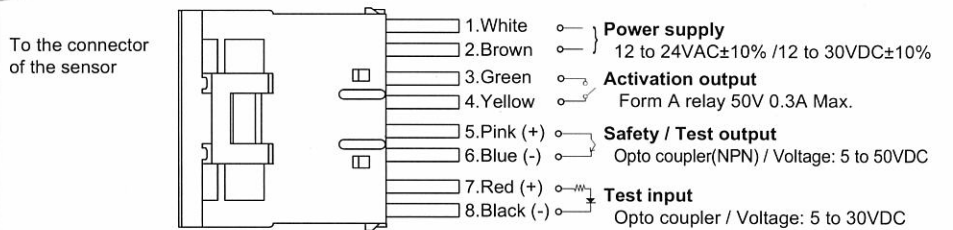
- Affix the mounting template at the desired mounting position.
- Drill two mounting holes of ø3.4mm (ø1/8").
- To pass the cable through the header, drill a wiring hole of ø8mm (ø5/16").
- Remove the mounting template.
- Remove the housing cover. Fix the sensor to the mounting surface with the two mounting screws.



	CAUTION Risk of getting caught.	Make sure to affix the mounting template as described in the above chart, otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible on the header.
--	---	---

NOTE The sensor mounting position may be limited depending on the header thickness and the mounting height. To comply with DIN 18650, make sure that the sensor is installed within the values in the above chart.

- Wire the cable to the door controller as shown below.



	WARNING Danger of electric shock.	Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield, otherwise it may cause electric shock or breakdown of the sensor.
--	---	---

- Plug the connector of the sensor.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **ADJUSTMENTS**)

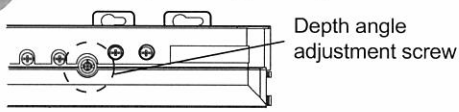
NOTE Make sure to connect the cable correctly to the door controller before turning the power ON. When turning the power ON or after adjusting the settings, do not enter the detection area for more than 10 seconds in order to enable the presence detection. Do not touch the dipswitches before turning the power ON, otherwise an error occurs. When changing the settings of dipswitch, see **ADJUSTMENTS 3 Dipswitch settings**.

- Place the housing cover. If wiring is to be exposed, break the knockout.

	WARNING Danger of electric shock.	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.
--	---	--

ADJUSTMENTS

1 Area depth angle adjustment

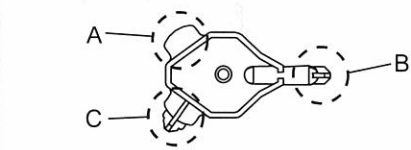


Depth angle adjustment screw

When adjusting the 1st row close to the door, follow 3-9 Installation mode for the easier adjustment.

NOTE Make sure that the detection area does not overlap with the door / header, and there is no highly reflecting object near the detection area otherwise ghosting / signal saturation may occur.

Area adjustment tool



1-1.Independent adjustment

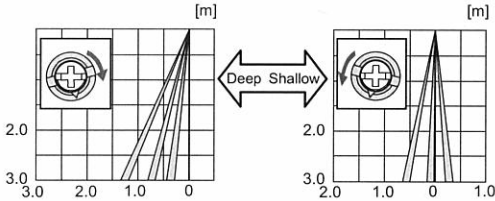
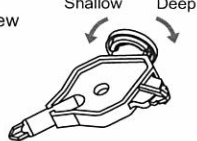
1st to 3rd rows

Depth angle adjustment screw for the 1st to 3rd rows



Red

Use the area adjustment tool (A) as shown above to change the area depth angle for the 1st to 3rd rows.



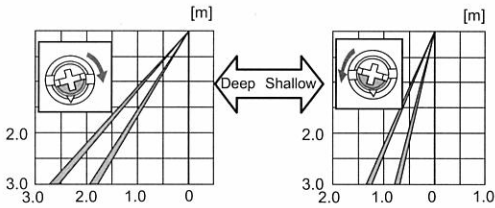
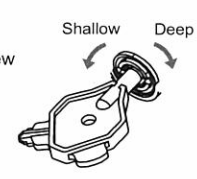
4th and 5th rows

Depth angle adjustment screw for the 4th and 5th rows



Blue

Use the area adjustment tool (B) as shown above to change the area depth angle for the 4th and 5th rows.

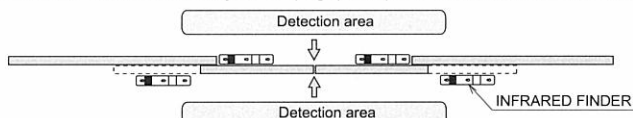


1-2.Simultaneous adjustment

For the simultaneous adjustment of the 1st to 5th rows, use the adjustment tool (C).

REFERENCE Area depth adjustment with INFRARED FINDER (Separately available)

- Turn the depth angle adjustment screw to the right (Deep) to place the detection area most away from the door.
- Set INFRARED FINDER sensitivity to "H" (High) and place it on the floor as shown below.

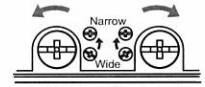


- Turn the depth angle adjustment screw to the left (Shallow) until the emitting area is placed at the position where INFRARED FINDER is in the low detection status (Slow Red blinking).

2 Area width adjustment

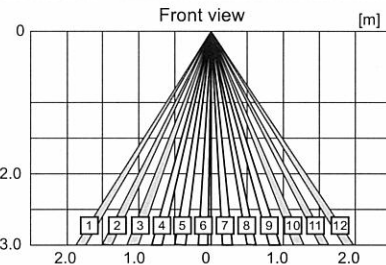
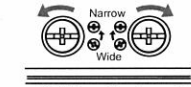
1st to 3rd rows

Width adjustment screws (Left)



4th and 5th rows

Width adjustment screws (Right)



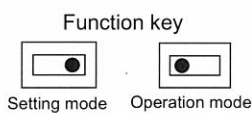
NOTE When adjusting the width adjustment screws, make sure to turn until it clicks otherwise the proper operation may not be obtained.

[1][2][3] cannot be eliminated separately, neither can [10][11][12].

3 Dipswitch settings

Follow these steps to change the settings of dipswitches.

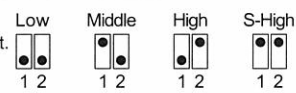
- Change the function key from the "Operation mode" to the "Setting mode". During the "Setting mode", the operation indicator is blinking Blue (only when stand-by status) and the door remains open.
- Change the dipswitch settings.
- When the setting is finished, change the function key back to the "Operation mode".



NOTE When the above procedures (1-3) are not followed, an error (Red & Green blinking) occurs. Make sure to use the sensor only in the "Operation mode". The sensor does not operate properly in the "Setting mode".

3-1.Setting the sensitivity

Refer to the chart below for the suitable sensitivity to your installation environment.



		Mounting height [m (feet,inch)]				For example
		2.0 (6' 6")	2.2 (7' 2")	2.5 (8' 2")	3.0 (9' 10")	
Floor condition	Low reflection	Middle	Middle	High	S-High	-Carpet -Dark color floor
	Middle reflection	Low	Middle	Middle	S-High	-Concrete
	High reflection	Low	Low	Middle	High	-Tile -Marble

NOTE Special attention to the setting is required when the door is used often by the elderly or children. Please adjust the sensitivity and the presence detection timer according to your risk assessment.

3-2.Setting the presence detection timer

The 1st and 2nd rows have the presence detection function. To comply with DIN 18650, set the timer to "60sec." or more.



NOTE To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.

3-3.Setting the frequency

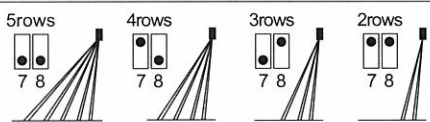
When using more than two sensors close to each other, set the different frequency for each sensor by dipswitches 5 and 6.



3-4.Setting the row adjustment

Set the depth rows with dipswitches 7 and 8.

NOTE When "2rows" are selected, the activation output is disabled.



3-5.Setting the immunity

Set dipswitch 9 to ON when the sensor operates by itself (Ghosting).

NOTE When dipswitch 9 is set to ON, the actual detection area may become smaller.



3-6.Setting the self monitoring

Set dipswitch 10 to "Disable" when the self monitoring is not required.

When set to "Disable", the sensor does not respond to the test input from the door operator.

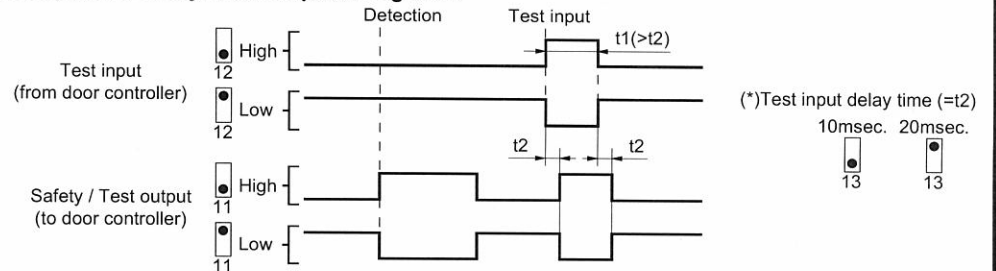


NOTE To comply with DIN 18650, set the self monitoring to "Enable".

3-7.Setting the test input, safety / test output and test input delay time

Set dipswitches 11 to 13 according to the door controller.

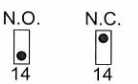
Test input and Safety / Test output timing chart



*: The test input delay time is the time period between the test input and safety / test output.

3-8.Setting the activation output

Set dipswitch 14 to "N.O." (Normally Open) or "N.C." (Normally Closed).

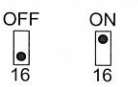


3-9.Installation mode

Set dipswitch 16 to ON when adjusting the 1st row close to the door.

When the setting is finished, set to OFF.

During the installation mode, only the 1st row remains, and the operation indicator glows Yellow.



NOTE If the function key is set back to the "Operation mode" while the installation mode is still ON, an error occurs.

CHECKING

Check the operation in the operation mode according to the chart below.

Entry	Power OFF	Outside of detection area	Entry into 3rd to 5th row	Entry into 2nd row	Entry into 1st row	Outside of detection area
Status	-	Stand-by	Motion detection active	Motion / Presence detection active		Stand-by
Operation indicator	None	Green	Orange	Red	Blinking Red	Green
Activation output	14 N.O.	—	—	—	—	—
	14 N.C.	—	—	—	—	—
Safety / Test output	11 High	OFF	ON		OFF	ON
	11 Low	OFF	OFF		ON	OFF

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. (Do not use any cleaner / solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- When the operation indicator blinks Green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE

- When turning the power ON, always walk-test the detection area to ensure the proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

TROUBLESHOOTING

Door operation	Operation indicator	Possible cause	Possible countermeasures	
Door does not open when a person enters the detection area.	None	Wrong power supply voltage	Set to the stated voltage.	
	Unstable	Wrong wiring or connection failure	Check the wires and connector.	
		Wrong detection area positioning	Check ADJUSTMENTS 1, 2 & 3.(*)	
		Sensitivity is too low.	Set the sensitivity higher.(*)	
Door opens when no one is in the detection area. (Ghosting)	Unstable	Short presence detection timer	Set the presence detection timer longer.(*)	
		Dirty detection window	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)	
		Objects that move or emit light in the detection area.	Remove the objects.	
		The detection area overlaps with that of another sensor.	Check ADJUSTMENTS 3-3.(*)	
		Waterdrops on the detection window	Use the rain-cover (Separately available). Or install in a place keeping the waterdrops off.	
		Detection area overlaps with door / header.	Adjust the detection area to "Deep" (Outside).	
	Proper	Sudden change in the detection area.	Sensitivity is too high.	Set the sensitivity lower.(*)
			Others	Set the immunity to ON.(*)
		Yellow	Sudden change in the detection area.	Check ADJUSTMENTS 3-1 & 3-2.(*) If the problem still persists, hard-reset the sensor. (Turn the power OFF and ON again.)
			Wrong wiring or connection failure	Check the wires and connector.
Blinking Blue	Self monitoring is set to "Disable".	Set dipswitch 10 to "Enable".(*)		
	Wrong setting of dipswitches.	Check ADJUSTMENTS 3-6, 7 & 8.(*)		
	Installation mode is set to ON.	Set installation mode to OFF.(*)		
	Wrong setting of function key	Set to the "Operation mode".		
Fast Green blinking	Sensitivity is too low.	Dirty detection window	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)	
		Sensor failure	Contact your installer or service engineer.	
	Slow Green blinking	Signal saturation (1st or 2nd row)	Remove highly reflecting objects from the detection area. Or lower the sensitivity.(*) Or change the area depth angle for 1st to 3rd rows.	
Red & Green blinking	Wrong setting of dipswitch	The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside).	
		1. Set the function key to the "Setting mode".		
		2. Change the dipswitch 16 setting (ON → OFF or OFF → ON → OFF).		
Door remains closed.	Proper	Wrong wiring or connection failure	Check the wires and connector.	
		Wrong wiring or connection failure	Check the wires and connector.	
Proper operation	Twice Green blinking	Life cycle notification	Contact your installer or service engineer.	
	Slow Green blinking	Signal saturation (3rd, 4th or 5th row)	Remove highly reflecting objects from the detection area. Or lower the sensitivity.(*) Or change the area depth angle.	

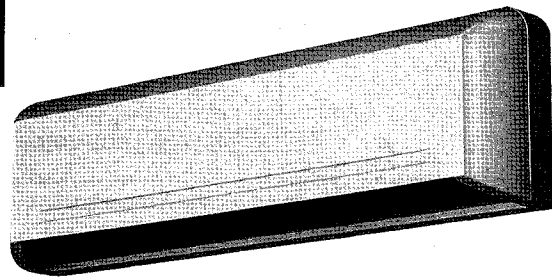
*: Before changing these settings, set the function key to the "Setting mode". When finished, set back to the "Operation mode".

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OPTEX
PROSAFE English
OA-203C



MANUFACTURER'S STATEMENT

5911184 AUG 2008

Read this Operation Manual carefully before use, to ensure proper operation of this Optex sensor. Failure to read this Operation Manual may cause improper sensor operation and may result in serious injury or death. This product is a non-contact activating switch intended for mounting on the header of an automatic door. Do not use it for any other applications; otherwise proper operation and safety cannot be guaranteed.

Cautions:

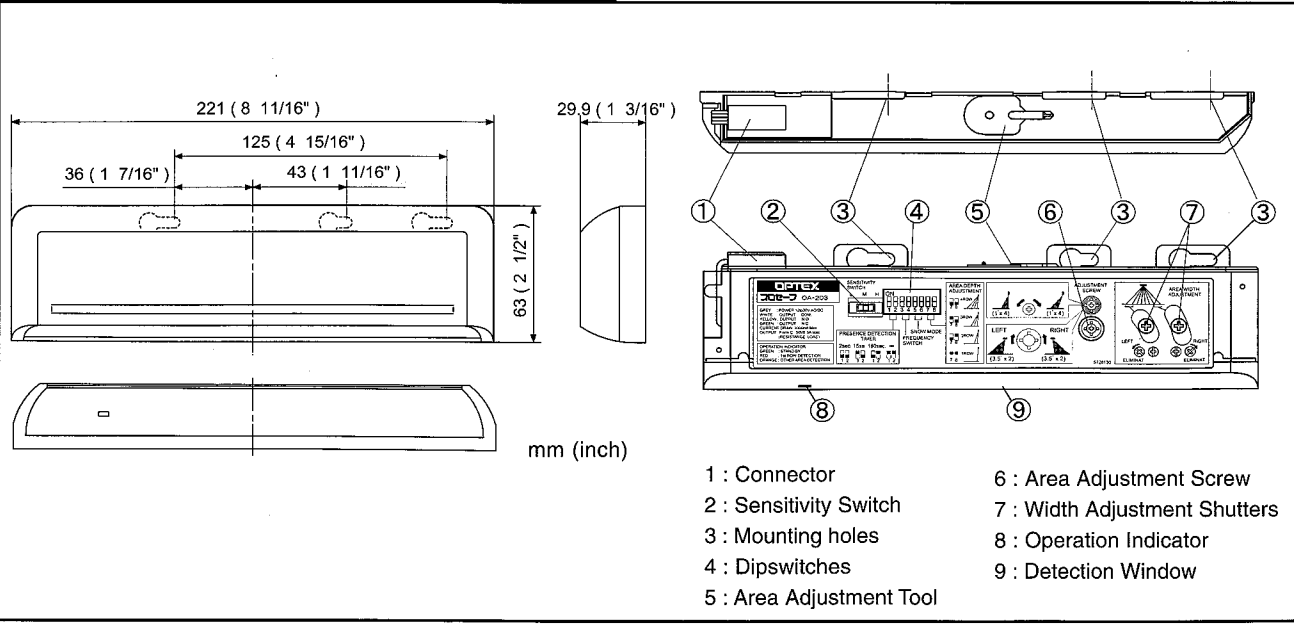
1. Follow the instructions (especially **Note**) in this Operation Manual when installing and adjusting the sensor.
2. When setting the sensor's area pattern, make sure there is no traffic around the installation site.
3. Before turning the power on, check the wiring to prevent damage or malfunction of equipment that is connected to the sensor.
4. Do not wash, disassemble, rebuild or repair the sensor by yourself; otherwise it may cause electric shock or breakdown of the sensor.
5. Only use the sensor as specified in the supplied instructions.
6. Be sure to install the sensor in accordance with the local laws and standards of your country.
7. Before leaving the jobsite, be sure that this sensor is operating properly and instruct the building owner/operator on proper operation of the door and this sensor.

SPECIFICATIONS

Model : OA-203C	Output : "Form C" relay 50V 0.3A Max. (Resistance Load)
Cover color type : Silver / Black / White	Relay Hold Time : 0.5 sec.
Mounting Height : 3.0m (9'10") Max.	Response Time : < 0.3 sec.
Detection Area : See "Detection Area"	Operating Temperature : -20°C to +55°C (-4°F to +131°F)
Detection Method : Active Infrared Reflection Method	Weight : 200g (7.1oz)
Detection Angle : ±4° adjustable by 1° every one click	Accessories : 1 Cable 3m (9'10")
Adjustments (Deep / Shallow)	2 Mounting Screws
Detection Width : ±7° adjustable by 3.5° every one click	1 Operation Manual
Adjustments (Right / Left)	1 Mounting Template
Power Supply : 12 to 30V AC / DC	1 Area Adjustment Tool
Current Draw : 160mA Max. (at 12V AC)	
Operation Indicator: Green / Stand-by	
Red / 1st Row Detection Active	
Orange / Other Row Detection Active	

*The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS



INSTALLATION

1. Affix the Mounting Template to the mounting surface.
2. Drill two mounting holes (ø 3.4mm or 1/8").
3. To carry through the wire to the header, drill a wiring hole (ø 8mm or 5/16").
4. After drilling the holes, remove the Mounting Template.

Note
 Be sure that the mounting height is within the value of those in "SPECIFICATION."

3. Remove the cover and attach the sensor with screws.
4. Plug the Connector for the sensor to that for the cable.
5. Supply power to the sensor. Adjust the detection area and set the various Switches. (See "ADJUSTMENT.")

Note
 Make sure that you connect the cable correctly to the Control Unit of the door before turning the power on.
6. 1. Put back the cover on the sensor.
 2. If wiring is to be exposed, break the Knockout.

2. The cable is arranged to connect to the door controller properly as shown below.

Grey } Power Supply
 Grey } 12 to 30V AC / DC
 White : COM.
 Yellow : N.O.
 Green : N.C.

Note
 Connect the cable when main power is turned off.

Note
 When passing through the cable to the hole, make sure not to tear shield: otherwise it may cause electric shock or breakdown of sensor.

DETECTION AREA

Detection Areas are shown in the figure below.

After adjustment, turn the power off and on again, be sure to walk-test all of detection areas.

*The values of the chart blow is of the Emitting Spots, but not of the Detection Area. The actual Detection Area may become smaller depending on the ambiance light and the colour / material of object and the floor as well as the entry speed of object.

	[m]				
A	2.00	2.20	2.50	2.70	3.00
B	0.28	0.31	0.35	0.38	0.41
C	0.68	0.75	0.85	0.92	1.02
D	1.18	1.30	1.48	1.59	1.77
E	2.10	2.30	2.60	2.80	3.10
F	0.16	0.18	0.20	0.22	0.25

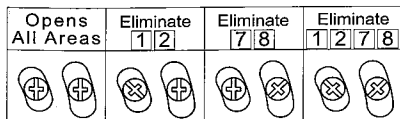
	[feet , inch]				
A	6' 6 3/4"	7' 2 5/8"	8' 2 7/16"	8' 10 5/16"	9' 10 1/8"
B	11"	1' 3 1/16"	1' 1 3/4"	1' 2 15/16"	1' 4 9/16"
C	2' 2 3/4"	2' 5 1/2"	2' 9 9/16"	3' 1/4"	3' 4 3/16"
D	3' 10 7/16"	4' 3 3/16"	4' 10 1/4"	5' 2 5/8"	5' 9 11/16"
E	6' 10 11/16"	7' 6 9/16"	8' 6 3/8"	9' 2 1/4"	10' 2 1/16"
F	6 5/16"	7 1/16"	7 7/8"	8 11/16"	9 13/16"

Provided Detection Row type	1st	2nd	3rd	4th
Presence Detection	○	○	×	×
Motion Detection	○	○	○	○

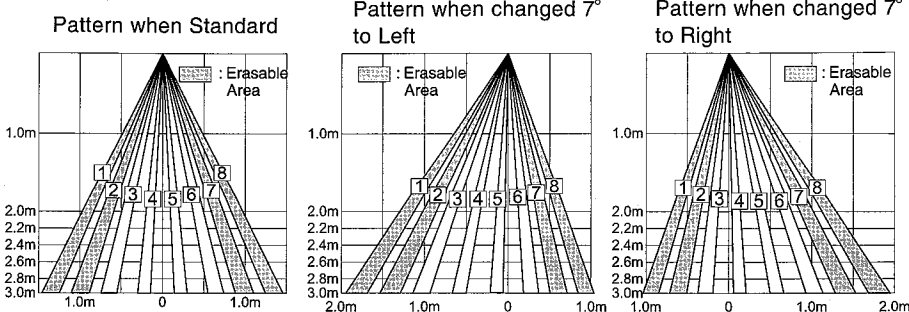
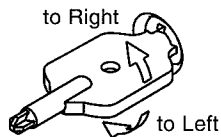
ADJUSTMENT

1 Adjusting the Pattern Width

Setting the Width adjustment shutters



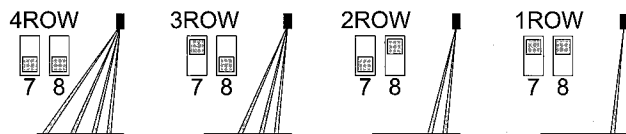
Adjusting the Width Angle Left or Right : between 0° to 7° (3.5° per click)



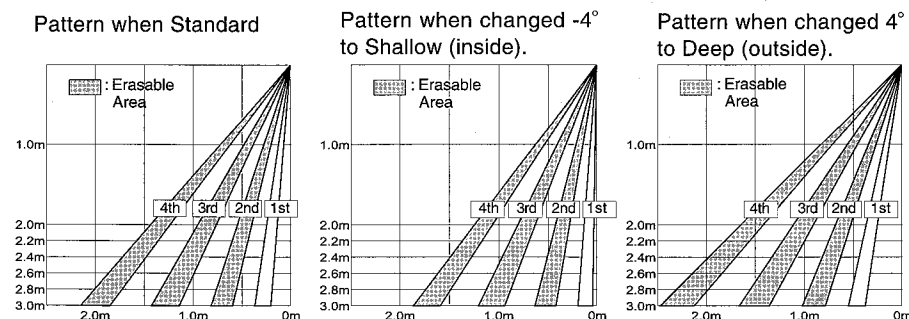
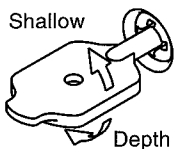
Note Setting the pattern for exact door opening may give a slow response to side approaching traffic.

2 Adjusting the Pattern Depth

Setting the Row with the Dipswitch 7 & 8.

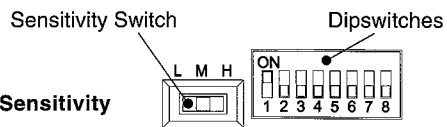


Adjusting the Depth Angle between -4° to 4° (1° per click).



Note Set the pattern for actual traffic. It may cause slow activation for the traffic from the front, when the Row is eliminated.

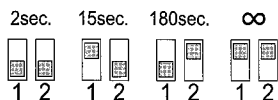
3 Setting of Sensitivity Switch and Dipswitches



Setting the Sensitivity

Normally set to "M."
"H" increases the sensitivity and "L" lowers the sensitivity.

Setting the Presence timer

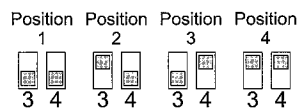


1st Row and 2nd Row from door provide the presence detection.

- (1) Select the presence detection time.
- (2) Turn the power off and on again. Otherwise it may leave door open for the duration of the presence time set.
- (3) After making sure that the door closes, wait for 10 seconds before entering the detection area to set the Presence timer.

Setting the Frequency Function (Interference Prevention)

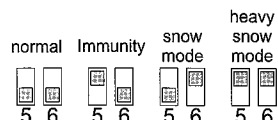
Four different frequencies can be set by adjusting the Dipswitch 3 and 4.



Note When two or more sensors are installed close to each other, it is possible that they interfere. When that happens, change the Frequency.

Setting the Snow mode

Set the Dipswitch 5 and 6 to snow mode, if the sensor is used in a region with snow or a lot of insects.



CHECKING

Check the operation according to the chart below.

Entry motion (image)	Power OFF	Outside the Detection area	Entry into 3rd or 4th Row	Entry into 2nd Row	Entry into 1st Row	Outside the Detection area
Sensor status	Power OFF	Stand-by	Motion Detection Active	Motion or Presence Detection Active		Stand-by
Operation indicator	OFF	Green	Orange		Red	Green
Output	Yellow Green White	Yellow Green White	Yellow Green White		Yellow Green White	Yellow Green White

Note The door may open once after the power is switched on.

Inform the following items to the building owner/operator

1. When turning the power on, always walk-test the sensor pattern to ensure proper operation.
2. Always keep the detection window clean. If dirty, wipe the window with a damp cloth. (Do not use any cleaner or solvent.)
3. Do not wash the sensor with water.
4. Do not disassemble, rebuild or repair the sensor yourself; otherwise electric shock may occur.
5. Contact your installer or the sales engineer if you want to change the settings.
6. Do not place an object that moves or emits light in the detection area. (Ex. Plant, illumination, etc.)
7. Do not paint the Detection Window.

TROUBLESHOOTING

Trouble	Possible Cause	Solution
Does not operate	Power supply is not adequate. Connection Failure.	Adjust to stated voltage. Check the wiring and the connector.
Dose not operate consistently	Dirty detection window. Sensitivity is Low.	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.) Set the Sensitivity Switch "H."
Operates by itself (Ghosting)	There is an object that moves or emits light in the detection area. (Ex. plant, illumination, etc.)	Remove the object.
	Vibration of the header.	Secure the header. Or set the Sensitivity Switch "L."
	Sensitivity is high.	Set the Sensitivity Switch "L."
	Waterdrops on detection window.	Install in a place keeping the waterdrops off. OR use a rain-cover (Optional).
	Detection area has interfered the area of another sensor.	Set the different frequency position each other.
	The detection 1st row spots are overlapping with the door / header.	Adjust the detection area to deep (outside).
Door stay open or closed	There is an reflected object in the detection area. Solar light reflects.	Remove the object.
	There was a puddle left by rain or snow. The floor has gotten wet.	This sensor is equipped with the anti-malfunction. However, pay attention when installing as malfunction may occur under the left conditions.
	The exhaust of the car and the fog penetrate into the detection area.	
Door stay open or closed	Presence timer is Infinity. There was an abrupt condition change in the detection area.	Turn the power off and on again.

Contact your installer or the sales engineer if:

- you need to change the settings or replace the sensor.
- the trouble still persists after checking and remedying as described above.

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Beam Switch OS-12C / OS-12C (HT0.1) Single / Double Beams

MANUFACTURER'S STATEMENT

When using this apparatus, please read this manual thoroughly to operate correctly. In this manual, a variety of illustrations and expressions are shown to prevent you and other people from undergoing any injury or damage of property during the use of the apparatus. The meanings of the expressions are as follows: Please learn the following first and then read the contents of this manual.

	Indicates that the disregard of the warning may result in serious injury or death.
	Indicates that the disregard of the caution may result in injury or physical damages.

- Note**
- When the equipment is in failure, the door is held open. (This is the function to secure the safety of traffic.)
 - Only use the sensor as specified in the supplied instructions.
 - Be sure to install the sensor in accordance with the local laws and standards of your country.
 - Before leaving the jobsite, be sure that this sensor is operating properly and instruct the building owner/operator on proper operation of this sensor.

Warning Danger of electric shock.
Be sure to turn off the power supply when carrying out electrical works. Do not wash, disassemble, rebuild or repair the sensor by yourself.

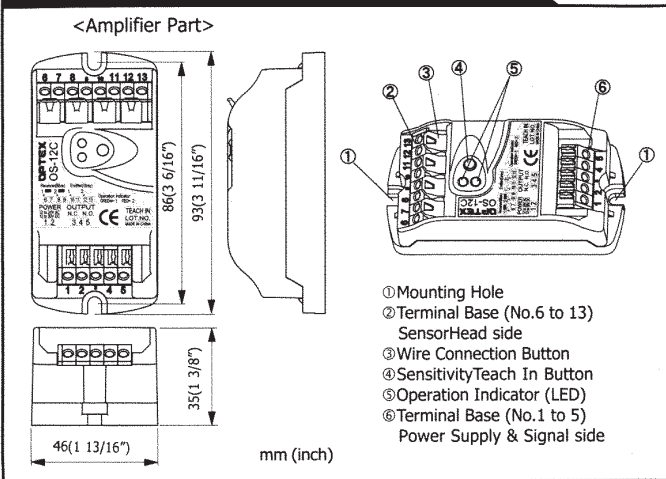
Warning Danger of getting caught between the door.
(Please explain to the building owner/operator)
Even when someone steps on the threshold, the door closes unless the light beam is cut off (The beam switch outputs the signal only when the light beam is cut off). The beam switch is not designed as an apparatus to prevent accidents. It should be used strictly for the purpose of an auxiliary apparatus for safety.

SPECIFICATIONS

Model	OS-12C / OS-12C (HT0.1)	
Installation Distance	Less than 10m (32' 10")	
Detection Method	Point to Point Near Infrared Light Beam	
Power Supply	12 to 24V AC / 12 to 30V DC	
Current Draw	160mA MAX	
Operation Indicator	Stand-by	BEAM1 / BEAM2
	Detection Active	: GREEN ON / RED ON
	Insufficient sensitivity	: GREEN BLINK / RED BLINK
Output Contact	N.O. / N.C. 50V 0.3A (Resistance Load)	
Response Time	Approx. 0.1 sec (from the moment of beam cut-off)	
Relay Hold Time	Approx. 0.5 sec / OS-12C, 0.1 sec / OS-12C (HT0.1) (from the moment of beam input)	
Operating Temperature	-20°C to +55°C (-4°F to +131°F)	
Weight	Amplifier: 65g (2.3oz)	
Component	1 Amplifier, 2 Mounting screws, 1 Manual (Optional sensor head is necessary for operation)	

- Note 1) It is possible to use OS-12C as an amplifier for 1 or 2 beam use by attaching a separately sold SensorHead.
Note 2) The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS



SEPARATELY SOLD OPTIONAL ITEMS

<SensorHead unit>

SH-7MC : 7m (22' 11 1/16")
SH-10MC: 10m (32' 9 11/16")

One push installation type
Mounting hole: $\phi 12\text{mm}$ (1/2") (1/16") 2 13 (1/2")

Plate installation type
Mounting hole: $\phi 12$ to 13mm (1/2") (1/16") 2 13 (1/2")

<Mounting Plate>
Silver or Bronze

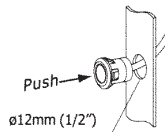
<One push outer plate>
Mirror surface or Chrome

INSTALLATION

1 Mounting the SensorHeads (Option)

① One push installation type

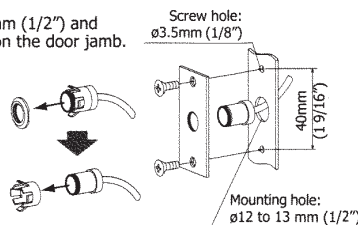
Drill a mounting hole $\phi 12\text{mm}$ (1/2") on the door jamb. Put the sensor heads into the mounting hole.



② Plate installation type

Drill a mounting hole $\phi 12$ to 13mm (1/2") and two screw hole $\phi 3.5\text{mm}$ (1/8") on the door jamb.

Remove one push plate and head holder from sensor head. Affix the main body to the plate. Screw the plate to the door jamb.

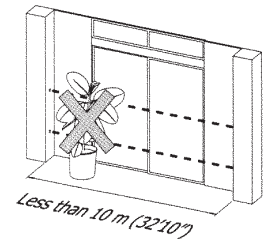


◆ On drilling the mounting holes ◆

- Be sure to drill holes so that the SensorHeads faces each other.
- After drilling the holes, remove the flashes around the holes. Otherwise, the apparatus may not operate properly as the SensorHead rides on the flashes causing tilts.

◆ Installation Site Environment ◆

Do not place any swaying object which cuts off the beam path. Otherwise the door may be held open.



◆ On setting of one push plate ◆

Be sure to push the SensorHeads in securely. If the SensorHeads are not secured, it may cause an unnecessary activation signal.

2 Installing the amplifier

Use the provided screws (2 pieces).

*The size of the hole is $\phi 3.5\text{mm}$ (1/8")

◆ Distance between the SensorHeads ◆

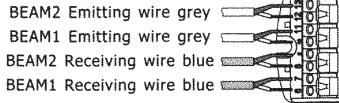
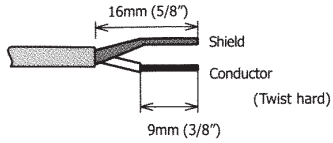
Be sure to set the distance to less than 10m (32' 10"). If the distance is more than 10m (32' 10"), the door may be held open.

INSTALLATION (CONTINUED)

3 Wiring SensorHeads

◆Cutting the wires◆

When cutting the wires, prepare the tip of the wires as follows:



◆Prohibition of extending wires◆

Do not extend the wires. Otherwise, the apparatus may be influenced by noises causing malfunction.

Warning Danger of electric shock.

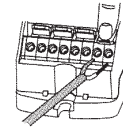
Before starting the procedure, be sure to turn off the power supply.

Caution Risk of breaking the apparatus.

When cutting the wires, be sure to prepare the tip of the wires as shown on the left: If the covers of the shielding wires are peeled off too long, the adjacent tips can easily contact each other causing breakdown of the apparatus.

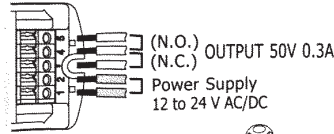
Insert the wires to Terminal Block 6-13 as shown on the left.

Insert the wire as you press the Wire Connection Button. Then, release the finger. Be sure to insert both the shield and the conductor.

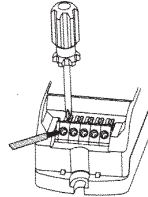


4 Connecting power supply wires and output signal wires

Insert the wires to Terminal Block 1-5 as shown below.



Press the Wire Connection Button of the power supply signal side and insert the wires. Be sure that all the wires are securely connected.



Caution Risk of breaking down the apparatus.

Be sure to connect the power supply wires to terminal 1 and 2. If wired wrongly, the apparatus may break down.

◆ Stated connection capacity ◆

- Solid(Rigid) $\phi 0.4\text{-}\phi 1.2\text{mm}$ (AWG26-18)
- Stranded(Flexible) $0.3\text{mm}^2\text{-}0.75\text{mm}^2$ (AWG22-20) (Strand diameter shall be more than 0.18mm)

◆ Warning about wiring ◆

Do not connect more than 2 wires to one terminal.

ADJUSTMENT & CHECKING

1 Sensitivity Adjustment

- Press Sensitivity Teach In Button for more than one second. When the green and red LED blinking becomes green and red (no blinking), the setting is completed. The proper sensitivity is adjusted automatically.
- Check the auto-set adjustment with the table below.



LED	State
Green/Red ON	The sensitivity has been set correctly. The adjustment is completed. (When using two beam)
Green ON	The sensitivity has been set correctly. The adjustment is completed. (When using one beam)
Green/Red Blink alternately	The sensitivity is insufficient. Check the followings.

Checking Item

If there is no person or object in the detection area.
If the lens surface is clean.
If the wire connections are done properly.
If the emitting/receiving SensorHeads are mounted straight. (They should not be tilted.)

◆Sensitivity Adjustment◆

Set the sensitivity in the environment same as the actual regular use. Also, be sure that there is no swaying object in the area.

◆When changing the number of Sensor Head◆

Be sure to press the Teach In Button. All SensorHeads can be adjusted at once. The apparatus does not operate properly if Teach In Button is not pressed.

◆Re-setup of sensitivity◆

For the maintenance, press Sensitivity Teach In Button to readjust. The sensitivity is set automatically.

2 Checking the operation

Check the operation of the apparatus according to the following chart.

Entry motion (Image)	OFF	ON (Green/Red)	OFF	ON (Green/Red)
Operation Indicator	OFF	ON (Green/Red)	OFF	ON (Green/Red)
Status	Power OFF *Failure of the apparatus	Stand-by status No person or object exists between the SensorHeads	While a person or object is passing in the beam path	After the traffic has passed, the status becomes stand-by.
Output	N.O. CLOSE N.C. OPEN	OPEN	CLOSE	OPEN
		CLOSE	OPEN	CLOSE

Inform the following items to the building owner/operator

- When turning the power on, always walk-test the sensor to ensure proper operation.
- Always keep the Lens surface clean. If dirty, wipe the lens with a damp cloth (Do not use any cleaner or solvent).
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself; otherwise electric shock may occur.
- Contact your installer or the sales engineer if you want to change the settings.
- Do not place an object that moves or emits light in the detection area. (Ex. Plant, illumination etc.)
- Do not paint the Lens surface.

TROUBLESHOOTING

Trouble	Possible Cause	Solution
Does not operate	Irregular supply voltage	Adjust to the stated voltage.
	Wire cut or bad connection	Check the wiring.
	Inappropriate installation distance or condition	Check the installation distance and condition.
Operates by itself (Ghosting)	Inappropriate installation distance or condition	Check the installation distance and condition.
	Something swaying between the SensorHeads cutting off the beam.	Remove the obstruction.
	Dirty lens.	Remove the dirt.

Contact your installer or the sales engineer if:

- you need to change the settings or replace the sensor.
- the trouble still persists after checking and remedying as described above.

FCC STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Warning:

This equipment has been tested and found to comply with the limits for a Class B device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio / TV technician for help.



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Air-Slide

5918460 AUG 2011

MANUFACTURER'S STATEMENT

Read this operation manual carefully before use to ensure proper operation of the sensor. Failure to read this operation manual may cause improper sensor operation and may result in serious injury or death of person. The meanings of the symbols are as follows. Please study the following first and then read the contents of this operation manual.

	WARNING	Disregard of warning may cause the improper operation causing death or serious injury of person.
	CAUTION	Disregard of caution may cause the improper operation causing injury of person or damage to objects.
	NOTE	Special attention is required to the section of this symbol.

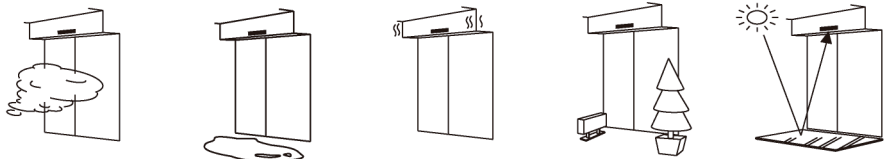
NOTE

- This sensor is a non-contact switch intended for header mount of an automatic door. Do not use for any other applications. This sensor cannot be used for industrial doors or shutters, when used, proper operation and safety cannot be guaranteed.
- When setting the sensor's detection area, make sure there is no traffic around the installation site.
- Before turning the power on, check the wiring to prevent damage or malfunction of equipments that are connected to the sensor.
- Only use the sensor as specified in the operation manual provided.
- Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
- Before leaving the job site make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
- The sensor setting can only be changed by an installer or service engineer. When changed, register the changed setting and dates in the maintenance logbook accompanying the door.

	WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of equipments.
Danger of electric shock.		

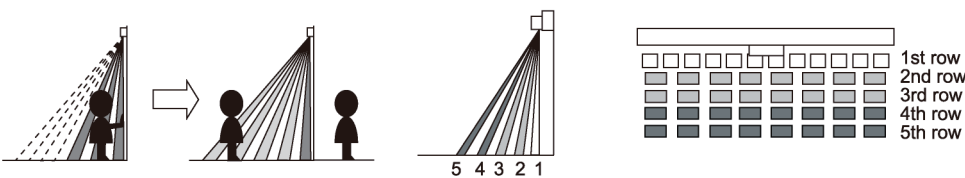
NOTE

- The following conditions are not suitable for the sensor installation.
- Fog or exhaust emission around the door.
 - Wet floor
 - Vibrating header or mounting surface.
 - Moving objects or a heating radiator in the detection area.
 - Highly reflecting floor or the presence of highly reflecting objects around the door.



WORKING PRINCIPLE

This sensor is designed to detect a hand approaching to a touchless plate as a knowingact activation device. Please make sure to understand the following working principle. This sensor sends primary activation output when "1st and 2nd row" or "1st and 3rd row" detects an object. After the detection until the door fully closes, 2nd to 5th rows work as a presence / secondary activation output.

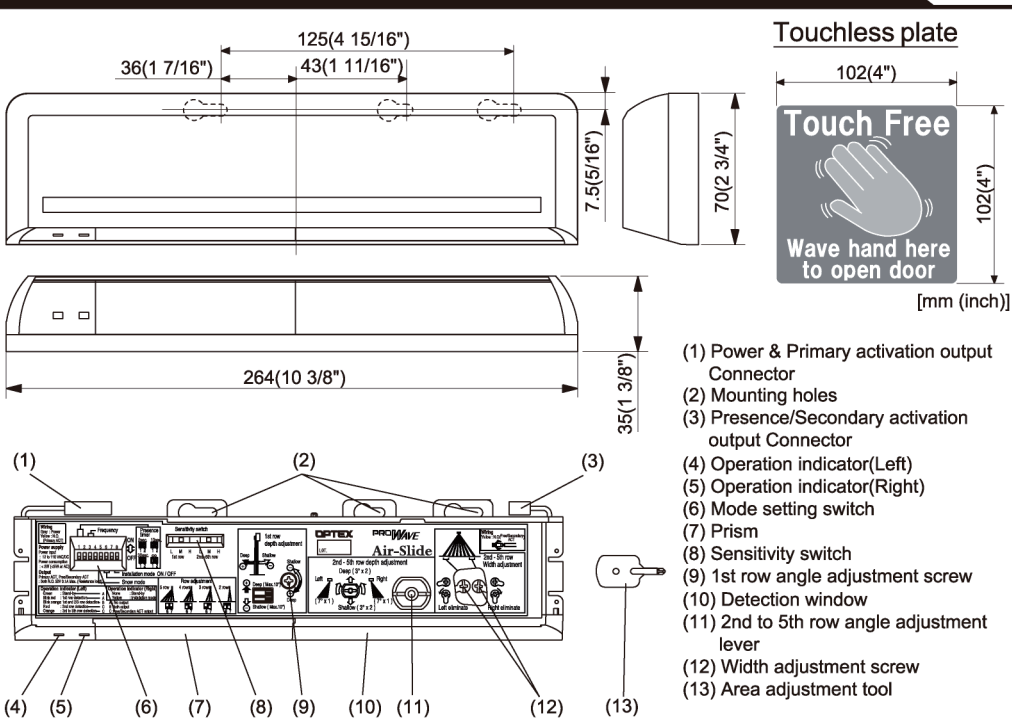


SPECIFICATIONS

Model	: Air-Slide	Operation indicator(right)	: None / Stand-by
Cover color	: Black	Output	: Yellow / 1st row adjustment mode
Mounting height	: 2.0 (6'7") to 3.0m (9'10")		: Form A relay
Detection area	: See ADJUSTMENTS		: 50V 0.1A Max. (Resistance load)
Detection method	: Active Infrared Reflection	Output hold time	: Approx. 0.5 sec.
Depth angle adjustment:	1st row / -10° to +10°	Response time	: <0.3 sec.
	2nd to 5th rows / +1° to +13°	Operating temperature	: -20 to +55°C (-4 to 131°F)
Width angle adjustment:	1st row / selected prism	IP rate	: IP44
	2nd to 5th rows / ±7°	Weight	: 320g (11.2oz)
Power supply	: 12 to 24V AC (±10%)	Accessories	: 1 Power & Primary activation output cable 2.5m (8'2")
	12 to 30V DC (±10%)		: 1 Presence / Secondary activation output cable 2.5m (8'2")
Power consumption	: <1.5W (<3VA at AC)		: 1 Operation manual
Operation indicator(left)	: Green / Stand-by		: 2 Mounting screws
	Blinking Red / 1st row detection		: 1 Mounting template
	Blinking Orange / "1st and 2nd row" or "1st and 3rd row" detection		: 1 Area adjustment tool
	Red / 2nd row detection		: 1 Middle prism
	Orange / 3rd to 5th rows detection		: 1 Right prism
			: 1 Left prism
			: 1 Touchless plate

NOTE The specifications herein are subject to change without prior notice due to improvements.

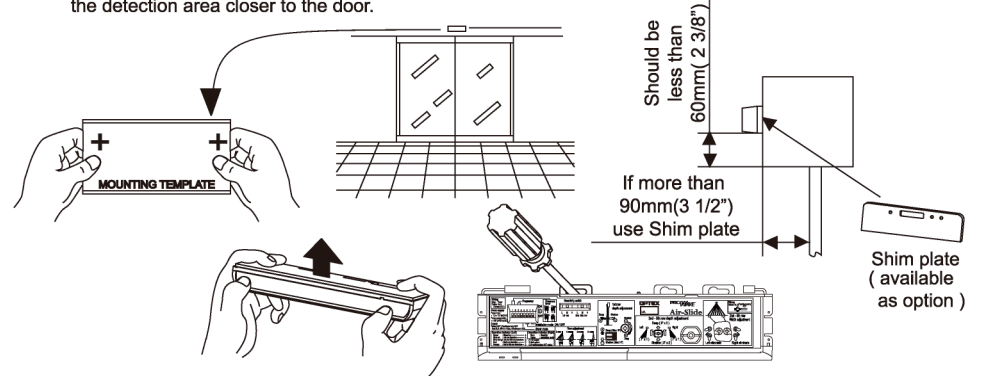
OUTER DIMENSIONS AND PART NAMES



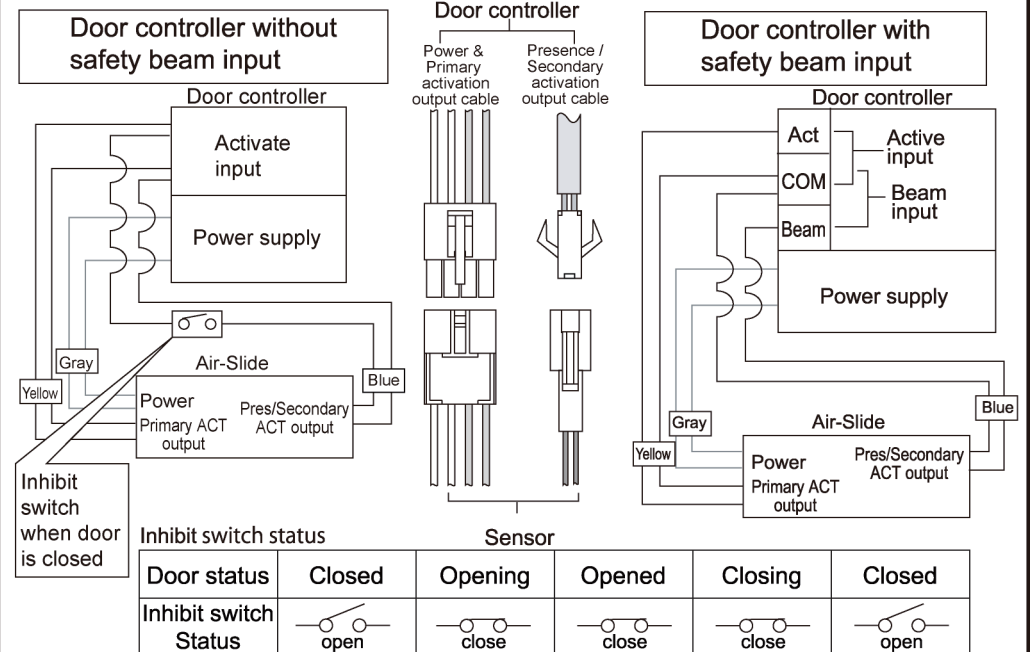
INSTALLATION

- Affix the mounting template at the desired mounting position.*
- Drill two mounting holes of $\phi 3.4\text{mm}$ ($\phi 1/8"$).
- To pass the cable through to the header, drill a wiring hole of $\phi 8\text{mm}$ ($\phi 5/16"$).
- Remove the mounting template.
- Remove the housing cover. Attach the sensor to the mounting surface with two mounting screws.

NOTE Make sure to install the sensor within 60mm (2 1/2") from the bottom of header. Use shim plate (available as option) when the reveal is deeper than 90mm (3 1/2") to make the detection area closer to the door.



- Wire the Power & Primary activation output cable and Presence / Secondary activation output cable to the door controller properly as shown in the drawing below. The Presence / Secondary activation output requires an input at the door control that is inhibited (ignored) when the door controller has a safety beam input. If not then install a position / inhibit switch in series with the blue wire output (see drawing below).

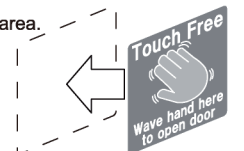


WARNING Before starting the procedure, ensure that the power is turned OFF. When passing through the cable to the hole, make sure not to tear the shield, otherwise it may cause electric shock or breakdown of the sensor.

NOTE Make sure to connect the cable correctly to the door controller before turning the power ON. To enable the presence detection, do not enter the detection area for 10 seconds after supplying the power.

- Affix the touchless plate on the appropriate position after adjusting the detection area.

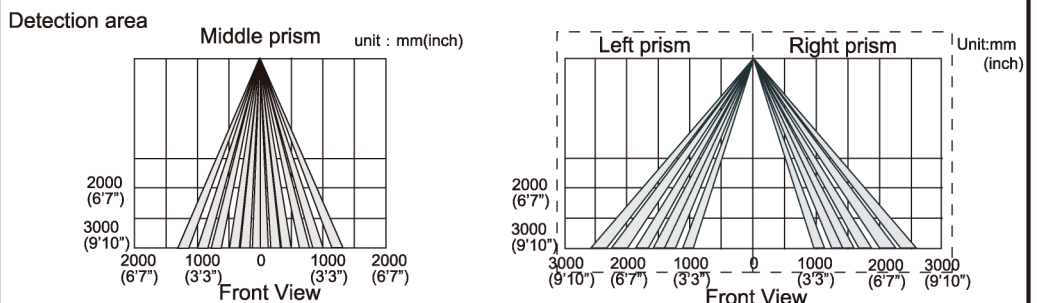
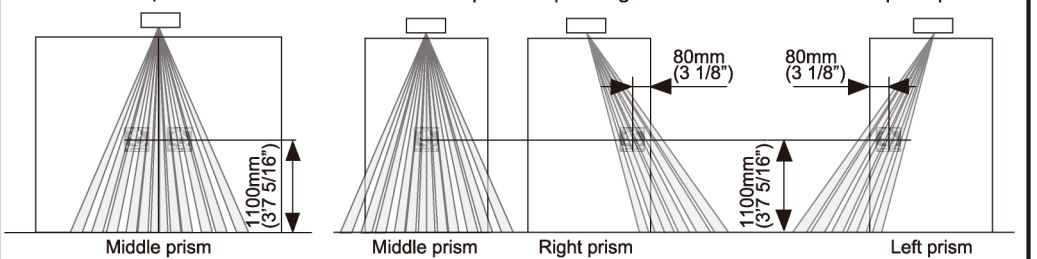
CAUTION Risk of getting caught. Make sure to affix the touchless plate where a hand is not caught by the door during door closing.



ADJUSTMENT

1. 1st row area adjustment

1. Prism selection
Make sure to select the prism depending on the door type and the intended touchless plate position; otherwise the sensor does not send an output when a hand approaches.



Prism change
Select the prism depending on the door type and the touchless plate position. Factory setting : Middle prism

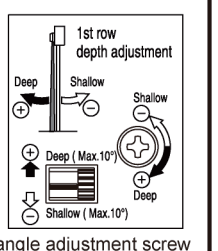
How to distinguish the prism
Check the engraved mark on the back of prism



2. Angle adjustment

- Adjust the 1st row angle to detect a hand at touchless plate intended position.
- To set the 1st row, follow the procedures below.
- Switch dipswitch 8 to "ON". Only the first row of detection area becomes active. (Door open state, Operation indicator (right) glows yellow.)
 - Turn the 1st row angle adjustment screw to "-(minus)" or "+(plus)" to detect a waving hand. The sensor status can be checked by operation indicator(left).*
 - Set dioswitch 8 to "OFF".

*1st row detection : blinking red. The sensor might detect a hand where touch plate is not affixed.



ADJUSTMENTS

2 Area adjustment (2nd to 5th row)

The 2nd to 5th rows work as a 2nd activation area to detect people who enter after the door opening by hand. The 2nd activation area becomes effective at the same time as the door opening.

	unit[mm]				
Mounting height	2000 (6'7")	2200 (7'3")	2500 (8'2")	2700 (8'10")	3000 (9'10")
A	200 (8")	220 (9")	250 (10")	270 (11")	300 (12")
B	420 (15")	460 (16")	520 (19")	560 (21")	630 (24")
C	780 (27")	860 (28")	970 (32")	1050 (35")	1180 (39")
D	1210 (39")	1330 (44")	1510 (49")	1630 (54")	1820 (57")
E	2230 (74")	2450 (78")	2780 (91")	3000 (99")	3350 (109")
F	1600 (53")	1760 (59")	2000 (67")	2160 (71")	2400 (79")
G	1010 (34")	1110 (38")	1260 (42")	1360 (46")	1520 (50")

The detection chart is when the pattern is changed to the shallowest.

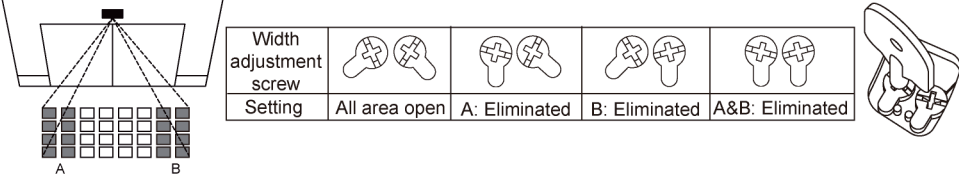
NOTE

The actual detection area may become smaller depending on the ambient light, the color / material of the object and the floor as well as the entry speed of the object.

1 Adjusting the pattern width

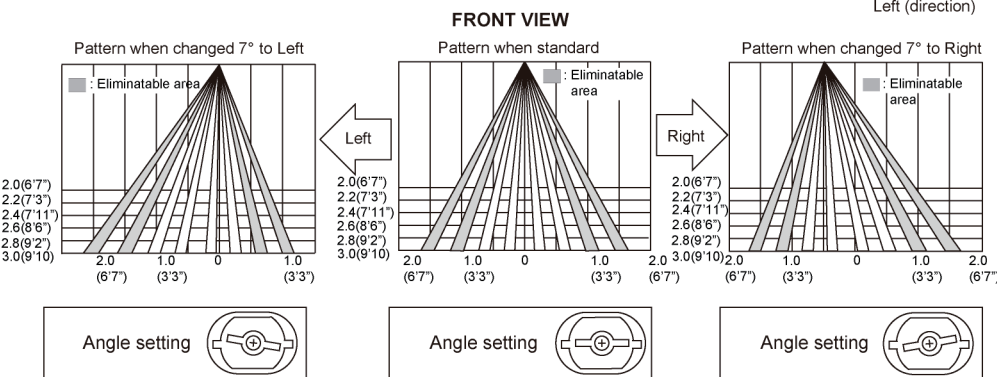
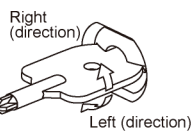
1-1 Row adjustment

The right & left detection area can be eliminated by width adjustment screw.



1-2 Angle adjustment

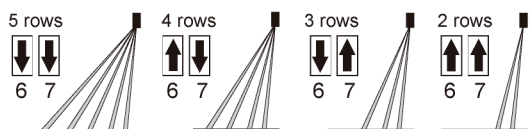
The width of the activation detection area (rows 3, 4 and 5) can both be moved at the same time 7° either left or right in 1 step.



2 Depth adjustment

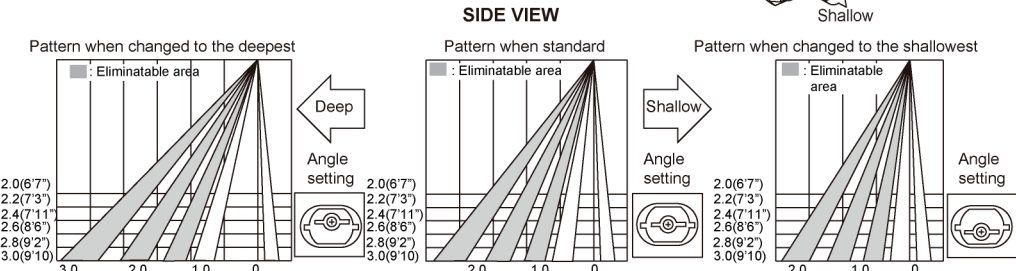
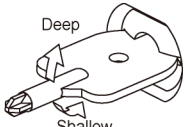
2-1 Row adjustment

The 5th, 4th, and 3rd rows can be eliminated by combining dipswitches 6 and 7.

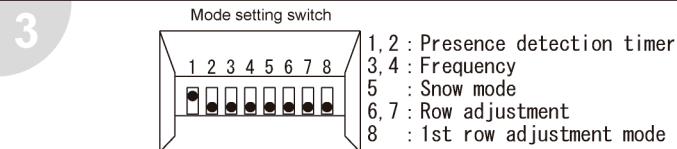


2-2 Angle adjustment

The area depth can be changed in 3 °*2 steps by moving the activation angle adjustment lever up and down.



NOTE Always check the area according to the expected entry speed and determine the appropriate number of rows. Make sure not to create a gap between the 1st row and the 2nd row.



1 Setting the sensitivity

Normally set to "Middle". "Low" decreases the sensitivity and "H" increases the sensitivity.

2 Setting the presence detection timer

The 2nd and 3rd rows have the presence detection function. The presence detection timer can be selected from 4 settings.

NOTE To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.

3 Setting the frequency

When using more than two sensors close to each other, set the different frequency for each sensor by combining dipswitch 3 and 4. 1st row and 2nd to 5th row setting can be adjusted individually.

4 Setting the snow mode

Set this switch to ON, if the sensor is used in a region with snow.

5 Setting the Row adjustment

See ADJUSTMENT 2 2-1. Row adjustment

6 Setting the 1st row adjustment mode

See ADJUSTMENT 1 2. Angle adjustment

CHECKING

Check the operation according to the chart below.

Entry	Power off	Outside of detection area	Entry to 3rd to 5th row	Entry to 2nd row	Entry to *1st and 2nd row* or *1st and 3rd row*	Entry to 1st row	Outside of detection area
Image							
Operation indicator(left)	None	Green	Orange	Red	Blinking Orange	Blinking Red	Green
Primary activation output	OFF	OFF	OFF	ON	OFF	OFF	OFF
Pres/Secondary ACT output	ON	OFF	ON	OFF	OFF	OFF	OFF

NOTE No output is made when sensor detects an object in the 1st row.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

WARNING

- Always keep the detection window clean. If dirty, wipe the window lightly with a damp cloth. (Do not use any cleaner or solvent.)
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

NOTE

- When turning the power on, always walk-test the detection area to ensure proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

Alarm display

Refer to the TROUBLESHOOTING below when the following status shows.

Status	Replacement notification	Life cycle notification	Saturation signal
Operation indicator (left)	Flashing green blinking	Twice green blinking	Slow green blinking

TROUBLESHOOTING

Problem	Operation indicator	Possible cause	Possible countermeasures	
Door does not open when a person enters the detection area and wave a hand.	None	Power supply voltage. Wrong wiring or connection failure.	Set to the stated voltage. Check the wires and connector. Check INSTALLATION 2 .	
	Unstable	Wrong detection area positioning. Sensitivity is too low. Short presence detection timer. Dirty detection window.	Check ADJUSTMENT . Set the sensitivity higher. Check ADJUSTMENT 3 1 . Set the presence detection timer longer. Check ADJUSTMENT 3 2 . Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)	
	Blinking Orange	Miss-wiring for Power & Primary activation output.	Make sure the inhibit switch is open when door is on closed position. Check INSTALLATION 2 .	
Door does not open when people wave the hand.	Red/Orange	Miss-adjustment for 1st Row.	Make sure the choice of prism for 1st Row is correct. Check ADJUSTMENT 1 . Increase the sensitivity of 1st Row. Check ADJUSTMENT 3 1 . Adjust the depth of 1st Row. Check ADJUSTMENT 1 .	
Door closes when people are in the 2nd to 5th row after the primary activation.	Red/Orange	Miss-wiring for Pres/Secondary ACT output.	Make sure Pres/Secondary ACT output is connected to the proper input. Check INSTALLATION 2 .	
Door opens when people are in the 2nd to 5th row despite people did not activate the door by hand.	Red/Orange	Miss-adjustment for inhibit switch when door controller is without safety beam input. Miss-wiring for Pres/Secondary ACT output.	Make sure the inhibit switch is open when door is on closed position. Check INSTALLATION 2 . Make sure Pres/Secondary ACT output is connected to the proper input. Check INSTALLATION 2 .	
	Red	The 2nd row overlaps with the door.	Adjust the 2nd row to "Deep" (Outside). Check ADJUSTMENT 2 2-2 .	
Door opens when no one is in the detection area. (Ghosting)	Unstable	Vibration of the header.	Set the sensitivity lower. Check ADJUSTMENT 3 1 .	
		Water drops on the detection window.	Use the rain-cover (available as option). Or install in a place keeping the waterdrops off.	
		The detection area overlaps with that of another sensor.	Select the different setting of frequency switch. Check ADJUSTMENT 3 3 .	
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside). Check ADJUSTMENT 1 and 2 2-2 .	
		Reflecting objects in the detection area. Or reflecting light on the floor.	Remove the objects.	
		Sensitivity is too high.	Set the sensitivity lower. Check ADJUSTMENT 3 1 .	
Door remains open	Yellow	The 1st row adjustment mode is on.	Turn off dipswitch 8 switch. Check ADJUSTMENT 1 2 .	
	Proper	Wrong wiring or connection failure.	Check the wires and connector. Check INSTALLATION 2 .	
		Presence timer is Infinite and sudden change in the detection area happened.	Check ADJUSTMENTS 3 2 . If the problem still persists, hard-reset the sensor. (Turn the power OFF and ON again.)	
Door remains closed	Proper	Wrong wiring or connection failure.	Check the wires and connector. Check INSTALLATION 2 .	
Indication	Fast Green blinking	The sensor failure.	Contact OPTEX tech support or the sales rep.	
		Twice Green blinking	The relay is reaching the end of its life cycle.	Contact OPTEX tech support or the sales rep.
		Slow Green blinking	Signal saturation	Remove highly reflecting objects from the detection area. Change the area angle.
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside). Check INSTALLATION 1 , ADJUSTMENT 1 .	

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