OPTEX
Manuals
Master Index

OPTEX

Left Panel

② CONSTRUCTION / ② AUFBAU / ② CONSTRUCTION

ENGLISH	DEUTSCH	FRANCAIS
① Main body	① Gehäuse	① Corps principal
② Relay inversion switch	② Relais-Inversionsschalter	② Interrupteur d'inversion à relais
③ Sensitivity selector switch	③ Sensor-Empfindlichkeitsschalter	③ Sélecteur de sensibilité
④ Transom mounting hole	④ Befestigungsbohrungen (Rahmenmontage)	④ Trou de montage de la traverse
⑤ Overhead mounting hole	⑤ Befestigungsbohrungen (Deckenmontage)	⑤ Trou de montage suspendu
⑥ Lens	⑥ Linse	⑥ Objectif
⑦ Power/operation indicator lamp (Green indicator lamp)	⑦ Betriebsanzeige (grün)	⑦ Témoin d'opération/alimentation (témoin vert)

③ INSTALLATION / ③ EINBAU / ③ INSTALLATION

❶ 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.

<Precautions for Mounting>
· 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.

(3) Connect a wiring cord to the door controller.

Note that the wiring method differs depending on setting of the relay inversion switch.

<When the relay inversion switch is "FAIL-SAFE">
● Grey : Power source 12 to 24 V
● Grey : Power source AC/DC
● White : COM
● Yellow : N.O
● Green : N.C.

<When the relay inversion switch is "FAIL-SECURE">
● Grey : Power source 12 to 24 V
● Grey : Power source AC/DC
● White : COM
● Yellow : N.C.
● Green : N.O

Install the main body in such a manner that the connector can be connected easily.

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.

(5) Connect the connector for the main body to that of the wiring cord. To disconnect them, press both knobs and pull them apart.

<Connecting the Connectors>
Insert the connectors deeply into each other. Otherwise, the OP-08C may malfunction due to a contact failure.

❶ 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.

< Gestaltung des Erfassungsbereiches >
· Gegenstände wie Topfpflanzen, Flaggen oder Spruchbänder etc. dürfen nicht im Detektionsbereich plaziert werden. Die Funktion des Sensors kann sonst beeinträchtigt werden.
· Plazierung >
· Das Gerät so anbringen, daß es nicht direkt der Witterung ausgesetzt ist. Wenn die vorgesehenen Kabeldurchbrüche zur Kabeleinführung verwendet werden sollen, muß das Gerät an einer Stelle installiert werden, daß es gegen Spritzwasser geschützt ist und sichergestellt ist, daß kein Wasser ins Gehäuse eindringen kann.

(3) Anschluß des Verbindungskabels zum Tür- Steuergerät.

Beachten Sie, daß die Verdrahtung je nach Einstellung des Relais-Inversionsschalters unterschiedlich ist.

<Wenn der Inversionsschalter auf "Fail-Safe" steht>
● Grau : Betriebsspannung 12 bis 24 V
● Grau : Betriebsspannung AC/DC
● Weiß : COM
● Gelb : N.O.
● Grün : N.C.

<Wenn der Inversionsschalter auf "Fail-Secure" steht>
● Grau : Betriebsspannung 12 bis 24 V
● Grau : Betriebsspannung AC/DC
● Weiß : COM
● Gelb : N.C.
● Grün : N.O.

Das Gehäuse muß so angebracht sein, daß der Stecker problemlos angeschlossen werden kann.

(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.

(5) Den am Gehäuse befindlichen Stecker in das Verbindungskabel einstecken. Zum Abstecken die beiden seitlichen Knöpfe zusammendrücken und die Stecker auseinander ziehen.

<Verbindung der Stecker>
Insérer les connecteurs profondément l'un dans l'autre, sinon l'OP-08 pourrait mal fonctionner en raison d'un défaut de contact.

❶ 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.

<Précautions pour le montage >
· Ne pas placer d'objets oscillants, tel qu'une 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.

(3) Brancher un cordon de câblage au contrôleur de la porte.

Il faut prendre note que la méthode de câblage diffère selon le réglage de l'interrupteur de reversion à relais.

<Lorsque l'interrupteur d'inversion à relais est réglé sur "FAIL-SAFE">
● Gris : Source d'alimentation De 12 à 24 V
● Gris : Source d'alimentation c.a./c.c.
● Blanc : COM
● Jaune : N.O
● Vert : N. C.

<Lorsque l'interrupteur d'inversion à relais est réglé sur "FAIL-SECURE">
● Gris : Source d'alimentation De 12 à 24 V
● Gris : Source d'alimentation c.a./c.c.
● Blanc : COM
● Jaune : N.C.
● Vert : N.O

Installer le corps principal de telle manière que le connecteur puisse être branché facilement.

(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.

(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.
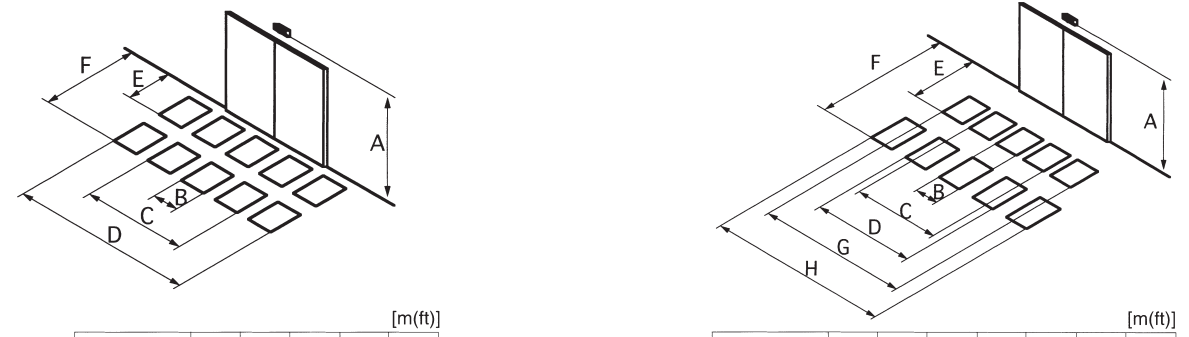
<Connexion des connecteurs>
Insérer les connecteurs profondément l'un dans l'autre, sinon l'OP-08 pourrait mal fonctionner en raison d'un défaut de contact.
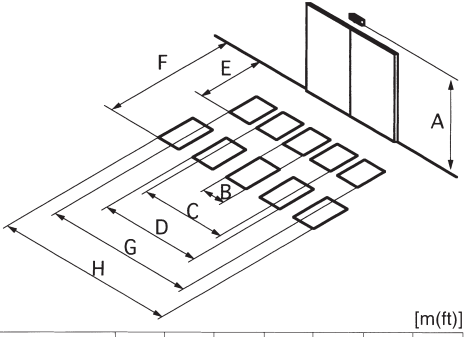
Grey / White / Yellow / Green
To Door Controller

Approx 10mm

Middle Panel

④ Adjustment (Turn on the power) / ④ Einstellung (Einschalten) / ④ Réglage (activer l'alimentation)

ENGLISH	DEUTSCH	FRANCAIS
Standard Detection Area	Normaldetektionsbereich	Aire de Detection Standard

	ENGLISH	DEUTSCH	FRANCAIS
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

[m(ft)]

	B	C	D	E	F
A	2.5 (8.2)	0.3 (1)	1.8 (5.9)	3.6 (11.8)	6.8 (22.3)	2.3 (7.5)
	3 (9.8)	0.4 (1.3)	2.1 (6.9)	4.3 (14.1)	1.0 (3.3)	0.9 (9.2)
	4 (13.1)	0.5 (1.6)	2.9 (9.5)	5.7 (18.7)	7.4 (24.3)	3.7 (12.1)

ENGLISH	DEUTSCH	FRANCAIS
Wide & Deep Detection Area	Gross Und Tief-Normaldetektionsbereich	Aire de détection large et profonde

	ENGLISH	DEUTSCH	FRANCAIS
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

[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 (9.5)	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)

④ Adjustment (Turn on the power) / ④ Einstellung (Einschalten) / ④ Réglage (activer l'alimentation)

❶ 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.

❷ 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.

❶ 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.

❷ 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-Normaldetektions-bereich einzustellen, diesen Knopf mit einer Kneifzange abschneiden.

(4) Die Linse anbringen und sicherstellen, daß die markierung ● auf der Linsenoberfläche auf der Anbringseite liegt.

❶ 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.

❷ 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 l'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.

knob
● mark

Right Panel

④ Adjustment (Turn on the power) / ④ Einstellung (Einschalten) / ④ Réglage (activer l'alimentation)

❸ Adjustment of the detection area (Masking)
Detection areas can be masked by affixing the area masking seal to the lens area.

(1) Remove the panel cover.

(2) Using a slotted screwdriver, remove the lens from the main unit.

(3) Peel off the area masking seal from the inside of the panel cover, and affix them on the parts of the lens corresponding to the areas to be masked. The relationship between the detection areas and the lens is shown in the diagram at left.

(4) After affixing the area masking seal, replace the lens in the main unit taking care not to mistake the lens direction.

When using the wide & deep detection area, the ● mark on the lens surface should be on the mounting surface side. When using the standard detection area, the ● mark on the lens surface should be on the opposite of the mounting surface side.

< Caution >
Note that the positions for attaching the area masking seal are different for the standard detection area and wide & deep detection area.

❸ Einstellen des Detektionsbereiches (Maskieren)
Die Detektionsbereiche können durch Anbringen der Bereichsmaske auf dem Linsenbereich eingestellt werden.

(1) Die Abdeckung abnehmen.

(2) Mit einem Schlitzschraubenzieher die Linse von Hauptgerät abnehmen.

(3) Die Bereichs-Maskierungsaufkleber von der Innenseite der Abdeckung abziehen und sie auf die Teile der Linse kleben, die den zu maskierenden Bereichen entsprechen. Die Beziehung zwischen Erkennungsbereichen und Linse ist in der Abbildung links gezeigt.

(4) Nach dem Anbringen der Bereichs-Maskierungsaufkleber die Linse in das Hauptgerät einsetzen, und darauf achten, nicht die Linsenrichtung zu verwechseln.

Wenn Gross Und Tief-Normaldetektionsbereich verwendet werden, soll sich die Markierung ● an der Linsenoberfläche auf der Anbringungsseite befinden. Wenn Normaldetektionsbereich verwendet werden, soll sich die Markierung ● an der Linsenoberfläche auf der Anbringungsseite entgegengesetzten Seite befinden.

< Achtung >
Beachten, daß die Anbringpositionen für die Bereichs-Maskierungsaufkleber für Normaldetektionsbereich- und Gross Und Tief-Normaldetektionsbereich unterschiedlich sind.

❸ Réglage de l'aire de détection (Masking)
Les aires de détection peuvent être masquées en fixant des étiquettes collantes d'aire sur la surface de la lentille.

(1) Enlever le couvercle du panneau.

(2) En utilisant un tournevis (-), enlever la lentille de l'unité principale.

(3) Détacher les étiquettes collantes de masquage d'aire de la partie interne du couvercle du panneau, et les coller sur les parties de la lentille correspondantes aux aires devant être masquées. Le rapport entre les aires de détection et la lentille est indiqué dans le diagramme sur la gauche.

(4) Après avoir fixé les étiquettes collantes de masquage d'aire, remettre la lentille dans l'unité principale, en faisant bien attention à ne pas se tromper dans la direction de la lentille.

Lorsque l'on utilise les aire de détection large et profonde, la marque ● sur la surface de la lentille devrait se trouver du côté de la surface de montage. Lorsque l'on utilise les aire de détection standard, la marqué ● sur la surface de la lentille devrait se trouver du côté opposé à celui de surface de montage.

< Précaution >
Il faut remarquer que les positions pour fixer les étiquettes collantes de masquage d'aire sont différentes pour les aire de détection standard et aire de détection large et profonde.

Standard Detection Area   DOOR OP-08C
Wide & Deep Detection Area   DOOR OP-08C
LENS

❹ SETTING THE SENSITIVITY SELECTOR SWITCH
Set the sensitivity selector switch, referring to the mentioned at left values. Normally, set it to "M".

L	2m (6.6ft) Under
M	2 (6.6) ~ 3m (9.8ft)
H	3 (9.8) ~ 4m (13.1ft)

SENS.

❹ EINSTELLUNG DER SENSOREMPFINDLICHKEIT
Den Wahlschalter zur Einstellung der Sensorempfindlichkeit entsprechend der links beschriebenen Werten einstellen. Normalfall zeigt der Schalter die Stellung "M".

❹ COMMENT RÉGLER LE SÉLECTEUR DE SENSIBILITÉ
Régler le sélecteur de sensibilité, en se référant aux valeurs mentionné à gauche. Normalement, l'ajuster à la position "M".

❺ SETTING THE RELAY INVERSION SWITCH
Set the state of the relay contact for power-off (power failure, etc.).

FAIL SAFE
FAIL SECURE
RELAY

FAIL SAFE

State of Sensor	State of Relay
At power-off	Green / Yellow / White
At standby	Green / Yellow / White
At detection	Green / Yellow / White

FAIL SECURE

State of Sensor	State of Relay
At power-off	Green / Yellow / White
At standby	Green / Yellow / White
At detection	Green / Yellow / White

· FAIL-SAFE
At power-off, the relay contact is closed and the door is opened.

· FAIL-SECURE
At power-off, the relay contact is open and the door is not opened.

❺ EINSTELLUNG DES RELAIS-INVERSIONSSCHALTERS
Wahl der gewünschten Stellung des Relaiskontakts (z.B. bei Stromausfall) wie folgt treffen:

· FAIL-SAFE
Im spannungslosen Zustand wird der Relaiskontakt geschlossen und die Tür geöffnet.

· FAIL-SECURE
Im spannungslosen Zustand wird der Relaiskontakt geöffnet und die Tür geschlossen.

❺ COMMENT RÉGLER L'INTERRUPTEUR D'INVERSION À RELAIS
Régler l'état du contact de relais en cas d'alimentation déconnectée (défaut d'alimentation, etc).

· FAIL-SAFE
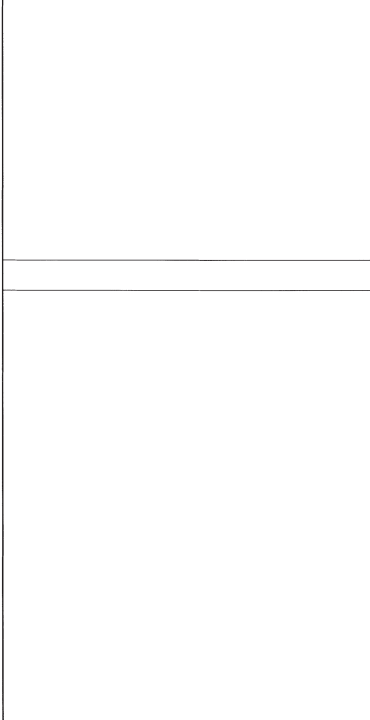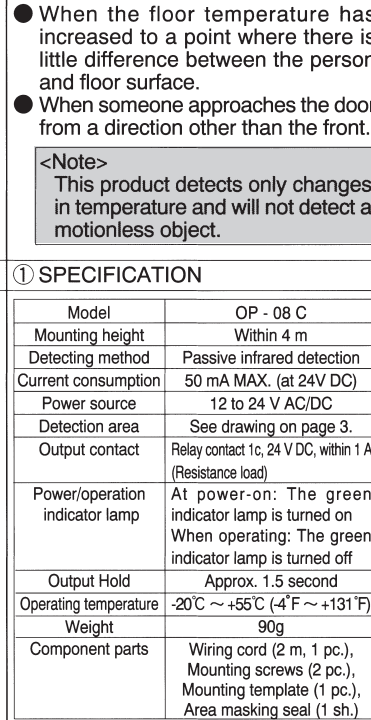Avec l'alimentation déconnectée, le contact de relais est fermé et la porte est ouverte.

· FAIL-SECURE
Avec l'alimentation déconnectée, le contact de relais est ouvert et la porte n'est pas ouverte.

❻ MOUNTING THE HOUSING COVER
Mount the housing cover to the main body.

In the situation where the wiring is to be left exposed, use cutting nippers to break out the knockout for the exposed wiring shown in the figure at left.
When the unit is to be attached to the ceiling, cut out the ceiling knockout of the panel cover.
(1) Cut into the cover using the cutting nippers.
(2) Break out the top panel by hand.

Overhead Mounting Knockout
Exposed Wiring Knockout

❻ MONTAGE DER GEHÄUSEABDECKUNG
Die Gehäuseabdeckung am Gehäuse anbringen. Im Falle der Aufputz-Verdrahtung mit geeignetem Werkzeug die vorgesehene Kabeleinführung herausbrechen (siehe Abbildung). Im Falle der Deckenmontage ist die Rückseite des Gehäusedeckels komplett zu entfernen. Die Rückwand hierzu entsprechend einschneiden und anschließend mit der Hand herausbrechen.

❻ COMMENT MONTER LE COUVERCLE DU LOGEMENT
Monter le couvercle du logement au corps principal.
Au cas où le câblage est laissé exposé, utiliser des pinces de coupe pour rompre le couvercle de boîte de jonction du câblage exposé comme illustré sur la figure à gauche.
Lorsque l'unité doit être fixée au plafond, découper le couvercle de boîte de jonction du couvercle du panneau.
(1) Couper le couvercle en utilisant des pinces de coupe.
(2) Rompre le panneau supérieur manuellement.

Left Panel

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

Entry Motion (Image) / Power/Operation Indicator Lamp (Green Indicator Lamp)

ON — Outside the Detection Area (Standby)

OFF — Inside the Detection Area (Detected)

❼ 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.)

❼ FUNKTIONSPRÜFUNG

Die Funktionen müssen in der folgenden Reihenfolge geprüft werden:

(1) Stromversorgung sicherstellen (die Betriebsanzeige - LED leuchtet)

(2) Nach dem Einschalten wird 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.)

❼ 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.)

ENGLISH	DEUTSCH	FRANCAIS

❽ 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.

❽ 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 in 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.

❽ 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.

ENGLISH	DEUTSCH	FRANCAIS
⑤ TROUBLESHOOTING	⑤ FEHLERSUCHE	⑤ RECHERCHE DES PANNES

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.

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 entfernen.

Spricht auf Hunde oder Katzen an
→ Der OP - 08 C erkennt derartige Tiere, weil eine Temperaturänderung gegenüber der Bodentemperatur vorliegt.

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 a 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

Mounting Pitch 123 (4.84) · 32.8 (1.29) · 45.6 (1.80) · 49.5 (1.95) · 145 (5.71) · 19.5 (0.77) · 31.5 (1.24) · Mounting Pitch 123 (4.84)

[mm (inch)]

Right Panel

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

OPTEX Technologies Inc.
3882 Del Amo Blvd., Suite 604
Torrance, CA 90503 U.S.A.
TEL.: +1 (310) 214-8644
FAX.: +1 (310) 214-8655
TOLL-FREE: 800-877-6656
WEBSITE: www.optextechnologies.com

OPTEX Technologies B.V.
Tiber 2, 2491 DH The Hague,
The Netherlands
TEL.: +31 (0)70-419-41-00
FAX.: +31 (0)70-317-73-21
E-MAIL: info@optex.nl
WEBSITE: www.optex.nl

Far Right Panel

 OPTEX

PASSIVE INFRARED SENSOR

INSTRUCTION MANUAL	BEDIENUNGSANLEITUNG	MODE D'EMPLOI
OP-08CS (SILVER)	OP-08CS (SILBER)	OP-08CS (ARGENT)
OP-08CW (WHITE)	OP-08CW (WEIß)	OP-08CW (BLANC)
OP-08CBL (BLACK)	OP-08CBL (SCHWARZ)	OP-08CBL (NOIR)
Before using, read this instruction manual thoroughly for proper installation procedures.	Vor Montagebeginn lesen Sie bitte diese Bedienungsanleitung aufmerksam durch um einen einwandfreien Betrieb zu gewährleisten.	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 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 AUFPASSEN

■ Der Sensor OP-08 C 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 Türantriebsteuerung. Es wird mit Rahmen über einer automatischen Tür befestigt und darf nur für diesen vorgesehenen Einsatz verwendet werden.

⚠ PRÉCAUTION
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 non 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	Detektionsbereich	Zone de détection

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

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

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

Detection Method of OP-08C	Funktionsprinzip OP-08 C	Méthode de détection de l'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.

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

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.

Actual Detection	Detektionsvermögen	Détection effective

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.

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.

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

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

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

① SPECIFICATION	① TECHNISCHE DATEN	① CARACTÉRISTIQUES TECHNIQUES

Model	OP - 08 C	Model	OP - 08 C	Modèle	OP - 08 C
Mounting height	Within 4 m	Montagehöhe	max. 4m	Hauteur de montage	Dans les limites de 4 m
Detecting method	Passive infrared detection	Detektionsmethode	Passiv Infrarot- Erkennung	Méthode de détection	Détection infrarouge passive
Current consumption	50 mA MAX. (at 24V DC)	Stromaufnahme	50 mA MAX. (auf 24 V DC)	Consommation de courant	50 mA MAX. (à 24V CC)
Power source	12 to 24 V AC/DC	Betriebsspannung normal	12 bis 24 V AC/DC	Source d'alimentation	De 12 à 24 V c.a./c.c.
Detection area	See drawing on page 3.	Detektionsbereich	siehe Seite 3	Zone de détection	Voir l'illustration de la page 3
Output contact	Relay contact 1c, 24 V DC, within 1 A (Resistance load)	Ausgangskontakt	Relaiskontakt 1c, 24 V DC, max. 1 A (Widerstandslast)	Contact de sortie	Relais à contact 1c, 24 V c.c., dans les limites de 1 A (charge de résistance)
Power/operation indicator lamp	At power-on: The green indicator lamp is turned on When operating: The green indicator lamp is turned off	Strom/ Betriebsanzeige	Eingeschaltet: Die grüne LED leuchtet Betrieb: Die grüne LED ist erloschen	Témoin d'opération/alimentation	Avec l'alimentation connectée. Le témoin vert est allumé. Lorsque l'on opère l'équipement : Le témoin vert est éteint.
Output time	Approx. 1.5 second	Dauer des Ausgangssignals	Ca. 1.5 sec	Maintien de sortie	Environ 1.5 seconde
Operating temperature	-20℃ ∼ +55℃ (-4°F ∼ +131°F)	Betriebstemperatur	-20℃ bis +55℃	Température de service	-20℃ ∼ +55℃ (-4° F ∼ +131° F)
Weight	90g	Gewicht	90g	Poids	90g
Component parts	Wiring cord (2 m, 1 pc.), Mounting screws (2 pc.), Mounting template (1 pc.), Area masking seal (1 sh.)	Lieferumfang	Anschlußkabel (2m, 1 St.), Befestigungsschrauben (2 St.), Montageschablone (1 St.), Aufkleber zur Bereichsabdeckung (1 Blatt)	Pièces de composante	Cordon de câblage (2 m, 1 pièce), vis de montage (2 pièces), gabarit de montage (1 pièce), joint de masquage de la zone (1 unité)

Specification subject to change without prior notice.

OPTEX
OM-105C / 106C

ENGLISH

CE 1731 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. 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
1. This sensor is a non-contact switch intended for header mount / ceiling mount of an automatic door. Do not use for any other applications.
2. When setting the sensor's detection area, 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 equipments that are connected to the sensor.
4. Only use the sensor as specified in the operation manual provided.
5. Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
6. 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.
7. 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 Danger of electric shock. | Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of equipments. |

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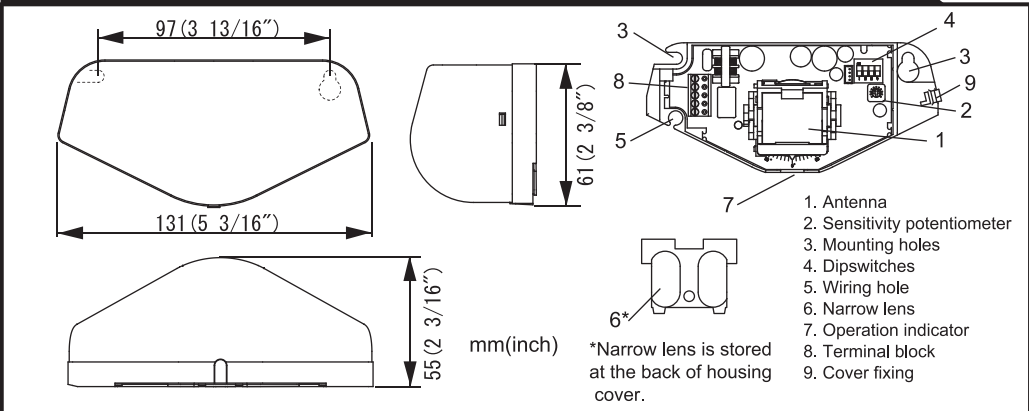-Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity.

SPECIFICATIONS

Model	: OM-105C / 106C
Cover color	: Silver / Black
Mounting height	: 2.0 (6'7") to 3.5m (11'5")
Detection method	: Microwave doppler effect
Power frequency	: 24.125GHz
Power density	: <20dBm
Detection area	: See Detection area
Vertical adjustment	: +10˚ to +70˚ (Header mount)
	+20˚ to +80˚ (Ceiling mount)
Horizontal adjustment	: 30˚ to left or right
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

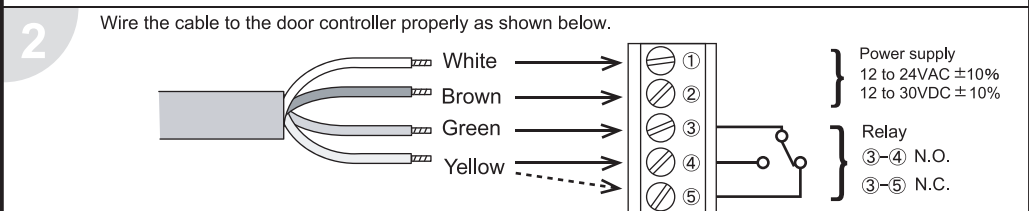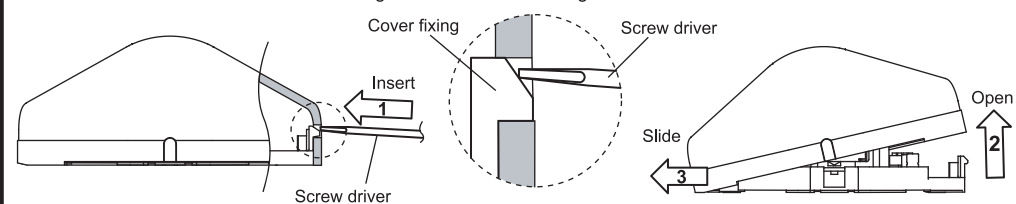|	
Output	: Form C relay
	50V 0.3A Max.(Resistance load)
Output hold time	: 0.5sec. / 2.0sec.
Response time	: <0.3 sec.
Operating humidity	: <80%
Operating temperature	: -20˚C to +55˚C(-4˚F to 131˚F)
IP rate	: IP54
Weight	: 140g (4.9oz)
Accessories	: 1 Cable 3m (9'10")
	1 Operation manual
	2 Mounting screws
	1 Mounting template
	1 Narrow lens*
	* 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

97(3 13/16")
131(5 3/16")
61(2 3/8")
55(2 3/16")
mm(inch)

1. Antenna
2. Sensitivity potentiometer
3. Mounting holes
4. Dipswitches
5. Wiring hole
6. Narrow lens
7. Operation indicator
8. Terminal block
9. Cover fixing

6* *Narrow lens is stored at the back of housing cover.

INSTALLATION

1
1. 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.
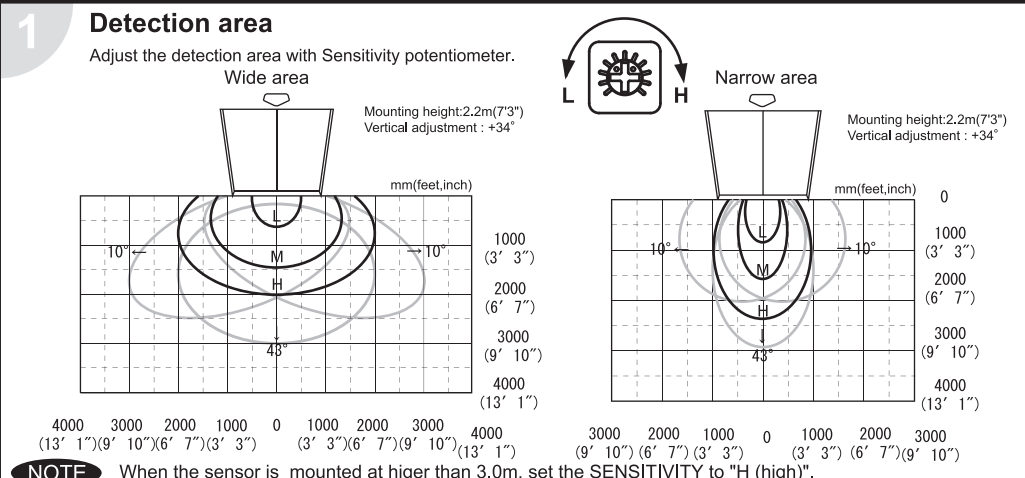
Cover fixing　Screw driver
Insert 1
Screw driver
Slide 3
Open 2

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

White ①
Brown ②
Green ③
Yellow ④
⑤

Power supply
12 to 24VAC ±10%
12 to 30VDC ±10%

Relay
③-④ N.O.
③-⑤ 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. |

3
1. 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.

4 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 Danger of electric shock. | 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. |

ADJUSTMENTS

1 Detection area
Adjust the detection area with Sensitivity potentiometer.

Wide area
Mounting height:2.2m(7'3")
Vertical adjustment : +34˚

Narrow area
Mounting height:2.2m(7'3")
Vertical adjustment : +34˚

mm(feet,inch)

L H

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

2 Detection area angle adjustment

	Adjustment	Scale	Angle
Vertical adjustment	Front View	3˚ X 20 steps / Side View	Header / Ceiling +80˚ +70˚ +20˚ +10˚ Side View
Horizontal adjustment	Front View	5˚ X 12 steps -30˚ 0˚ +30˚ Front View	+30˚ +30˚ Front View

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

3 Narrow area
To obtain Narrow area, place Narrow lens attached at the back of housing cover.
To place Narrow lens, follow step1&2 as shown on the right.

4 Dipswitches settings
Set Dipswitch1&2 to enable the direction recognition. (OM-106C Only.)

Bi-direction(Bi)
Door
Detection area
1 2

Uni-direction(Uni)
1 2

➡ : Detection
➡ : Non-Detection

Bi-direction
1 2
When Dipswitch1 is set to OFF, Bi-direction mode is effective, regardless of Dipswitch2 setting.

Uni-direction with Auto-caution mode*(ACM)
1 2

*Auto-caution mode(A person wavering in the detection area to be detected.)

Dipswitch3:Output hold time
0.5sec. 2.0sec.
3　3

Dipswitch4:Immunity
If there is external interference, set Dipswich 4 to ON.
4

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

⚠ **WARNING**
1. Always keep the housing cover clean. If dirty, wipe the housing cover lightly with a cloth. (Do not use any cleaner or 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. Always contact your installer or service engineer when changing the settings.
5. Do not paint the housing cover.

⬤ **NOTE**
1. When turning the power ON, always walk-test the 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.)

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	③④⑤	③④⑤	③④⑤	③④⑤

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.	Set the sensitivity higher.
		Wrong detection area positioning.	Check **ADJUSTMENTS**.
	Green blinking	The sensor is being set up.	Wait for the set-up to complete.
Door opens when no one is in the detection area. (Ghosting)	Red	Water drops on the housing cover.	Wipe the housing cover with a cloth.
		The detection area is overlaping with the door.	Adjust the detection area away from the door. Or set Dipswitch4 to ON.
		Sensitivity is too high.	Set the sensitivity lower.
		Raining or snowing.	Set Dipswitch1 to ON.(OM-106C Only) Or Dipswitch4 to ON.
Door remains open	Green	Wrong wiring or connection failure.	Check the wiring and Terminal block.

OPTEX
OM-105C (L)

CE 1731 ⚠

5916411 SEP 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 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

1. This sensor is a non-contact switch intended for header mount / ceiling mount of an automatic door.
   Do not use for any other applications.
2. When setting the sensor's detection area, 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 equipments that are connected to the sensor.
4. Only use the sensor as specified in the operation manual provided.
5. Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
6. 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.
7. 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	: OM-105C(L)	Output	: Form C relay
Cover color	: Black		50V 0.3A Max.(Resistance load)
Mounting height	: 2.0 (6'7") to 3.0m (9'10")	Output hold time	: 0.5sec.
Detection method	: Microwave doppler effect	Response time	: <0.3 sec.
Power frequency	: 24.125GHz	Operating humidity	: <80%
Power density	: <20dBm	Operating temperature	: -20℃ to +55℃(-4°F to 131°F)
Detection area	: See **Detection area**	IP rate	: IP54
Vertical adjustment	: +10° to +70° (Header mount)	Weight	: 140g (4.9oz)
	+20° to +80° (Ceiling mount)	Accessories	: 1 Cable 3m (9'10")
Horizontal adjustment	: 30° to left or right		1 Operation manual
Power supply	: 12 to 24VAC(+10%)		2 Mounting screws
	12 to 30VDC(+10%)		1 Mounting template
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

97(3 13/16")
131(5 3/16")
61(2 3/8")
55(2 3/16")
mm(inch)

1. Antenna
2. Sensitivity potentiometer
3. Mounting holes
4. Wiring hole
5. Operation indicator
6. Terminal block
7. Cover fixing

INSTALLATION

1
1. 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.

Cover fixing   Screw driver
Insert   1
Screw driver
Open   2
Slide   3

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

White ①
Brown ②
Green ④
Yellow ⑤

} Power supply
12 to 24VAC ±10%
12 to 30VDC ±10%

} Relay
③-④ N.O.
③-⑤ N.C.

| ⚠ 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. | |

3
1. 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.

4 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.

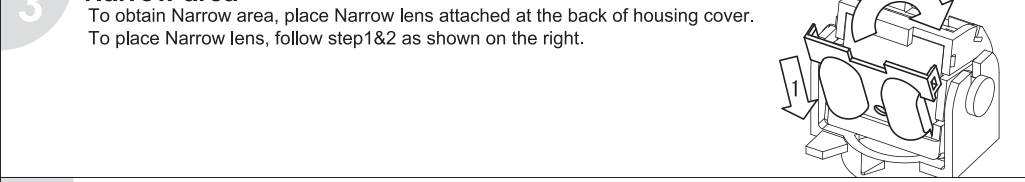| ⚠ WARNING | Do not use the sensor without the Housing cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or breakdown of the sensor may occur. |
| Danger of electric shock. | |

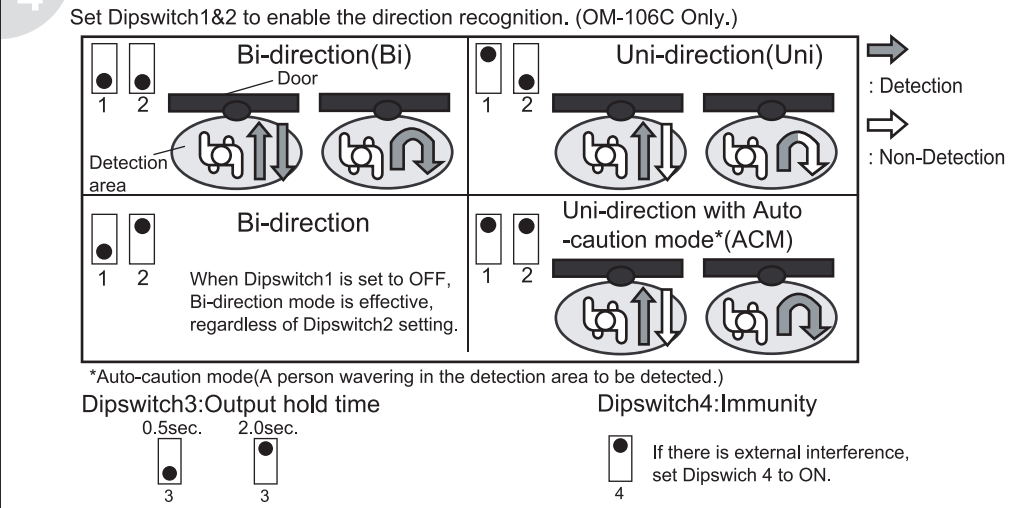## ADJUSTMENTS

1 **Detection area**
Adjust the detection area with Sensitivity potentiometer.
Wide area

Mounting height:2.2m(7'3")
Vertical adjustment : +34°

mm(feet.inch)

1000 (3' 3")
2000 (6' 7")
3000 (9' 10")
4000 (13' 1")

4000 3000 2000 1000   1000 2000 3000 4000
(13' 1")(9' 10")(6' 7")(3' 3") (3' 3")(6' 7")(9' 10")(13' 1")

L ⚙ H

2 **Detection area angle adjustment**

	Adjustment	Scale	Angle
Vertical adjustment	Front View	3° X 20 steps Side View	Header / Ceiling +80° +70° +20° +10° Side View
Horizontal adjustment	Front View	5° X 12 steps Front View	+30° +30° Front View

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

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

⚠ **WARNING**
1. Always keep the housing cover clean. If dirty, wipe the housing cover lightly with a cloth.
   (Do not use any cleaner or 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. Always contact your installer or service engineer when changing the settings.
5. Do not paint the housing cover.

● NOTE
1. When turning the power ON, always walk-test the 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.)
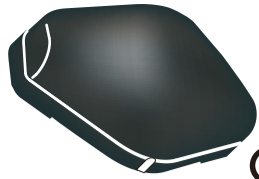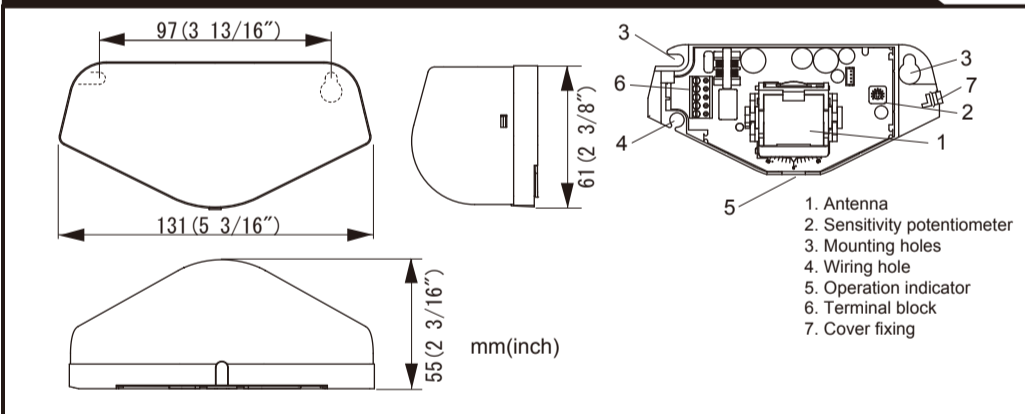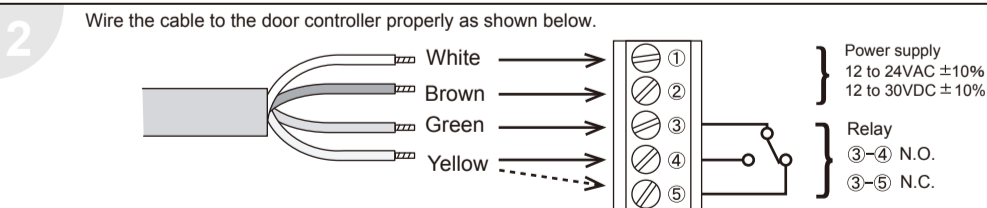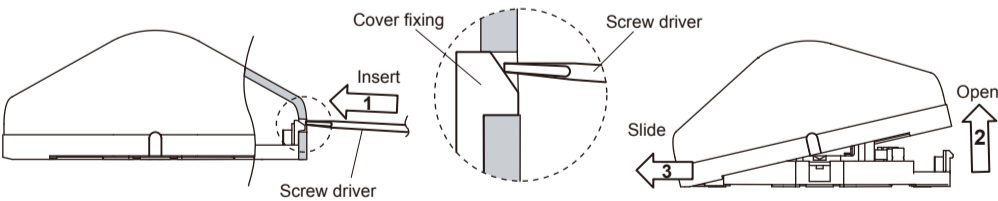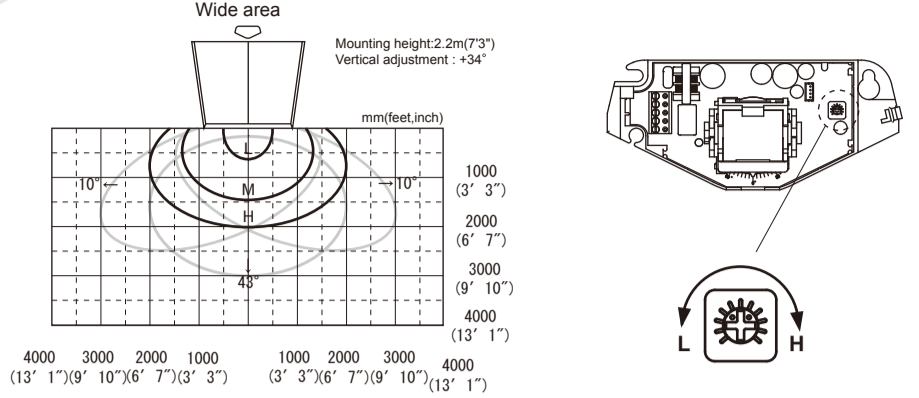
CHECKING

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	③④⑤	③④⑤	③④⑤	③④⑤

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.	
	Green blinking	The sensor is being set up.	Wait for the set-up to complete.
Door opens when no one is in the detection area. (Ghosting)	Red	Water drops on the housing cover.	Wipe the housing cover with a cloth.
		The detection area is overlapping with the door.	Adjust the detection area away from the door.
		Sensitivity is too high.	Set the sensitivity lower.
Door remains open	Green	Wrong wiring or connection failure.	Check the wiring and Terminal block.

OPTEX
REACTION ONE / REACTION TWO

5916231 · SEP 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 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

1. This sensor is a non-contact switch intended for header mount / ceiling mount of an automatic door. Do not use for any other applications.
2. When setting the sensor's detection area, 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 equipments that are connected to the sensor.
4. Only use the sensor as specified in the operation manual provided.
5. Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
6. 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.
7. 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 Danger of electric shock.	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of equipments.

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

97 (3 13/16")
131 (5 3/16")
61 (2 3/8")
55 (2 3/16")
mm(inch)

1. Antenna
2. Sensitivity potentiometer
3. Mounting holes
4. Dipswitches
5. Wiring hole
6. Narrow lens
7. Operation indicator
8. Terminal block
9. Cover fixing

*Narrow lens is stored at the back of housing cover.

INSTALLATION

1
1. 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.

Cover fixing
Insert
Screw driver
Screw driver
Slide
Open

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

Red →① Power supply 12 to 24VAC ±10%
Black →② 12 to 30VDC ±10%
White →③ Relay
Green →④ ③—④ N.O.
⑤ ③—⑤ 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.

3
1. 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.

4 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 Danger of electric shock.	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.

ADJUSTMENTS

1 **Detection area**
Adjust the detection area with Sensitivity potentiometer.
Wide area
Narrow area
Mounting height:2.2m(7'3")
Vertical adjustment : +34°
mm(feet,inch)
1000 (3' 3")
2000 (6' 7")
3000 (9' 10")
4000 (13' 1")

4000 3000 2000 1000 0 1000 2000 3000 4000
(13' 1")(9' 10")(6' 7")(3' 3") (3' 3")(6' 7")(9' 10")(13' 1")

3000 2000 1000 0 1000 2000 3000
(9' 10")(6' 7")(3' 3") (3' 3")(6' 7")(9' 10")

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

2 **Detection area angle adjustment**

	Adjustment	Scale	Angle
Vertical adjustment	Front View	3° X 20 steps Side View	Header / Ceiling +80° +70° +20° +10° Side View
Horizontal adjustment	Front View	5° X 12 steps Front View	+30° +30° Front View

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

3 **Narrow area**
To obtain Narrow area, place Narrow lens attached at the back of housing cover.
To place Narrow lens, follow step1&2 as shown on the right.

4 **Dipswitches settings**
Set Dipswitch1&2 to enable the direction recognition. (REACTION TWO Only.)

Bi-direction(Bi) — Door
Detection area
Uni-direction(Uni)
⇒ : Detection
: Non-Detection

Bi-direction
When Dipswitch1 is set to OFF, Bi-direction mode is effective, regardless of Dipswitch2 setting.

Uni-direction with Auto-caution mode*(ACM)

*Auto-caution mode(A person wavering in the detection area to be detected.)

Dipswitch3:Output hold time
2.0sec. 4.0sec.
3 3

Dipswitch4:Immunity
If there is external interference, set Dipswich 4 to ON.
4

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

⚠ WARNING
1. Always keep the housing cover clean. If dirty, wipe the housing cover lightly with a cloth. (Do not use any cleaner or 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. Always contact your installer or service engineer when changing the settings.
5. Do not paint the housing 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.)
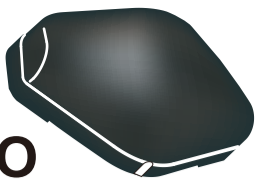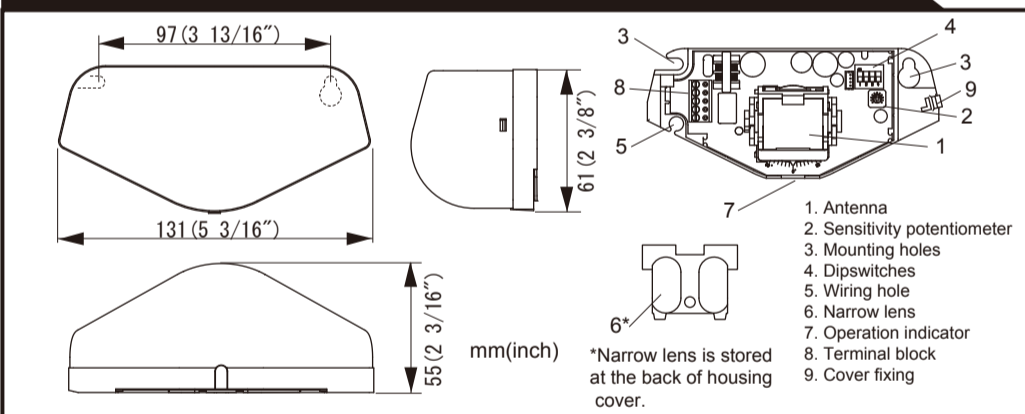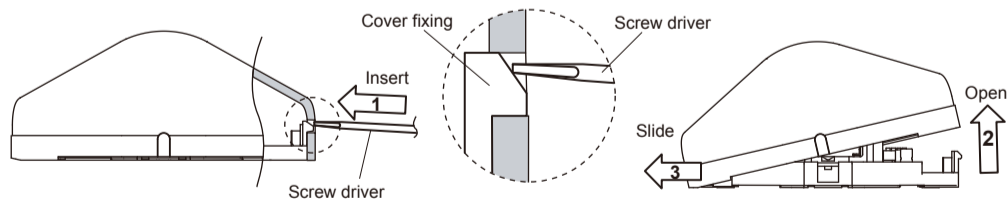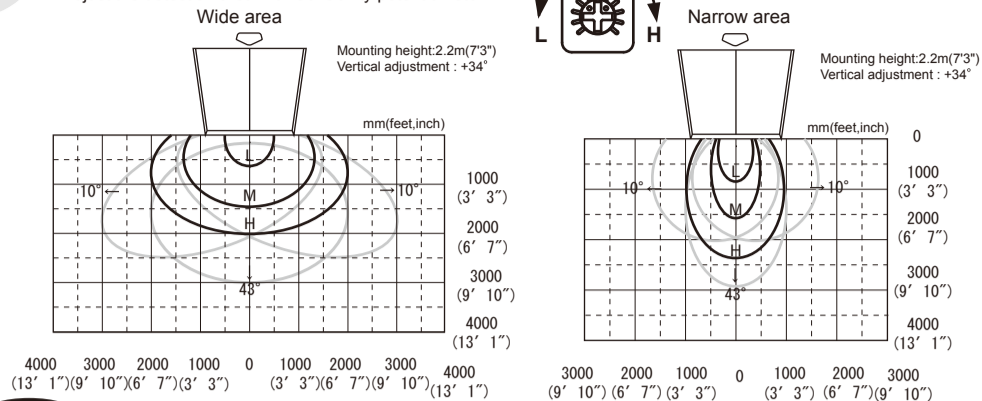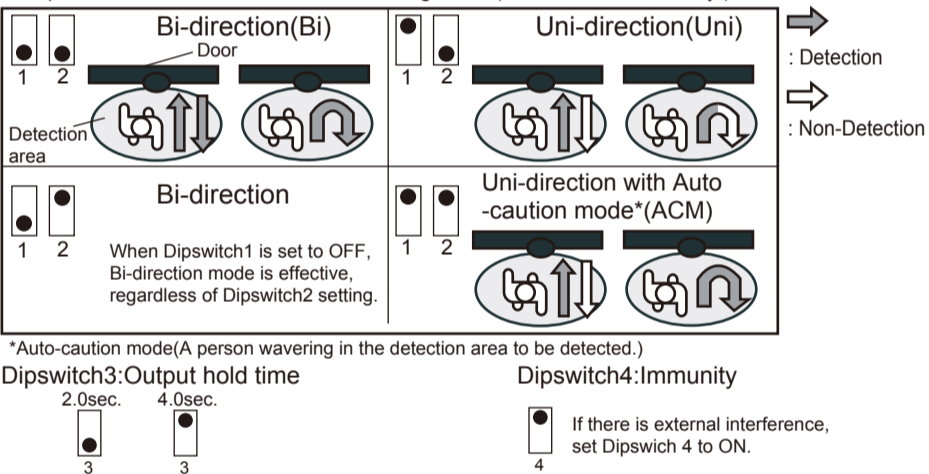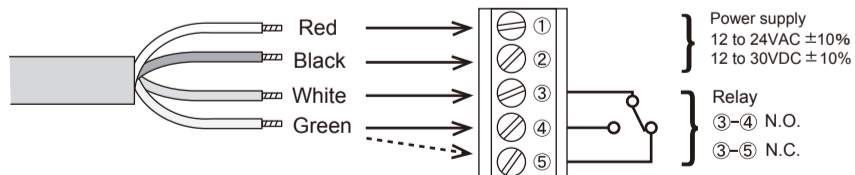
CHECKING

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.	Set the sensitivity higher.
	Green	Wrong detection area positioning.	Check **ADJUSTMENTS**.
	Green blinking	The sensor is being set up.	Wait for the set-up to complete.
Door opens when no one is in the detection area. (Ghosting)	Red	Water drops on the housing cover.	Wipe the housing cover with a cloth.
		The detection area is overlapping with the door.	Adjust the detection area away from the door. Or set Dipswitch4 to ON.
		Sensitivity is too high.	Set the sensitivity lower.
		Raining or snowing.	Set Dipswitch1 to ON.(REACTION TWO Only) Or Dipswitch4 to ON.
Door remains open	Green	Wrong wiring or connection failure.	Check the wiring and Terminal block.

OPTEX *Microwave Door Sensor*
OM-104C

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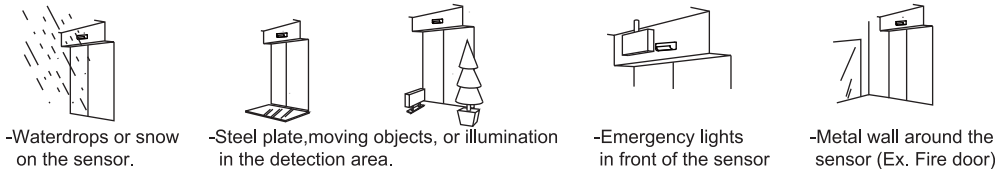
⚠ WARNING	Disregard of warning may cause the improper operation causing death or serious injury of a person.
⚠ CAUTION	Disregard of caution may cause the improper operation causing injury of person or damage to objects.
NOTE	Special attention is required to the section of this symbol.

NOTE

1. This sensor is a non-contact switch intended for header mount of an automatic door.
   Do not use for any other applications.
2. When setting the sensor's detection area, 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 equipments that are connected to the sensor.
4. Only use the sensor as specified in the operation manual provided.
5. Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
6. 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.
7. 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 equipment.
Danger of electric shock.	

NOTE The following conditions are not suitable for the sensor installation.

-Waterdrops or snow on the sensor.
-Steel plate, moving objects, or illumination in the detection area.
-Emergency lights in front of the sensor
-Metal wall around the sensor (Ex. Fire door)

SPECIFICATIONS

Model	: OM-104C	Output	: Form A relay 50V 0.1A Max.(Resistance load)
Cover color	: Silver / Black		
Mounting height	: 2.0 (6'7") to 3.5m (11'5")	Output hold time	: 0.5sec.
Detection method	: Microwave doppler effect	Response time	: <0.3 sec.
Power frequency	: 24.125GHz	Operating humidity	: <80%
Power density	: <20dBm	Operating temperature	: -20°C to +55°C(-4°F to 131°F)
Detection area	: See **ADJUSTMENT**	IP rate	: IP54
Minimum detection speed	: 5cm(1 15/16")/sec.	Weight	: 120g (4.2oz)
Vertical adjustment	: +35° to +55° (5° per click)	Accessories	: 1 Cable 2.5m (8'2")
(without stopper)	: +25° to +55° (5° per click)		1 Operation manual
Power supply	: 12 to 24VAC(±10%)		2 Mounting screws
	12 to 30VDC(±10%)		
Power consumption	: < 0.7W(<1.3VA at AC)		
Current draw	: < 45mA (at 12VDC)		The specifications herein are subject to change without prior notice due to improvements.
Operation indicator	: Red / Stand-by None / Detection Red blinking / Set-up		

OUTER DIMENSIONS AND PART NAMES

160
48
37
[mm]

1. Mounting screws
2. Connector
3. Mounting holes
4. Sensitivity potentiometer
5. Angle scale
6. Wiring hole
7. Detection cover (Include Operation indicator)
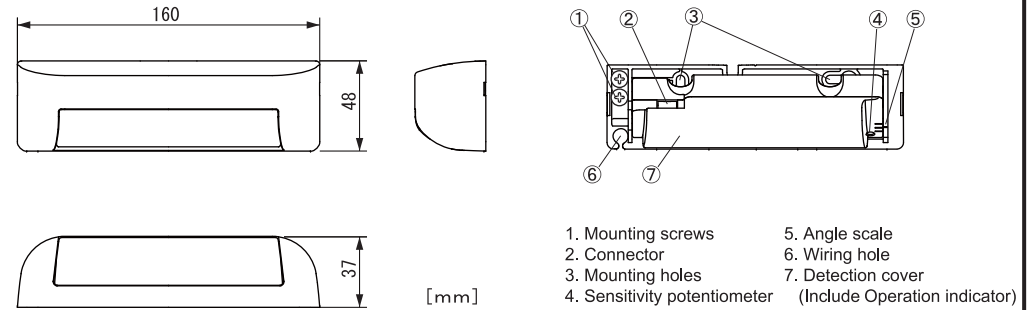
INSTALLATION

1
1. Use the mounting template on the back of this manual , and drill two mounting holes of ø3.4mm (ø1/8").
2. To pass the cable through the header, drill a wiring hole of ø8mm (ø5/16").
3. Fix the sensor to the mounting surface with the two mounting screws.
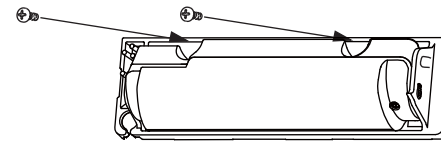
⚠ CAUTION   Risk of getting caught.
Make sure to install the sensor below 3.5m otherwise it can be dangerous since there may be no detection area.

2
Wire the cable to the door controller properly as shown below.

·To the sensor
To the door controller
Gray : Power supply
12 to 30VDC,12 to 24VAC
Yellow : Output
Form A relay 50V 0.1A Max.
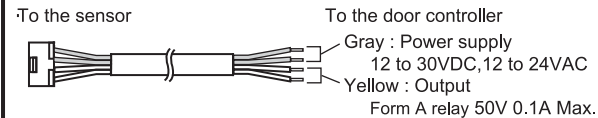
⚠ WARNING   Danger of electric shock.
Before starting procedures, ensure that the power is turned OFF. When passing through the cable to a hole, make sure not to tear the shield, otherwise it may cause electric shock or damage on a sensor.

3
1. Plug the connector of the sensor.
2. Supply power to the sensor and the sensor will automatically go into the set-up mode indicating Red blinking .
3. Adjust the detection area (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.

4
Place the housing cover.
If wiring is to be exposed, break the knockout.
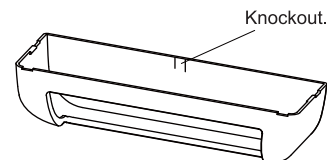
Knockout.

⚠ WARNING   Danger of electric shock.
Make sure to put housing cover on when use. Using the cable knockout, install a sensor inside of the building or use the rain-cover (Separately available) otherwise electric shock or damage on a sensor may occur.

ADJUSTMENTS

Adjust the detection area with angle setting and sensitivity potentiometer.

Depth angle can be set below.

	Adjustable range
With stopper	+35° to +55°
Without stopper	+25° to +55°

Sensitivity potentiometer

L   H
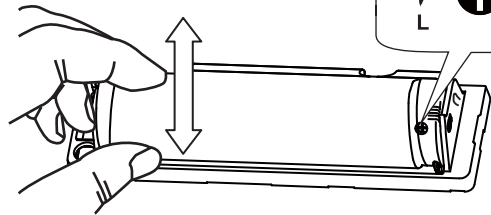
The stopper is located behind the sensor.
When removing the stopper , cut off with the nipper.
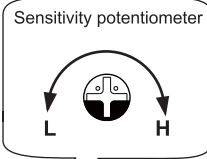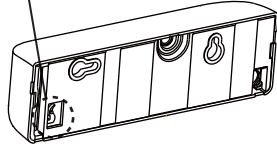
Detection area

Mounting height
: 2.2m (7'3")
Depth angle : 35°

mm(feet)

0
1000 (3'3")
2000 (6'7")
3000 (9'10")

L
M
H

2000 (6'7")   1000 (3'3")   0   1000 (3'3")   2000 (6'7")
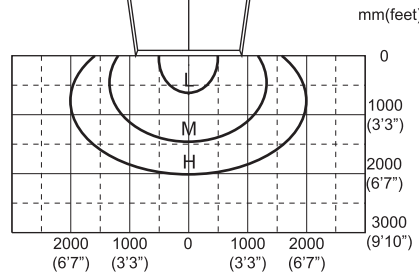
⚠ CAUTION   Risk of getting caught.

Adjust the depth angle for each installation site.
There may be no detection area in front of the door,
when the angle is too deep.

CHECKING

Check the operation according to the chart below.

Entry (image)	Power OFF	10 sec. after power ON	Outside of detection area	Entry into detection area	Outside of detection area
Sensor status	-	Set-up	Stand-by	Motion detection active	Stand-by
Operation indicator	None	Red blinking	Red	None	Red
Output	OFF	OFF	OFF	ON	OFF

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

⚠ WARNING

1. Keep the housing cover clean. If it is not clean enough, wipe the housing cover lightly with a cloth.
   Do not use any cleaner or 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. Always contact your installer or service engineer when changing the settings.
5. Do not paint the housing 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	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.
	Red	Emergency lights in front of the sensor	Change the mounting position.
		Sensitivity is too low.	Set the sensitivity higher.
		Wrong detection area positioning.	Check **ADJUSTMENTS.**
	Red blinking	The sensor is being set up.	Wait for the set-up to complete.
Door opens when no one is in the detection area. (Ghosting)	None	Objects that move or emit light in the detection area. (Ex. Plant, illumination, etc)	Check the intallation condition.
		Water drops on the housing cover.	Wipe the housing cover with a cloth.
		The detection area is overlaping with the door.	Adjust the detection area away from the door. Or set the sensitivity lower.
		Sensitivity is too high.	Set the sensitivity lower.
		Change the condition in the detection area. (Ex. The steel plate is laid)	Check the intallation condition.
Door remains closed	Unstable	Wrong wiring or connection failure.	Check the wiring.

MOUNTING TEMPLATE
▲ CENTER

1. Drill two mounting holes.
2. For concealed cable, drill a hole within the shaded portion .

Wiring holes
φ8mm (φ5/16")

Mounting holes
φ3.4mm (φ1/8")

Mounting holes
φ3.4mm (φ1/8")

79mm(3 1/8")

OPTEX

OAM-DUAL T / TV / TF / TT

ENGLISH
ORIGINAL

CE 1731

TÜV SÜD
Production monitored
Safety tested

COMPLIANCE

EN16005:2012
EMC Directive 2004/108/EC
EN61496-3:2001 clause 4. 3. 5 and 5. 4. 7. 3

EN12978+A1:2009
EN ISO13849-1:2008

Machinery Directive 2006/42/EC
EN ISO13849-2:2008
AutSchR (OAM-DUAL TV/TF/TT Only)

Notified Body: TÜV SÜD Product Service GmbH, Daimlerstraße 40 60314 Frankfurt Germany

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.
📖	It is required to check the operation manual if this symbol is shown on the product.

NOTE
1. 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.
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 product.
4. Only use the product 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 product is installed.
6. 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.
7. 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	: OAM-DUAL T / TV / TF / TT
Cover color	: Black
Mounting height	: 2.0 (6'6") to 3.5m (11'6")
Detection area	: See **DETECTION AREA**
Detection method	: Active infrared reflection *1 Microwave doppler effect
Depth angle adjustment	: AIR area -6 to +6° Microwave area +25 to +45°
Power supply *2	: 12 to 24VAC ±10% (50 / 60 Hz) 12 to 30VDC ±10%
Power consumption	: < 2.5W (< 4VA at AC)
Operation indicator	: See **Operation indicator table**
Test input	: Opto coupler Voltage 5 to 30VDC Current 6mA Max. (30VDC)
Activation output	: See **INSTALLATION 2**

Safety / test output	: Opto coupler (NPN) Voltage 5 to 50VDC Current 100mA Max. Dark current 600nA Max. (resistance load)
Noise level	: <70dBA
Output hold time	: <0.5 sec.
Response time	: <0.3 sec.
Operating temperature	: -20 to +55°C (-4 to 131°F)
Operating humidity	: <80%
IP rate	: IP54
Category	: See **Table 1**
Performance level	: See **Table 1**
Weight	: 320g (11.2oz)
Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Cable 3m (9'10") (8 × 0.22mm² AWG24) *3

Table 1		OAM-DUAL T	OAM-DUAL TV	OAM-DUAL TF	OAM-DUAL TT
AIR part	Cat.		2 (EN ISO13849-1 : 2008)		
	PL		d (EN ISO13849-1 : 2008)		
Microwave part	Cat.		2 (EN ISO13849-1 : 2008)		
	PL		d (EN ISO13849-1 : 2008)		

Operation indicator table

Status	Operation indicator color	1sec.	1sec.
Set-up	Yellow blinking		
Stand-by (installation mode)	Yellow		
Stand-by (operation mode)	Green		
Lookback (1st row) detection*4	Blue		
2nd row detection	Red blinking		
3rd row detection	Red		
Microwave detection	Orange		
Setting error	Red & green blinking		
Signal saturation	Slow green blinking		
Sensor failure	Fast green blinking		

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

*4 : See **LOOKBACK AREA**

*1 : Active infrared reflection has a presence detection function.
*2 : The sensor has to be connected to a door system which has a SELV circuit.
*3 : Overcurrent protection with less than 2A.

OUTER DIMENSIONS AND PART NAMES

267(10 1/2")
125(4 15/16")
36(1 7/16")   43(1 11/16")
7.5(5/16")
38(1 1/2")
61(2 3/8")
[mm (inch)]

(1) Connector
(2) Mounting holes
(3) Operation indicator
(4) Width adjustment screws
(5) Depth angle adjustment screw
(6) Function switch
(7) Microwave sensitivity potentiometer
(8) Dipswitches
(9) Detection window
(10) Area adjustment tool

LOOKBACK AREA

When dipswitch 15 is set to ON, the lookback area, that provides extra safety over the threshold, is activated.
In case the lookback 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.

2nd row   Lookback (1st row)
3rd row

2nd row   Lookback (1st row)
3rd row

DETECTION AREA

[mm(feet,inch)]

A
B
Mounting surface
Lookback(1st row)
2nd row
3rd row
C D E
X F
G
H
I
1000(3'3")
2000(6'6")
2000 (6'6")   1000 (3'3")   0   1000 (3'3")   2000 (6'6")

AIR
Mounting height : 2.2m(7'2")
Angle adjustment : +6°
Sensitivity : M
□ : Emitting spots
■ : Emitting spots (can be eliminated)
▫▫ : Detection area

Microwave
Mounting height : 2.2m(7'2")
Vertical adjustment : +35°
Sensitivity : H
Area width : wide
Speed of detection object : 50mm / sec.
◯ : 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")	1.03(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")

AIR detection area
To comply with EN16005, make sure that the detection area is within the values of the chart below.

A	2.00 (6'6")	2.20 (7'2")	3.00 (9'10")
X	0.23 (9")	0.25 (10")	0.34 (1'1")
G	1.02 (3'4")	1.12 (3'8")	1.53 (5')
I*	2.41 (7'11")	2.65 (8'8")	3.60 (11'10")

Test conditions required by EN16005
Floor :Grey paper
Detection object : EN 16005 CA reference body
Sensitivity : middle
Speed of detection object : 50mm / sec.

The values mentioned in "detection area" refer to the test conditions as described in the EN16005 (the emitting area is specified in "emitting area").
*: When installed at higher than 3.0m(9'10"), EN16005 requirements are fulfilled only within the area width "I" of 3.6m(11'10").

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

1
1. Affix the mounting template at the desired mounting position. Refer to the chart in below.
2. Drill two mounting holes of ø3.4mm (ø1/8").
3. To pass the cable through the header, drill a wiring hole of ø8mm (ø5/16").
4. Remove the mounting template.
5. Remove the housing cover. Fix the sensor to the mounting surface with the two mounting screws.

Header
Sensor
Y
X
Door
H
Floor

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

Power supply 1 — 1.White / 2.Brown
Activation output 2 — 3.Green / 4.Yellow
Safety / test output 3 — 5.Pink (+) / 6.Blue (-)
Test input 4 — 7.Red (+) / 8.Black (-)

Power supply 1 — 1.White / 2.Brown
Activation output 2 — 3.Green / 4.Yellow
Safety / test output 3 — 5.Pink (+) / 6.Blue (-)
Test input (Safety) 4 — 7.Red (+) / 8.Black (-)
Test input (Activation) 5 — 9.Gray/Pink (+) / 10.Red/Blue (-)

	OAM-DUAL T	OAM-DUAL TV	OAM-DUAL TF	OAM-DUAL TT
1	12 to 24VAC±10% / 12 to 30VDC±10%			
2	Form A relay 50V 0.3A Max.	Voltage output 3.2V@10mA (+)○ (-)○ Min. 4.5V(no load)	Frequency output 100Hz±10%	Form A relay 50V 0.3A Max.
3	Opto coupler(NPN) / Voltage: 5 to 50VDC			
4	Opto coupler / Voltage: 5 to 30VDC			
5				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
1. Plug the connector.
2. 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.
After changing the dipswitches and/or potentiometer, make sure to push the function switch for 2 seconds.

4
Place the housing cover.
If wiring is to be exposed, break the knockout.

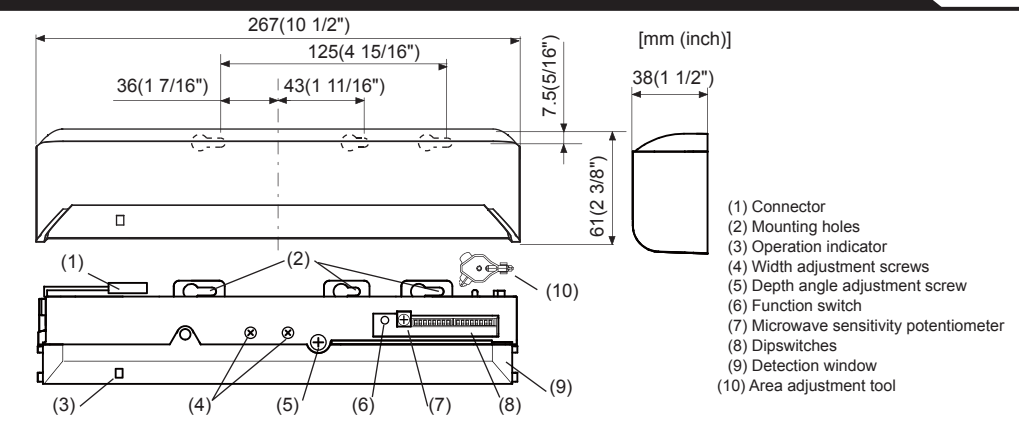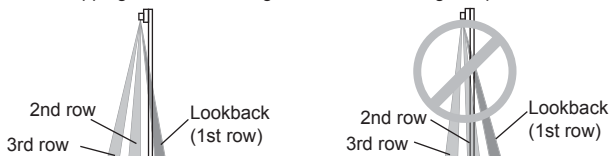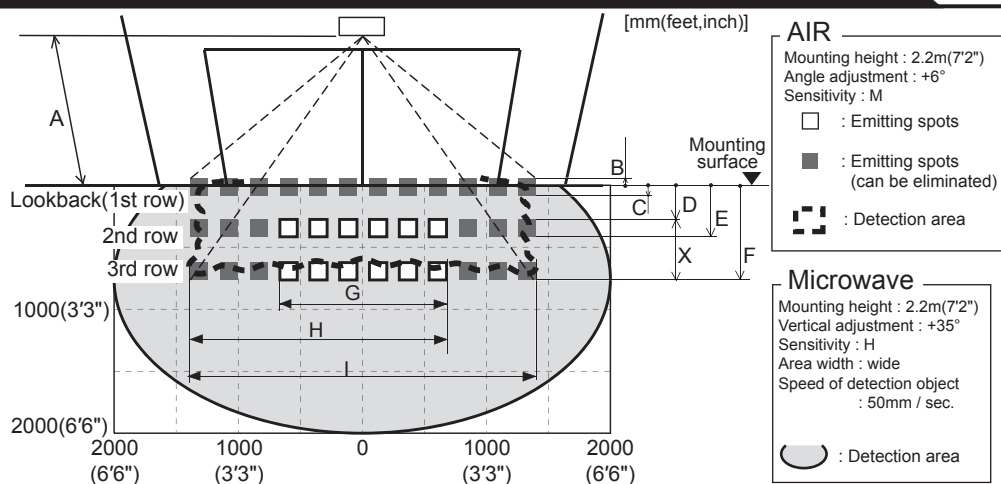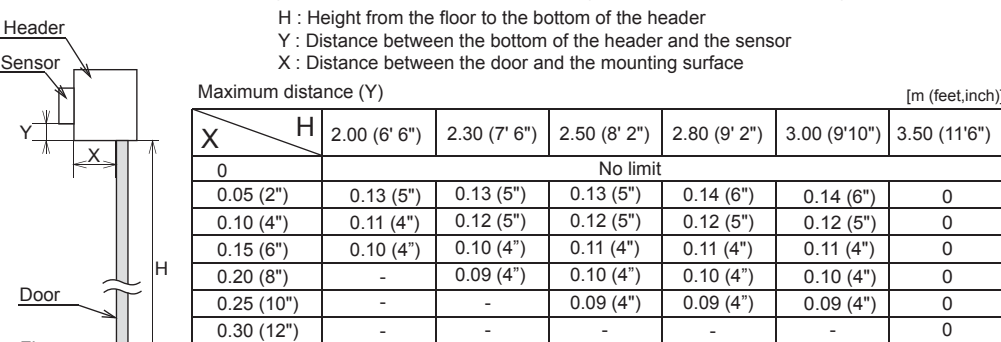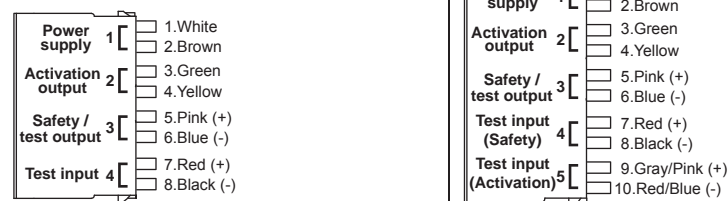| ⚠ WARNING	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain cover (separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock	

ADJUSTMENTS

1 Area depth angle adjustment

Depth angle adjustment screw

Area adjustment tool

A ─ B

When adjusting the 2nd row close to the door, follow **Table 2** 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.

1-1 AIR adjustment

Depth angle adjustment screw for the AIR area

Shallow Deep

Red

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

[mm(feet,inch)]

Deep Shallow

0
2000 (6'6")
3000 (9'10")
2000 (6'6") 1000 (3'3") 0

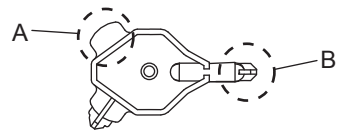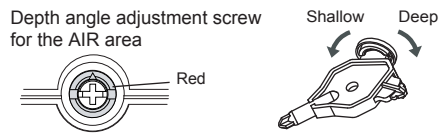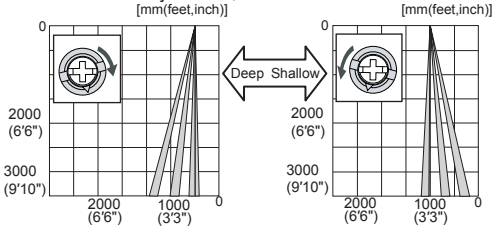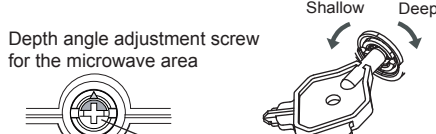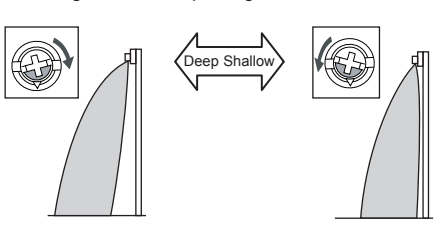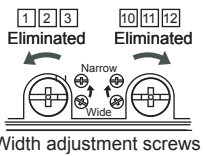### 1-2 Microwave adjustment

Depth angle adjustment screw for the microwave area

Shallow Deep

Blue

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

[mm(feet,inch)]

Deep Shallow

0
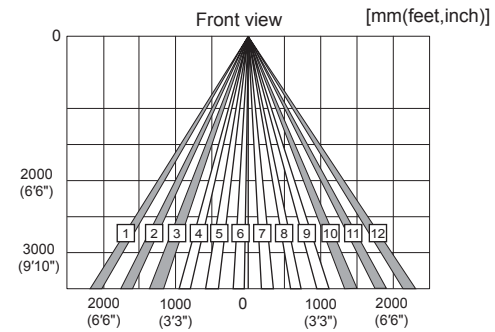2000 (6'6")
3000 (9'10")
2000 (6'6") 1000 (3'3") 0

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.

1 2 3 | 10 11 12
Eliminated   Eliminated

Narrow
Wide

Width adjustment screws

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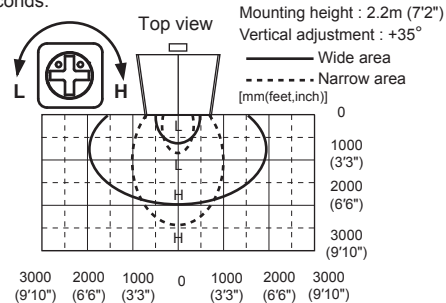1 2 3 cannot be eliminated separately, neither can 10 11 12.

Front view [mm(feet,inch)]

0
2000 (6'6")
3000 (9'10")

1 2 3 4 5 6 7 8 9 10 11 12

2000 (6'6") 1000 (3'3") 0 1000 (3'3") 2000 (6'6")

2-2 Microwave adjustment

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

2.Open 1.Remove screw Narrow lens

2.Open
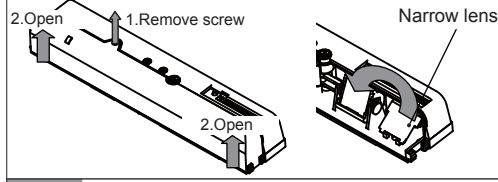
3 Microwave sensitivity

Adjust the microwave detection area with potentiometer. Afterwards, make sure to push the function switch for 2 seconds.
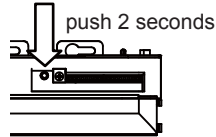
L H Top view

Mounting height : 2.2m (7'2")
Vertical adjustment : +35°
—— Wide area
---- Narrow area
[mm(feet,inch)]

0
1000 (3'3")
2000 (6'6")
3000 (9'10")

3000 (9'10") 2000 (6'6") 1000 (3'3") 0 1000 (3'3") 2000 (6'6") 3000 (9'10")

4 Dipswitch settings

After changing the dipswitch settings, make sure to push the function switch for 2 seconds.

push 2 seconds

Table 2

■ AIR settings ■ Microwave settings □ Other settings

	Function	Setting				Comment
Dipswitch 1 / Dipswitch 2	Sensitivity	Low 1 2 2.0 to 3.0m	Middle 1 2 2.0 to 3.0m	High 1 2 2.5 to 3.2m	S-High 1 2 3.0 to 3.5m	Set the sensitivity according to the mounting height. Values below dipswitch are reference only. Adjust the sensitivity according to your risk assessment.
Dipswitch 3 / Dipswitch 4	Presence timer	30sec 3 4	60sec 3 4	180sec 3 4	600sec 3 4	To comply with EN16005, set the timer to "30sec." or more. To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.
Dipswitch 5 / Dipswitch 6	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 7	Safety / Testoutput (to the door controller)	High 7	Low 7			
Dipswitch 8	Test input (from the door controller)	High 8	Low 8			The delay time between test input and Safety / Test output is 10msec.
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	Autocaution	OFF 10	ON 10			When dipswitch 10 is set to ON, a person wavering in the motion 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 9 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	Activation output	N.O. 12	N.C. 12			Select N.O/N.C for the activation output (OAM-DUAL T only)
	Activation / Testoutput (to the door controller)	N.O. 12	N.C. 12			Select N.O/N.C for the activation / Testoutput. (OAM-DUAL TT only)
Dipswitch 13	AIR output	Safety 13	Safety + Activation 13			When dipswitch 13 is ON, the sensor outputs safety and activation simultaneously.
Dipswitch 14	Self monitoring	Enable 14	Disable 14			When the door remains open and the operation indicator shows fast / slow green blinking, refer to TROUBLESHOOTING. If the door still remains open, set dipswitch 14 to "Disable". To comply with EN16005, set the self monitoring to "Enable".
Dipswitch 15	Lookback	OFF 15	ON 15			When dipswitch 15 is set to ON, the lookback (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.

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 Lookback (1st row)
Status			-	Stand-by	Motion detection active	Motion / Presence detection active		
Operation indicator			None	Green	Orange	Red	Red blinking	Blue
Activation output	OAM-DUAL T/TT	12 N.O. 13 Safety						
		12 N.C.						
		12 N.O. 13 Safety + Activation						
		12 N.C.						
	OAM-DUAL TV	13 Safety	0V	*	<=0.5V	*		
		13 Safety + Activation	0V	*	<=0.5V	<=0.5V		
	OAM-DUAL TF	13 Safety	0Hz	100Hz	0Hz	100Hz		
		13 Safety + Activation	0Hz	100Hz	0Hz	0Hz		
Safety / Test output	7 High		OFF	ON	OFF			
	7 Low		OFF	OFF	ON			

*3.2V@10mA Min.4.5V(no load)

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 an 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. 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.)

TO COMPLY WITH EN16005

Make sure to confirm the following content to comply with EN16005.
1. Detection area settings (See **DETECTION AREA**)
2. Presence timer (See **ADJUSTMENTS 4. Dipswitch settings**)
3. Self monitoring (See **ADJUSTMENTS 4. Dipswitch settings**)
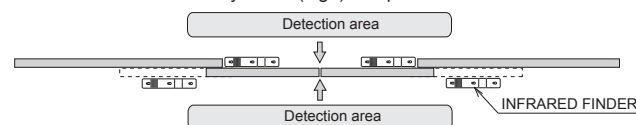
TROUBLESHOOTING

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.
		Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Wrong detection area positioning.	Check **ADJUSTMENTS 1, 2 ,3 & 4**.*
		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.
	Proper	Wrong wiring or connection failure.	Check the wires and connector.
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 **Table 2** dipswitch 5, 6.*
		Waterdrops on the detection window.	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). Or set dipswitch 11 to ON.*
		Sensitivity is too high.	Set the sensitivity lower.*
		Raining or snowing	Set dipswitch 9 and / or dipswitch 11 to ON.*
		Others	Set dipswitch 11 to ON.*
Door remains open	Proper	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.
		Setting error of dipswitches	Check **Table 2** dipswitches 7, 8, 12, 14.*
	Yellow	Installation mode is set to ON.	Set dipswitch 16 to OFF.*
	Fast green blinking	Sensitivity is too low.	Set the sensitivity higher.* Set AIR area width to "wide".
		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 (2nd or 3rd row)	Remove highly reflecting objects from the detection area. Lower the sensitivity.* Change the area depth angle for AIR area.
		The detection area overlaps with the door / header.	Adjust the detection area to "deep". (outside)
	Red & green blinking	Setting error of dipswitch and/or potentiometer	After changing the dipswitches and/or potentiometer settings, make sure to push the function switch for 2 seconds.
Proper operation	Slow green blinking	Signal saturation (Lookback)	Remove highly reflecting objects from the detection area. Lower the sensitivity.* Change the area depth angle for AIR area.

*After changing the dipswitches and/or potentiometer settings, make sure to push the function switch for 2 seconds.

REFERENCE

Area depth adjustment with INFRARED FINDER (separately available)
1. Turn the depth angle adjustment screw to the right (deep) to place the detection area most away from the door.
2. Set INFRARED FINDER sensitivity to "H" (high) and place it on the floor as shown below.

Detection area

Detection area

INFRARED FINDER

3. 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).

OPTEX

X-ZONE

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
1. 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.
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 product.
4. Only use the product 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 product is installed.
6. 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.
7. 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	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	: <1.0 sec.
Detection area	: See **DETECTION AREA**	Response time	: <0.3 sec.
Detection method	: Active infrared reflection*1	Opetating temperature	: -35 to +55°C (-31 to 131°F)
	Microwave doppler effect	Operating humidity	: <80%
Depth angle	: AIR area -6 to +6°	IP rate	: IP54
adjustment	Microwave area +25 to +45°	Weight	: 320g (11.2oz)
Power supply	: 12 to 24VAC ±10% (50 / 60 Hz)	Accessories	: 1 Operation manual
	12 to 30VDC ±10%		2 Mounting screws
Power consumption	: < 2.5W (< 4VA at AC)		1 Mounting template
Operation indicator	: See **Operation indicator table**		1 Area adjustment tool
Activation output	: Form C relay		1 Cable 3m (9'10")
	50V 0.3A Max.(Resistance load)		1 Narrow lens

Operation indicator table

Status	Operation indicator color		
		1sec.	1sec.
Set-up	Yellow blinking		
Stand-by (installation mode)	Yellow		
Stand-by (operation mode)	Green		
Blue-zone (1st row) detection*2	Blue		
2nd row detection	Red blinking		
3rd row detection	Red		
Microwave detection	Orange		
Signal saturation	Slow green blinking		
Sensor failure	Fast green blinking		

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
Mounting height : 2.2m(7'2")
Angle adjustment : +6°
Sensitivity : M
□ : Emitting spots
■ : Emitting spots (can be eliminated)
⌐¬ : Detection area

Microwave
Mounting height : 2.2m(7'2")
Vertical adjustment : +35°
Sensitivity : H
Speed of detection object : 50mm / sec.
◯ : Detection area (Wide area)
⬯ : Detection area (Narrow area)
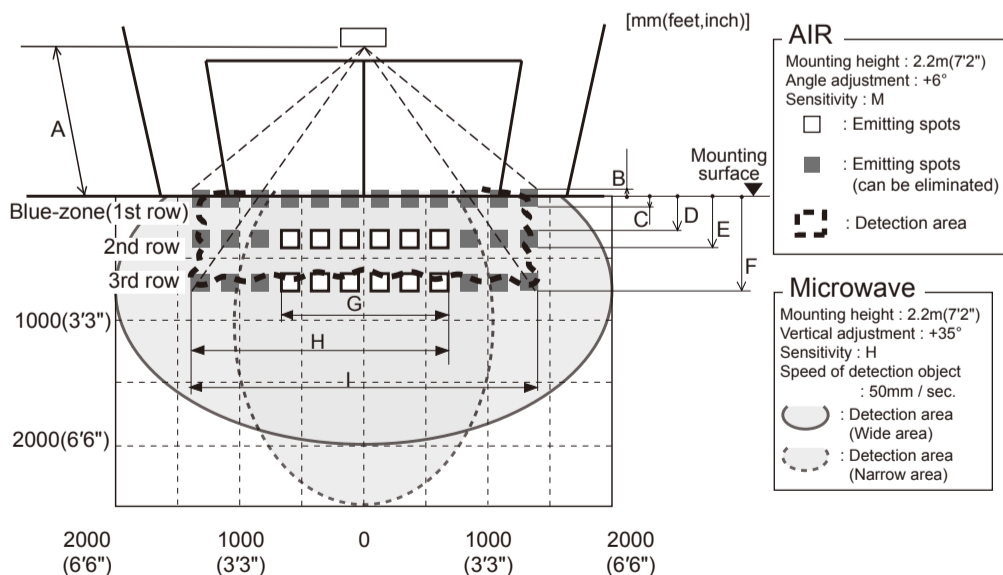
AIR emitting area
The chart shows the values at depth angle +6° [m(feet,inch)]

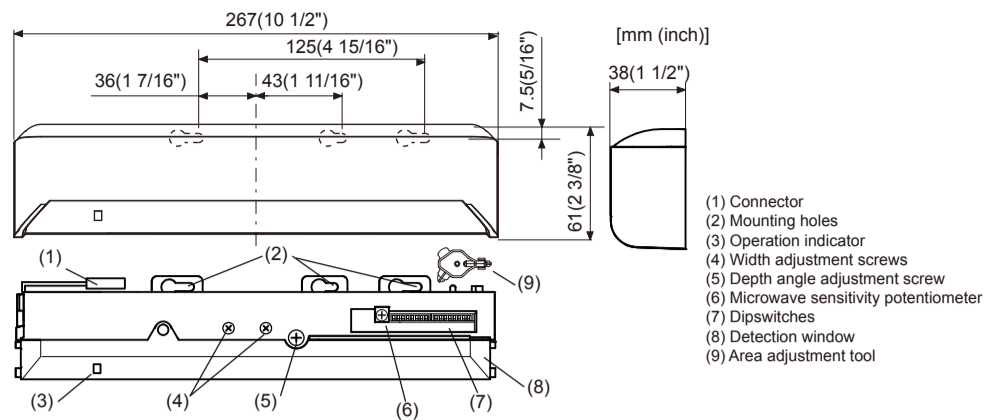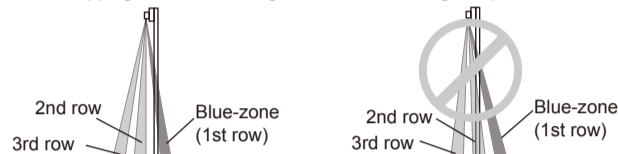|	2.00 (6'6")	2.20 (7'2")	2.50 (8'2")	2.70 (8'10")	3.00 (9'10")	3.50 (11'6")
A						
B	0.05(2")	0.06 (2")	0.07 (3")	0.074(3")	0.08 (3")	0.09 (4")
C	0.07(3")	0.08 (3")	0.09 (4")	0.10 (4")	0.11 (4")	0.12 (5")
D	0.23 (9")	0.25 (10")	0.28 (11")	0.31 (1')	0.34 (1'1")	0.39 (1'4")
E	0.35 (1'2")	0.39 (1'3")	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 (1'8")
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

[mm (inch)]

(1) Connector
(2) Mounting holes
(3) Operation indicator
(4) Width adjustment screws
(5) Depth angle adjustment screw
(6) Microwave sensitivity potentiometer
(7) Dipswitches
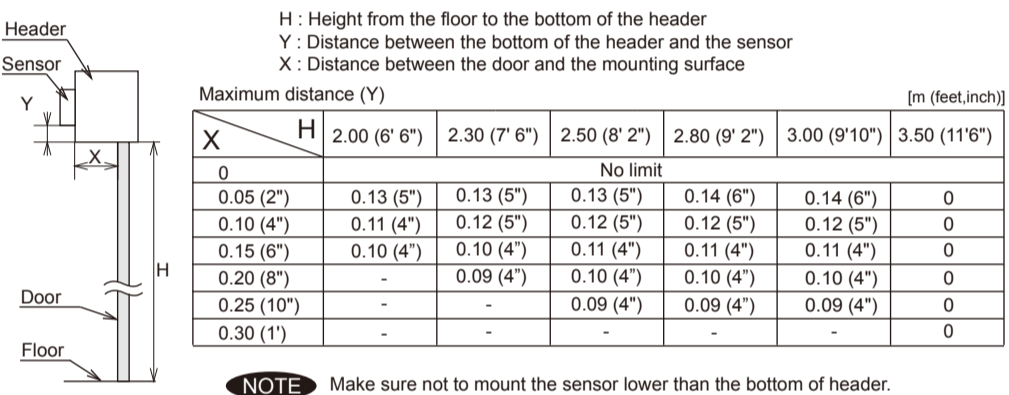(8) Detection window
(9) Area adjustment tool

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.
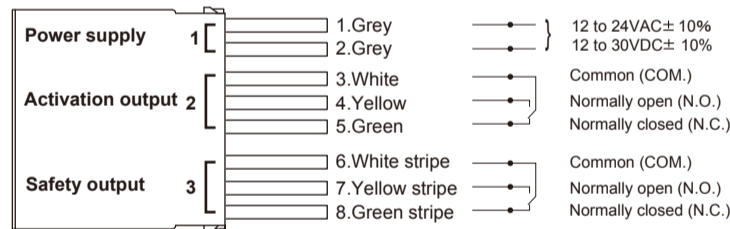

INSTALLATION

1
1. Affix the mounting template at the desired mounting position. Refer to the chart in below.
2. Drill two mounting holes of ø3.4mm (ø1/8").
3. To pass the cable through the header, drill a wiring hole of ø8mm (ø5/16").
4. Remove the mounting template.
5. 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 (1')	-	-	-	-	-	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 Wire the cable to the door controller as shown below.

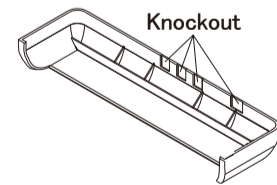| Power supply 1 | 1.Grey | } 12 to 24VAC± 10% |
	2.Grey	} 12 to 30VDC± 10%
Activation output 2	3.White	Common (COM.)
	4.Yellow	Normally open (N.O.)
	5.Green	Normally closed (N.C.)
Safety output 3	6.White stripe	Common (COM.)
	7.Yellow stripe	Normally open (N.O.)
	8.Green stripe	Normally closed (N.C.)

⚠ 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
1. Plug the connector.
2. 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.
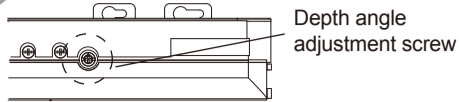
4
Place the housing cover.
If wiring is to be exposed, break the knockout.

Knockout

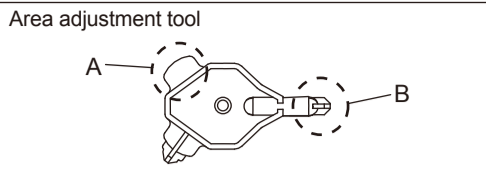| ⚠ WARNING	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain cover (separately available) otherwise electric shock or breakdown of the sensor may occur.
Danger of electric shock	

ADJUSTMENTS

1 Area depth angle adjustment

Depth angle adjustment screw

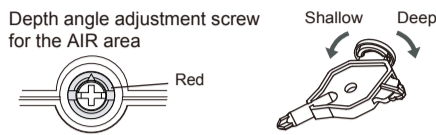**Area adjustment tool**

A — B

When adjusting the 2nd row close to the door, follow **Table1** dipswitch16 for the easier adjustment.
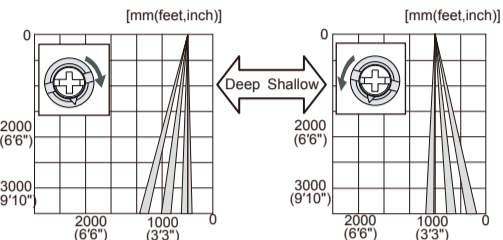
NOTE Make sure that the detection area does not overlap with the door / header, and there is no highly reflecting object near the detection area otherwise ghosting / signal saturation may occur.
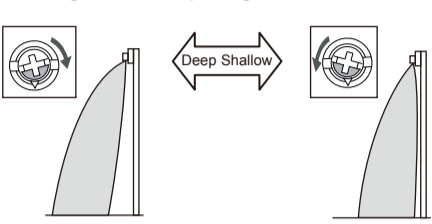
1-1 AIR adjustment

Depth angle adjustment screw for the AIR area

Shallow   Deep

Red

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

[mm(feet,inch)]

Deep Shallow

1-2 Microwave adjustment

Depth angle adjustment screw for the microwave area
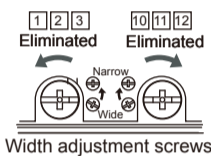
Shallow   Deep

Blue

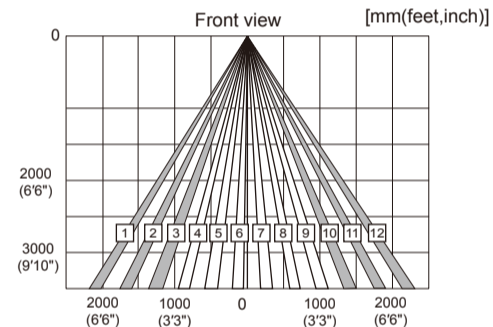Use the area adjustment tool (B) as shown above to change the area depth angle.

Deep Shallow

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.

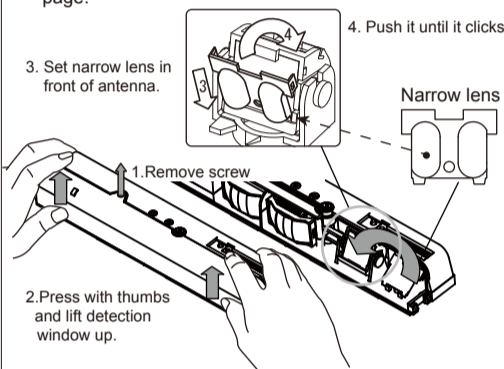| 1 2 3 | 10 11 12 |
| Eliminated | Eliminated |

Narrow
Wide

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
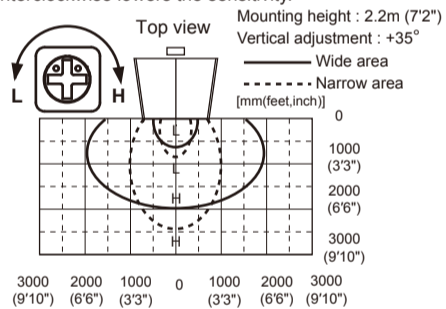
Front view   [mm(feet,inch)]

2-2 Microwave adjustment

To adjust the microwave detection area width, use the narrow lens referring to the following procedures. For detection area, See **DETECTION AREA** in the front page.

4. Push it until it clicks.

3. Set narrow lens in front of antenna.

Narrow lens

1.Remove screw

2.Press with thumbs and lift detection window up.

3 Microwave sensitivity

Adjust the microwave detection area with potentiometer. Turning it clockwise increases the sensitivity and turning counterclockwise lowers the sensitivity.

Top view

Mounting height : 2.2m (7'2")
Vertical adjustment : +35°
—— Wide area
---- Narrow area
[mm(feet,inch)]

L   H

4 Dipswitch settings

Table1   ■ AIR settings   ■ Microwave settings   □ Other settings

	Function	Setting				Comment
Dipswitch 1 / Dipswitch 2	Sensitivity	Low 1 2 2.0 to 3.0m	Middle 1 2 2.0 to 3.0m	High 1 2 2.5 to 3.2m	S-High 1 2 3.0 to 3.5m	Set the sensitivity according to the mounting height. Values below dipswitch are reference only.
Dipswitch 3 / Dipswitch 4	Presence timer	30sec 3 4	60sec 3 4	180sec 3 4	600sec 3 4	All rows have the presence detection function. The presence timer can be selected from 4 settings.
Dipswitch 5 / Dipswitch 6	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 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		*Please refer to **Table 2** for the details.	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.

Table 2

Bi-direction(Bi)	Uni-direction(Uni)	
Door / Sensor / Detection area		⇨ : Detection
Bi OFF 9 10	Uni OFF 9 10	⇨ : Non-Detection
Bi ON 9 10	Uni ON 9 10	

Bi-direction
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	④⑤⑥	④⑤⑥	④⑤⑥	④⑤⑥		
	Activation output	①②③	①②③	①②③	①②③		
Safety & Activation 13	Safety output	④⑤⑥	④⑤⑥	④⑤⑥	④⑤⑥		
	Activation output	①②③	①②③	①②③			

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 an 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. 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.
		Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Wrong detection area positioning.	Check **ADJUSTMENTS 1, 2 ,3 & 4**.
		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.
	Proper	Wrong wiring or connection failure.	Check the wires and connector.
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 Microwave) to "deep".Or set dipswitch 11 to ON.
		Sensitivity is too high.	Set the sensitivity lower.
		Raining or snowing(AIR)	Set dipswitch 7 and / or dipswitch 8 to ON.
		Raining or snowing(Microwave)	Set dipswitch 9 and / or dipswitch 11 to ON.
		Others	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.
	Yellow	Installation mode is set to ON.	Set dipswitch 16 to OFF.
Proper operation	Fast green blinking	Sensor failure	Contact your installer or service engineer.
		Sensitivity is too low.	Set the sensitivity higher. Set AIR area width to "wide".
		Dirty detection window	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.	Adjust the detection area to "deep".
		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-
1.The antennas cannot be exchanged.
2.To comply with FCC RF exposure compliance requirements, aseparation 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) the device must accept any interference received, indluding interference that may cause undesired operation of the device.

OPTEX PROSAFE **English**

OA-203C

CE

5911184 AUG 2008

MANUFACTURER'S STATEMENT

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.
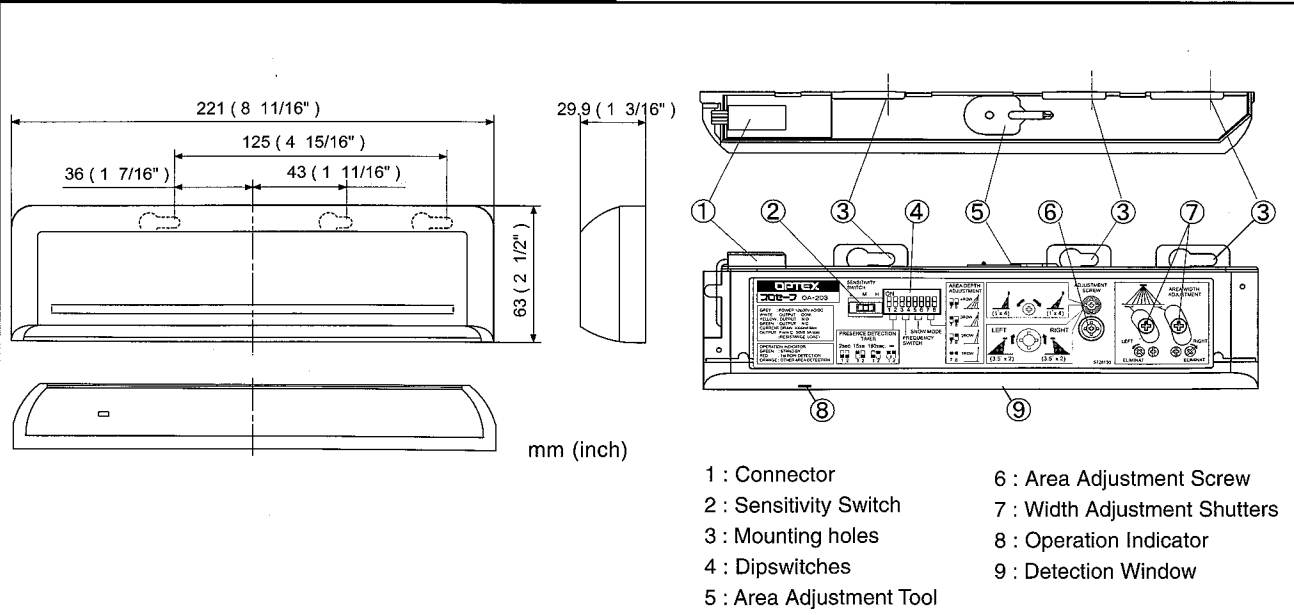6. Be sure to install the sensor in accordance with the local laws and standards of your country.
7. Before leaving the jobsite, be sure that this sensor is operating properly and instruct the building owner/operator on proper operation of the door and this sensor.

SPECIFICATIONS

Model	: OA-203C	Output	: "Form C" relay 50V 0.3A Max.
Cover color type	: Silver / Black / White		(Resistance Load)
Mounting Height	: 3.0m (9'10") Max.	Relay Hold Time	: 0.5 sec.
Detection Area	: See "Detection Area"	Response Time	: < 0.3 sec.
Detection Method	: Active Infrared Reflection Method	Operating Temperature	: -20°C to +55°C (-4°F to +131°F)
Detection Angle	: ±4° adjustable by 1° every one click	Weight	: 200g (7.1oz)
Adjustments	(Deep / Shallow)	Accessories	: 1 Cable 3m (9'10")
Detection Width	: ±7° adjustable by 3.5° every one click		2 Mounting Screws
Adjustments	(Right / Left)		1 Operation Manual
Power Supply	: 12 to 30V AC / DC		1 Mounting Template
Current Draw	: 160mA Max. (at 12V AC)		1 Area Adjustment Tool
Operation Indicator	: Green / Stand-by		
	Red / 1st Row Detection Active	*The specifications herein are subject to change without prior notice due to improvements.	
	Orange / Other Row Detection Active		

OUTER DIMENSIONS

221 (8 11/16")
125 (4 15/16")
36 (1 7/16") 43 (1 11/16")
29.9 (1 3/16")
63 (2 1/2")

mm (inch)

1 : Connector
2 : Sensitivity Switch
3 : Mounting holes
4 : Dipswitches
5 : Area Adjustment Tool
6 : Area Adjustment Screw
7 : Width Adjustment Shutters
8 : Operation Indicator
9 : Detection Window

INSTALLATION

1

3m Max.

Mounting Template

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."

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.

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.

Knockout

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.

1st Row
2nd Row
3rd Row
4th Row

▨ : Emitting Spot
▢ : Detection Area

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' 3/16"	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	O	O	×	×
Motion Detection	O	O	O	O

ADJUSTMENT

1 Adjusting the Pattern Width

Setting the Width adjustment shutters

Opens All Areas	Eliminate 1 2	Eliminate 7 8	Eliminate 1 2 7 8

Adjusting the Width Angle
Left or Right : between 0° to 7°
(3.5° per click)

to Right
to Left

Pattern when Standard

Pattern when changed 7° to Left

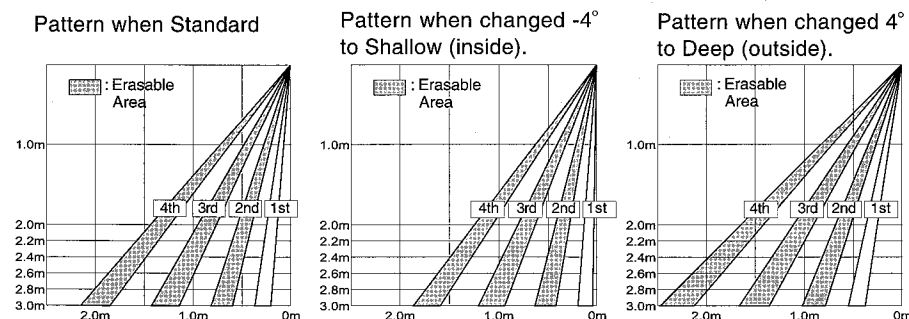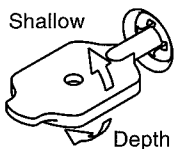Pattern when changed 7° to Right

: Erasable Area

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

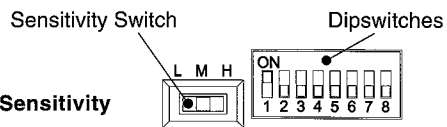## 2 Adjusting the Pattern Depth

Setting the Row with the Dipswitch 7 & 8.

4ROW	3ROW	2ROW	1ROW
7 8	7 8	7 8	7 8

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

Shallow
Depth

Pattern when Standard

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

Pattern when changed 4° to Deep (outside).

: Erasable Area

4th 3rd 2nd 1st

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

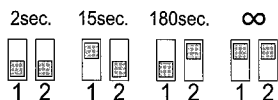## 3 Setting of Sensitivity Switch and Dipswitches

Sensitivity Switch   Dipswitches

L M H   ON 1 2 3 4 5 6 7 8

Setting the Sensitivity

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

Setting the Presence timer

2sec.   15sec.   180sec.   ∞
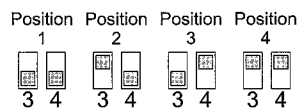1 2   1 2   1 2   1 2

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.

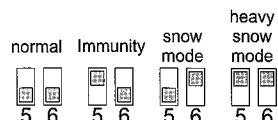**Setting the Frequency Function (Interference Prevention)**

Four different frequencies can be set by adjusting the Dipswitch 3 and 4.

Position 1	Position 2	Position 3	Position 4
3 4	3 4	3 4	3 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 Dipswitch5 and 6 to snow mode , if the sensor is used in a region with snow or a lot of insects.

normal	Immunity	snow mode	heavy snow mode
5 6	5 6	5 6	5 6

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

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.	Adjust to stated voltage.
	Connection Failure.	Check the wiring and the connector.
Dose not operate consistently	Dirty detection window.	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)
	Sensitivity is Low.	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).
	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.
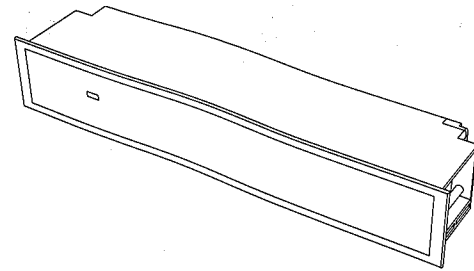- the trouble still persists after checking and remedying as described above.

OPTEX

English

PROSAFE MIRAGE

CE

5911752 AUG 2008

MANUFACTURER'S STATEMENT

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.
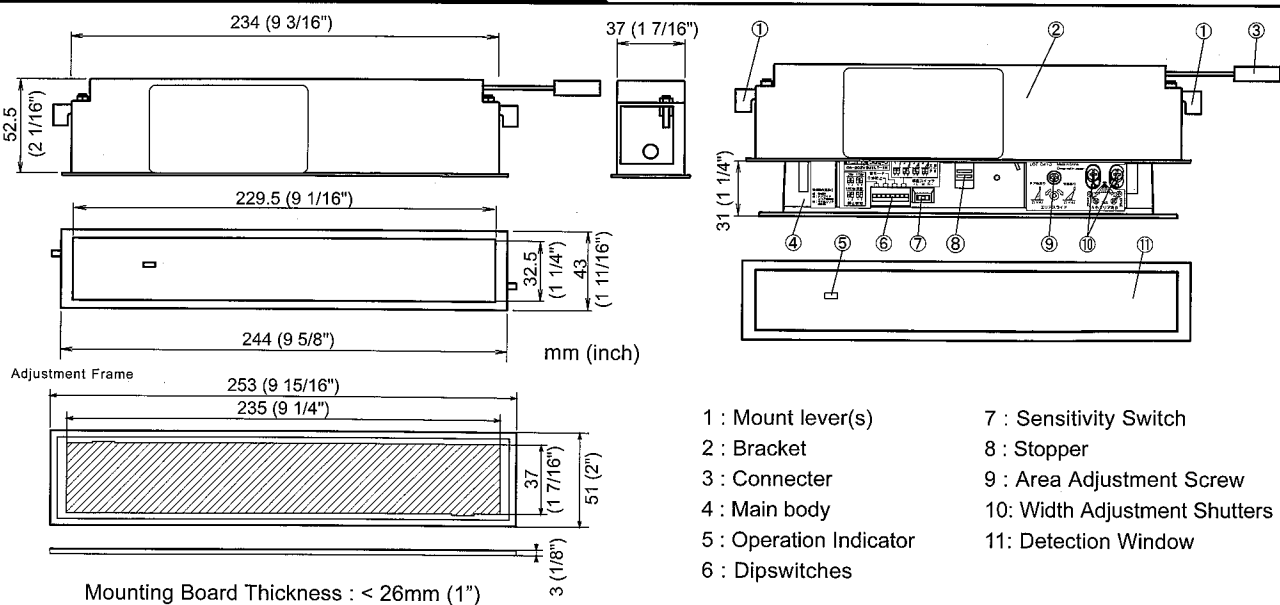Do not use it for any other applications; otherwise proper operation and safety cannot be guaranteed.
Cautions:
1. Follow the instructions (especially **Note**) in this Operation Manual when installing and adjusting the sensor.
2. When setting the sensor's area pattern, make sure there is no traffic 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	: 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 Adjustments	: ±4° adjustable by 1° every one click (Deep / Shallow)	Accessories	: 1 Cable 3m (9'10")
Detection Width Adjustments	: 4 type selectable with Adjustment Shutters (Not angle adjustment)		1 Operation Manual 1 Area Adjustment Tool
Power Supply	: 12 to 30V AC / DC		1 Adjustment Frame
Current Draw	: 200mA Max. (At 12V AC)		
Operation Indicator	: Green / Stand-by	* The specifications herein are subject to change without prior notice due to improvements.	
	Red / 1st Row Detection Active		
	Orange / Other Row Detection Active		

OUTER DIMENSIONS

234 (9 3/16")
37 (1 7/16")
52.5 (2 1/16")
229.5 (9 1/16")
32.5 (1 1/4")
43 (1 11/16")
244 (9 5/8")
31 (1 1/4")

mm (inch)

Adjustment Frame
253 (9 15/16")
235 (9 1/4")
37 (1 7/16")
51 (2")
3 (1/8")

Mounting Board Thickness : < 26mm (1")

1 : Mount lever(s)
2 : Bracket
3 : Connecter
4 : Main body
5 : Operation Indicator
6 : Dipswitches
7 : Sensitivity Switch
8 : Stopper
9 : Area Adjustment Screw
10: Width Adjustment Shutters
11: Detection Window

INSTALLATION

1
235(9 1/4")
Mounting hole size
38 (1/2")

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".

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.

3
Pressing the Detection Window
Pull the Main Body
Pressing the Stopper

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).

4
Note
The cable between the Main Body and the Bracket cannot be removed.
Do not pull the cable strongly, otherwise it may be damaged.

5
Plug the Connector for the sensor to that for the cable.

6
Fold the Mounting Levers inside.
Point the arrow sign inside of the bracket to the doorside, then insert the bracket into the mounting hole.

7
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 injures.

8
When the mounting holes are exposed, use the adjustment frame.

9
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 ambiance light and the color / material of object and the floor as well as the entry speed of object.

1st Row
2nd Row
3rd Row
4th Row

▨ : Emitting Spot
⊡ : Detection Area

					[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

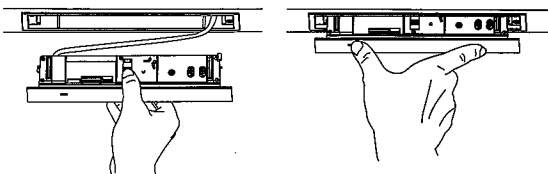| Provided Detection Row type	1st	2nd	3rd	4th
Presence Detection	O	O	×	×
Motion Detection	O	O	O	O

ADJUSTMENT

1 Fixing and removing the Main Body

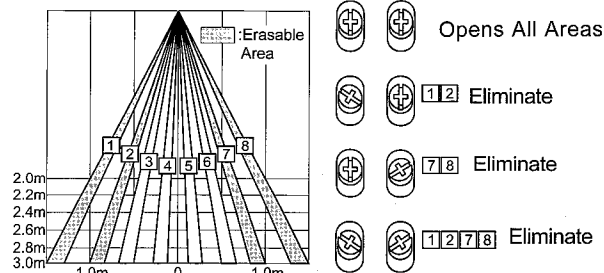Place the Main Body in the Bracket, Paying attention to direction of the sensor.

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.

2 Adjusting the Pattern Width

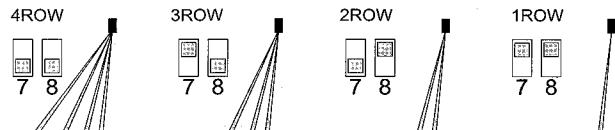Setting the Width adjustment shutters

:Erasable Area

Opens All Areas

1 2 Eliminate

7 8 Eliminate

1 2 7 8 Eliminate
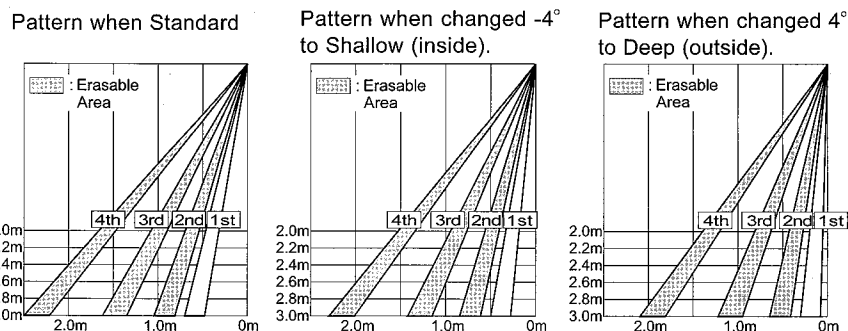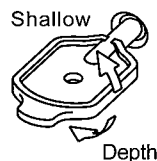
2.0m 2.2m 2.4m 2.6m 2.8m 3.0m
1.0m 0 1.0m

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

3 Adjusting the Pattern Depth
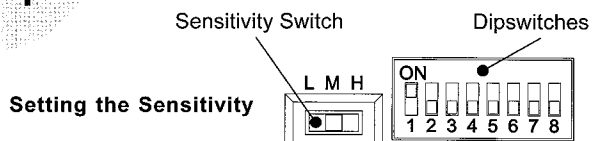
Setting the Row with the Dipswitch 7 & 8.

4ROW 7 8
3ROW 7 8
2ROW 7 8
1ROW 7 8

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

Shallow

Depth

Pattern when Standard
: Erasable Area
4th 3rd 2nd 1st
2.0m 2.2m 2.4m 2.6m 2.8m 3.0m
2.0m 1.0m 0m

Pattern when changed -4° to Shallow (inside).
: Erasable Area
4th 3rd 2nd 1st
2.0m 2.2m 2.4m 2.6m 2.8m 3.0m
2.0m 1.0m 0m

Pattern when changed 4° to Deep (outside).
: Erasable Area
4th 3rd 2nd 1st
2.0m 2.2m 2.4m 2.6m 2.8m 3.0m
2.0m 1.0m 0m

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

4 Setting of Sensitivity Switch and Dipswitches

Sensitivity Switch   Dipswitches

L M H   ON 1 2 3 4 5 6 7 8

Setting the Sensitivity

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

Setting the Presence timer

2sec. 15sec. 180sec. ∞
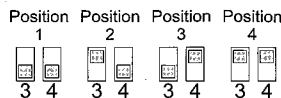1 2   1 2   1 2   1 2

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.

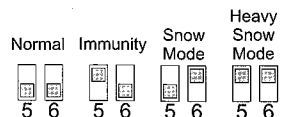### Setting the Frequency Function (interference Prevention)

Four different frequencies can be set by adjusting the Dipswitch 3 and 4.

Position 1 Position 2 Position 3 Position 4
3 4   3 4   3 4   3 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.

Normal Immunity Snow Mode Heavy Snow Mode
5 6   5 6   5 6   5 6

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 Detecion 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.	Adjust to stated voltage.
	Connection Failure.	Check the wiring and the connector.
Dose not operate consistently	Dirty detection window.	Wipe the detection window with a damp cloth (Do not use any cleaner or solvent).
	Sensitivity is Low.	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).
	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.

OPTEX

BLUEZONE

i-oneX T

Web manual

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	Failure to follow the instructions provided with this indication and improper handling may cause death or serious injury.
⚠ CAUTION	Failure to follow the instructions provided with this indication and improper handling may cause injury and/or property damage.
NOTE	Special attention is required to the section of this symbol.

NOTE
1. 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.
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 product.
4. Only use the product 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 product is installed.
6. 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.
7. 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 damage to 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
Cover color	: Black		50V 0.3A Max.(Resistance load)
Mounting height	: 6'7" to 9'10" (2.0m to 3.0m)	Output hold time	: 0.5 to 1.5sec.
Detection area	: See **Detection area**	Response time	: < 0.3sec.
Detection method	: Active infrared reflection	Operating temperature	: -31°F to 131°F(-35°C to +55°C)
Depth angle	: Approach -15° to +10°	Operating humidity	: < 80%
adjustment	1st to 5th rows -10° to +8°	IP rate	: IP54
Power supply	: 12 to 24VAC ±10% (50 / 60 Hz)	Weight	: 14.6oz (420g)
	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
Activation output	: Form A relay		1 Area adjustment tool
	50V 0.3A Max.(Resistance load)		1 Cable 9'10" (3m)
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		
Stand-by (operation mode)	Green		
BLUEZONE (1st row) detection(*1)	Blue		
2nd row detection	Red blinking		
3rd/4th row detection	Red		
5th row detection	Orange		
Approach detection	Orange blinking		
Signal saturation	Slow Green blinking		
Sensor failure	Fast Green blinking		

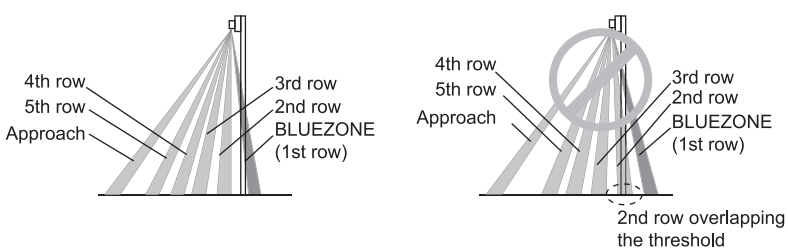**NOTE** The specifications herein are subject to change without prior notice due to improvements.
*1 : See **BLUEZONE area**

Outer dimentions and part names

1' 5/16" (312)
9 13/16" (250)
4 13/16" (123)
4 15/16" (125)
1 7/16" (36)
[inch (mm)]
5/16" (8)
2 1/16" (52.5)
2 11/16" (67.5)

(1) Connector
(2) Mounting holes (for retrofit)
(3) Mounting holes
(4) Operation indicator
(5) Width pattern adjustment screws
(6) Depth angle adjustment screw (1st to 5th rows)
(7) Depth angle adjustment screw (Approach)
(8) Sensitivity potentiometers
(9) Dipswitches
(10) Detection window
(11) Cover fixing
(12) Area adjustment tool
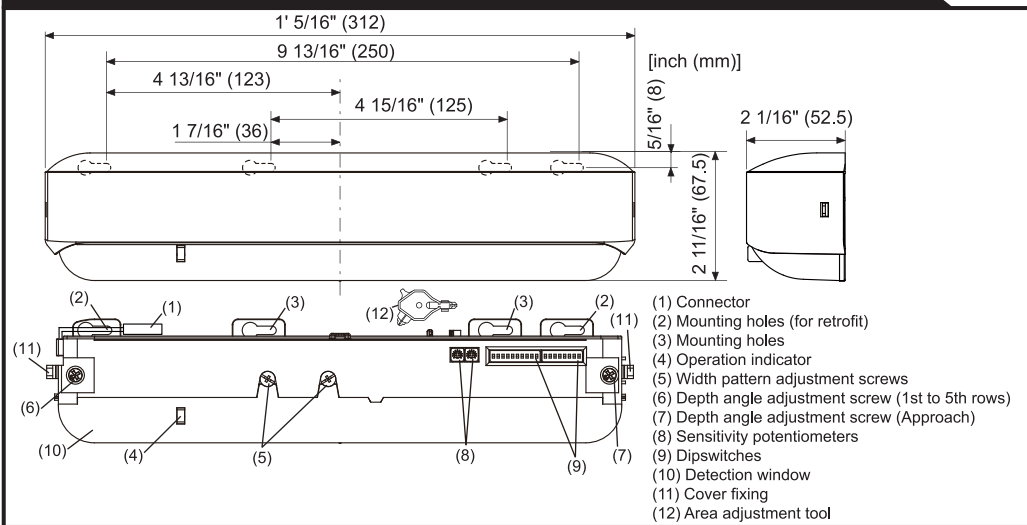
BLUEZONE area

When dipswitch 5 is set to "ON", the BLUEZONE(1st row) is active and looks through the threshold.
In case the BLUEZONE function is not required, set dipswitch 5 to "OFF".
Do not overlap the 2nd row into the threshold area, regardless of dipswitch 5 setting.

4th row
5th row
Approach
3rd row
2nd row
BLUEZONE (1st row)

4th row
5th row
Approach
3rd row
2nd row
BLUEZONE (1st row)
2nd row overlapping the threshold

Detection area

The chart shows the values at depth angle 0°

Emitting area

			[feet,inch(m)]
A	7'3" (2.20)	8'2" (2.50)	9'10" (3.00)
B	1' (0.31)	1'2" (0.36)	1'5" (0.43)
C	7" (0.17)	8" (0.20)	9" (0.24)
D	1'9" (0.53)	2' (0.61)	2'5" (0.73)
E	3' (0.91)	3'5" (1.04)	4'1" (1.25)
F	3'11" (1.19)	4'5" (1.35)	5'4" (1.62)
G	8'6" (2.60)	9'8" (2.95)	11'8" (3.54)
H	5'3" (1.60)	6' (1.82)	7'2" (2.18)
I	7' (2.14)	8' (2.44)	9'7" (2.92)
J	9'1" (2.76)	10'3" (3.13)	12'4" (3.76)
K	10'3" (3.12)	11'8" (3.55)	14' (4.26)
L	12'10" (3.91)	14'7" (4.45)	17'6" (5.34)
M	13'6" (4.10)	15'4" (4.66)	18'4" (5.60)
N	16'8" (5.07)	18'11" (5.76)	22'8" (6.91)
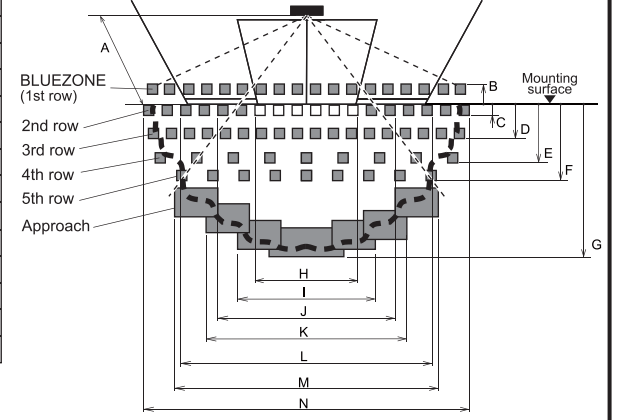
Emitting area (Approach)
*Mounting Height = 7'3"(2.2m)

	-15°	0°	+10°	[feet,inch(m)]
G	5' (1.53)	8'6" (2.60)	12'5" (3.77)	
I	5'10" (1.79)	7' (2.14)	8'6" (2.59)	
K	8'10" (2.70)	10'3" (3.12)	12' (3.65)	
M	12'1" (3.67)	13'6" (4.10)	15'3" (4.65)	

BLUEZONE (1st row)
2nd row
3rd row
4th row
5th row
Approach
Mounting surface

-15°
0°
10°
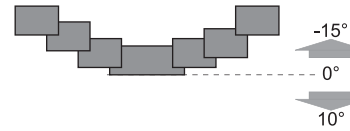
☐ : Emitting spots
■ : Emitting spots (can be eliminated)
⌐¬ : Detection area

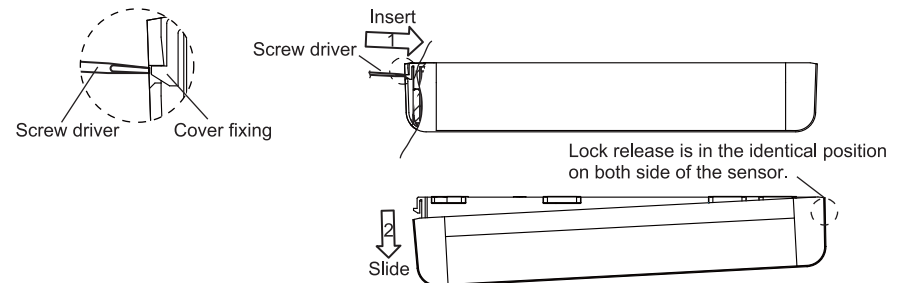| Approach	: Motion detection
5th row	: Motion detection
1st to 4th rows	: Motion / Presence detection

NOTE The actual detection area may be different 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
1. Attach the mounting template at the desired mounting position. Refer to the chart in below.
2. Drill two mounting holes of ø1/8" (ø3.4mm).
3. To pass the cable through the header, drill a wiring hole of ø5/16" (ø8mm).
4. Remove the mounting template.
5. Remove the cover with screw driver as shown below. Secure the sensor to the mounting surface with the two mounting screws.

Insert
Screw driver
Screw driver
Cover fixing
Lock release is in the identical position on both side of the sensor.
Slide

Header
Sensor
Y
X
H
Door
Floor

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 value of Y [feet,inch(m)]

X \ H	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)	3 1/2" (0.09)	4" (0.10)	4 1/2" (0.11)	5" (0.13)	0
4" (0.10)	3" (0.07)	3 1/2" (0.08)	3 1/2" (0.10)	4" (0.10)	0
6" (0.15)	2 1/2" (0.06)	2 1/2" (0.07)	3" (0.08)	3 1/2" (0.09)	0
8" (0.20)	2" (0.05)	2 1/2" (0.06)	2 1/2" (0.06)	3" (0.07)	0
10" (0.25)	1 1/2" (0.04)	2" (0.05)	2 1/2" (0.06)	2 1/2" (0.06)	0
12" (0.30)	-	-	-	-	-

⚠ CAUTION	Make sure within the range of Y, otherwise it can be dangerous since there may be no detection area around the threshold.
Risk of getting caught	Install the sensor as low as possible to the bottom of the header.

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

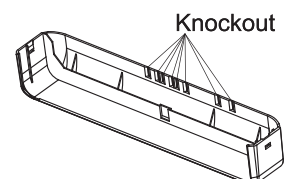| Power supply	1	1.Grey
		2.Grey
Activation output	2	3.White
		4.Yellow
Safety output	3	5.White stripe
		6.Yellow stripe
Test input	4	7.Red (+)
		8.Black (-)

1	12 to 24VAC±10% / 12 to 30VDC±10%
2	Form A relay 50V 0.3A Max.
3	Form A relay 50V 0.3A Max.
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 damage to the sensor.
Danger of electric shock	

3
1. Plug the connector.
2. 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 area, 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 Installing the cover.
If wiring is to be exposed, remove the knockout.

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 damage to the sensor may occur.
Danger of electric shock	

Adjustments

1 Depth angle adjustment

Depth angle adjustment screw (1st to 5th rows)
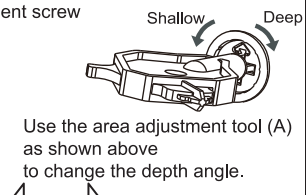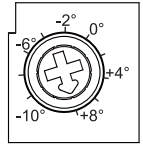Depth angle adjustment screw (Approach)

Area adjustment tool
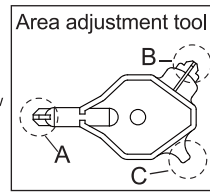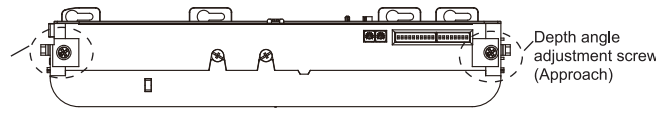
When adjusting the 2nd row close to the door,
follow **Table1** dipswitch18(Installation mode) for the easier adjustment.
When dipswitch 18 remains "ON" for more than 5 minutes, the sensor automatically sets back to the operation mode.
If the installation mode is required again, set dipswitch 18 to "OFF", then set to "ON".
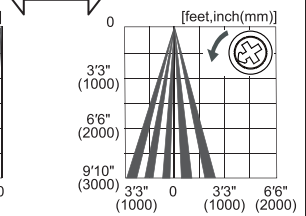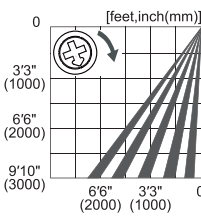
NOTE Make sure that the detection area does not overlap with the door / header, and there is no highly reflecting object near the detection area otherwise ghosting / signal saturation may occur.

1-1 1st to 5th rows
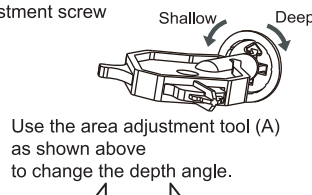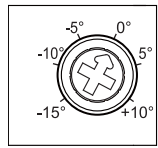Depth angle adjustment screw (1st to 5th rows)

Shallow — Deep

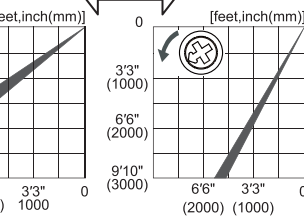Use the area adjustment tool (A) as shown above to change the depth angle.

-2° 0°
-6° +4°
-10° +8°

Deep Shallow

[feet,inch(mm)]
0
3'3"(1000)
6'6"(2000)
9'10"(3000)
6'6"(2000) 3'3"(1000) 0

[feet,inch(mm)]
0
3'3"(1000)
6'6"(2000)
9'10"(3000)
3'3"(1000) 0 3'3"(1000) 6'6"(2000)

1-2 Approach
Depth angle adjustment screw (Approach)

Shallow — Deep

-5° 0°
-10° 5°
-15° +10°

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

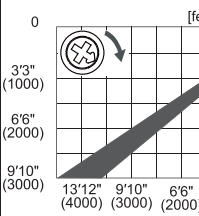Deep Shallow

[feet,inch(mm)]
0
3'3"(1000)
6'6"(2000)
9'10"(3000)
13'12"(4000) 9'10"(3000) 6'6"(2000) 3'3"(1000) 1000
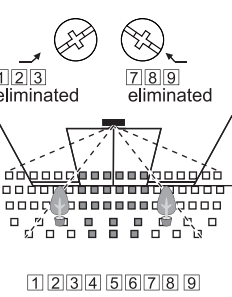
[feet,inch(mm)]
0
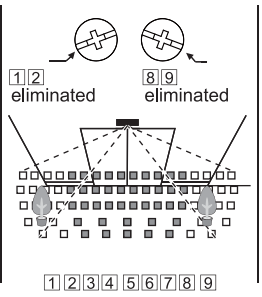3'3"(1000)
6'6"(2000)
9'10"(3000)
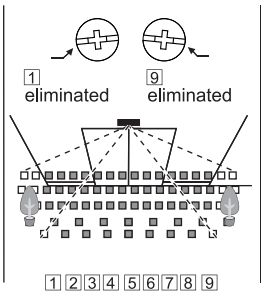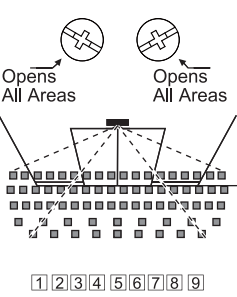6'6"(2000) 3'3"(1000) 0

### 2 Width pattern adjustment

2-1 1st to 5th rows

Each side can be adjusted independently, allowing for asymmetrical settings. Use the area adjustment tool (A) to adjust the width pattern.

NOTE When setting 1st to 5th rows width pattern, make sure to turn the width pattern adjustment screws until it clicks.

Left eliminated 1 2 3
Right eliminated 7 8 9

Width pattern adjustment screws

Opens All Areas
Opens All Areas
1 eliminated
9 eliminated
1 2 eliminated
8 9 eliminated
1 2 3 eliminated
7 8 9 eliminated

1 2 3 4 5 6 7 8 9

2-2 Approach
Width pattern can be adjusted by changing the Dipswitches 8,9,10.
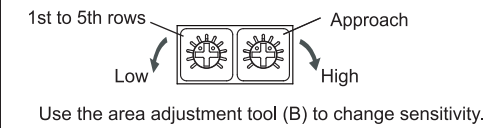See **5.Dipswitch settings, Table 1**.
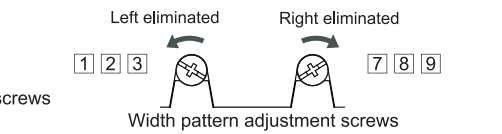
3 Depth row adjustment (1st to 5th rows)

1st to 5th rows can be adjusted by changing the Dipswitches 6 & 7.
See **5.Dipswitch settings, Table 1**.

4 Sensitivity adjustment

Adjust the sensitivity (1st to 5th rows /Approach) with potentiometer.
Turning it clockwise increases the sensitivity and turning counterclockwise lowers the sensitivity.

1st to 5th rows — Approach
Low — High

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

5 Dipswitch settings

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

Table1

	Function	Setting				Comment
Dipswitch 1 / Dipswitch 2	Presence timer	30sec. 1 2	60sec. 1 2	180sec. 1 2	600sec. 1 2	To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.
Dipswitch 3 / Dipswitch 4	Frequency	Setting1 3 4	Setting2 3 4	Setting3 3 4	Setting4 3 4	Make sure to select different frequency setting for interior and exterior sensors. When using more than one sensor close to each other, set the frequency different for each sensor.
Dipswitch 5	BLUEZONE	OFF 5	ON 5			When dipswitch 5 is set to "ON", the BLUEZONE (1st row) is active and looks through the threshold.
Dipswitch 6 / Dipswitch 7	Depth row adjustment	5rows 6 7	4rows 6 7	3rows 6 7	2rows 6 7	The number of depth rows can be selected from 4 patterns. 5rows 4rows 3rows 2rows
Dipswitch 8 / Dipswitch 9 / Dipswitch 10	Approach width pattern adjustment	8 9 10 ①②③④⑤⑥⑦				Width of Approach area can be selected from 8 patterns as shown left. ■ Active area □ Inactive area
Dipswitch 11	Rain mode	Normal 11	Rain 11			Set this switch to "Rain" if the sensor is used in a region with a lot of rain.
Dipswitch 12	Snow mode	Normal 12	Snow 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 13	Uni 13	*Please refer to **Table 2** for the details.		By setting this switch to "Uni", you enable to close the door faster when a person walks away from the door.
Dipswitch 14	Simultaneous output	OFF 14	ON 14			When this switch is set to "ON", both the Activation & Safety outputs will operate simultaneously regardless of the actual detection occurring area. But only the Safety output will respond back with a Safety output responds to a Test input.
Dipswitch 15	Safety output	N.O. 15	N.C. 15			Select "N.O." / "N.C." for Safety output to door controller.
Dipswitch 16	Test input	High 16	Low 16			Select "High" / "Low" for Test input from door controller. The delay time between Test input and Safety output is 10msec..
Dipswitch 17	Future use					
Dipswitch 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
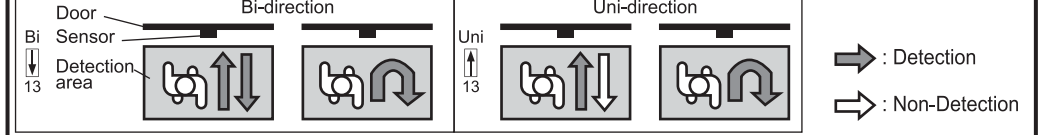
Door / Sensor / Detection area
Bi 13
Uni 13

Bi-direction / Uni-direction

➡ : Detection
⇨ : Non-Detection

Checking

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

Entry		Power OFF	Outside of detection area	Entry into Approach area	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	Motion detection active			Motion / 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								
	ON 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
1. Do not wash the sensor with water.
2. Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.

⚠ CAUTION
1. Do not paint the detection window.

NOTE
1. Always keep the detection window clean. If dirty, wipe the window with a damp cloth.(Do not use any cleaner / solvent.)
2. When the operation indicator blinks Green, contact your installer or service engineer.
3. Always contact your installer or service engineer when changing the settings.
4. When turning the power ON, always walk-test the detection area to ensure the proper operation.
5. 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.
		Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Wrong detection area positioning.	Check the detection area.(**Adjustments** 1,2,3,4,5)
		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.
	Proper	Wrong wiring or connection failure.	Check the wires and connector.
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 that of another sensor.	Check the frequency setting. (**Table1** 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.
		Detection area overlaps with door / header.	Adjust the detection area to "Deep"(Outside). (**Adjustments** 1)
		Sensitivity is too high.	Set the sensitivity lower.
		The sensor is used in a region with a lot of rain.	Set dipswitch 11 to "Rain".
		The sensor is used in a region with snow or a lot of insects.	Set dipswitch 12 to "Snow".
		Wrong setting of dipswitches	Check the Simultaneous output (dipswitch 14).
	Proper	Wrong setting of dipswitches	Check the Safety output (dipswitch 15) or Test input (dipswitch 16)
Door remains open	Proper	Sudden change in the detection area.	Check sensitivity or presense timer (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.
	Fast 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	The detection area overlaps with the door / header.	Adjust the detection area to "Deep"(Outside). (**Adjustments** 1)
		Signal saturation	Remove highly reflecting objects from the detection area. Or change the area depth angle(**Adjustments** 1).

OPTEX

OA-72C

CE

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
1. This product is a non-contact switch intended for ceiling mount for use on automatic sliding doors. Do not use for any other applications.
2. When setting the sensors 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 product.
4. Only use the product 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 product is installed.
6. 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.
7. 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.

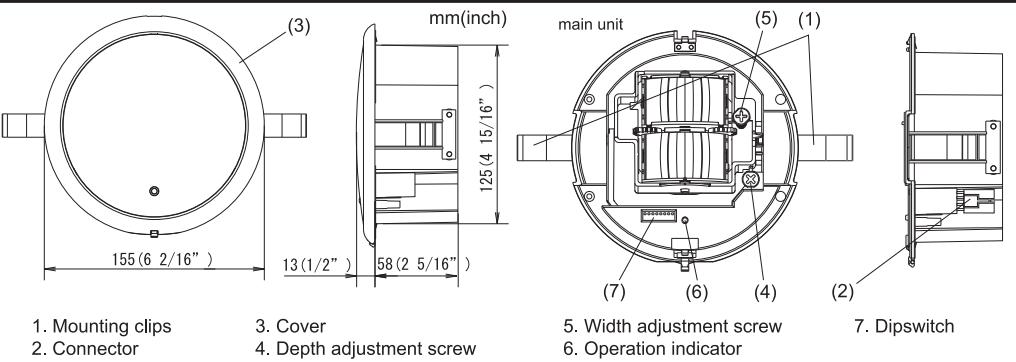| ⚠ WARNING Danger of electric shock	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.

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
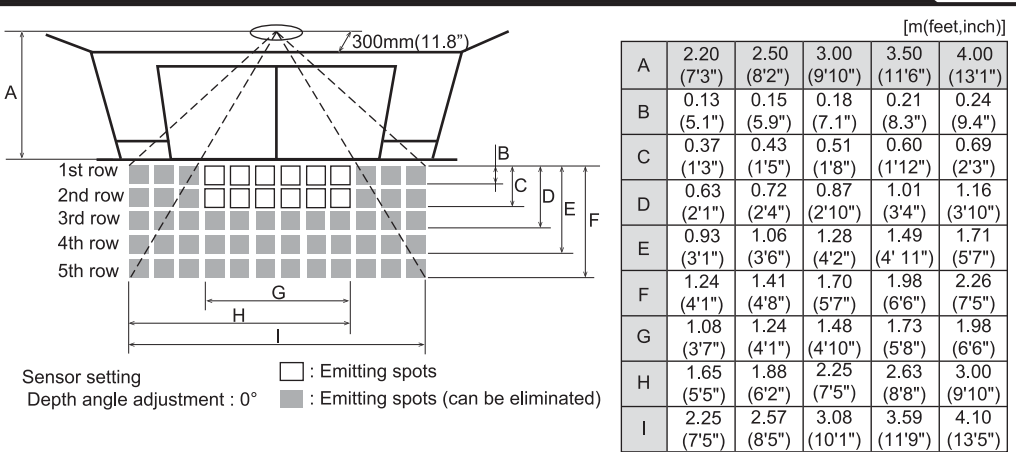
SPECIFICATIONS

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

mm(inch)

155 (6 2/16") 13 (1/2") 58 (2 5/16") 125 (4 15/16")

main unit

1. Mounting clips
2. Connector
3. Cover
4. Depth adjustment screw
5. Width adjustment screw
6. Operation indicator
7. Dipswitch

DETECTION AREA

300mm(11.8")

1st row
2nd row
3rd row
4th row
5th row

Sensor setting
Depth angle adjustment : 0°
☐ Emitting spots
▩ Emitting spots (can be eliminated)

[m(feet,inch)]

A	2.20 (7'3")	2.50 (8'2")	3.00 (9'10")	3.50 (11'6")	4.00 (13'1")
B	0.13 (5.1")	0.15 (5.9")	0.18 (7.1")	0.21 (8.3")	0.24 (9.4")
C	0.37 (1'3")	0.43 (1'5")	0.51 (1'8")	0.60 (1'12")	0.69 (2'3")
D	0.63 (2'1")	0.72 (2'4")	0.87 (2'10")	1.01 (3'4")	1.16 (3'10")
E	0.93 (3'1")	1.06 (3'6")	1.28 (4'2")	1.49 (4' 11")	1.71 (5'7")
F	1.24 (4'1")	1.41 (4'8")	1.70 (5'7")	1.98 (6'6")	2.26 (7'5")
G	1.08 (3'7")	1.24 (4'1")	1.48 (4'10")	1.73 (5'8")	1.98 (6'6")
H	1.65 (5'5")	1.88 (6'2")	2.25 (7'5")	2.63 (8'8")	3.00 (9'10")
I	2.25 (7'5")	2.57 (8'5")	3.08 (10'1")	3.59 (11'9")	4.10 (13'5")

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
1. Affix the mounting template at the desired mounting position.
2. Drill a mounting hole. (recommended diameter : ø130mm (5"))
3. 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.

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.

3
1. Install the sensor with cover, keeping the direction of operation indicator towards the door.
2. Press the mounting clips against the sensor to place the sensor into the mounting hole.

Door
Operation indicator

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.

Main unit
Cover

ADJUSTMENTS

1 **Area depth angle adjustment**

Deep
Shallow
+10°
-10°
-15°
Depth angle scale
Door Side

10° to the outside
2.0m 3.0m 4.0m
4.0m 3.0m 2.0m 1.0m 0

-15° to the door side
2.0m 3.0m
4.0m 2.0m 1.0m 0 -1.0m

2 **Width detection area adjustment**

Left
Right
Right Left
10° 0° 10°

Wide Narrow
Wide Narrow
1 to 3 elimination
10 to 12 elimination

10° to left
2.0m 3.0m 4.0m
4.0m 3.0m 2.0m 1.0m 0 1.0m 2.0m

10° to right
2.0m 3.0m
2.0m 1.0m 0 1.0m 2.0m 3.0m 4.0m

3 **Dipswich 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
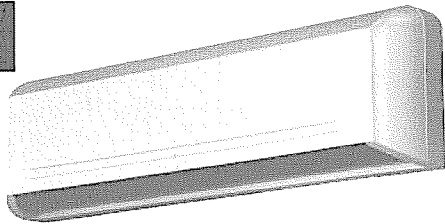
Check the operation according to the chart below.

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 ITEMES

⚠ WARNING
1. Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
2. Do not wash the sensor with water.
3. Do not disassemble, rebuild or repair the sensor yourself, otherwise an electric shock may occur.
4. When an operation LED 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. When turning the power on, always walk-test the 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	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.
		Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Wrong detection area positioning.	Check ADJUSTMENTS 1 & 2.
		Sensitivity is too low.	Set the sensitivity higher.
		Short presence detection timer.	Set the presence detection timer longer.
		Dirty detection window.	Wipe the detection window with a damp cloth.
Door opens when no one is in the detection area. (Ghosting)	Unstable	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).
		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 MANUFACTURE'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.
	Fast green blinking	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.
	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.

OPTEX PROSAFE English

OA-203-2C

CE

MANUFACTURER'S STATEMENT

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.
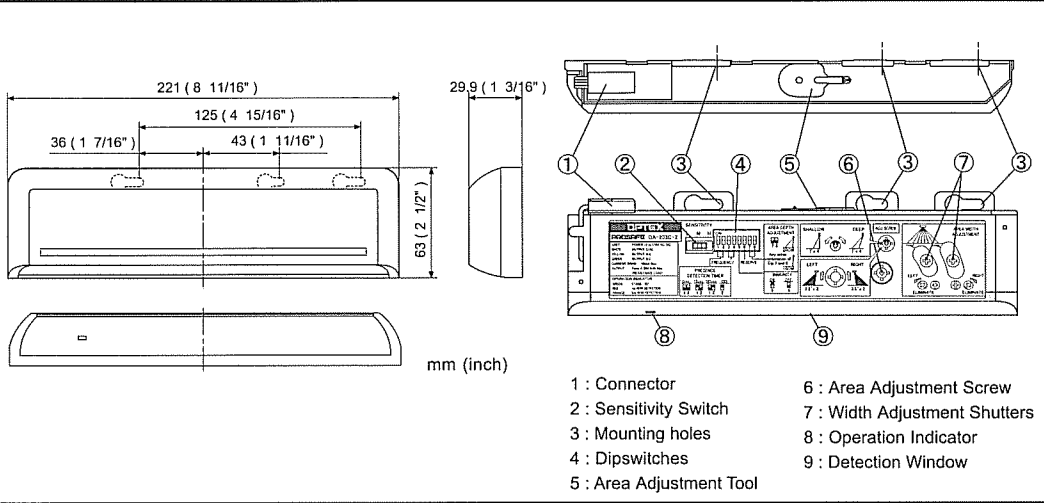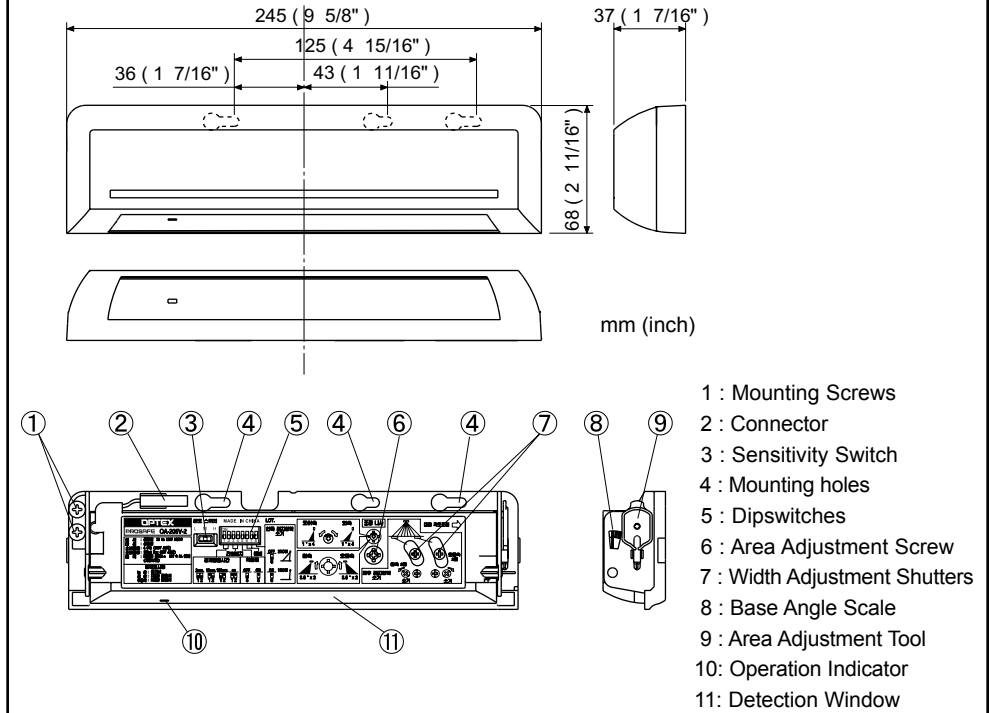Cautions:
1. Follow the instructions (especially **Note**) in this Operation Manual when installing and adjusting the sensor.
2. When setting the sensor's area pattern, make sure there is no traffic around the installation site.
3. Before turning the power on, check the wiring to prevent damage or malfunction 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-203-2C	Output	: "Form C" relay 50V 0.3A Max. (Resistance Load)
Cover color type	: Silver / 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	: 200g (7.1oz)
Detection Angle	: ±4° adjustable by 1° every one click Adjustments (Deep / Shallow)	Accessories	: 1 Cable 3m (9'10")
Detection Width	: ±7° adjustable by 3.5° every one click Adjustments (Right / Left)		2 Mounting Screws
Power Supply	: 12 to 30V AC / DC		1 Operation Manual
Current Draw	: 160mA Max. (at 12V AC)		1 Mounting Template
Operation Indicator	: Green / Stand-by		1 Area Adjustment Tool
	Red / Doorside area detect		
	Orange / Activation Area Detection		*The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS

221 (8 11/16")
125 (4 15/16")
36 (1 7/16")　43 (1 11/16")
29.9 (1 3/16")
63 (2 1/2")

mm (inch)

① ② ③ ④ ⑤ ⑥ ⑦ ③
⑧ ⑨

1 : Connector
2 : Sensitivity Switch
3 : Mounting holes
4 : Dipswitches
5 : Area Adjustment Tool
6 : Area Adjustment Screw
7 : Width Adjustment Shutters
8 : Operation Indicator
9 : Detection Window

INSTALLATION

1
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.

3m Max.
Mounting Template

Note
Be sure that the mounting height is within the value of those in "SPECIFICATION."

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.

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.

Knockout

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

Confirming the Detection Area
Detection areas are shown in the figure below.
Be sure to confirm all the detection areas.

Presence Detection
Motion Detection

A	2.00 (6.56)	2.20 (7.22)	2.50 (8.20)	2.70 (8.86)	3.00 (9.84)
B	0.14 (0.46)	0.16 (0.51)	0.18 (0.58)	0.19 (0.63)	0.21 (0.69)
C	1.18 (3.87)	1.30 (4.26)	1.48 (4.85)	1.59 (5.22)	1.77 (5.81)
D	0.16 (0.52)	0.18 (0.59)	0.20 (0.66)	0.22 (0.72)	0.25 (0.82)
E	2.10 (6.89)	2.30 (7.54)	2.60 (8.53)	2.80 (9.18)	3.10 (10.17)

m(ft)

ADJUSTMENT

1 Adjustment of Area Width
The left and right areas can be eliminated.
All areas can be moved by 7° to the right or left.

to Right
to Left

Area Eliminate			
Opens All Areas	Eliminate [A]	Eliminate [B]	Eliminate [A]&[B]

Areas When Changed 7° to Right
A B
Eliminated Area :

Standard Conditions
A B
Eliminated Area :

Areas When Changed 7° to Left
A B
Eliminated Area :

2 Adjustment of Area Depth
The entire area can be moved by 4° to the inside or outside.

Shallow
Depth

Area Eliminate			
2ROW	1ROW	1ROW	1ROW
7 8	7 8	7 8	7 8

Standard Conditions
Eliminated Area :

Areas When Changed 4° to Outside (Deep)
Eliminated Area :

Areas When Changed 4° to Door side (Shallow)
Eliminated Area :

3 Setting of Sensitivity Switch and Dipswitches

Sensitivity Switch
Dipswitches

Setting the Sensitivity
Factory set : "M"
1,2: Presence Detection Timer
3,4: Frequency Switch (Interference Prevention)
5,6: Immunity
7,8: Area Depth Adjustment

L M H
ON
1 2 3 4 5 6 7 8

Setting the Interference Preventive Function (Frequency Switch)
4 kinds of interference preventive modes can be set by combining the mode setting switches 3 and 4.

3 4　3 4　3 4　3 4

Setting the Presence timer

2sec.　15sec.　180sec.　∞
1 2　1 2　1 2　1 2

First two rows from the door provides presence detection
①Select your presence detection time.
②Turn power on
③Do not enter detection area for 10 seconds.

Immunity
normal　Immunity
5　5

Reserve
Do not use.
6

CHECKING

Checking the Entry Motion
Check the entry motions according to the following flow chart.

Entry motion (Image)	Outside the detection area	Entry into the approach area	Entry into the door side area	Outside the detection area
	Standby	Motion detection	Motion/presence detection	Standby
Power/Operating indicator	Green	Orange	Red	Green
Output contact	Yellow / Green / White	Yellow / Green / White	Yellow / Green / White	Yellow / Green / White

Note Sometimes detection can be difficult due to : environmental light, colors of the object , and floor material / color. This might influence the speed of detection.

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.	Adjust to stated voltage.
	Connection Failure.	Check the wiring and the connector.
Dose not operate consistently	Dirty detection window.	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)
	Sensitivity is Low.	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).
	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.

OPTEX

PROSAFE
OA-1V OA-205V-1
OA-2V OA-205V-2
OA-2VF

MANUFACTURER'S STATEMENT

5911961 2005.07

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-1V / OA-2V / OA-2VF / OA-205V-1 / OA-205V-2
Cover color type	: Silver / Black
Mounting Height	: 2.0m (6'6") to 3.0m (9'10")
Detection Area	: See "ADJUSTMENT - 1. Detection Area"
Detection Method	: Active Infrared Reflection Method
Detection Angle Adjustments	: Base Angle: -2° to 10° for OA-1V/OA-205V-1 0° to 10° for OA-2V/2VF/OA-205V-2 Adjustment Screw Angle: ±4° adjustable by 1° every one click (Deep / Shallow)
Detection Width Adjustments	: Adjustment Screw Angle: ±7° adjustable by 3.5° every one click (Right / Left)
Power Supply	: 12 to 110V AC / DC (50/60Hz)
Current Draw	: 160mA Max. (at 12V AC)
Power Consumption	: 4.0VA Max. (at 100V AC)
Operation Indicator	: Green / Stand-by Red / 1st Row Detection Active Orange / 2nd Row Detection Active (OA-1V/OA-205V-1 has no 2nd Row.)
Output	: "Form A" relay 50V 0.1A Max. (Resistance Load)
Relay Hold Time	: 0.5 sec.
Response Time	: < 0.3 sec.
Operating Temperature	: -20°C to +55°C (-4°F to +131°F)
Weight	: 230g (8.2oz)
Accessories	: 1 Cable 3m (9'10"), 2 Mounting Screws 1 Operation Manual, 1 Mounting Template 1 Area Adjustment Tool, 1 Protection sheet

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

OUTER DIMENSIONS

245 (9 5/8")
125 (4 15/16")
36 (1 7/16")
43 (1 11/16")
37 (1 7/16")
68 (2 11/16")

mm (inch)

1 : Mounting Screws
2 : Connector
3 : Sensitivity Switch
4 : Mounting holes
5 : Dipswitches
6 : Area Adjustment Screw
7 : Width Adjustment Shutters
8 : Base Angle Scale
9 : Area Adjustment Tool
10: Operation Indicator
11: Detection Window

INSTALLATION

1
2m to 3m (6'6" to 9'10")
Mounting Template

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 "SPECIFICATIONS."

2 The cable is arranged to connect to the door controller properly as shown below.

Yellow ⌐ Output : "Form A" relay
Yellow ⌐ 50V 0.1A Max. (Resistance Load)
Grey ⌐ Power Supply
Grey ⌐ 12 to 110V AC / DC (50/60Hz)

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.

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. Stick a protection sheet on the sensor.
2. Put back the cover on the sensor.
3. If wiring is to be exposed, break the Knockout.

Knockout

Note Do not use the sensor without the cover. Install the sensor indoors , or use the rain-cover (Optional), when using the Knockout, otherwise it may cause electric shock or breakdown of sensor.

ADJUSTMENT

1 **Detection Area**
Area arrangement changes with models. Please adjust after taking into consideration.

OA-1V/OA-205V-1

1st Row

■ : Emitting Spots
⸬ : Detection Area

Provided Detection Row type	1st	2nd
Presence Detection	○	✕
Motion Detection	○	○

OA-2V/OA-2VF/OA-205V-2

1st Row

2nd Row

■ : Emitting Spots
⸬ : Detection Area

OA-2VF does not have 1st Row Spots during stand-by.
Refer to "4-Setting of Dipswitches" in detail.

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.

Base Angle: 0°, Adjustment Screw Angle: 0° [m]

A	2.00	2.20	2.50	2.70	3.00
B	2.10	2.30	2.60	2.80	3.10
C	0.73	0.80	0.91	0.98	1.09
D	0.85	0.93	1.06	1.14	1.27
E	0.16	0.18	0.20	0.22	0.25
F	0.27	0.29	0.33	0.36	0.40
G	1.34	1.47	1.68	1.81	2.01

Base Angle: 10°, Adjustment Screw Angle: 0° [m]

A	2.00	2.20	2.50	2.70	3.00
B	2.40	2.64	3.00	3.24	3.60
C	1.25	1.38	1.56	1.69	1.88
D	1.41	1.55	1.76	1.90	2.12
E	0.51	0.56	0.64	0.69	0.77
F	0.65	0.72	0.81	0.88	0.98
G	2.05	2.26	2.56	2.77	3.08

2 **Adjusting the Pattern Width**

Setting the Width adjustment shutters

Adjusting the Width Angle Left or Right : between 0° to 7° (3.5° per click)

Opens All Areas	Eliminate 1 2	Eliminate 7 8	Eliminate 1 2 7 8

to Right

to Left

Pattern when changed 7° to Left

Pattern when Standard

Pattern when changed 7° to Right

□ : Erasable Area

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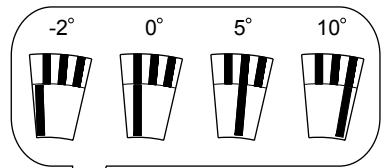
3 Adjusting the Pattern Depth

Depth angle can be set up by two kinds, a base and an adjustment screw.
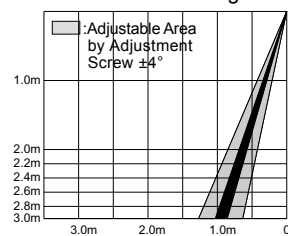
1. Setting the Base Angle.
OA-1V/OA-205V-1: between -2° to 10°.
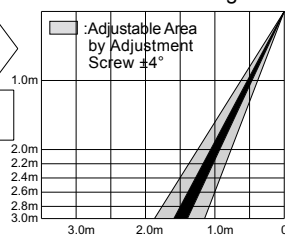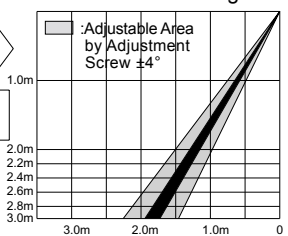OA-2V/2VF/OA-205V-2: between 0° to 10°.

-2°   0°   5°   10°

2. Setting the Depth Angle between -4° to 4° (1° per click) by Adjustment Screw.

Shallow

Depth

OA-1V/OA-205V-1

Pattern when Base Angle -2°
:Adjustable Area by Adjustment Screw ±4°
1.0m
2.0m 2.2m 2.4m 2.6m 2.8m 3.0m
3.0m 2.0m 1.0m 0

+7° / -7°

Pattern when Base Angle 5°
:Adjustable Area by Adjustment Screw ±4°
1.0m
2.0m 2.2m 2.4m 2.6m 2.8m 3.0m
3.0m 2.0m 1.0m 0

+5° / -5°

Pattern when Base Angle 10°
:Adjustable Area by Adjustment Screw ±4°
1.0m
2.0m 2.2m 2.4m 2.6m 2.8m 3.0m
3.0m 2.0m 1.0m 0

OA-2V/OA-2VF/OA-205V-2

Pattern when Base Angle 0°
:Adjustable Area by Adjustment Screw ±4°
1.0m
2.0m 2.2m 2.4m 2.6m 2.8m 3.0m
3.0m 2.0m 1.0m 0

+5° / -5°

Pattern when Base Angle 5°
:Adjustable Area by Adjustment Screw ±4°
1.0m
2.0m 2.2m 2.4m 2.6m 2.8m 3.0m
3.0m 2.0m 1.0m 0

+5° / -5°

Pattern when Base Angle 10°
:Adjustable Area by Adjustment Screw ±4°
1.0m
2.0m 2.2m 2.4m 2.6m 2.8m 3.0m
3.0m 2.0m 1.0m 0

3. Setting the Row with the Dipswitch 8 (for only OA-2V/OA-205V-2).

8 — 2ROW   8 — 1ROW
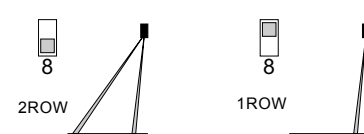
Note Be aware of non-detection area by the door-rail when moving the emitting spots forward too much for deeper approach.

4 Setting of Sensitivity Switch and Dipswitches
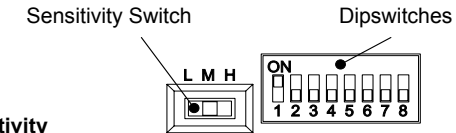
Sensitivity Switch   Dipswitches

L M H   ON 1 2 3 4 5 6 7 8

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

Setting the Presence timer
1st Row from door provide the presence detection.
(1) Select the presence timer.
(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.
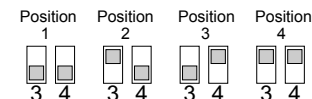
2sec. — 1 2   15sec. — 1 2   180sec. — 1 2   ∞ — 1 2

Setting the Frequency Function
(Interference Prevention)
Four different frequencies can be set by adjusting the Dipswitch 3 and 4.

Position 1 — 3 4   Position 2 — 3 4   Position 3 — 3 4   Position 4 — 3 4
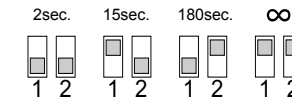
Note When two or more sensors are installed close to each other, it is possible that they interfere. When that happens, change the Frequency.

Setting the immunity mode
Set the Dipswitch5 if the sensor is used in a region with snow or a lot of insects.

Normal — 5   Immunity — 5

Setting the 1st Row detectable timer
(For only OA-2VF)
Select the 1st Row detection time by adjusting the Dipswitch 7 and 8.

5sec. — 7 8   10sec. — 7 8   15sec. — 7 8   20sec. — 7 8

OA-2VF does not have 1st Row spots during stand-by. Immediately after 2nd Row spots detects, 1st Row spots appear till the 1st Row detection time set up.
When entry into 1st Row spots or 2nd Row spots within 1st Row detection time, even if setting time passes, 1st Row spots continue existing.
After leaving area, and passing 1st Row detection time, 1st ROW spots are lost again.
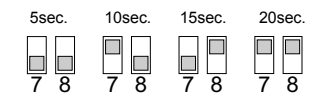
CHECKING

Check the operation according to the chart below.

Entry motion	Power OFF	Outside the Detection area	Entry into 2nd Row	Entry into 1st Row	During 1st Row detectable time ,after leaving the Detection area	Outside the Detection area
OA-1V OA-205V-1 (image)			✕		✕	
OA-2V OA-205V-2 (image)					✕	
OA-2VF (image)						
Sensor status	Power OFF	Stand-by	Motion Detection Active	Motion or Presence Detection Active	1st Row detectable Stand-by	Stand-by
Operation indicator	OFF	Green	Orange	Red	Green	Green
Output	Yellow / Yellow	Yellow / Yellow	Yellow / Yellow	Yellow / Yellow	Yellow / Yellow	Yellow / Yellow

Note The door may close when this sensor broke down.

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.)
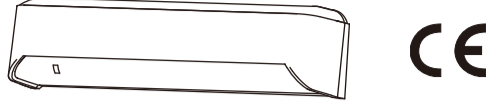7. Do not paint the Detection Window.

TROUBLESHOOTING

Trouble	Possible Cause	Solution
Does not operate	Power supply is not adequate.	Adjust to stated voltage.
	Connection Failure.	Check the wiring and the connector.
Dose not operate consistently	Dirty detection window.	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)
	Sensitivity is Low.	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).
	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.

OPTEX
OA-AXIS I / II

CE

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
1. 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.
2. When setting the sensor's detection area, 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 equipments that are connected to the sensor.
4. Only use the sensor as specified in the operation manual provided.
5. Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
6. 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.
7.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. | |

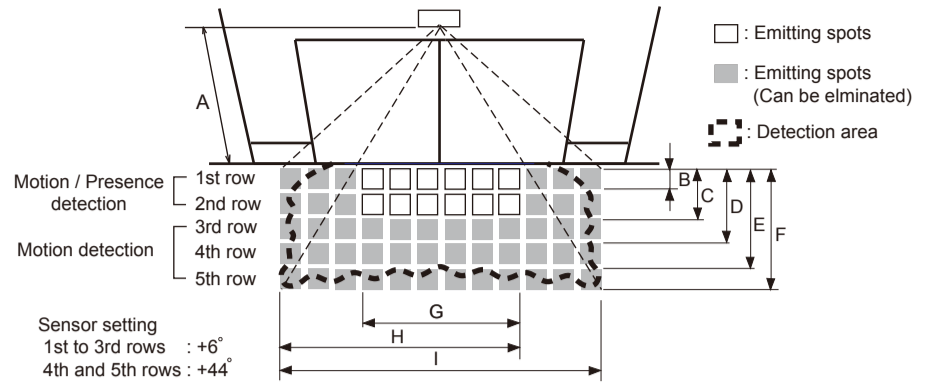## SPECIFICATIONS

Model : OA-AXIS I / OA-AXIS II
Cover color : Silver / Black
Mounting height : 2.0 (6'7") to 3.5m (11'5")
Detection area : See DETECTION AREA
Detection method : Active Infrared Reflection
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%)
Power consumption : OA-AXIS I < 3VA
　OA-AXIS II < 4VA
Operation LED : Green / Stand-by
　Blinking Red / 1st row detection
　Red / 2nd row detection
　Orange / 3rd to 5th rows detection

Output : OA-AXIS I /
　Form C relay
　50V 0.3A Max.(Resistance load)
　OA-AXIS II /
　1st to 3rd rows / Form C relay
　50V 0.3A Max. (Resistance load)
　3rd to 5th rows / Form C relay
　50V 0.3A Max.(Resistance load)
Output hold time : Approx. 0.5 sec.
Response time : <0.3 sec.
Operating temperature : -20 to +55℃(-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

267(10 1/2")
125(4 15/16")
36(1 7/16") 43(1 11/16")
7.5(5/16")
45(1 3/4")
62.3(2 7/16")

[mm (inch)]

(1) Connector
(2) Mounting holes
(3) Operation LED
(4) Depth angle adjustment screw
(5) Width adjustment screws
(6) Dipswitches
(7) Detection window
(8) Area adjustment tool

DETECTION AREA

Emitting spots
Emitting spots (Can be eleminated)
Detection area

Motion / Presence detection — 1st row, 2nd row
Motion detection — 3rd row, 4th row, 5th row

Sensor setting
1st to 3rd rows : +6°
4th and 5th rows : +44°

[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 3/8")
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 3/8")	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.
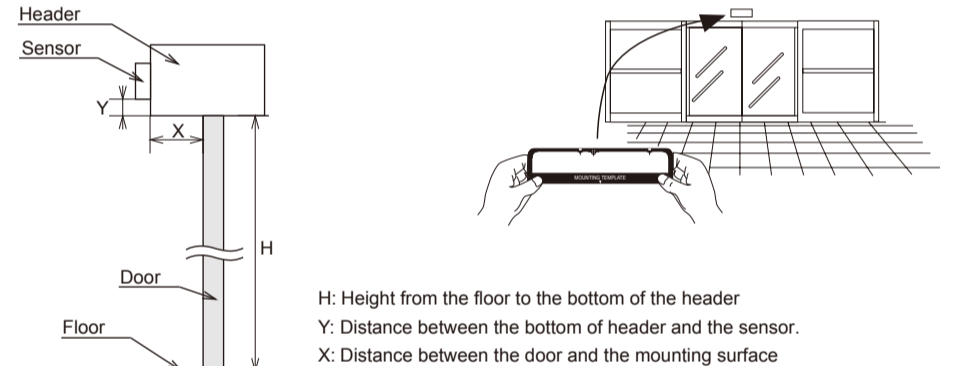*The values of the chart above is of the emitting spots, but not of the detection area.

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.
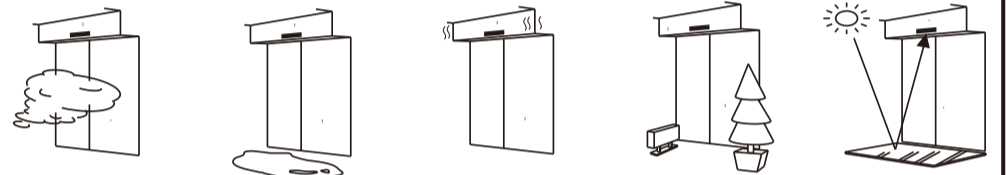
1
1. Affix the mounting template at the desired mounting position.
2. Drill two mounting holes of ø3.4mm (ø1/8").
3. To pass the cable through to the header, drill a wiring hole of ø8mm (ø5/16").
4. Remove the mounting template.
5. Remove the housing cover. Attach the sensor to the mounting surface with two mounting screws.

Header
Sensor
Door
Floor
Y
X
H

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. |
| Risk of getting caught. | |

NOTE The sensor mounting position may be limited depending on the header thickness and the mounting height.

2
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% / 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% / 12 to 30VDC ±10%
White	Common (COM.)	3rd to 5th * rows output
Yellow	Normally open (N.O.)	
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. |
| Danger of electric shock. | |

3
1.Plug the connector of the sensor.
2.Supply power to the sensor. Adjust the detection area and set the dipswitches. (See ADJUSTMENTS)
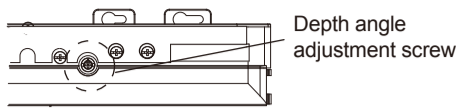
NOTE Make sure to connect the cable correctly to the door controller before turning the power ON.
To enable the presence detection, do not enter the detection area for 10 seconds after supplying the power.

4
Place the housing cover.
If wiring is to be exposed , break the knockout.

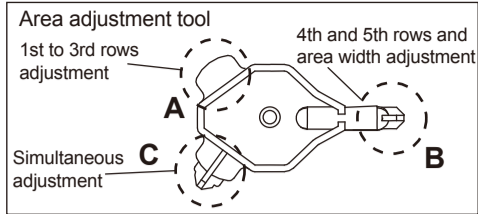| ⚠ WARNING | Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Seperately available) otherwise electric shock or breakdown of the sensor may occur. |
| Danger of electric shock. | |

1 Area depth angle adjustment

Depth angle adjustment screw

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**.

Area adjustment tool
1st to 3rd rows adjustment — **A**
4th and 5th rows and area width adjustment — **B**
Simultaneous adjustment — **C**

1-1. Independent adjustment

1st to 3rd rows
Depth angle adjustment screw for 1st to 3rd rows
Shallow / Deep
Red

Use the area adjustment tool **(A)** as shown above and change the depth of the detection area by turning the depth angle adjustment screw.
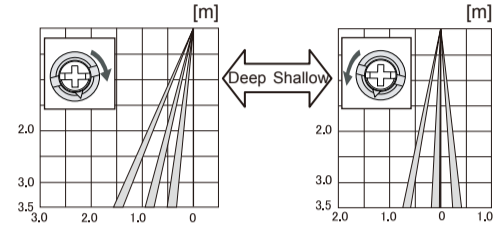
4th and 5th rows
Depth angle adjustment screw for 4th and 5th rows
Shallow / Deep
Blue

Use the area adjustment tool **(B)** as shown above and change the depth of the detection area by turning the depth angle adjustment screw.

Deep Shallow [m]   Deep Shallow [m]
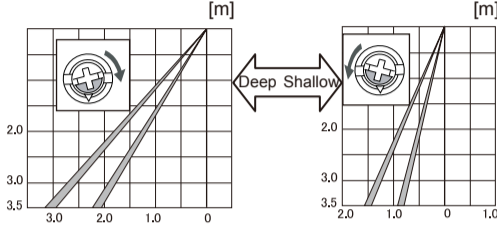
Check the area position with Red LED of the Operation LED using a tool such as a reflecting mirror.

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)

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

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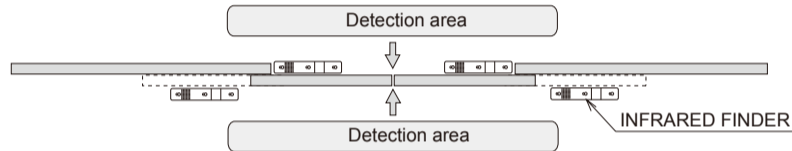
3. Turn the depth adjustment screw to the left (Shallow) until the emitting area is placed at the position where INFRARED FINDER is in the low detection status (Slow Red blinking).

1-2. Simultaneous adjustment

For the simultaneous adjustment of 1st to 5th rows, use the adjustment tool **(C)**.

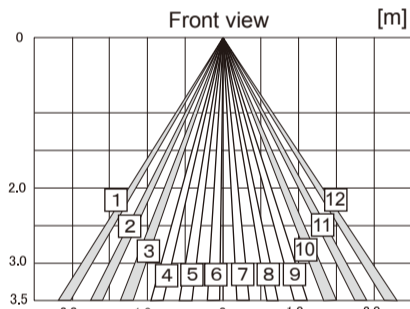# 2 Width detection area adjustment

1st to 3rd rows
1 - 3 Eliminated
10 - 12 Eliminated
Narrow / Wide
Width adjustment screw (Left)
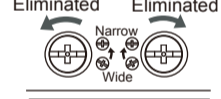
4th and 5th rows
1 - 3 Eliminated
10 - 12 Eliminated
Narrow / Wide
Width adjustment screw (Right)

Front view [m]

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 3 4 5 6 7 8   9 10 11 12 13 14 15 16

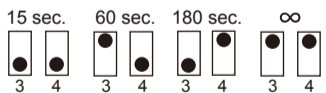| 1,2 | : Sensitivity | 9 | : Snow mode |
3,4	: Presence detection timer	10	: Immunity
5,6	: Frequency	11 to 15	: Not applicable
7,8	: Row adjustment	16	: Installation mode

3-1 Setting the sensitivity

Normally set to "Middle". " Low" decreases the sensitivity and "High / S-High" increases the sensitivity.

Low   Middle   High   S- High
1 2   1 2   1 2   1 2

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.

15 sec.   60 sec.   180 sec.   ∞
3 4   3 4   3 4   3 4

NOTE To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.
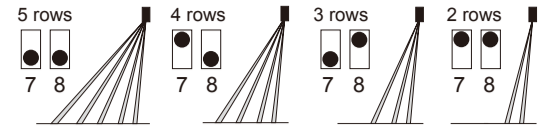
3-3 Setting the frequency

When using more than two sensors close to each other, set the different frequency for each sensor by combining dipswitch 5 and 6.

Setting 1   Setting 2   Setting 3   Setting 4
5 6   5 6   5 6   5 6
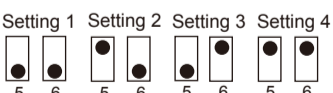
3-4 Setting the area depth

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.

5 rows   4 rows   3 rows   2 rows
7 8   7 8   7 8   7 8

NOTE Always check the area according to the expected entry speed and determine the appropriate number of rows.
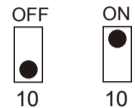When setting motion and motion / presence detection area sparately, make sure that there is no gap between two areas.

3-5 Setting the snow mode

Set this switch to ON, if the sensor is used in a region with snow.

OFF   ON
9   9

3-6 Setting the immunity

Set this switch to ON, when less influence by the header vibration is required.

OFF   ON
10   10

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.
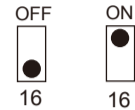
OFF   ON
16   16

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	①②③	①②③	①②③			
OA-AXIS II Output from 1st to 3rd rows*	④⑤⑥	④⑤⑥	④⑤⑥			
OA-AXIS II Output from 3rd to 5th rows*	①②③	①②③	①②③		①②③	

*The outputs from the 3rd row overlaps.

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMES

⚠ WARNING
1. Always keep the detection window clean. If dirty, wipe the window lightly with a damp cloth.
    (Do not use any cleaner or 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 an operation LED 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. When turning the power on, always walk-test the 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	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.
		Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Wrong detection area positioning.	Check **ADJUSTMENTS 1 & 2.**
		Sensitivity is too low.	Set the sensitivity higher.
		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.)
Door opens when no one is in the detection area. (Ghosting)	Unstable	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.
		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 or Orange	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.
	Twice Green blinking	The relay is reaching the end of its life cycle.	Contact your installer or the sales engineer.
	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.

OPTEX

OA-AXIS T

ENGLISH

CE

TÜV NORD
TÜV NORD CERT GmbH
Type Tested

COMPLIED STANDARDS
AND EXTRACT FROM EC DECLARATION OF CONFORMITY

EN 16005:2012 Chapter 4.6.8 and Annex C	EN 12978:2003 +A1:2009	Machinery Directive 2006/42/EC
EMC Directive 2004/108/EC	EN ISO 13849-1:2008	EN ISO 13849-2:2012
EN 61496-3:2001 clause 4. 3. 5 and 5. 4. 7. 3	EN 61000-6-2:2005	EN 61000-6-3:2007 +A1:2011

Notified Body 0044 : TÜV NORD CERT GmbH Langemarckstr. 20 45141 Essen Germany
EC-type examination certificate No. 44 205 13 099205

Technical documentation see manufacture address

A. Maekawa
General Manager
OPTEX CO., LTD.
Quality Control Dept.

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

1. 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.
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 product.
4. Only use the product 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 product is installed.
6. 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.
7. 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 Danger of electric shock.	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.

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.

SPECIFICATIONS

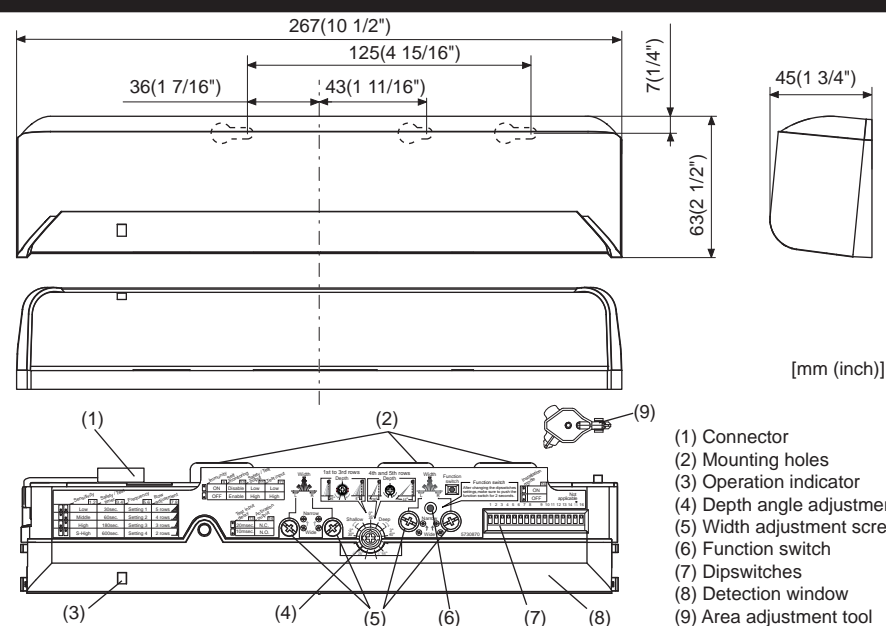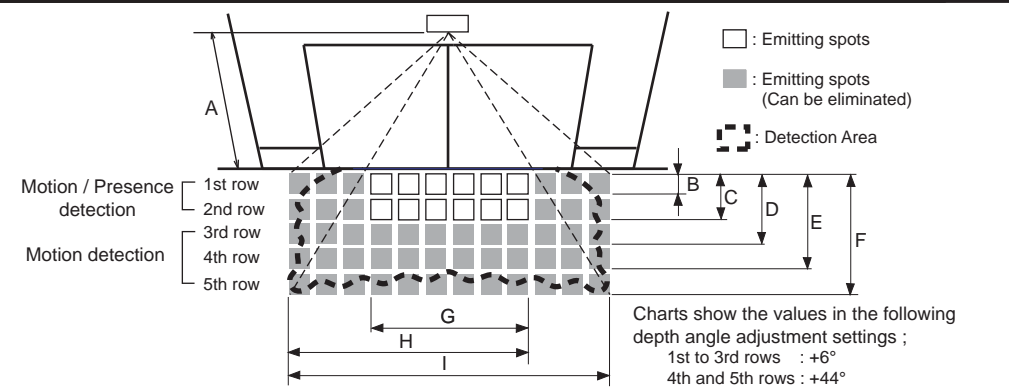|			
Model	: OA-AXIS T	Activation output	: When 3rd, 4th or 5th row detects.
Cover color	: Silver / Black		Form A relay
Mounting height	: 2.0 (6'7") to 3.0m (9'10")		50V 0.3A Max. (Resistance load)
Detection area	: See **DETECTION AREA**	Operating temperature	: -20 to +55°C (-4 to 131°F)
Detection method	: Active infrared reflection (*1)	Operating humidity	: <80%
Depth angle	: 1st to 3rd rows / -6 to +6°	Noise level	: <70dBA
adjustment	4th and 5th rows / +26 to +44°	Output hold time	: <0.5 sec.
Power supply (*2)	: 12 to 24VAC ±10% (50 / 60 Hz)	Response time	: <0.3 sec.
	12 to 30VDC ±10%	IP rate	: IP54
Power consumption	: < 2.5W (< 4VA at AC)	Category	: 2 (EN ISO 13849-1 : 2008)
Operation indicator	: See chart below	Performance level	: d (EN ISO 13849-1 : 2008)
Safety input	: Opto coupler	ESPE	: Type2
	Voltage / 5 to 30VDC	Weight	: 320g (11.2oz)
	Current / 6mA Max. (30VDC)	Accessories	: 1 Operation manual
Safety output	: When 1st or 2nd row detects.		2 Mounting screws
	Opto coupler (NPN)		1 Mounting template
	Voltage / 5 to 50VDC		1 Area adjustment tool
	Current / 100mA Max.		1 Cable 3m (9'10")
	Dark current / 600nA Max.		(8 × 0.22mm² AWG24) (*3)
	(Resistance load)		

*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	1sec.	1sec.
Stand-by (Installation mode)	Yellow		
Stand-by (Operation mode)	Green		
1st row detection	Blinking Red		
2nd row detection	Red		
3rd, 4th or 5th row detection	Orange		
Setting error	Red & Green Blinking		
Signal saturation	Slow Green Blinking		
Sensor failure	Fast Green Blinking		

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

OUTER DIMENSIONS AND PART NAMES

267(10 1/2")
125(4 15/16")
36(1 7/16")
43(1 11/16")
7(1/4")
45(1 3/4")
63(2 1/2")

[mm (inch)]

(1) Connector
(2) Mounting holes
(3) Operation indicator
(4) Depth angle adjustment screw
(5) Width adjustment screws
(6) Function switch
(7) Dipswitches
(8) Detection window
(9) Area adjustment tool

DETECTION AREA

□ : Emitting spots
▒ : Emitting spots (Can be eliminated)
⌐ : Detection Area

Motion / Presence detection — 1st row, 2nd row
Motion detection — 3rd row, 4th row, 5th row

Charts show the values in the following depth angle adjustment settings ;
1st to 3rd rows : +6°
4th and 5th rows : +44°

Emitting area

					[m(feet,inch)]
A	2.00 (6'7")	2.20 (7'3")	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')	1.35 (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 (9'1")	3.15 (10'4")	3.40 (11'2")	3.79 (12'5")
X	0.19 (7")	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 EN 16005, make sure that the detection area is within the values in the chart below.

	2.00 (6'7")	2.20 (7'3")
A	2.00 (6'7")	2.20 (7'3")
C	0.23 (9")	0.24 (9")
G	1.02 (3'4")	1.10 (37")
I	2.41 (7'11")	2.54 (8'4")

Test conditions required by EN 16005
Floor :Grey paper
Detection object : EN 16005 CA reference body
Sensitivity : Middle
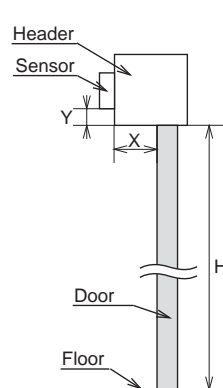Speed of detection object : 50mm / sec.

The values above are those of the **Detection area** when tested referring to the test conditions of EN 16005.
(The emitting area is as shown in **Emitting area** above.)
*: When installed at higher than 2.35m(7'9"), EN 16005 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

1
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.)
2. Drill two mounting holes of ø3.4mm (ø1/8").
3. To pass the cable through the header, drill a wiring hole of ø8mm (ø5/16").
4. Remove the mounting template.
5. Remove the housing cover. Fix the sensor to the mounting surface with the two mounting screws.

Header
Sensor
Door
Floor
Y
X
H

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)

[m (feet,inch)]

X \ H	2.00 (6'7")	2.30 (7'7")	2.50 (8'2")	2.80 (9'2")	3.00 (9'10")
0	No limit				
0.05 (2")	0.20 (8")	0.20 (8")	0.20 (8")	0.20 (8")	0
0.10 (4")	0.20 (8")	0.20 (8")	0.20 (8")	0.20 (8")	0
0.15 (6")	0.13 (5")	0.15 (6")	0.19 (7")	0.20 (8")	0
0.20 (8")	-	0.12 (5")	0.14 (6")	0.15 (6")	0
0.25 (10")	-	-	0.11 (4")	0.12 (5")	0
0.30 (12")	-	-	-	-	-

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

⚠ 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.

2

To the connector of the sensor

1.White ─┐ **Power supply**
2.Brown ─┘ 12 to 24VAC±10% /12 to 30VDC±10%
3.Green ─┐ **Activation output**
4.Yellow ─┘ Form A relay 50V 0.3A Max.
5.Pink (+) ─┐ **Safety output**
6.Blue (-) ─┘ Opto coupler(NPN) / Voltage: 5 to 50VDC
7.Red (+) ─┐ **Safety input**
8.Black (-) ─┘ Opto coupler / Voltage: 5 to 30VDC

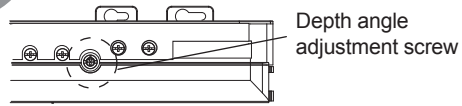| ⚠ WARNING Danger of electric shock.	Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield. otherwise it may cause electric shock or breakdown of the sensor.

3
1. Plug the connector of the sensor.
2. 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**.

4
Place the housing cover.
If wiring is to be exposed, break the knockout.

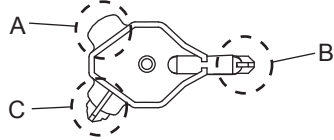| ⚠ WARNING Danger of electric shock.	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.

1 Area depth angle adjustment

Depth angle adjustment screw

Area adjustment tool

A
B
C

When adjusting the 1st row close to the door,
see **3-11 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.
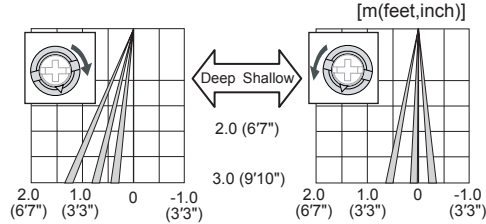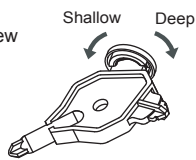
1-1.Independent adjustment

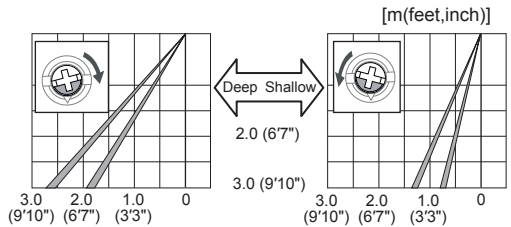1st to 3rd rows

Depth angle adjustment screw for the 1st to 3rd rows

Red

Use the area adjustment tool **(A)** as shown above to change the area depth angle for the 1st to 3rd rows.

Shallow   Deep

[m(feet,inch)]

Deep Shallow

2.0 (6'7")

3.0 (9'10")

2.0 (6'7") 1.0 (3'3") 0 -1.0 (3'3")

2.0 (6'7") 1.0 (3'3") 0 -1.0 (3'3")

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.

Shallow   Deep

[m(feet,inch)]

Deep Shallow

2.0 (6'7")

3.0 (9'10")

3.0 (9'10") 2.0 (6'7") 1.0 (3'3") 0

3.0 (9'10") 2.0 (6'7") 1.0 (3'3") 0
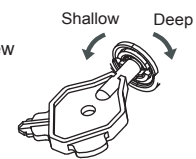
1-2.Simultaneous adjustment

For the simultaneous adjustment of the 1st to 5th rows, use the adjustment tool **(C)**.

REFERENCE Area depth adjustment with INFRARED FINDER (Separately available)

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

Detection area

Detection area
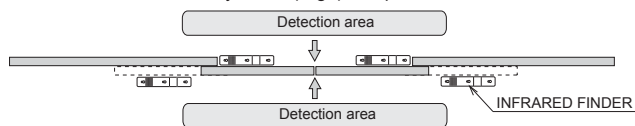
INFRARED FINDER

3. 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).
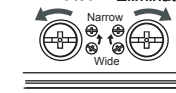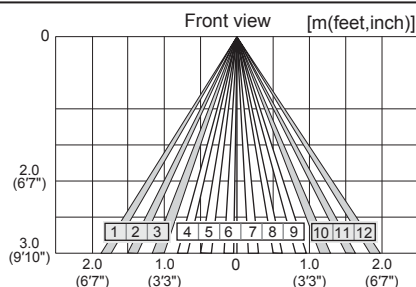
2 Area width adjustment

1st to 3rd rows

1 2 3   10 11 12
Eliminated Eliminated

Narrow
Wide
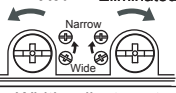
Width adjustment screws (Left)

4th and 5th rows

1 2 3   10 11 12
Eliminated Eliminated

Narrow
Wide

Width adjustment screws (Right)

Front view   [m(feet,inch)]

0

2.0 (6'7")

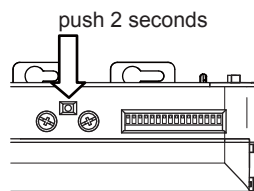3.0 (9'10")

1 2 3 4 5 6 7 8 9 10 11 12

2.0 (6'7") 1.0 (3'3") 0 1.0 (3'3") 2.0 (6'7")

NOTE When adjusting the width adjustment screws, make sure to turn until it clicks otherwise the proper operation may not be obtained.
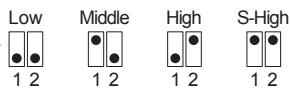1 2 3 cannot be eliminated separately, neither can 10 11 12.

3 Dipswitch settings

After changing the dipswitch settings, make sure to push the function switch for 2 seconds.

push 2 seconds

3-1.Setting the sensitivity

Refer to the chart below for the suitable sensitivity to your installation environment.

Low   Middle   High   S-High
1 2   1 2   1 2   1 2

		Mounting height [m (feet,inch)]				
		2.0 (6'7")	2.2 (7'3")	2.5 (8'2")	3.0 (9'10")	For example
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 timer

The 1st and 2nd rows have the presence detection function.

30sec.   60sec.   180sec.   600sec.
3 4   3 4   3 4   3 4

NOTE To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.
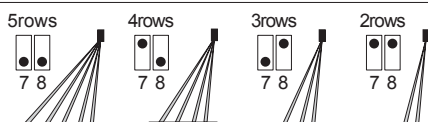
3-3.Setting the frequency

When using more than two sensors close to each other, set the different frequency for each sensor by dipswitches 5 and 6.

Setting1   Setting2   Setting3   Setting4
5 6   5 6   5 6   5 6
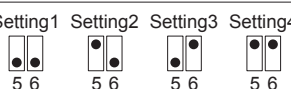
3-4.Setting the row adjustment

Set the depth rows with dipswitches 7 and 8.

5rows   4rows   3rows   2rows
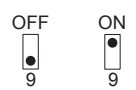7 8   7 8   7 8   7 8

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).

OFF   ON
9   9

NOTE When dipswitch 9 is set to "ON", the actual detection area may become smaller.

3-6.Setting the self monitoring

When the door remains open and the LED indicator shows fast or slow green blinking, please refer to the **TROUBLESHOOTING**.
If the door still remains open, set dipswitch 10 to "Disable".

Enable   Disable
10   10

NOTE To comply with EN 16005, dipswitch 10 must be set to "Enable".

3-7.Setting the Safety output (to door controller)

Dipswitch11 is for the Safety output (to door controller).

High   Low
11   11

3-8.Setting the Safety input (from door controller)

Dipswitch12 is for the Safety input (from door controller).

High   Low
12   12

NOTE The delay time between Safety input and Safety output is 10msec..

3-9.Settings the direction recognition

When Dipswitch13 is set to "Uni", uni-directional function is activated.
This function enables the door to close faster if a person walks away from the door.

Bi   Uni
13   13

NOTE Uni-directional function is disabled in case the detection at 1st and/or 2nd row continues for more than 5sec..

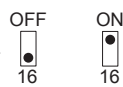### 3-10.Setting the Activation output

Dipswitch14 is for the Activation output to door controller.

N.O.   N.C.
14   14
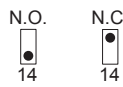
3-11.Installation mode

Set dipswitch 16 to "ON" to adjust the 1st row.
During the Installation mode only the 1st row remains active and the operation indicator shows yellow.
After setting the row set dipswitch 16 "OFF".

OFF   ON
16   16

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 output	11 High	OFF	ON		OFF		ON
	11 Low	OFF	OFF		ON		OFF

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. 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.
		Wrong wiring or connection failure.	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 timer.	Set the presence timer longer. (*)
		Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
	Proper	Wrong wiring or connection failure.	Check the wires and connector.
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 that of another sensor.	Check **ADJUSTMENTS 3-3**.(*)
		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).
		Sensitivity is too high.	Set the sensitivity lower.(*)
		Others	Set dipswitch 9 to "ON".(*)
	Proper	Wrong setting of dipswitches.	Check **ADJUSTMENTS 3-7, 3-8, 3-10**.(*)
Door remains open	Proper	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.
	Yellow	Installation mode is set to "ON".	Set dipswitch 16 to "OFF".(*)
	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	Setting error.	After changing the dipswitch settings, make sure to push the function switch for 2 seconds.
Proper operation	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.

* After changing the dipswitch settings, make sure to push the function switch for 2 seconds.

OPTEX

OA-FLEX T

CE **ENGLISH**

BLUEZONE

TÜV NORD CERT GmbH — Type Tested

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.

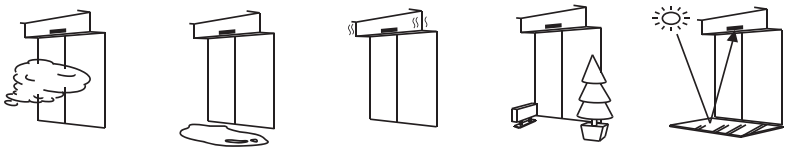| ⚠ WARNING | Disregard of warning may cause the improper operation causing death or serious injury of a person. |
⚠ CAUTION	Disregard of caution may cause the improper operation causing injury of a person or damage to objects.
NOTE	Special attention is required to the section of this symbol.
📖	It is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

NOTE

1. 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.
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 product.
4. Only use the product 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 product is installed.
6. 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.
7.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 Danger of electric shock. | Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment. |

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.

DETECTION AREA

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

Charts show the values in the following area angle adjustment settings ; Depth : 8°
Width : 0°

☐ Emitting spots
▨ Emitting spots (can be eliminated)
⬚ Detection Area

Detection area
To comply with EN 16005, make sure that the detection area is within the values of the chart below.

A	2.00 (6'7")	2.30 (7'7")	2.50 (8'2")
X	0.24 (9")	0.25 (10")	0.23 (9")
H	0.85 (2'9")	0.91 (2'12")	0.96 (3'2")
J	2.01 (6'7")	2.20 (7'3")	2.44 (8')

Test conditions required by EN 16005
Floor :Grey paper
Detection object : EN 16005 CA reference body
Sensitivity : High
Speed of detection object : 50mm / sec.

The values above are those of the **Detection area** when tested referring to the test conditions of EN 16005.
(The emitting area is as shown in **Emitting area** above.)

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.

SPECIFICATIONS

Model : OA-FLEX T
Cover color : Silver / Black
Mounting height : 2.0m(6'7") to 2.5m(8'2")
Detection area : See **DETECTION AREA**
Detection method : Active infrared reflection(*1)
Area angle adjustment : Depth : -8° to +8°
Width : ±7°
(2 clicks with 3.5°every click-Left/Right)
Power supply (*2) : 12 to 24VAC ±10% (50 / 60Hz)
12 to 30VDC ±10%
Power consumption : < 2.0W (< 5VA at AC)
Operation indicator : See **Operation indicator table**
Safety intput : Opto coupler
Voltage / 5 to 30VDC
Current / 6mA Max. (30VDC)
Activation output : Form A relay
50V 0.3A Max. (Resistance load)
Safety output : Opto coupler (NPN)
Voltage / 5 to 50VDC
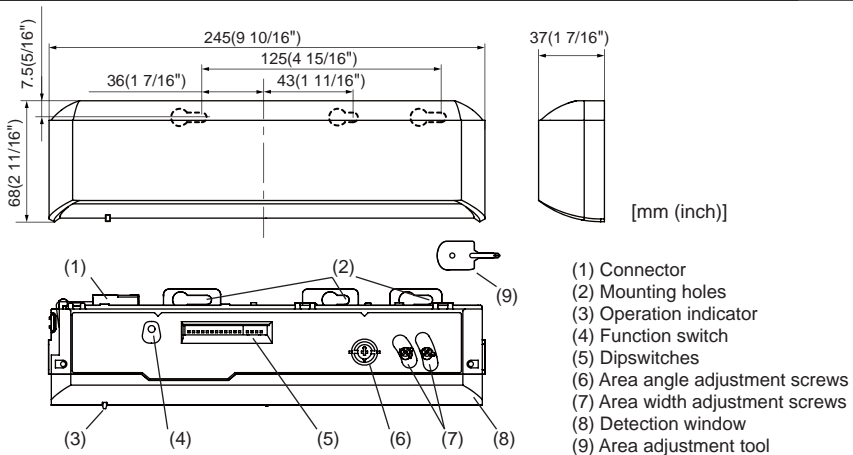Current / 100mA Max.
(Resistance load)
Dark current / 600nA Max.

Operating temperature : -20 to +55°C (-4 to 131°F)
Operating humidity : < 80%
Noise level : < 70dBA
Output hold time : Approx. 0.5 sec.
Response time : < 0.3 sec.
IP rate : IP54
Category : 2 (EN ISO 13849-1 : 2008/AC:2009)
Performance level : d (EN ISO 13849-1 : 2008/AC:2009)
ESPE : Type2
Weight : 220g (7.8oz)
Accessories : 1 Operation manual
2 Mounting screws
1 Mounting template
1 Area adjustment tool
1 Cable 3m(9'10")
(8 × 0.22mm² AWG24) (*3)

Operation indicator table

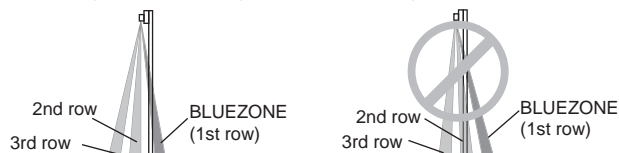| Status	Operation indicator color	1sec.	1sec.
Set-up	Yellow Blinking		
Stand-by (Installation mode)	Yellow		
Stand-by (Operation mode)	Green		
BLUEZONE (1st row) detection (*4)	Blue		
2nd row detection	Red Blinking		
3rd row detection	Red		
4th-6th row detection	Orange		
Signal saturation	Slow Green Blinking		
Sensor failure	Fast Green Blinking		
Setting error	Red & Green Blinking		

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

245(9 10/16")
125(4 15/16")
36(1 7/16")
43(1 11/16")
37(1 7/16")
7.5(5/16")
68(2 11/16")
[mm (inch)]

(1) Connector
(2) Mounting holes
(3) Operation indicator
(4) Function switch
(5) Dipswitches
(6) Area angle adjustment screws
(7) Area width adjustment screws
(8) Detection window
(9) Area adjustment tool

INSTALLATION

1
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.)
2. Drill two mounting holes of ø3.4mm (ø1/8").
3. To pass the cable through the header, drill a wiring hole of ø10mm (ø3/8").
4. Remove the mounting template.
5. Remove the housing cover. Fix the sensor to the mounting surface with the two mounting screws.

Header
Sensor
Door
Floor

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) [m (feet,inch)]

X ＼ H	2.00 (6'7")	2.30 (7'7")	2.50 (8'2")
0	No limit		
0.05 (2")	0.20 (8")	0.20 (8")	0.20 (8")
0.10 (4")	0.20 (8")	0.20 (8")	0.20 (8")
0.15 (6")	0.13 (5")	0.15 (6")	0.19 (7")
0.20 (8")	-	0.12 (5")	0.14 (6")
0.25 (10")	-	-	0.11 (4")
0.30 (12")	-	-	-

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

| ⚠ 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. |

2

To the connector of the sensor

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

| ⚠ 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. |

3
1.Plug the connector.
2.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.

Knockout

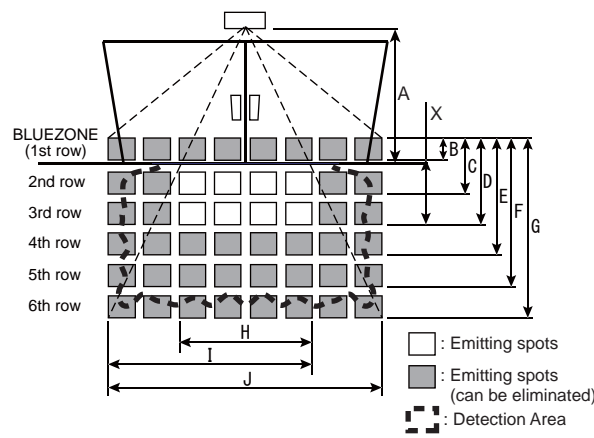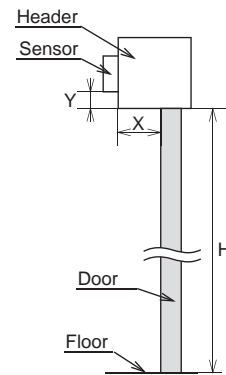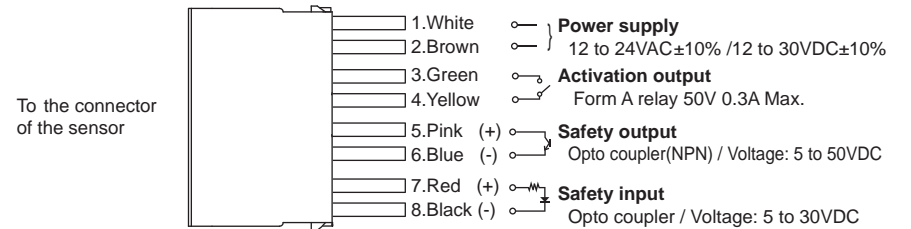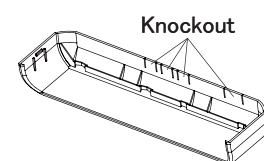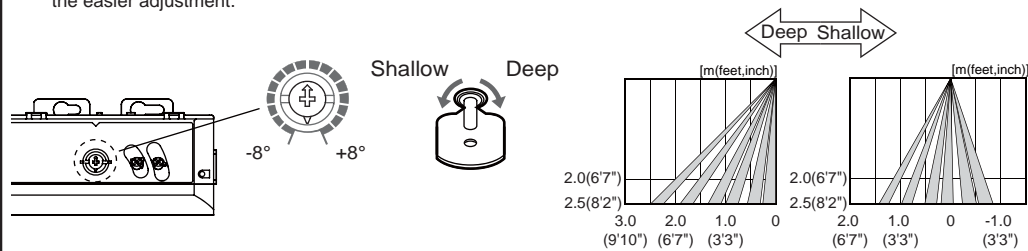| ⚠ WARNING Danger of electric shock. | Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or breakdown of the sensor may occur. |

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.

2nd row
3rd row
BLUEZONE (1st row)

ADJUSTMENTS

1 Area angle adjustment

1-1.Area depth angle adjustment
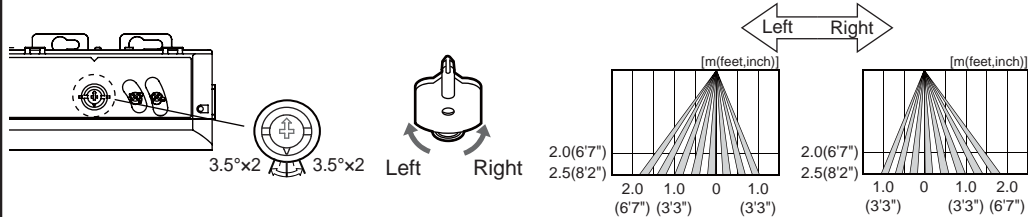When adjusting the 2nd row close to the door, see dipswitch 16 in **Dipswitch settings table** and **REFERENCE** for the easier adjustment.

Shallow Deep

-8° +8°

Deep Shallow

[m(feet,inch)]
2.0(6'7")
2.5(8'2")
3.0 (9'10") 2.0 (6'7") 1.0 (3'3") 0

[m(feet,inch)]
2.0(6'7")
2.5(8'2")
2.0 (6'7") 1.0 (3'3") 0 -1.0 (3'3")

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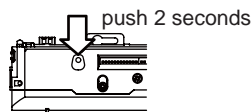The angle of the detection area can both be moved 7° either left or right in 2 steps.

3.5°×2 3.5°×2 Left Right

Left Right

[m(feet,inch)]
2.0(6'7")
2.5(8'2")
2.0 (6'7") 1.0 (3'3") 0 1.0 (3'3")

[m(feet,inch)]
2.0(6'7")
2.5(8'2")
1.0 (3'3") 0 1.0 (3'3") 2.0 (6'7")

2 Area width adjustment

Adjust the detection area width with the adjustment screws.

1 2 Left eliminated 7 8 Right eliminated

Front view
[m(feet,inch)]
2.0(6'7")
2.5(8'2")
2.0 (6'7") 1.0 (3'3") 0 1.0 (3'3") 2.0 (6'7")
1 2 3 4 5 6 7 8

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

After changing the dipswitch settings, make sure to push the function switch for 2 seconds.

push 2 seconds

Dipswitch settings table

	Function	Setting				Comment
Dipswitch 1	Sensitivity	Low 1	High 1			Set the sensitivity according to the mounting height.
Dipswitch 2 / Dipswitch 3	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 4 / Dipswitch 5	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 6 / Dipswitch 7	Row adjustment	6rows 6 7	5rows 6 7	4rows 6 7	3rows 6 7	Set the depth rows with dipswitches 6 and 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	Self Monitoring	Enable 10	Disable 10			When the door remains open and the operation indicator shows Fast/Slow Green Blinking, refer to **TROUBLESHOOTING**. If the door still remains open, set dipswitch 10 to "Disable".To comply with EN 16005, set dipswitch 10 to "Enable".
Dipswitch 11	Safety output	High 11	Low 11			Dipswitch 11 is for the Safety output (to door controller).
Dipswitch 12	Safety input	High 12	Low 12			Dipswitch 12 is for the Safety input (from door controller).
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	OFF	ON	OFF		
	9 N.C. / 14 OFF		ON	OFF	ON		
	9 N.O. / 14 ON	OFF	OFF	ON			
	9 N.C. / 14 ON		ON	OFF			
Safety output	11 High / 14 OFF	OFF	OFF			ON	
	11 Low / 14 OFF		ON			OFF	
	11 High / 14 ON	OFF	OFF			ON	
	11 Low / 14 ON		ON			OFF	

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

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. 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.)
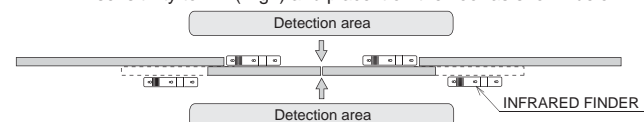
TROUBLESHOOTING

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.
		Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Wrong detection area positioning.	Check **ADJUSTMENTS 1, 2**.(*)
		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.
	Proper	Wrong wiring or connection failure.	Check the wires and connector.
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 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).
		Sensitivity is too high.	Set the sensitivity lower.(*)
		Others	Set dipswitch 8 to "ON".(*)
	Proper	Wrong setting of dipswitches.	Check **ADJUSTMENTS 3** dipswitch 9,11,12.(*)
Door remains open	Proper	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.
	Yellow	Installation mode is set to "ON".	Set dipswitch 16 to "OFF".(*)
	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. (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).
	Red & Green Blinking	Setting error.	After changing the dipswitch settings, make sure to push the function switch for 2 seconds.
Proper operation	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.

* : After changing the dipswitch settings, make sure to push the function switch for 2 seconds.

REFERENCE

Area depth adjustment with INFRARED FINDER (Separately available)

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

Detection area
Detection area
INFRARED FINDER

3. 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).

OPTEX

OA-FLEX T#

BLUEZONE

Web manual

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.

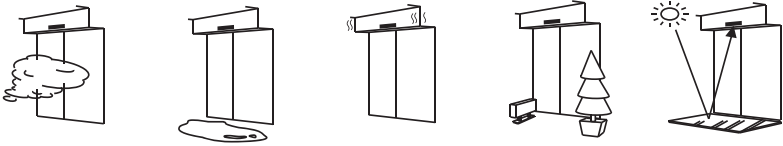| ⚠ WARNING	Failure to follow the instructions provided with this indication and improper handling may cause death or serious injury.
⚠ CAUTION	Failure to follow the instructions provided with this indication and improper handling may cause injury and/or property damage.
NOTE	Special attention is required to the section of this symbol.
📖	It is required to check the operation manual if this symbol is shown on the product.

NOTE

1. This product is a non-contact switch intended for header mount or wall mount for use on an automatic door.
   Do not use for any other applications.
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 product.
4. Only use the product 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 product is installed.
6. 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.
7. 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 Danger of electric shock.	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or damage to the equipment.

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

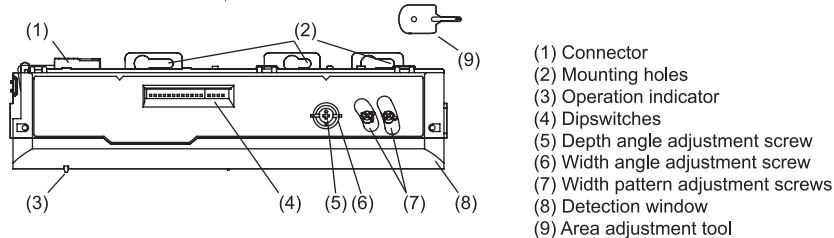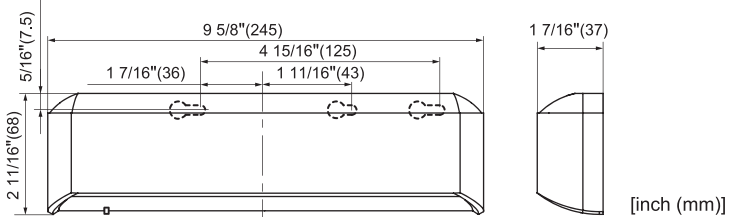|	
Model	: OA-FLEX T#
Cover color	: Black
Mounting height	: 6'7"(2.0m) to 9'10"(3.0m)
Detection area	: See **Detection area**
Detection method	: Active infrared reflection
Depth angle adjustment	: -8° to +8°
Width angle adjustment	: ±7° (2 clicks with 3.5°every click-Left / Right)
Power supply	: 12 to 24VAC ±10% (50 / 60Hz) 12 to 30VDC ±10%
Power consumption	: < 2.0W (< 5VA at AC)
Operation indicator	: See **Operation indicator table**
Test intput	: 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)

Output hold time	: Approx. 1.0sec.
Response time	: < 0.3sec.
Operating temperature	: –31 to 131°F (–35 to +55°C)
Operating humidity	: < 80%
IP rate	: IP54
Weight	: 7.8oz (220g)
Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Cable 9'10"(3m) (8 × 0.22mm² AWG24)

Operation indicator table

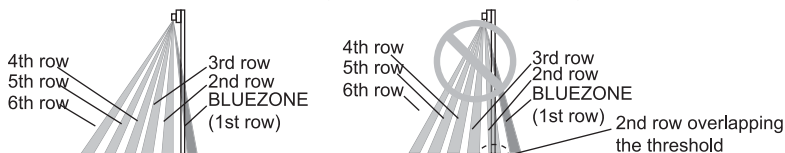| Status	Operation indicator color	1sec.	1sec.
Set-up	Yellow blinking		
Stand-by (Installation mode)	Yellow		
Stand-by (Operation mode)	Green		
BLUEZONE (1st row) detection (*1)	Blue		
2nd row detection	Red blinking		
3rd row detection	Red		
4th-6th row detection	Orange		
Signal saturation	Slow Green blinking		
Sensor failure	Fast Green blinking		

NOTE The specifications herein are subject to change without prior notice due to improvements.
*1 : See **BLUEZONE area**

Outer dimensions and part names

9 5/8"(245)
4 15/16"(125)
1 7/16"(36)
1 11/16"(43)
1 7/16"(37)
5/16"(7.5)
2 11/16"(68)
[inch (mm)]

(1) Connector
(2) Mounting holes
(3) Operation indicator
(4) Dipswitches
(5) Depth angle adjustment screw
(6) Width angle adjustment screw
(7) Width pattern adjustment screws
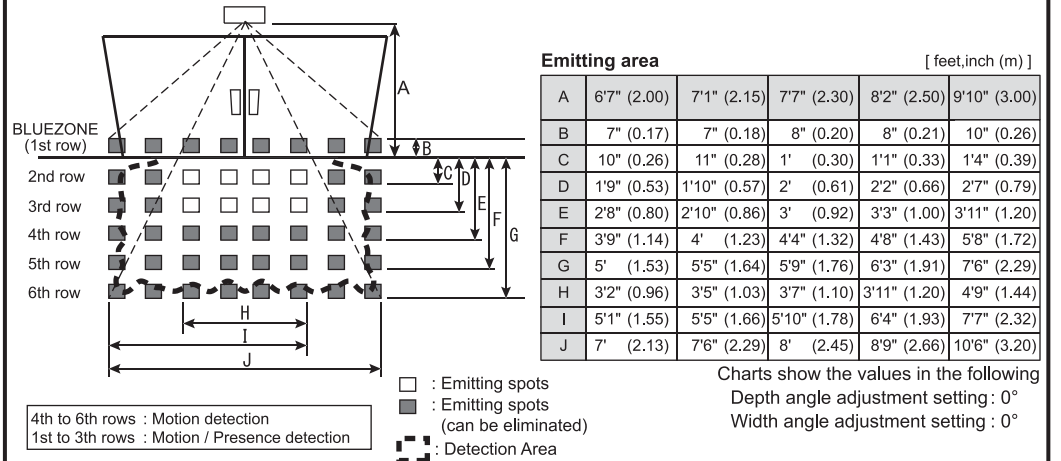(8) Detection window
(9) Area adjustment tool

BLUEZONE area

When dipswitch 15 is set to "ON", the BLUEZONE area is active and looks through the threshold.
In case the BLUEZONE function is not required, set dipswitch 15 to "OFF".
Do not overlap the 2nd row into the threshold area, regardless of dipswitch 15 setting.

4th row
5th row
6th row
3rd row
2nd row
BLUEZONE
(1st row)

4th row
5th row
6th row
3rd row
2nd row
BLUEZONE
(1st row)
2nd row overlapping the threshold

Detection area

Sliding door

BLUEZONE (1st row)
2nd row
3rd row
4th row
5th row
6th row

|	Emitting area				[feet,inch (m)]
A	6'7" (2.00)	7'1" (2.15)	7'7" (2.30)	8'2" (2.50)	9'10" (3.00)
B	7" (0.17)	7" (0.18)	8" (0.20)	8" (0.21)	10" (0.26)
C	10" (0.26)	11" (0.28)	1' (0.30)	1'1" (0.33)	1'4" (0.39)
D	1'9" (0.53)	1'10" (0.57)	2' (0.61)	2'2" (0.66)	2'7" (0.79)
E	2'8" (0.80)	2'10" (0.86)	3' (0.92)	3'3" (1.00)	3'11" (1.20)
F	3'9" (1.14)	4' (1.23)	4'4" (1.32)	4'8" (1.43)	5'8" (1.72)
G	5' (1.53)	5'5" (1.64)	5'9" (1.76)	6'3" (1.91)	7'6" (2.29)
H	3'2" (0.96)	3'5" (1.03)	3'7" (1.10)	3'11" (1.20)	4'9" (1.44)
I	5'1" (1.55)	5'5" (1.66)	5'10" (1.78)	6'4" (1.93)	7'7" (2.32)
J	7' (2.13)	7'6" (2.29)	8' (2.45)	8'9" (2.66)	10'6" (3.20)

Charts show the values in the following
Depth angle adjustment setting : 0°
Width angle adjustment setting : 0°

4th to 6th rows : Motion detection
1st to 3th rows : Motion / Presence detection

☐ : Emitting spots
▪ : Emitting spots (can be eliminated)
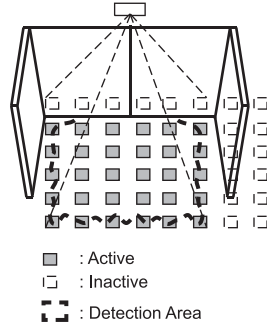⌐⌐ : Detection Area

NOTE The actual detection area may be different 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.
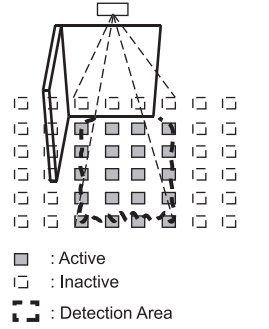
Swing door

Double swing door(Large)
Width angle:0deg
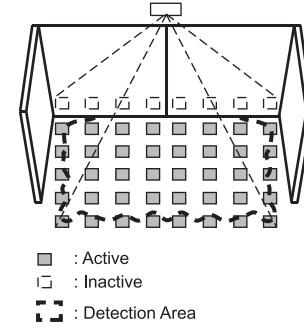
Double swing door(Middle)
Width angle:7deg

Single swing door(Small)
Width angle:3.5deg
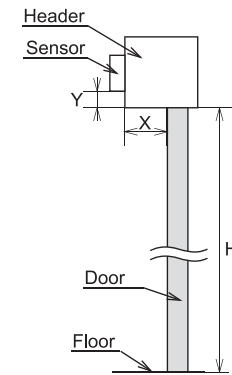
▪ : Active
⌐ : Inactive
⌐⌐ : Detection Area

NOTE When using for swing door, set the detection area and dipswitches as below.
- Set the detection area slightly narrower than the door width not to detect door itself.
- Set dipswitch 12 to "All rows" to comply with ANSI standard.
- Set dipswitch 15 to "OFF" not to detect door itself.

Installation

1
1. Attach 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.)
2. Drill two mounting holes of ø1/8" (ø3.4mm).
3. To pass the cable through the header, drill a wiring hole of ø3/8" (ø10mm).
4. Remove the mounting template.
5. Remove the housing cover. Secure the sensor to the mounting surface with the two mounting screws.

Header
Sensor
Door
Floor
H
Y
X

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	6'7" (2.00)	7'7" (2.30)	8'2" (2.50)	9'10"(3.0)
0	5 1/2" (0.14)	5 1/2" (0.14)	5 1/2" (0.14)	0
2" (0.05)	5" (0.13)	5" (0.13)	5" (0.13)	0
4" (0.10)	4" (0.11)	4" (0.11)	4" (0.11)	0
6" (0.15)	3 1/2" (0.10)	3 1/2" (0.10)	3 1/2" (0.10)	0
8" (0.20)	3 1/2" (0.09)	3 1/2" (0.09)	3 1/2" (0.09)	0
10" (0.25)	2 1/2" (0.07)	2 1/2" (0.07)	2 1/2" (0.07)	0
12" (0.30)	2" (0.06)	2" (0.06)	2" (0.06)	0

⚠ CAUTION Risk of getting caught.	Make sure within the range of Y, otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible to the bottom of the header.

2

Power supply 1 — 1.Grey / 2.Grey
Activation output 2 — 3.White / 4.Yellow
Safety output 3 — 5.White stripe / 6.Yellow stripe
Test input 4 — 7.Red (+) / 8.Black (-)

1	12 to 24VAC±10% / 12 to 30VDC±10%
2	Form A relay 50V 0.3A Max.
3	Form A relay 50V 0.3A Max.
4	Opto coupler / Voltage: 5 to 30VDC

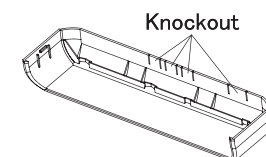| ⚠ WARNING Danger of electric shock.	Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield. otherwise it may cause electric shock or damage to the sensor.

3
1. Plug the connector.
2. 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.

4
Installing the cover.
If wiring is to be exposed, remove the knockout.

Knockout

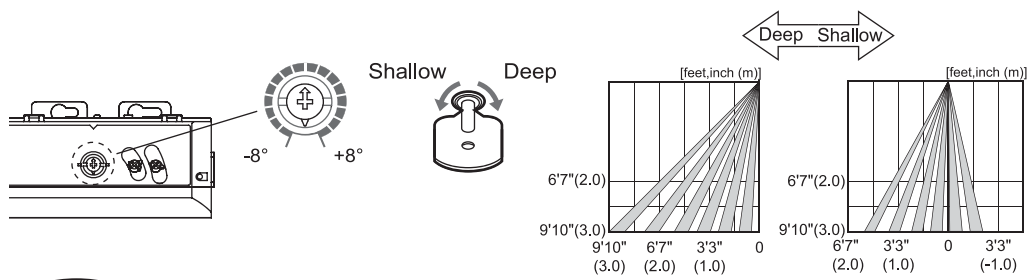| ⚠ WARNING Danger of electric shock.	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or damage to the sensor may occur.

1　Area angle adjustment
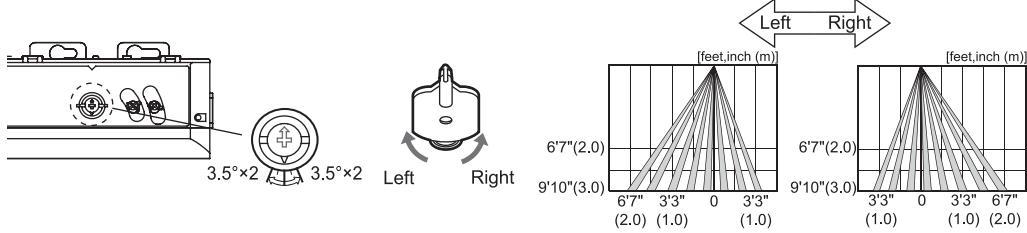
1-1.Depth angle adjustment
When adjusting the 2nd row close to the door, see dipswitch 16 in **Table 1** for the easier adjustment.

Shallow　Deep

−8°　+8°

Deep　Shallow

[feet,inch (m)]

6'7"(2.0)
9'10"(3.0)

9'10"　6'7"　3'3"　0
(3.0)　(2.0)　(1.0)

6'7"(2.0)
9'10"(3.0)

6'7"　3'3"　0　3'3"
(2.0)　(1.0)　(-1.0)

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.
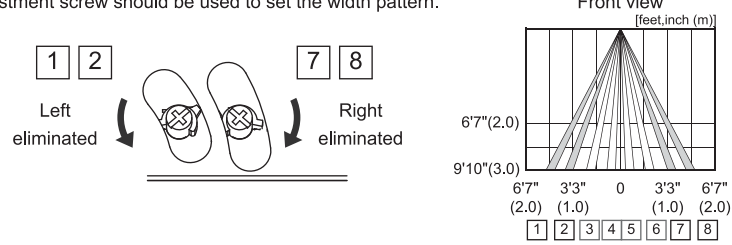
1-2.Width angle adjustment
Width angle of the detection area can be adjusted 7° either left or right in 2 steps.

Left　Right

3.5°×2　3.5°×2　Left　Right

[feet,inch (m)]

6'7"(2.0)
9'10"(3.0)

6'7"　3'3"　0　3'3"
(2.0)　(1.0)　(1.0)

6'7"(2.0)
9'10"(3.0)

3'3"　0　3'3"　6'7"
(1.0)　(1.0)　(2.0)

2　Width pattern adjustment

Width pattern adjustment screw should be used to set the width pattern.

Front view
[feet,inch (m)]

1 2 　 7 8

Left eliminated　Right eliminated

6'7"(2.0)
9'10"(3.0)

6'7"　3'3"　0　3'3"　6'7"
(2.0)　(1.0)　(1.0)　(2.0)

1 2 3 4 5 6 7 8

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

3　Dipswitch settings

Table 1

Function	Setting				Comment
Dipswitch 1 Sensitivity	Low 1	High 1			Set dipswitch 1 to "Low" when the sensor installed under 8'2" height. This height is reference only. Adjust sensitivity according to your risk assessment.
Dipswitch 2 / **Dipswitch 3** Presence timer	30sec. 2 3	60sec. 2 3	180sec. 2 3	600sec. 2 3	1st - 3rd rows have presence detection function. The presence timer can be selected from 4 settings. To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.
Dipswitch 4 / **Dipswitch 5** Frequency	Setting1 4 5	Setting2 4 5	Setting3 4 5	Setting4 4 5	Make sure to select different frequency setting for interior and exterior sensors.When using more than one sensor close to each other, set the frequency different for each sensor.
Dipswitch 6 / **Dipswitch 7** Depth row adjustment	6rows 6 7	5rows 6 7	4rows 6 7	3rows 6 7	The number of depth rows can be selected from 4 patterns.
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			Select "N.O." / "N.C." for Activation output to door controller.
Dipswitch 10 Safety output	N.O. 10	N.C. 10			Select "N.O." / "N.C." for Safety output to door controller.
Dipswitch 11 Test input	High 11	Low 11			Select "High" / "Low" for Test input from door controller. The delay time between Test input and Safety output is 10msec..
Dipswitch 12 Presence area	1st to 3rd rows 12	All rows 12			When dipswitch 12 is set to "All rows", 1st - 6th rows have presence detection function. Set this switch to "All rows" when using for swing door.
Dipswitch 13 Future use	N/A				
Dipswitch 14 Simultaneous output	OFF 14	ON 14			When this swich is set to "ON", both the Activation & Safety output will operate simultaneously regardless of detection area. But only the Safety output will respond back with a Safety output responds to Test input.
Dipswitch 15 BLUEZONE	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 into 4th to 6th row	Entry into 3rd row	Entry into 2nd row	Entry into BLUZONE
Image								
Operation indicator			None	Green	Orange	Red	Red blinking	Blue
Status			-	Stand-by	Motion detection active	Motion / Presence detection active		
Activation output	9 N.O.	14 OFF						
	9 N.C.							
	9 N.O.	14 ON						
	9 N.C.							
Safety output	10 N.O.	14 OFF						
	10 N.C.							
	10 N.O.	14 ON						
	10 N.C.							

NOTE
- Do not enter the detection area during set-up(indicator : Yellow blinking).
- 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**
1. Do not wash the sensor with water.
2. Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.

⚠ **CAUTION**
1. Do not paint the detection window.

NOTE
1. Always keep the detection window clean. If dirty, wipe the window with a damp cloth.(Do not use any cleaner / solvent.)
2. When the operation indicator blinks Green, contact your installer or service engineer.
3. Always contact your installer or service engineer when changing the settings.
4. When turning the power ON, always walk-test the detection area to ensure the proper operation.
5. 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.
		Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Wrong detection area positioning.	Check the detection area(**Adjustments 1, 2**.) and depth row adjustment (dipswitch 6,7).
		Sensitivity is too low.	Set the sensitivity higher (dipswitch 1).
		Short presence timer.	Set the presence timer longer (dipswitch 2,3).
		Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
	Proper	Wrong wiring or connection failure.	Check the wires and connector.
	Yellow	Installation mode is set to "ON".	Set dipswitch 16 to "OFF".
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 that of another sensor.	Check the frequency setting (dipswitch 4,5).
		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. Install in a place keeping the waterdrops off.
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside).
		Sensitivity is too high.	Set the sensitivity lower (dipswitch 1).
		Others	Set dipswitch 8 to "ON".
Door remains open	Proper	Wrong setting of dipswitches.	Check the Activation output(dipswitch 9) or Safety output(dipswitch 10) or Test input(dipswitch 11).
		Sudden change in the detection area.	Check sensitivity or presence timer (dipswitch 1,2,3). 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.
	Fast Green blinking	Sensitivity is too low.	Set the sensitivity higher (dipswitch 1).
		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.
Swing door opens from full closed position or closes from full opened position when a person in the detection area.	Unstable	Presence area is set to "1st to 3rd rows" when using for swing door.	Set dipswitch 12 to "All rows".
Swing door does not open or close when no one in the detection area.	Unstable	The detection area overlaps with the full opened or closed swing door.	Check the detection area(**Adjustments 1, 2**.)
	Blue	BLUEZONE is set to "ON" when using for swing door.	Set dipswitch 15 to "OFF".
Proper operation	Slow Green blinking	Signal saturation.	Remove highly reflecting objects from the detection area. Or lower the sensitivity (dipswitch 1). Or change the area depth angle.
		The detection area overlaps with the door/header.	Adjust the detection area to "Deep" (Outside).

OPTEX

OA-FLEX AIR T   CE   *ENGLISH*

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.

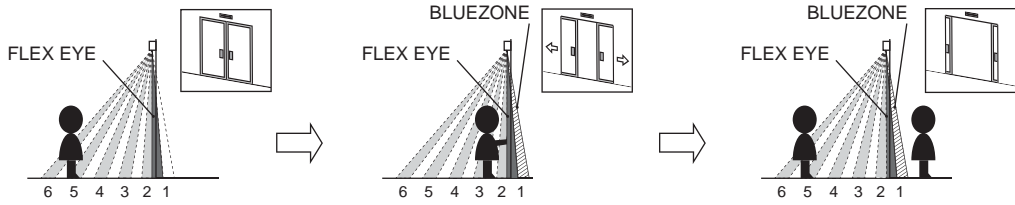|		
⚠	WARNING	Disregard of warning may cause the improper operation causing death or serious injury of a person.
⚠	CAUTION	Disregard of caution may cause the improper operation causing injury of a person or damage to objects.
	NOTE	Special attention is required to the section of this symbol.
📖		It is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

NOTE
1. 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.
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 product.
4. Only use the product 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 product is installed.
6. 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.
7.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.

WORKING PRINCIPLE

This sensor is designed to detect a hand approaching to a touchless plate as a knowing act activation device.
Please make sure to understand the following working principle.
If FLEX EYE mode is enabled (Dipswitch 14 is set to "ON"), this sensor an activation output when both FLEX EYE and 2nd to 4th row of detection area detect some objects.
FLEX EYE means an area for the hand detection.

NOTE   Safety output is designed to be used on door system that enables only while the door is open.
BLUEZONE is only activated while Activation output is emitted. When no detection, BLUEZONE is deactivated.
When FLEX EYE is enabled (Dipswitch 14 is set to "ON"), detection area (of 2nd to 6th row) is safety output area.
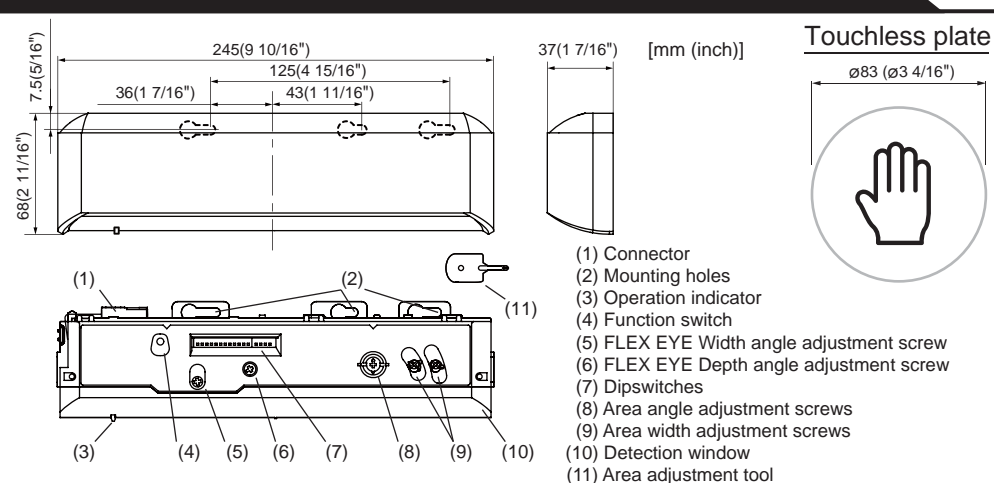
SPECIFICATIONS

Model	: OA-FLEX AIR T
Cover color	: Silver / Black
Mounting height	: 2.0m(6'7") to 2.5m(8'2")
Detection area	: See **DETECTION AREA**
Detection method	: Active infrared reflection(*1)
Area angle adjustment	: Depth : -8° to +8°
	Width : ±7°
	(2 clicks with 3.5°every click-Left/Right)
FLEX EYE angle adjustment	: Depth : -14° to +2°
	Width : ±42°
	(7 clicks with 6°every click-Left/Right)
Power supply (*2)	: 12 to 24VAC ±10% (50 / 60Hz)
	12 to 30VDC ±10%
Power consumption	: < 2.5W (< 6VA at AC)
Operation indicator	: See **Operation indicator table**
Safety intput	: Opto coupler
	Voltage / 5 to 30VDC
	Current / 6mA Max. (30VDC)
Activation output	: Form A relay
	50V 0.3A Max. (Resistance load)

Safety output	: Opto coupler (NPN)
	Voltage / 5 to 50VDC
	Current / 100mA Max. (Resistance load)
	Dark current / 600nA Max.
Operating temperature	: -20 to +55°C (-4 to 131°F)
Operating humidity	: < 80%
Noise level	: < 70dBA
Output hold time	: Approx. 0.5 sec.
Response time	: < 0.3 sec.
IP rate	: IP54
Category	: 2 (EN ISO 13849-1 : 2008/AC:2009)
Performance level	: d (EN ISO 13849-1 : 2008/AC:2009)
ESPE	: Type2
Weight	: 230g (8.1oz)
Accessories	: 1 Operation manual
	2 Mounting screws
	1 Mounting template
	1 Area adjustment tool
	1 Cable 3m(9'10")
	(8 × 0.22mm² AWG24) (*3)

Operation indicator table

Status	Operation indicator color	1sec.	1sec.
Set-up	Yellow Blinking		
Stand-by (Installation mode)	Yellow		
Stand-by (Operation mode)	Green		
BLUEZONE (1st row) detection (*4)	Blue		
2nd row detection	Red Blinking		
3rd row detection	Red		
4th-6th row detection	Orange		
FLEX EYE detection	Fast Purple Blinking		
FLEX EYE & 2nd-4th row detection	Purple		
Signal saturation	Slow Green Blinking		
Signal saturation (FLEX EYE)	Slow Purple Blinking		
Sensor failure	Fast Green Blinking		
Setting error	Red & Green Blinking		

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**
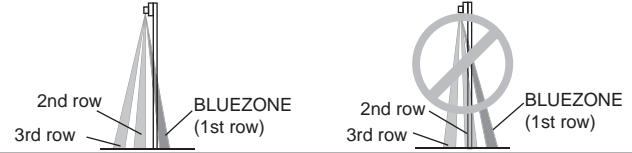
OUTER DIMENSIONS AND PART NAMES

245(9 10/16")   125(4 15/16")   36(1 7/16")   43(1 11/16")   37(1 7/16")   [mm (inch)]
7.5(5/16")   68(2 11/16")

Touchless plate
ø83 (ø3 3/4")

(1) Connector
(2) Mounting holes
(3) Operation indicator
(4) Function switch
(5) FLEX EYE Width angle adjustment screw
(6) FLEX EYE Depth angle adjustment screw
(7) Dipswitches
(8) Area angle adjustment screws
(9) Area width adjustment screws
(10) Detection window
(11) Area adjustment tool

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".
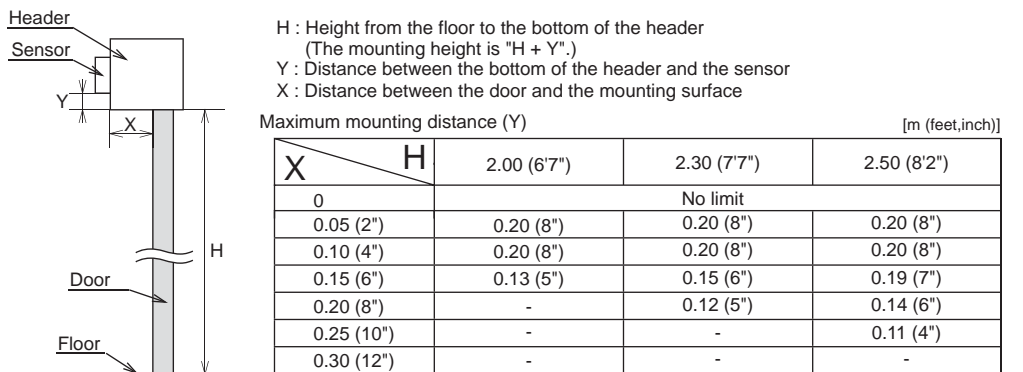Do not set the 2nd row overlapping the threshold regardless of the setting of dipswitch 15.

2nd row   BLUEZONE (1st row)   3rd row

DETECTION AREA

FLEX EYE
BLUEZONE (1st row)
2nd row
3rd row
4th row
5th row
6th row

□ : Emitting spots
▒ : Emitting spots (can be eliminated)
⬚ : Detection Area

Emitting area   [m (feet,inch)]

A	2.00 (6'7")	2.30 (7'7")	2.50(8'2")
B	0.13 (5")	0.16 (6")	0.17(7")
C	0.38 (1'3")	0.46 (1'6")	0.50(1'8")
D	0.71 (2'4")	0.86 (2'10")	0.94(3'1")
E	0.84 (2'9")	1.01 (3'4")	1.09(3'7")
F	1.34 (4'5")	1.62 (5'4")	1.76(5'9")
G	1.75 (5'9")	2.11 (6'11")	2.29(7'6")
H	0.92 (3')	1.11 (3'8")	1.20(3'11")
I	1.49 (4'11")	1.80 (5'11")	1.95(6'5")
J	2.06 (6'9")	2.48 (8'2")	2.69(8'10")

Charts show the values in the following area angle adjustment settings ; Depth : 8°   Width : 0°

Detection area
To comply with EN 16005, make sure that the detection area is within the values of the chart below.

A	2.00 (6'7")	2.30 (7'7")	2.50 (8'2")
X	0.24 (9")	0.25 (10")	0.23 (9")
H	0.85 (2'9")	0.91 (2'12")	0.96 (3'2")
J	2.01 (6'7")	2.20 (7'3")	2.44 (8')

Test conditions required by EN 16005
Floor :Grey paper
Detection object : EN 16005 CA reference body
Sensitivity : High
Speed of detection object : 50mm / sec.

The values above are those of the **Detection area** when tested referring to the test conditions of EN 16005.
(The emitting area is as shown in **Emitting area** above.)

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.
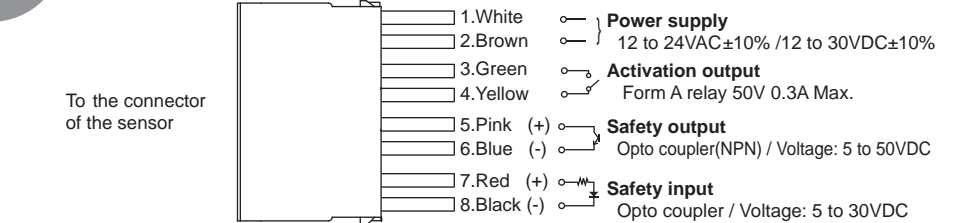
INSTALLATION

1
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.)
2. Drill two mounting holes of ø3.4mm (ø1/8").
3. To pass the cable through the header, drill a wiring hole of ø10mm (ø3/8").
4. Remove the mounting template.
5. Remove the housing cover. Fix the sensor to the mounting surface with the two mounting screws.

Header
Sensor
Door
Floor

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)   [m (feet,inch)]

X \ H	2.00 (6'7")	2.30 (7'7")	2.50 (8'2")
0	No limit		
0.05 (2")	0.20 (8")	0.20 (8")	0.20 (8")
0.10 (4")	0.20 (8")	0.20 (8")	0.20 (8")
0.15 (6")	0.13 (5")	0.15 (6")	0.19 (7")
0.20 (8")	-	0.12 (5")	0.14 (6")
0.25 (10")	-	-	0.11 (4")
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

To the connector of the sensor

1.White ⊸ } **Power supply**
2.Brown ⊸   12 to 24VAC±10% /12 to 30VDC±10%
3.Green ⊸ } **Activation output**
4.Yellow ⊸   Form A relay 50V 0.3A Max.
5.Pink (+) ⊸ } **Safety output**
6.Blue (-) ⊸   Opto coupler(NPN) / Voltage: 5 to 50VDC
7.Red (+) ⊸ } **Safety input**
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
1.Plug the connector.
2.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.
When changing the settings of dipswitch, see **ADJUSTMENTS 4. Dipswitch settings**
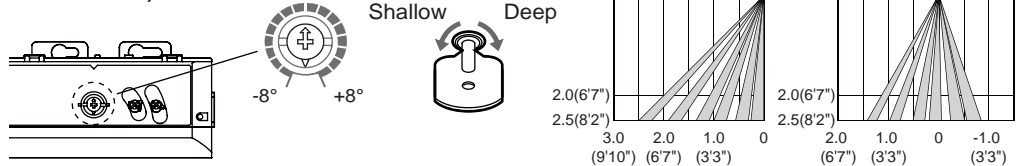
4
Place the housing cover.
If wiring is to be exposed, break the knockout.

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
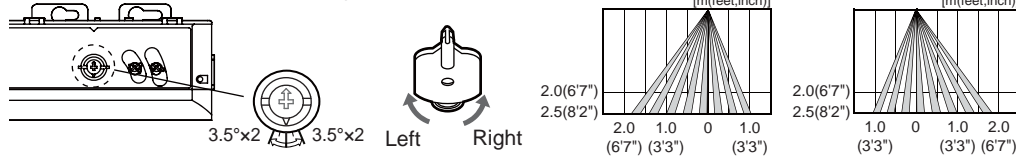
1 Area angle adjustment

1-1.Area depth angle adjustment
When adjusting the 2nd row close to the door,
see dipswitch 16 in **Dipswitch settings table** and **REFERENCE** for
the easier adjustment.

Shallow   Deep

-8° +8°

Deep Shallow

[m(feet,inch)]   [m(feet,inch)]

2.0(6'7")   2.0(6'7")
2.5(8'2")   2.5(8'2")

3.0 2.0 1.0 0   2.0 1.0 0 -1.0
(9'10") (6'7") (3'3")   (6'7") (3'3")   (3'3")

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.

Left Right

3.5°×2 3.5°×2   Left Right

[m(feet,inch)]   [m(feet,inch)]

2.0(6'7")   2.0(6'7")
2.5(8'2")   2.5(8'2")

2.0 1.0 0 1.0   2.0 1.0 0 1.0 2.0
(6'7") (3'3")   (3'3")   (3'3")   (3'3") (6'7")

2 Area width adjustment

Adjust the detection area width with
the adjustment screws.

[1][2] Left eliminated   [7][8] Right eliminated

Front view
[m(feet,inch)]

2.0(6'7")
2.5(8'2")

2.0 1.0 0 1.0 2.0
(6'7") (3'3")   (3'3") (6'7")

[1][2][3][4][5][6][7][8]

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 FLEX EYE angle adjustment

Make sure to adjust the FLEX EYE angle depending on the door type and the intended touchless plate position
otherwise the sensor may not detect when a hand is approached.

3-1.FLEX EYE width angle adjustment
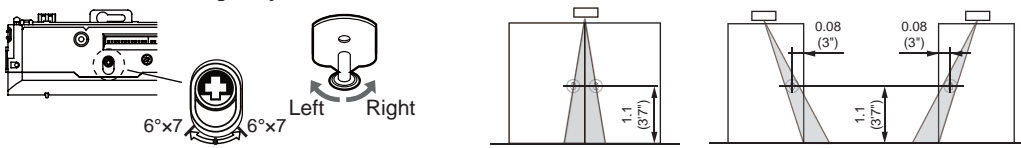
Left Right

6°×7 6°×7

Double slide door
[m(feet,inch)]

1.1
(3'7")

Single slide door
[m(feet,inch)]

0.08   0.08
(3")   (3")

1.1
(3'7")

3-2.FLEX EYE depth angle adjustment

Shallow Deep

-14° +2°
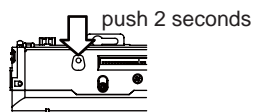
Operation
indicator :
Purple

NOTE After adjusting the angle, make sure that the FLEX EYE is placed on the proper position for your use.
Affix the touchless plate on the appropriate position after adjusting the FLEX EYE.

⚠ CAUTION	Make sure to affix the touchless plate where a hand
Risk of getting caught.	is not caught by the door during door opening and closing.

4 Dipswitch settings

After changing the dipswitch settings,
make sure to push the function switch for 2 seconds.

push 2 seconds

Dipswitch settings table

	Function	Setting				Comment
Dipswitch 1	Sensitivity	Low 1	High 1			Set the detection area sensitivity according to the mounting height.
Dipswitch 2 / Dipswitch 3	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 4 / Dipswitch 5	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 6 / Dipswitch 7	Row adjustment	6rows 6 7	5rows 6 7	4rows 6 7	3rows 6 7	Set the depth rows with dipswitches 6 and 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	Self Monitoring	Enable 10	Disable 10			When the door remains open and the operation indicator shows Fast/Slow Green Blinking, refer to **TROUBLESHOOTING**. If the door still remains open, set dipswitch 10 to "Disable".To comply with EN 16005, set dipswitch 10 to "Enable".
Dipswitch 11	Safety output	High 11	Low 11			Dipswitch 11 is for the Safety output (to door controller).
Dipswitch 12	Safety input	High 12	Low 12			Dipswitch 12 is for the Safety input (from door controller).
Dipswitch 13	FLEX EYE Sensitivity	Low 13	High 13			Adjust sensitivity for FLEX EYE.
Dipswitch 14	FLEX EYE mode	ON 14	OFF 14			Select the FLEX EYE mode "ON" or "OFF". ON : Activation output is emitted when a detection occurs in FLEX EYE and the 2nd to 4th row. OFF : Activation output is emitted when a detection occurs in the 2nd to 6th row.
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 FLEX EYE and 2nd to 4th row
Image						
Operation indicator	None	Green	Orange	Red	Red Blinking	Purple
Activation output (*1)	9 ▪N.O. OFF	OFF				ON
	9 ▪N.C. OFF	ON				OFF
Safety output	11 ▪High OFF	ON	OFF			
	11 ▪Low OFF	OFF	ON			

Entry	Entry to BLUEZONE (*2)	Outside of detection area	Entry to FLEX EYE only
Image			
Operation indicator	Blue	Green	Fast Purple Blinking
Activation output (*1)	9 ▪N.O.	OFF	
	9 ▪N.C.	ON	
Safety output	11 ▪High OFF	ON	ON
	11 ▪Low ON	OFF	OFF

NOTE *1 : Activation output shows the status of when FLEX EYE mode is enabled. (Dipswitch 14 is set to "ON".)
*2 : When dipswitch 15 is set to "ON".

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. 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.)
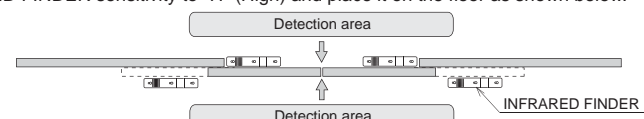
TROUBLESHOOTING

Door operation	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area and FLEX EYE.	None	Wrong power supply voltage.	Set to the stated voltage.
		Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Wrong detection area(2nd to 4th row) and FLEX EYE positioning.	Check **ADJUSTMENT 1,2,3**.(*)
		Sensitivity of detection area(2nd to 4th row) is too low.	Set the detection area sensitivity higher.
		Sensitivity of FLEX EYE is too low.	Set the FLEX EYE 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.
	Proper	Wrong wiring or connection failure.	Check the wires and connector.
Door opens when a person enters the detection area.	Proper	FLEX EYE function is not working. (Dipswitch 15 is up side position)	Check **ADJUSTMENT 4** dipswitch 14.(*)
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 that of another sensor.	Check **ADJUSTMENT 4** 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).
		Sensitivity of detection area is too high.	Set the detection area sensitivity lower.
		Sensitivity of FLEX EYE is too high.	Set the FLEX EYE sensitivity lower.
		Others	Set dipswitch 8 to "ON".(*)
	Proper	Wrong setting of dipswitches.	Check **ADJUSTMENT 4** dipswitch 9,11,12.(*)
Door remains open	Proper	Sudden change in the detection area.	Check **ADJUSTMENT 4** 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.
	Yellow	Installation mode is set to "ON".	Set dipswitch 16 to "OFF".(*)
	Fast Green Blinking	Sensitivity of detection area is too low.	Set the detection area sensitivity higher.
		Sensitivity of FLEX EYE is too low.	Set the FLEX EYE 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. (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).
	Red & Green Blinking	Setting error.	After changing the dipswitch settings, make sure to push the function switch for 2 seconds.
Proper operation	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.
	Slow Purple Blinking	Signal saturation. (FLEX EYE)	Remove highly reflecting objects from the FLEX EYE. Lower the FLEX EYE sensitivity. Change the area depth angle for FLEX EYE.
		FLEX EYE overlaps with the header.	Adjust FLEX EYE to "Deep" (Outside).

* : After changing the dipswitch settings, make sure to push the function switch for 2 seconds.

REFERENCE

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

Detection area

INFRARED FINDER

Detection area

3. 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).

OPTEX

PRO WAVE AIR-SLIDE 2

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.

NOTE

1. 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.
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 product.
4. Only use the product 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 product is installed.
6. 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.
7. 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 Danger of electric shock.	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.

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.

WORKING PRINCIPLE

This sensor is designed to detect a hand approaching to a touchless plate as a knowing act activation device.
Please make sure to understand the following working principle.
This sensor sends primary activation output when both "FLEX EYE and 2nd to 4th row" detect some object.
After the detection until the door fully closes, 2nd to 6th rows work as a Secondary Activation output.
"FLEX EYE" means a detection area for the hand.
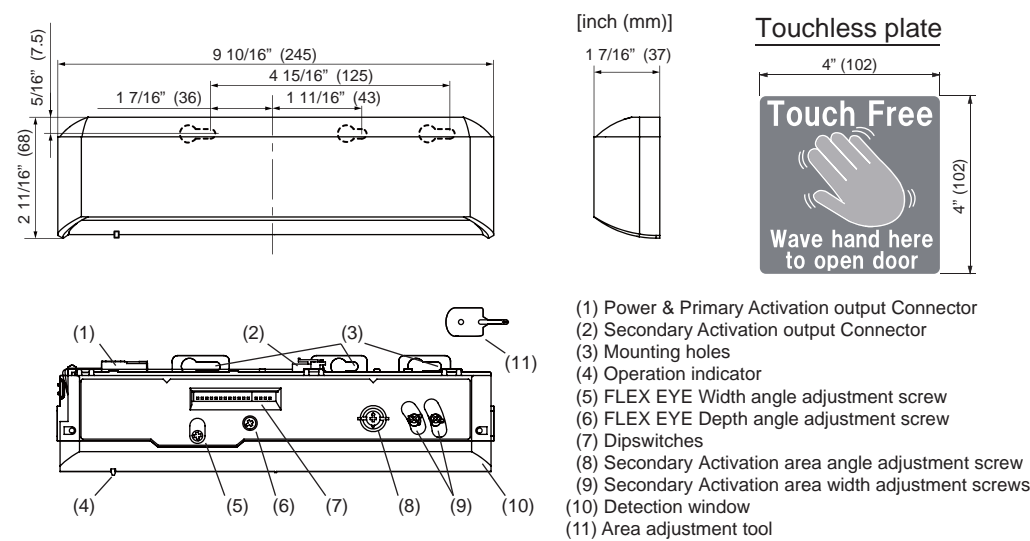Secondary Activation area is from the 2nd row to the 6th row.

SPECIFICATIONS

Model	: AIR-SLIDE 2
Cover color	: Black
Mounting height	: 6'7"(2.0m) to 9'10"(3.0m)
Detection area	: See **DETECTION AREA**
Detection method	: Active infrared reflection(*1)
FLEX EYE angle adjustment	Depth : -14° to +2°
	Width : ±42° (7 clicks with 6°every one click-Reft/Light)
Secondary Activation area angle adjustment	Depth : -16° to +0°
	Width : ±7° (2 clicks with 3.5°every one click-Reft/Light)
Power supply	: 12 to 24V AC ±10% (50/60Hz) 12 to 30V DC ±10%
Power consumption	: < 2.0W (< 3VA at AC)
Operation indicator	: See **Operation indicator table**
Primary, Secondary Activation output	: Form A relay 50V 0.3A Max. (Resistance load)

Output hold time	: Approx. 0.5 sec.
Response time	: < 0.3 sec.
Operating temperature	: -4 to 131°F (-20 to +55°C)
Operating humidity	: <80%
IP rate	: IP44
Weight	: 8.8oz (250g)
Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Power & Primary Activation output cable 8'2" (2.5m) 1 Secondary Activation output cable 8'2" (2.5m)

Operation indicator table

Status	Operation indicator color	1sec.	1sec.
Set-up	Yellow Blinking		
Stand-by (Installation mode)	Yellow		
Stand-by (Operation mode)	Green		
BLUEZONE (1st row) detection (*2)	Blue		
2nd row detection	Red Blinking		
3rd row detection	Red		
4th-6th row detection	Orange		
FLEX EYE detection (*3)	Fast Purple Blinking		
FLEX EYE & 2nd-4th row detection	Purple		
Signal saturation(Secondary Activation area)	Slow Green Blinking		
Signal saturation (FLEX EYE)	Slow Purple Blinking		
Sensor failure	Fast Green Blinking		

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 : See **BLUEZONE**
*3 : See **FLEX EYE MODE**

OUTER DIMENSIONS AND PART NAMES

[inch (mm)]

Touchless plate

Touch Free
Wave hand here
to open door

(1) Power & Primary Activation output Connector
(2) Secondary Activation output Connector
(3) Mounting holes
(4) Operation indicator
(5) FLEX EYE Width angle adjustment screw
(6) FLEX EYE Depth angle adjustment screw
(7) Dipswitches
(8) Secondary Activation area angle adjustment screw
(9) Secondary Activation area width adjustment screws
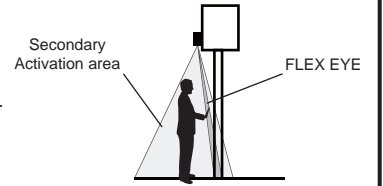(10) Detection window
(11) Area adjustment tool

BLUEZONE

When dipswitch 11 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 11 to OFF.
Do not set the 2nd row overlapping the threshold regardless of the setting of dipswitch 11.
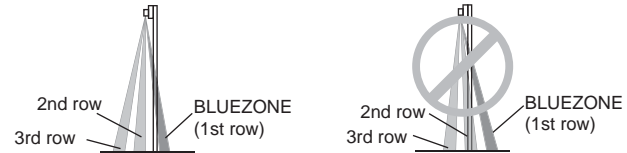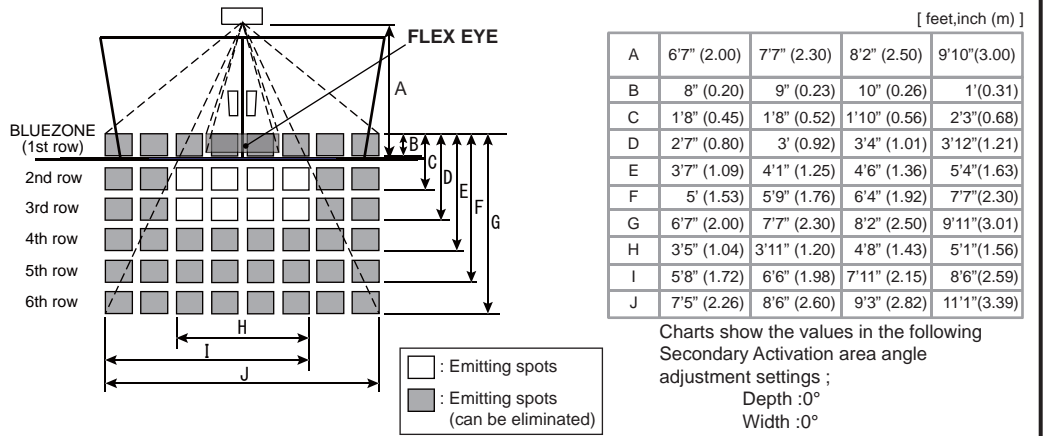

FLEX EYE MODE

Dipswitch 15 can adjust the FLEX EYE function ON or OFF.
- FLEX EYE mode ON.(Dipswitch 15 OFF)
  During FLEX EYE and Secondary Activation area are both working, Primary Activation output is emited.
  When only one function is working, Primary Activation output is not emited.
- FLEX EYE mode OFF.(Dipswitch 15 ON)
  You can use AIR-SLIDE 2 as normal Autodoor activation sensor.
  You do not need to adjust FLEX EYE function.

DETECTION AREA

[feet,inch (m)]

A	6'7" (2.00)	7'7" (2.30)	8'2" (2.50)	9'10"(3.00)
B	8" (0.20)	9" (0.23)	10" (0.26)	1'(0.31)
C	1'8" (0.45)	1'8" (0.52)	1'10" (0.56)	2'3"(0.68)
D	2'7" (0.80)	3' (0.92)	3'4" (1.01)	3'12"(1.21)
E	3'7" (1.09)	4'1" (1.25)	4'6" (1.36)	5'4"(1.63)
F	5' (1.53)	5'9" (1.76)	6'4" (1.92)	7'7"(2.30)
G	6'7" (2.00)	7'7" (2.30)	8'2" (2.50)	9'11"(3.01)
H	3'5" (1.04)	3'11" (1.20)	4'8" (1.43)	5'1"(1.56)
I	5'8" (1.72)	6'6" (1.98)	7'11" (2.15)	8'6"(2.59)
J	7'5" (2.26)	8'6" (2.60)	9'3" (2.82)	11'1"(3.39)

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

☐ Emitting spots
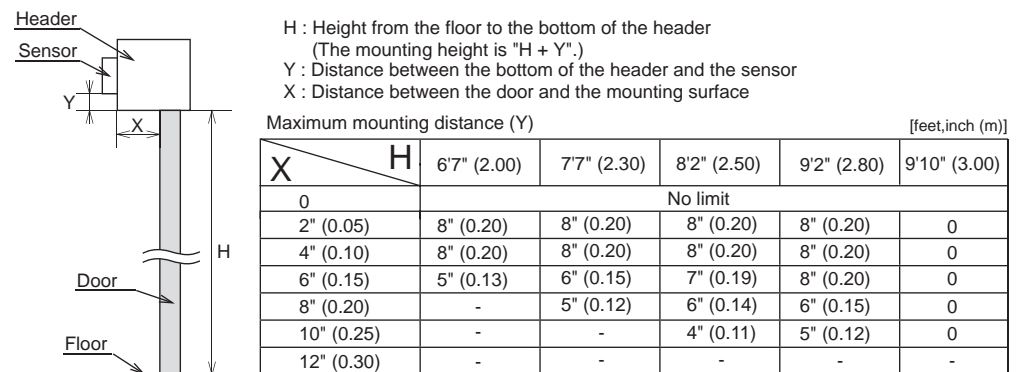▦ Emitting spots (can be eliminated)

NOTE The actual Secondary Activation 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.
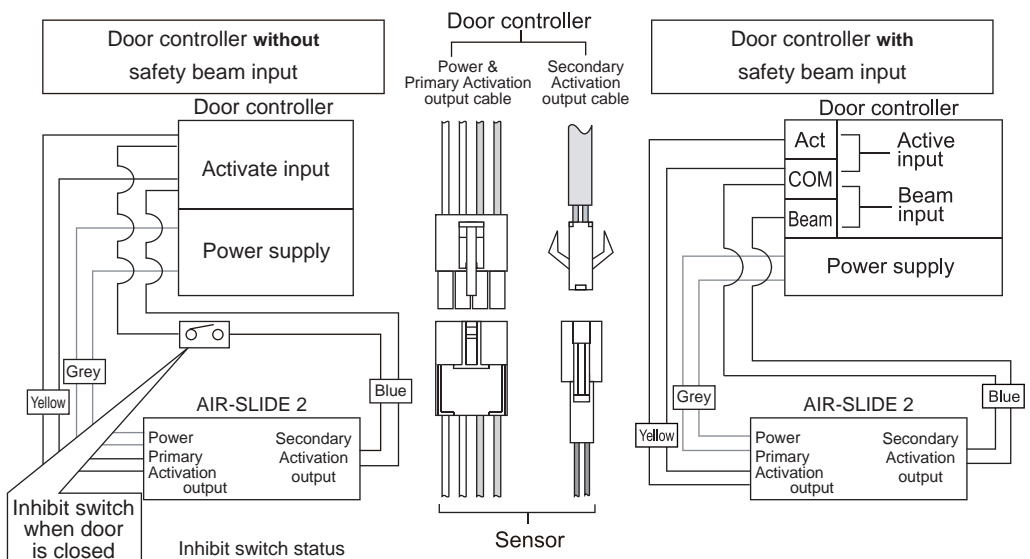
INSTALLATION

1
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.)
2. Drill two mounting holes of ø1/8" (ø3.4mm).
3. To pass the cable through the header, drill a wiring hole of ø3/8" (ø10mm).
4. Remove the mounting template.
5. 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	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)	8" (0.20)	8" (0.20)	8" (0.20)	8" (0.20)	0
4" (0.10)	8" (0.20)	8" (0.20)	8" (0.20)	8" (0.20)	0
6" (0.15)	5" (0.13)	6" (0.15)	7" (0.19)	8" (0.20)	0
8" (0.20)	-	5" (0.12)	6" (0.14)	6" (0.15)	0
10" (0.25)	-	-	4" (0.11)	5" (0.12)	0
12" (0.30)	-	-	-	-	-

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

⚠ 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.

2 Wire the Power & Primary Activation output cable and Secondary Activation output cable to the door controller properly as shown in the drawing below. The 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).

Door controller without safety beam input

Door controller

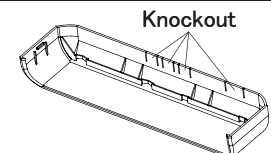Door controller with safety beam input

3
1.Plug the connector.
2.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.
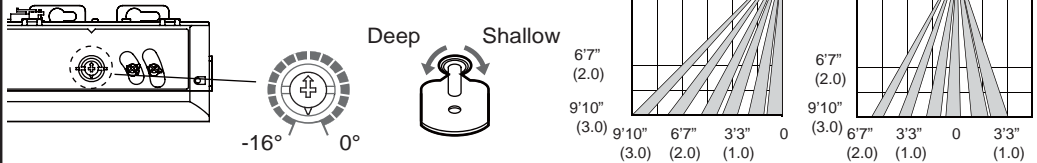

Knockout

⚠ 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

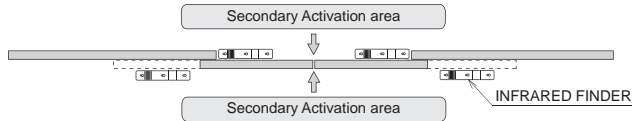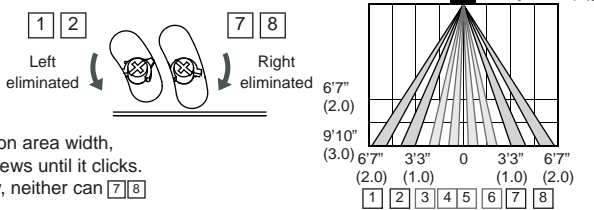## 1 Secondary Activation area angle adjustment

1-1.Secondary Activation area depth angle adjustment
When adjusting the 2nd row close to the door,
see **Dipswitch settings table** dipswitch16 for the easier adjustment.

Deep   Shallow

Deep   Shallow

-16°   0°

[feet,inch(m)]
6'7" (2.0)
9'10" (3.0)
9'10" (3.0)   6'7" (2.0)   3'3" (1.0)   0

[feet,inch(m)]
6'7" (2.0)
9'10" (3.0)
6'7" (2.0)   3'3" (1.0)   0   3'3" (1.0)

NOTE Make sure that the Secondary Activation 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.

REFERENCE Area depth adjustment with INFRARED FINDER (Separately available)

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

Secondary Activation area
Secondary Activation area
INFRARED FINDER

3. 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).

1-2.Secondary Activation area width angle adjustment
The width of the activation Secondary Activation area can both be moved at the same time 7° either left or right in 2 step.

Left   Right

7° to Left
[feet,inch(m)]
6'7" (2.0)
9'10" (3.0)
6'7" (2.0)   3'3" (1.0)   0   3'3" (1.0)

7° to Right
[feet,inch(m)]
6'7" (2.0)
9'10" (3.0)
3'3" (1.0)   0   3'3" (1.0)   6'7" (2.0)
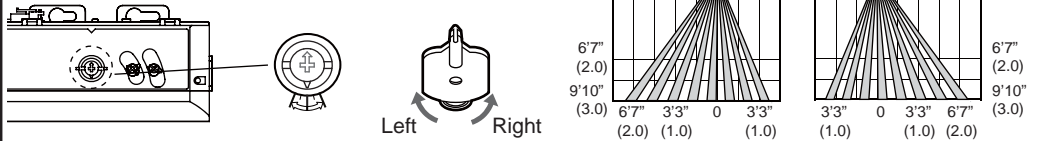
2 Secondary Activation area width elimination

To adjust the Secondary Activation area width, use the adjustment screws.

1 2   7 8
Left eliminated   Right eliminated

Front view
[feet,inch(m)]
6'7" (2.0)
9'10" (3.0)
6'7" (2.0)   3'3" (1.0)   0   3'3" (1.0)   6'7" (2.0)
1 2 3 4 5 6 7 8

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

3 FLEX EYE angle adjustment

Make sure to select the FLEX EYE angle depending on the door type and the intended touchless plate position otherwise the sensor does not send an output when a hand is waved.

3-1.FLEX EYE width adjustment

Left   Right

Double slide door
[feet,inch(mm)]
3'7" (1100)

Single slide door
[feet,inch(mm)]
3' (80)   3' (80)
3' 7" (1100)
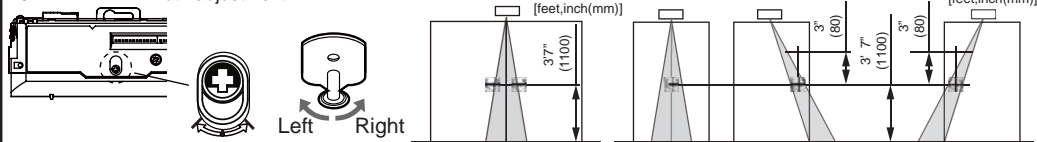
3-2.FLEX EYE Depth adjustment

Shallow   Deep
-14°   +2°

Operation indicator : Purple
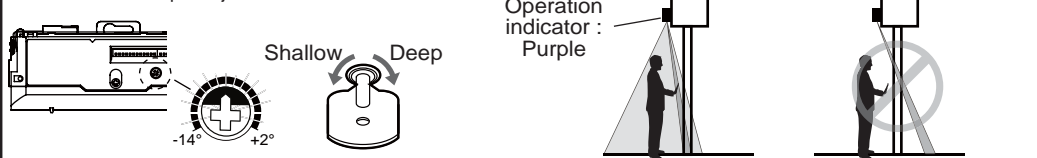
NOTE After adjust the angle, please check the FLEX EYE is on the best position for your use.
Please check the door will be open, when you are detected in the area between 2nd to 4th row.
Operation indicator color will be purple, when all the adjustment are OK.

3-3.Affix the touchless plate on the appropriate position after adjusting the FLEX EYE.

CAUTION Risk of getting caught.
Make sure to affix the touchless plate where a head is not caught by the door during door closing.

4 Dipswitch settings

Dipswitch settings table

	Function	Setting				Comment
Dipswitch 1 / Dipswitch 2	Secondary Activation area Sensitivity	Low 1 2 6'7" to 8'2"	Middle 1 2 6'7" to 8'2"	High 1 2 7'7" to 8'10"	S-High 1 2 8'2" to 9'10"	Set the sensitivity according to the mounting height. Values below dipswitch are reference only.
Dipswitch 3 / Dipswitch 4	Presence timer	30sec. 3 4	60sec. 3 4	180sec. 3 4	600sec. 3 4	All rows have the presence detection function. The presence timer can be selected from 4 settings.
Dipswitch 5 / Dipswitch 6	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 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 / Dipswitch 10	Row adjustment	6rows 9 10	5rows 9 10	4rows 9 10	3rows 9 10	Set the depth rows with dipswitches 9 and 10.
Dipswitch 11	BLUEZONE (1st row)	OFF 11	ON 11			When dipswitch 11 is set to ON, the BLUEZONE (1st row) is active and looks through the threshold.
Dipswitch 12	Secondary Activation output	N.O. 12	N.C. 12			Select "N.O."/"N.C." for Secondary Activation output.
Dipswitch 13 / Dipswitch 14	FLEX EYE Sensitivity	Low 13 14	Middle 13 14	High 13 14	S-High 13 14	Adjust sensitivity for "FLEX EYE" detection.
Dipswitch 15	FLEX EYE mode	ON 15	OFF 15			Select the FLEX EYE mode ON or OFF. See **FLEX EYE MODE**.
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 FLEX EYE and 2nd to 4th row
Image						
Operation indicator	None	Green	Orange	Red	Red Blinking	Purple
Primary Activation output	OFF	OFF	OFF			ON
Secondary Activation output	12 N.O. ON	OFF	ON			
	12 N.C.	ON	OFF			

Entry	Entry to BLUEZONE	Outside of detection area	Entry to FLEX EYE only
Image			
Operation indicator	Blue	Green	Purple Blinking
Primary Activation output	OFF	OFF	OFF
Secondary Activation output	12 N.O. ON	OFF	OFF
	12 N.C. OFF	ON	ON

NOTE No output is made when sensor detects an object in the BLUEZONE(1st row).

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. 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

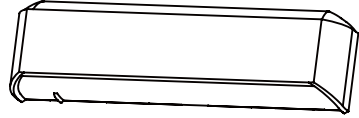| Door operation	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the Secondary Activation area.	None	Wrong power supply voltage.	Set to the stated voltage.
		Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Wrong Secondary Activation area positioning.	Check **ADJUSTMENT 1**.
		Sensitivity of Secondary Activation area is too low.	Set the Secondary Activation area sensitivity higher.
		Sensitivity of FLEX EYE is too low.	Set the FLEX EYE 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.
	Proper	Wrong wiring or connection failure.	Check the wires and connector.
		FLEX EYE function is working. (Dipswitch 15 is down side position)	Check **FLEX EYE MODE**.
Door opens when no one is in the Secondary Activation area. (Ghosting)	Unstable	Objects that move or emit light in the Secondary Activation area.	Remove the objects.
		The Secondary Activation area overlaps with that of another sensor.	Check **ADJUSTMENT 1**. Or change Frequency setting.
		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 Secondary Activation area overlaps with the door/header.	Adjust the Secondary Activation area to "Deep" (Outside).
		Sensitivity of Secondary Activation area is too high.	Set the Secondary Activation area sensitivity lower.
		Sensitivity of FLEX EYE is too high.	Set the FLEX EYE sensitivity lower.
	Proper	Wrong setting of dipswitches.	Check **ADJUSTMENT 4**.
Door remains open	Proper	Sudden change in the Secondary Activation area.	Check **ADJUSTMENT 1**. 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.
	Yellow	Installation mode is set to "ON".	Set dipswitch 16 to "OFF".
	Fast Green Blinking	Sensitivity of Secondary Activation area is too low.	Set the Secondary Activation area sensitivity higher.
		Sensitivity of FLEX EYE is too low.	Set the FLEX EYE 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. (Secondary Activation area)	Remove highly reflecting objects from the Secondary Activation area. Or lower the Secondary Activation area sensitivity. Or change the area depth angle for Secondary Activation.
		Secondary Activation area overlaps with the door/header.	Adjust the Secondary Activation area to "Deep" (Outside).
	Slow Purple Blinking	Signal saturation. (FLEX EYE)	Remove highly reflecting objects from the FLEX EYE. Or lower the FLEX EYE sensitivity. Or change the area depth angle for FLEX EYE.
		FLEX EYE overlaps with the header.	Adjust FLEX EYE to "Deep" (Outside).

Access setting website from here.

OPTEX

BLUEZONE

AIR-SLIDE 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	Failure to follow the instructions provided with this indication and improper handling may cause death or serious injury.
⚠ CAUTION	Failure to follow the instructions provided with this indication and improper handling may cause injury and/or property damage.
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
1. 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.
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 product.
4. Only use the product 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 product is installed.
6. 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.
7. 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
Danger of electric shock.

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

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.

Working principle

This sensor is designed to detect a hand approaching to a touchless plate as a knowing act activation device.
Please make sure to understand the following working principle.
If FLEX EYE mode is enabled (Dipswitch 14 is set to "ON"), this sensor an activation output when both FLEX EYE and 2nd to 4th row of detection area detect some objects.
FLEX EYE means an area for the hand detection.

NOTE Safety output is designed to be used on door system that enables only while the door is open.
BLUEZONE is only activated while Activation output is emitted. When no detection, BLUEZONE is deactivated.
When FLEX EYE is enabled (Dipswitch 14 is set to "ON"), detection area (of 2nd to 6th row) is safety output area.

Specifications

Model	: AIR-SLIDE T
Cover color	: Black
Mounting height	: 6'7"(2.0m) to 9'10"(3.0m)
Detection area	: See **Detection area**
Detection method	: Active infrared reflection
Depth angle adjustment	: 1st to 6th rows -8° to +8° FLEX EYE -14° to +2°
Width angle adjustment	: 1st to 6th rows ±7° (2 clicks with 3.5°every click-Left/Right) FLEX EYE ±42° (7 clicks with 6°every click-Left/Right)
Power supply	: 12 to 24VAC ±10% (50 / 60Hz) 12 to 30VDC ±10%
Power consumption	: < 2.5W (< 6VA at AC)
Operation indicator	: See **Operation indicator table**
Test intput	: 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)
Operating temperature	: -31 to 131°F (-35 to +55°C)
Operating humidity	: < 80%
Output hold time	: Approx. 1.0 sec.
Response time	: < 0.3 sec.
IP rate	: IP54
Weight	: 8.1oz (230g)
Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Cable 9'10"(3m) (8 × 0.22mm² AWG24)

Operation indicator table

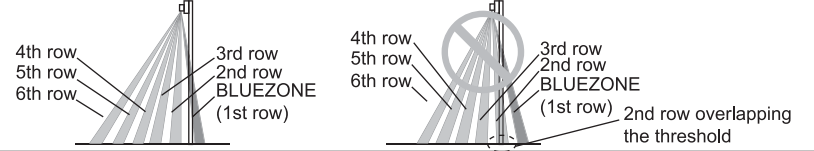| Status	Operation indicator color	1sec.	1sec.
Set-up	Yellow Blinking		
Stand-by (Installation mode)	Yellow		
Stand-by (Operation mode)	Green		
BLUEZONE (1st row) detection (*1)	Blue		
2nd row detection	Red Blinking		
3rd row detection	Red		
4th-6th row detection	Orange		
FLEX EYE detection	Fast Purple Blinking		
FLEX EYE & 2nd-4th row detection	Purple		
Signal saturation	Slow Green Blinking		
Signal saturation (FLEX EYE)	Slow Purple Blinking		
Sensor failure	Fast Green Blinking		

NOTE The specifications herein are subject to change without prior notice due to improvements.
*1 : See **BLUEZONE area**

Outer dimensions and part names

Touchless plate

ø3 1/4"(ø83)

[inch (mm)]

(1) Connector
(2) Mounting holes
(3) Operation indicator
(4) Width angle adjustment screw(FLEX EYE)
(5) Depth angle adjustment screw(FLEX EYE)
(6) Dipswitches
(7) Depth angle adjustment screw(1st-6th rows)
(8) Width angle adjustment screw(1st-6th rows)
(9) Width pattern adjustment screws
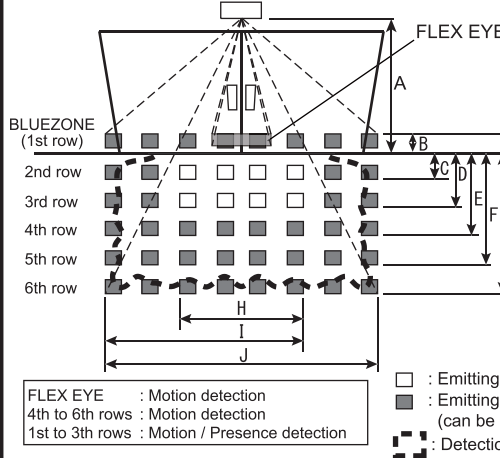(10) Detection window
(11) Area adjustment tool

BLUEZONE area

When dipswitch 15 is set to "ON", the BLUEZONE area is active and looks through the threshold.
In case the BLUEZONE function is not required, set dipswitch 15 to "OFF".
Do not overlap the 2nd row into the threshold area, regardless of dipswitch 15 setting.
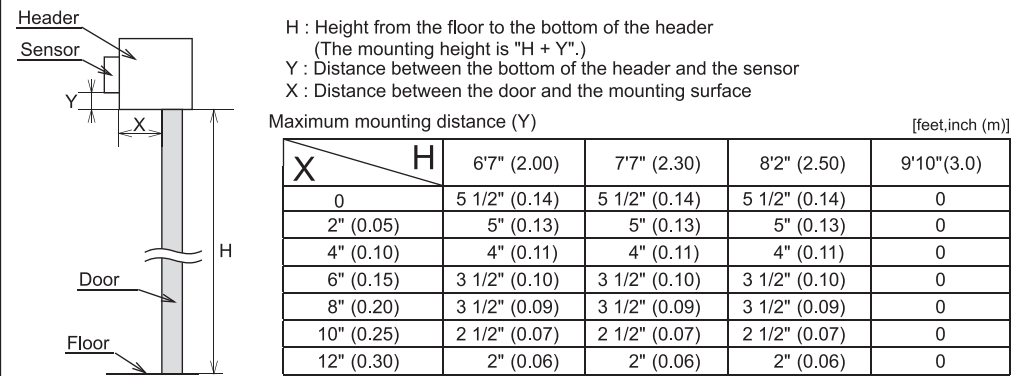

Detection area

Sliding door

Emitting area [feet,inch (m)]

	6'7" (2.00)	7'1" (2.15)	7'7" (2.30)	8'2" (2.50)	9'10" (3.00)
A	6'7" (2.00)	7'1" (2.15)	7'7" (2.30)	8'2" (2.50)	9'10" (3.00)
B	7" (0.17)	7" (0.18)	8" (0.20)	8" (0.21)	10" (0.26)
C	10" (0.26)	11" (0.28)	1' (0.30)	1'1" (0.33)	1'4" (0.39)
D	1'9" (0.53)	1'10" (0.57)	2' (0.61)	2'2" (0.66)	2'7" (0.79)
E	2'8" (0.80)	2'10" (0.86)	3' (0.92)	3'3" (1.00)	3'11" (1.20)
F	3'9" (1.14)	4' (1.23)	4'4" (1.32)	4'8" (1.43)	5'8" (1.72)
G	5' (1.53)	5'5" (1.64)	5'9" (1.76)	6'3" (1.91)	7'6" (2.29)
H	3'2" (0.96)	3'5" (1.03)	3'7" (1.10)	3'11" (1.20)	4'9" (1.44)
I	5'1" (1.55)	5'5" (1.66)	5'10" (1.78)	6'4" (1.93)	7'7" (2.32)
J	7' (2.13)	7'6" (2.29)	8' (2.45)	8'9" (2.66)	10'6" (3.20)

Charts show the values in the following
Depth angle adjustment setting : 0°
Width angle adjustment setting : 0°

FLEX EYE	: Motion detection
4th to 6th rows	: Motion detection
1st to 3th rows	: Motion / Presence detection

□ : Emitting spots
■ : Emitting spots (can be eliminated)
⬚ : Detection Area

NOTE The actual detection area may be different 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
1. Attach 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.)
2. Drill two mounting holes of ø1/8" (ø3.4mm).
3. To pass the cable through the header, drill a wiring hole of ø3/8" (ø10mm).
4. Remove the mounting template.
5. Remove the housing cover. Secure the sensor to the mounting surface with the two mounting holes.

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	6'7" (2.00)	7'7" (2.30)	8'2" (2.50)	9'10"(3.0)
0	5 1/2" (0.14)	5 1/2" (0.14)	5 1/2" (0.14)	0
2" (0.05)	5" (0.13)	5" (0.13)	5" (0.13)	0
4" (0.10)	4" (0.11)	4" (0.11)	4" (0.11)	0
6" (0.15)	3 1/2" (0.10)	3 1/2" (0.10)	3 1/2" (0.10)	0
8" (0.20)	3 1/2" (0.09)	3 1/2" (0.09)	3 1/2" (0.09)	0
10" (0.25)	2 1/2" (0.07)	2 1/2" (0.07)	2 1/2" (0.07)	0
12" (0.30)	2" (0.06)	2" (0.06)	2" (0.06)	0

⚠ CAUTION
Risk of getting caught.

Make sure within the range of Y, otherwise it can be dangerous since there may be no detection area around the threshold.
Install the sensor as low as possible to the bottom of the header.

2

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
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 damage to the sensor.
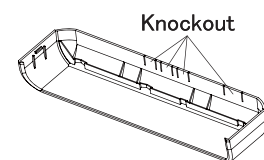
3
1. Plug the connector.
2. Supply power to the sensor. Adjust the detection area and set the dipswitches.
(See **Adjustments 4. Dipswitch settings**)

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
Installing the cover.
If wiring is to be exposed, remove the knockout.
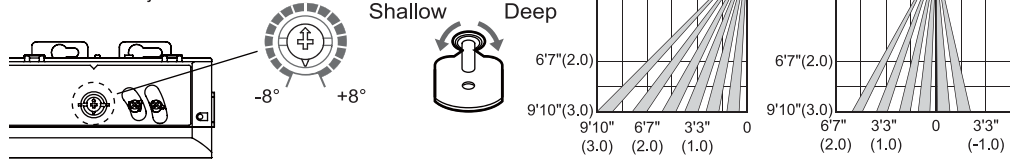
Knockout

⚠ 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 damage to the sensor may occur.

Adjustments

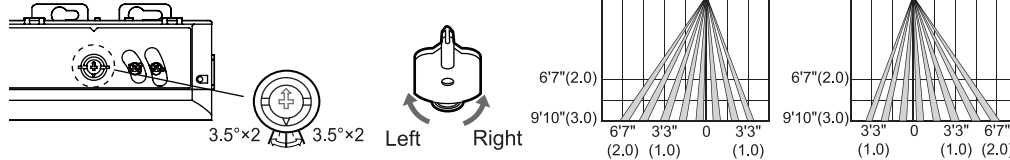## 1 Area angle adjustment(1st to 6th rows)

1-1.Depth angle adjustment

When adjusting the 2nd row close to the door,
see dipswitch 16 in **Table 1** for
the easier adjustment.

Shallow   Deep

-8° +8°

Deep Shallow

[feet,inch (m)]

6'7"(2.0)

9'10"(3.0)

9'10" 6'7" 3'3" 0   6'7" 3'3" 0 3'3"
(2.0) (2.0) (1.0)   (2.0) (1.0)   (-1.0)

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.Width angle adjustment

Width angle of the detection area
can be adjusted 7° either left or right in 2 steps.

3.5°×2   3.5°×2

Left   Right

Left Right

[feet,inch (m)]

6'7"(2.0)

9'10"(3.0)

6'7" 3'3" 0 3'3"   6'7" 3'3" 0 3'3" 6'7"
(2.0) (1.0) (1.0)   (2.0) (1.0) (1.0) (2.0)

2 Width pattern adjustment(1st to 6th rows)

Width pattern adjustment screw should be
used to set the width pattern.
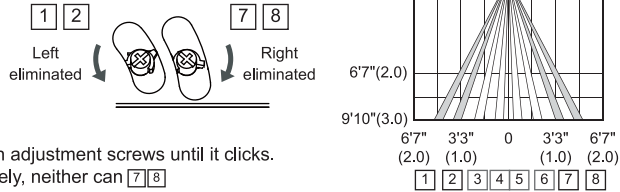
[1][2] Left eliminated   [7][8] Right eliminated

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

Front view
[feet,inch (m)]

6'7"(2.0)

9'10"(3.0)

6'7" 3'3" 0 3'3" 6'7"
(2.0) (1.0) (1.0) (2.0)

[1][2][3][4][5][6][7][8]

3 Area angle adjustment(FLEX EYE)

Make sure to adjust the FLEX EYE angle depending on the door type and the intended touchless plate position otherwise the sensor may not detect when a hand is approached.

3-1.Depth angle adjustment
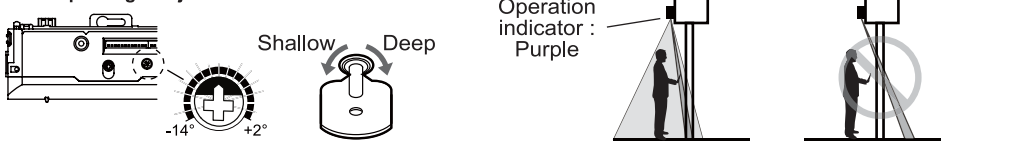
Shallow Deep

-14° +2°

Operation indicator : Purple

NOTE After adjusting the angle, make sure that the FLEX EYE is placed on the proper position for your use. Attach the touchless plate on the appropriate position after adjusting the FLEX EYE.

⚠ CAUTION | Risk of getting caught. | Make sure to attach the touchless plate where a hand is not caught by the door during door opening and closing.

3-2.Width angle adjustment

6°×7   6°×7

Left   Right

Double slide door
[feet,inch (m)]
3'7"(1.1)

Single slide door
[feet,inch (m)]
3" (0.08)   3" (0.08)
3'7"(1.1)

4 Dipswitch settings

Table 1

	Function	Setting				Comment
Dipswitch 1	Sensitivity	Low ↓ 1	High ↑ 1			Set dipswitch 1 to "Low" when the sensor installed under 8'2" height. This height is reference only. Adjust sensitivity according to your risk assessment.
Dipswitch 2 Dipswitch 3	Presence timer	30sec. ↓↓ 2 3	60sec. ↑↓ 2 3	180sec. ↓↑ 2 3	600sec. ↑↑ 2 3	1st - 3rd rows have the presence detection function. The presence timer can be selected from 4 settings. To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.
Dipswitch 4 Dipswitch 5	Frequency	Setting 1 ↓↓ 4 5	Setting 2 ↑↓ 4 5	Setting 3 ↓↑ 4 5	Setting 4 ↑↑ 4 5	Make sure to select different frequency setting for interior and exterior sensors.When using more than one sensor close to each other, set the frequency different for each sensor.
Dipswitch 6 Dipswitch 7	Depth row adjustment	6rows ↓↓ 6 7	5rows ↑↓ 6 7	4rows ↓↑ 6 7	3rows ↑↑ 6 7	The number of depth rows can be selected from 4 patterns.
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			Select "N.O." / "N.C." for Activation output to door controller.
Dipswitch 10	Safety output	N.O. ↓ 10	N.C. ↑ 10			Select "N.O." / "N.C." for Safety output to door controller.
Dipswitch 11	Test input	High ↓ 11	Low ↑ 11			Select "High" / "Low" for Test input from door controller. The delay time between Test input and Safety output is 10msec..
Dipswitch 12	Presence area	1st to 3rd rows ↓ 12	All rows ↑ 12			When dipswitch 12 is set to "All rows", 1st - 6th rows have presence detection function.
Dipswitch 13	FLEX EYE sensitivity	Low ↓ 13	High ↑ 13			Adjust sensitivity for FLEX EYE.
Dipswitch 14	FLEX EYE mode	ON ↓ 14	OFF ↑ 14			Select the FLEX EYE mode "ON" or "OFF". ON : Activation output is emitted when a detection occurs in FLEX EYE and the 2nd to 4th row. OFF : Activation output is emitted when a detection occurs in the 2nd to 6th row.
Dipswitch 15	BLUEZONE	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 into 4th to 6th row	Entry into 3rd row	Entry into 2nd row	Entry into FLEX EYE and 2nd to 4th row
Image						
Status	-	Stand-by	Motion detection active	Motion / Presence detection active	Motion / Presence detection active	Motion / Presence detection active
Operation indicator	None	Green	Orange	Red	Red Blinking	Purple
Activation output (*1) 9 ↓ N.O.						
9 ↑ N.C.						
Safety output 10 ↓ N.O.						
10 ↑ N.C.						

Entry	Entry into BLUEZONE	Outside of detection area	Entry into FLEX EYE only
Image			
Status	Motion / Presence detection active	Stand-by	Motion detection active
Operation indicator	Blue	Green	Fast Purple Blinking
Activation output (*1) 9 ↓ N.O.			
9 ↑ N.C.			
Safety output 10 ↓ N.O.			
10 ↑ N.C.			

NOTE
- Do not enter the detection area during set-up(indicator : Yellow blinking).
- The response time may differ according to the color of the objects and the color/material of the floor.

*1 : Activation output shows the status of when FLEX EYE mode is enabled. (Dipswitch 14 is set to "ON".)

Inform building owner / operator of the following items

⚠ WARNING
1. Do not wash the sensor with water.
2. Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.

⚠ CAUTION
1. Do not paint the detection window.

NOTE
1. Always keep the detection window clean. If dirty, wipe the window with a damp cloth.(Do not use any cleaner / solvent.)
2. When the operation indicator blinks Green, contact your installer or service engineer.
3. Always contact your installer or service engineer when changing the settings.
4. When turning the power ON, always walk-test the detection area to ensure the proper operation.
5. 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 and FLEX EYE.	None	Wrong power supply voltage.	Set to the stated voltage.
		Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Wrong detection area(2nd to 4th row) and FLEX EYE positioning.	Check the detection area and FLEX EYE (**Adjustment 1,2,3**) and depth row adjustment (dipswitch 6,7).
		Sensitivity of detection area(2nd to 4th row) is too low.	Set the detection area sensitivity higher (dipswitch 1).
		Sensitivity of FLEX EYE is too low.	Set the FLEX EYE sensitivity higher (dipswitch 13).
		Short presence timer.	Set the presence timer longer (dipswitch 2,3).
		Dirty detection window.	Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
	Proper	Wrong wiring or connection failure.	Check the wires and connector.
Door opens when a person enters only the detection area.	Proper	FLEX EYE function is not working. (Dipswitch 14 is set to "OFF".)	Set dipswitch 14 to "ON".
	Yellow	Installation mode is set to "ON".	Set dipswitch 16 to "OFF".
Door opens when no one is in the detection area. (Ghosting)	Unstable	Objects that move or emit light in the detection area and FLEX EYE.	Remove the objects.
		The detection area and FLEX EYE overlaps with those of another sensor.	Check the frequency setting (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).
		Sensitivity of detection area is too high.	Set the detection area sensitivity lower (dipswitch 1).
		Sensitivity of FLEX EYE is too high.	Set the FLEX EYE sensitivity lower (dipswitch 13).
		Others	Set dipswitch 8 to "ON".
Door remains open	Proper	Wrong setting of dipswitches.	Check the Activation output(dipswitch 9) or Safety output(dipswitch 10) or Test input(dipswitch 11).
		Sudden change in the detection area.	Check sensitivity or presence timer (dipswitch 1,2,3). 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.
	Fast Green Blinking	Sensitivity of detection area is too low.	Set the detection area sensitivity higher (dipswitch 1).
		Sensitivity of FLEX EYE is too low.	Set the FLEX EYE sensitivity higher (dipswitch 13).
		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.(detection area)	Remove highly reflecting objects from the detection area. Or lower the detection area sensitivity(dipswitch 1). Or change the detection area depth angle.
		The detection area overlaps with the door/header.	Adjust the detection area to "Deep" (Outside).
	Slow Purple Blinking	Signal saturation. (FLEX EYE)	Remove highly reflecting objects from the FLEX EYE. Or lower the FLEX EYE sensitivity (dipswitch 13). Or change the area depth angle for FLEX EYE.
		FLEX EYE overlaps with the header.	Adjust FLEX EYE to "Deep" (Outside).

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.

| ⚠Warning | Indicates that the disregard of the warning may result in serious injury or death. |
| ⚠Caution | Indicates that the disregard of the caution may result in injury or physical damages. |

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.
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 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

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	BEAM1 / BEAM2 Stand-by : GREEN ON / RED ON Detection Active : GREEN OFF / RED OFF 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

<Amplifier Part>

①Mounting Hole
②Terminal Base (No.6 to 13) SensorHead side
③Wire Connection Button
④SensitivityTeach In Button
⑤Operation Indicator (LED)
⑥Terminal Base (No.1 to 5) Power Supply & Signal side

mm (inch)
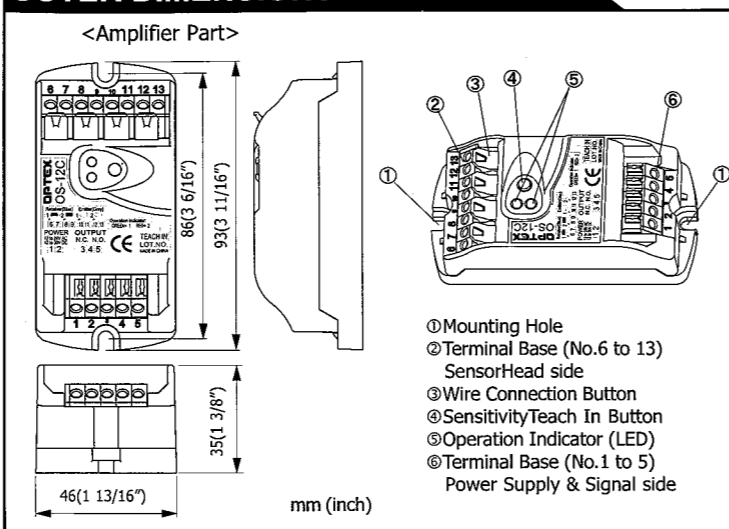
SEPARATELY SOLD OPTIONAL ITEMS

<SensorHead unit>

One push plate
Head holder
Main body

SH-7MC : 7m (22' 11 1/16")
SH-10MC: 10m (32' 9 1/16")
SensorHead

One push installation type
Mounting hole : ø12mm (1/2")
(1/16")2 13 (1/2")
ø15 (5/8")

Plate installation type
Mounting hole : ø12 to 13 mm (1/2")
(1/16")2 13 (1/2")
M10P 0.75

<Mounting Plate>
Silver or Bronze

<One push outer plate>
Mirror surface
or
Chrome

40(1 9/16")   50(2")   24(15/16")

mm (inch)
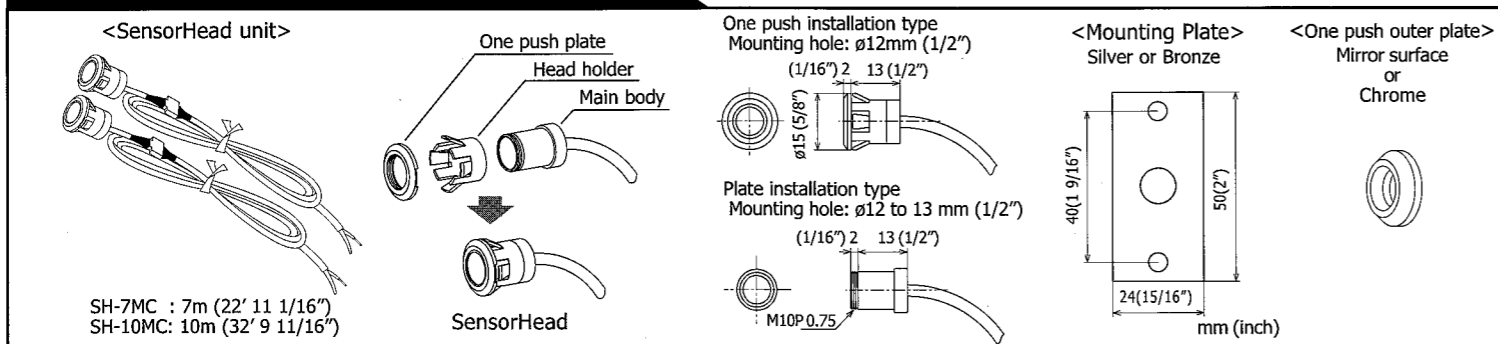
INSTALLATION

1 Mounting the SensorHeads (Option)

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

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

Screw hole: ø3.5mm (1/8")

Remove one push plate and head holder from sensor head. Affix the main body to the plate. Screw the plate to the door jamb.

40 (1 9/16")
Mounting hole: ø12 to 13 mm (1/2")

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

◆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.

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

Less than 10 m (32'10")

INSTALLATION (CONTINUED)

3 Wiring SensorHeads

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

16mm (5/8")
Shield
Conductor
(Twist hard)
9mm (3/8")

BEAM2 Emitting wire grey
BEAM1 Emitting wire grey
BEAM2 Receiving wire blue
BEAM1 Receiving wire blue

◆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.

(N.O.)
(N.C.) OUTPUT 50V 0.3A
Power Supply 12 to 24 V AC/DC

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)ø0.4-ø1.2mm (AWG26-18)
·Stranded(Flexible)0.3mm²-0.75mm² (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 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.
② 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)		🚶	🚶	🚶
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	OPEN
Output N.C.	OPEN	CLOSE	OPEN	CLOSE

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.
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.)
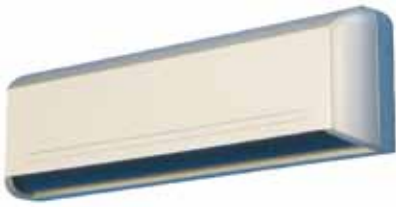7. Do not paint the Lens surface.

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

OPTEX PROSAFE — English

OA-Presence

CE

MANUFACTURER'S STATEMENT

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.
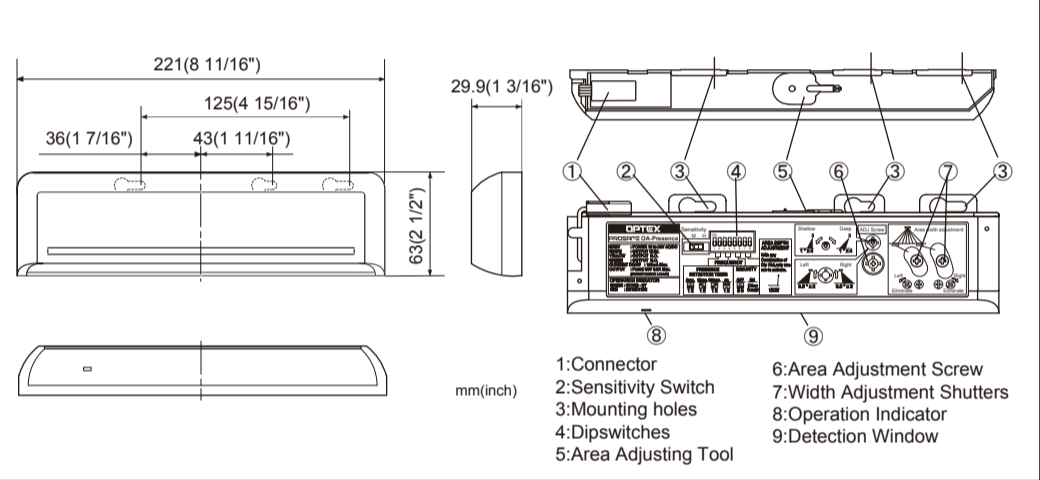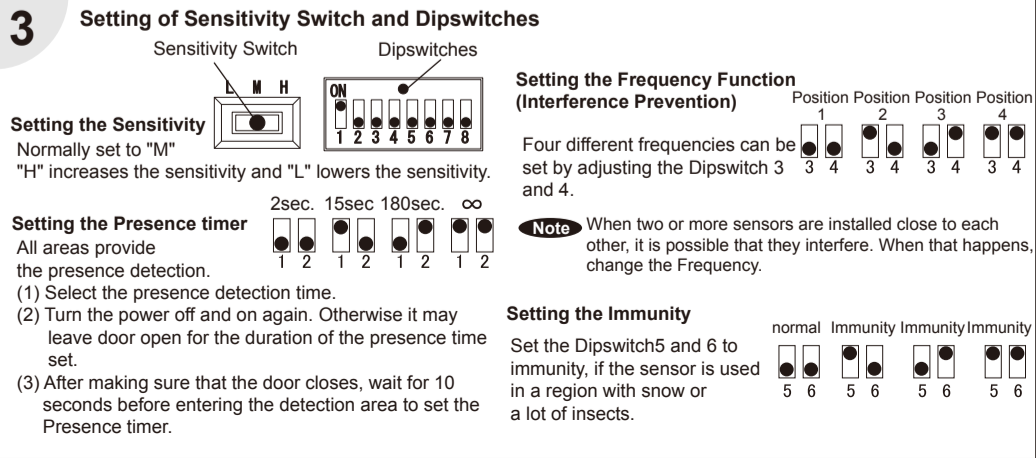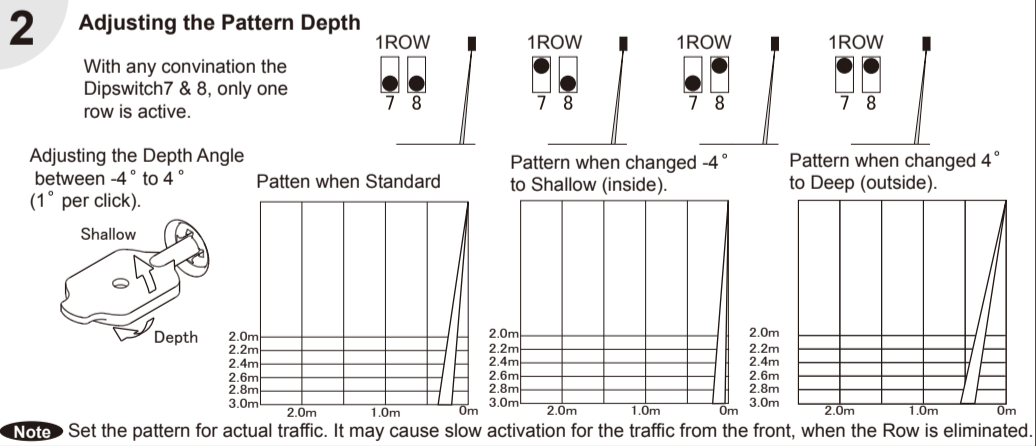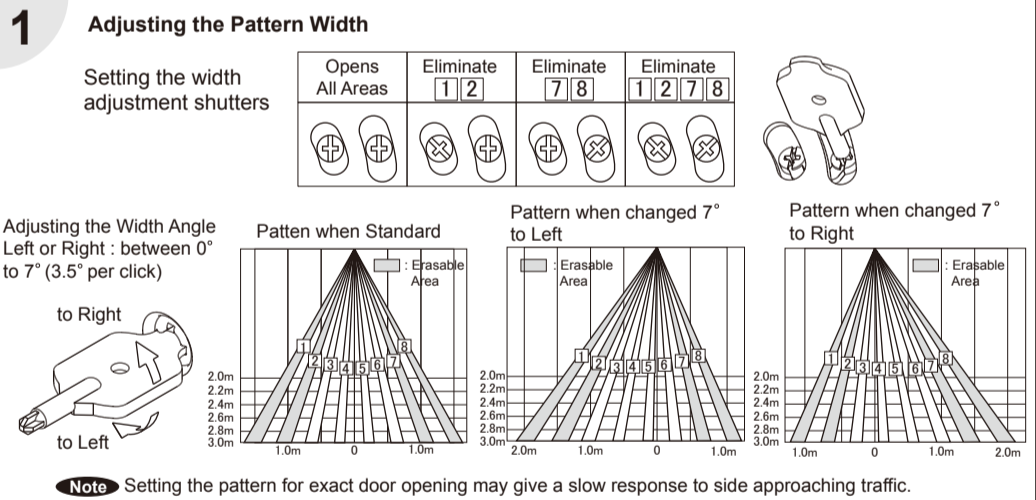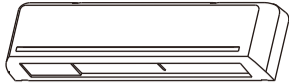Do not use it for any other applications; otherwise proper operation and safety cannot be guaranteed.
Cautions:
1. Follow the instructions (especially **Note**) in this Operation Manual when installing and adjusting the sensor.
2. When setting the sensor's area pattern, make sure there is no traffic 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 senor 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-Presence	Output	: "Form C" relay 50V 0.3A Max. (Resistance Load)
Cover color type	: Silver / Black /White		
Mounting Height	: 3.0m (9'10") Max.	Relay Hold Time	: 0.5 sec.
Detection Area	: See "Detection Area"	Response Time	: <0.3 sec.
Detection Method	: Active Infrared Reflection Method	Operating Temperature	: -20℃ to +55℃ (-4°F to +131°F)
Depth Angle Adjustments	: ±4°adjustable by 1°every one click (Deep / Shallow)	Weight	: 200g (7.1oz)
		Accessories	: 1 Cable 3m (9'10")
Detection Width Adjustments	: ±7°adjustable by 3.5° every one click (Right / Left)		2 Mounting Screws
			1 Operation Manual
Power supply	12 to 30V AC / DC		1 Mounting Template
Current Draw	: 160mA Max. (at 12V AC)		1 Area Adjustment Tool
Operation indicator	: Green / Stand-by Red / 1st Row Detection Active		

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

OUTER DIMENSIONS

221(8 11/16")
125(4 15/16")
36(1 7/16")
43(1 11/16")
29.9(1 3/16")
63(2 1/2")
mm(inch)

1:Connector
2:Sensitivity Switch
3:Mounting holes
4:Dipswitches
5:Area Adjusting Tool
6:Area Adjustment Screw
7:Width Adjustment Shutters
8:Operation Indicator
9:Detection Window

INSTALLATION

1

1. Affix the Mounting Template to the mounting surface.
2. Drill two mounting holes. (φ3.4mm or 1/8")
3. To carry through the wire to the header, drill a wiring hole (φ8mm 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".

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.

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.

Knockout

Note Do not use the sensor without the cover. Install the sensor indoors or use the rain-cover(Optional), when using Cable Knockout, otherwise it may cause electric shock or breakdown of sensor.

DETECTION AREA

Detection Areas are shown in the figure below.

■ : Emitting spots
⌐⌐ : Detection area

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

*The values of the chart below 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	0.14	0.16	0.18	0.19	0.21
C	0.16	0.18	0.20	0.22	0.25
D	2.10	2.30	2.60	2.80	3.10

Provided Detection Row type	
Presence Detection	○
Motion Detection	○

[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' 3/16"	1' 1 3/4"	1' 2 15/16"	1' 4 9/16"
C	6 5/16"	7 1/16"	7 7/8"	8 11/16"	9 13/16"
D	6' 10 11/16"	7' 6 9/16"	8' 6 3/8"	9' 2 1/4"	10' 2 1/16"

ADJUSTMENT

1 Adjusting the Pattern Width

Setting the width adjustment shutters

Opens All Areas	Eliminate 1 2	Eliminate 7 8	Eliminate 1 2 7 8

Adjusting the Width Angle Left or Right : between 0° to 7° (3.5° per click)

to Right
to Left

Patten when Standard
Pattern when changed 7° to Left
Pattern when changed 7° to Right

: Erasable Area

2.0m 2.2m 2.4m 2.6m 2.8m 3.0m
1.0m 2.0m 1.0m 2.0m 1.0m

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

2 Adjusting the Pattern Depth

With any convination the Dipswitch7 & 8, only one row is active.

1ROW 7 8	1ROW 7 8	1ROW 7 8	1ROW 7 8

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

Shallow
Depth

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

2.0m 2.2m 2.4m 2.6m 2.8m 3.0m
2.0m 0m 2.0m 0m 2.0m 0m

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

Sensitivity Switch   Dipswitches

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

Setting the Presence timer
All areas provide the presence detection.
(1) Select the presence detection time.

2sec.	15sec.	180sec.	∞
1 2	1 2	1 2	1 2

(2) Turn the power on and off 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.

Position 1	Position 2	Position 3	Position 4
3 4	3 4	3 4	3 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 Immunity
Set the Dipswitch5 and 6 to immunity, if the sensor is used in a region with snow or a lot of insects.

normal	Immunity	Immunity	Immunity
5 6	5 6	5 6	5 6

CHECKING

Check the operation according to the chart below

Entry motion (image)	Power OFF	Outside the Detection area	Entry into the Detection area	Outside the Detection area
Sensor status	Power OFF	Stand-by	Motion or Presence Detection Active	Stand-by
Operation Indicator	OFF	Green	Red	Green
Output	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 pain the Detection Window.

TROUBLESHOOTING

Trouble	Possible Cause	Solution
Does not operate	Power supply is not adequate.	Adjust to stated voltage.
	Connection Failure.	Check the wiring and the connector.
Does not operate consistently	Dirty detection window.	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)
	Sensitivity is Low.	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 the 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 Emitting spots are overlapping with the door / header.	Adjust the detection area to deep (outside).
	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 stays 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.

OPTEX PROSAFE

OA-PRESENCE T

ENGLISH ORIGINAL

CE

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

1. 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.
2. When setting the sensor's detection area, 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 equipments that are connected to the sensor.
4. Only use the sensor as specified in the operation manual provided.
5. Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
6. 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.
7. 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%)	Operating temperature	: -20 to +55°C (-4 to 131°F)
	12 to 30VDC (±10%)	Operating humidity	: <80%
Power consumption	: < 2W (< 3VA at AC)	IP rate	: IP54
Operation LED	: See chart below	Category	: 2 (EN ISO13849-1 : 2008)
Safety / Test output	: Opto coupler (NPN)	Performance level	: d (EN ISO13849-1 : 2008)
	Voltage / 5 to 50VDC	Weight	: 260g (9.2oz)
	Current / 100mA Max.	Accessories	: 1 Operation manual
	Dark current / 600nA Max.		2 Mounting screws
	(Resistance load)		1 Mounting template
			1 Cable 3m(9'10")
			(6 × 0.14mm² AWG26 / Overcurrent protection with less than 2A)

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

245(9 5/8")
125(4 15/16")
36(1 7/16")
43(1 11/16")
9(3/8")
38(1 1/2")
64(2 1/2")

[mm(inch)]

(1) Connector
(2) Mounting holes
(3) Setting cover
(4) Setting cover screw
(5) Operation LED
(6) Detection window
(7) Dipswitches
(8) Depth angle adjustment screw
(9) Depth angle indicator
(10) Function key

When setting cover is open.

ON
1 2 3 4 5 6 7 8 9 10

(7) (8) (9) (10)

(1) (2) (2) (2)

(3) (4) (5) (6)

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

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.)
2. Drill two mounting holes of ø3.4mm (ø1/8").
3. To pass the cable through the header, drill a wiring hole of ø8mm (ø5/16").
4. Remove the mounting template.

Header
Sensor
Y
X
H
Door
Floor

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

5. Unhook Ⓐ to remove the housing cover as shown below.
6. 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

1. Red — Power supply 12 to 24VAC ±10% 12 to 30VDC ±10%
2. Green
3. Blue — Safety / Test output Opto coupler (NPN) Voltage: 5 to 50VDC
4. White
5. Brown — Test input Opto coupler Voltage: 5 to 30VDC
6. Orange

⚠ 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

1. Plug the connector of the sensor.
2. Open the setting cover.
3. Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **ADJUSTMENTS**)
4. 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.

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.
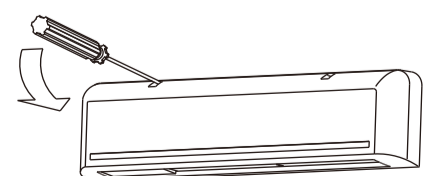
ADJUSTMENTS

1 Detection area according to the test conditions required by EN 16005.
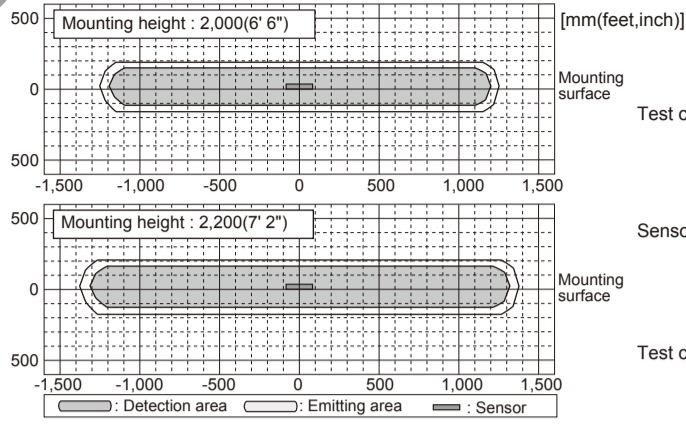
[mm(feet,inch)]

Mounting height : 2,000(6' 6")

Mounting surface

Mounting height : 2,200(7' 2")

Mounting surface

: Detection area   : Emitting area   : Sensor

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

[m] Deep [m] Shallow [m]
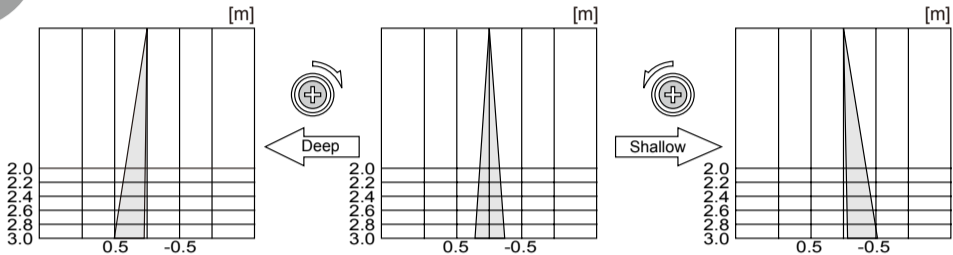
The detection area can be adjusted up to 5° away from the door (Deep) or 5° towards the door (Shallow).
Adjust the required detection area by turning the depth adjustment screw wth a screw driver. Check the detection area position with Red LED of the Operation LED using a tool such as a reflecting mirror.
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)

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

Detection Area

Detection Area

INFRARED FINDER

3. 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.
1.Change the function key from "Operation Mode" to "Setting Mode".
2.Change the dipswitches setting.
3.Change the function key back to"Operation Mode".

Dipswitches
Function key
Setting Mode

ON
1 2 3 4 5 6 7 8 9 10
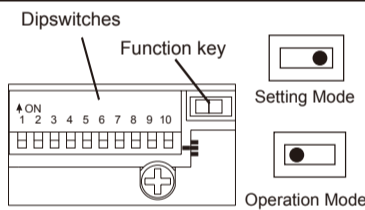
Operation Mode

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.
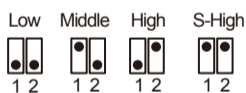
Low Middle High S-High
1 2 1 2 1 2 1 2

		Mounting height [mm (feet,inch)]				
		2,000 (6' 6")	2,200 (7' 2")	2,500 (8' 2")	3,000 (9' 10")	For example
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 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.

30sec. 60sec. 180sec. ∞
3 4 3 4 3 4 3 4

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.
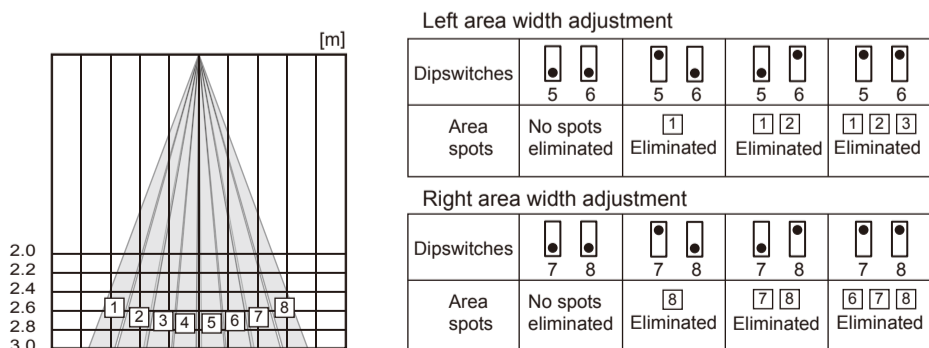
[m]

Left area width adjustment

Dipswitches	5 6	5 6	5 6	5 6
Area spots	No spots eliminated	1 Eliminated	1 2 Eliminated	1 2 3 Eliminated

Right area width adjustment

Dipswitches	7 8	7 8	7 8	7 8
Area spots	No spots eliminated	8 Eliminated	7 8 Eliminated	6 7 8 Eliminated

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.

Setting1 Setting2
9 9
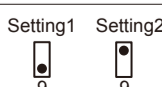
3-5.Setting the test input

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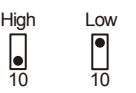
High Low
10 10

< Test input and Safety / Test output timing chart >

High Detection Test input

Test input (from door controller) Low

t1(>t2)

Safety / Test output (to door controller)

t2 t2

* t2 =Test input delay time (10msec.)
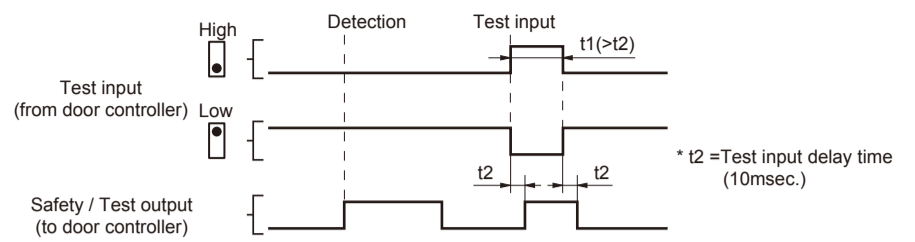
*The test input delay time is the time period between the test input and safety / test output.

CHECKING

Check the operation according to the chart below.

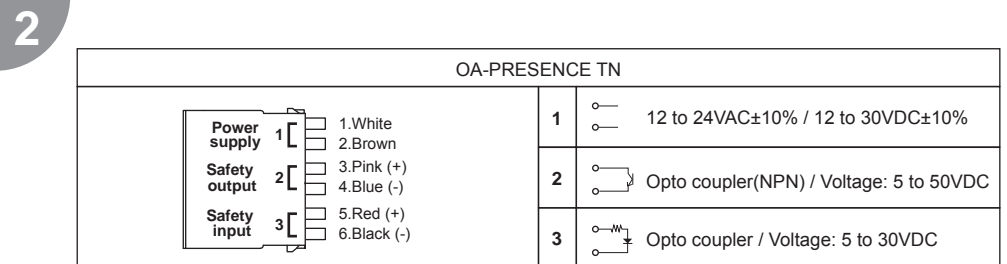| Entry	Power OFF	Outside of detection area	Entry into detection area	Outside of detection area
Status	-	Stand-by	Motion/Presence detection active	Stand-by
Operation LED	None	Green	Red	Green
Output	OFF	ON	OFF	ON

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
1. Always keep the detection window clean. If dirty, wipe the window lightly with a damp cloth.
        (Do not use any cleaner or 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 an operation LED 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. When turning the power ON, always walk-test the 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	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.
		Wrong wiring or connection failure.	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(*).
		Dirty detection window.	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)
Door opens when no one is in the detection area. (Ghosting)	Unstable	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**(*).
		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.)
		Sensitivity is too low.	Set the sensitivity higher(*).
	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).
	Red & Green blinking	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".

OPTEX

ENGLISH

OA-PRESENCE TN

CE

TÜV NORD
TÜV NORD CERT GmbH
Type Tested

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.
📖	It is required to check the operation manual if this symbol is shown on the product.

NOTE

1. 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.
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 product.
4. Only use the product 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 product is installed.
6. 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.
7. 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-PRESENCE TN	Operating temperature	: -20 to +55°C (-4 to 131°F)
Cover color	: Silver / Black	Operating humidity	: <80%
Mounting height	: 2.0 (6'7") to 3.5m (11'6")	Noise level	: <70dBA
Detection area	: See **DETECTION AREA**	Output hold time	: <0.5 sec.
Detection method	: Active infrared reflection	Response time	: <0.3 sec.
Depth angle adjustment	: -6 to +6°	IP rate	: IP54
Power supply (*1)	: 12 to 24VAC ±10% (50 / 60 Hz) 12 to 30VDC ±10%	Category	: 2 (EN ISO13849-1 : 2008)
		Performance level	: d (EN ISO13849-1 : 2008)
Power consumption	: < 1W (< 2 VA at AC)	ESPE	: Type 2
Operation indicator	: See **Operation indicator table**	Weight	: 250g (8.8oz)
Safety input	: Opto coupler Voltage 5 to 30VDC Current 6mA Max. (30VDC)	Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Cable 3m (9'10") (8×0.22mm² AWG24) (*2)
Safety output	: Opto coupler (NPN) Voltage 5 to 50VDC Current 100mA Max. Dark current 600nA Max. (Resistance load)		

Operation indicator table

Status	Operation indicator color	1sec.	1sec.
Stand-by (Installation mode)	Yellow		
Stand-by (Operation mode)	Green		
1st row detection	Red Blinking		
2nd row detection	Red		
Setting error	Red & Green Blinking		
Signal saturation	Slow Green Blinking		
Sensor failure	Fast Green Blinking		

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

*1 : The sensor has to be connected to a door system which has a SELV circuit.
*2 : Overcurrent protection with less than 2A.

OUTER DIMENSIONS AND PART NAMES

267(10 1/2")
125(4 15/16")
36(1 7/16") 43(1 11/16")
7.5(5/16")
38(1 1/2")
61(2 3/8")
[mm (inch)]

(1) Connector
(2) Mounting holes
(3) Operation indicator
(4) Width adjustment screws
(5) Depth angle adjustment screw
(6) Function switch
(7) Dipswitches
(8) Detection window
(9) Area adjustment tool

DETECTION AREA

1st row
2nd row
[m(feet,inch)]
A
B C
Mounting surface
X
D
E'
F
G
1.0(3'3")
2.0 (6'7")　1.0 (3'3")　0　1.0 (3'3")　2.0 (6'7")

Mounting height : 2.2m(7'3")
Angle adjustment : +6°
Sensitivity : Middle

□ : Emitting spots
■ : Emitting spots (can be eliminated)
⌐¬ : Detection area

Emitting area
The chart shows the values at depth angle +6°　　[m(feet,inch)]

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

Detection area
To comply with EN 16005, make sure that the detection area is within the values of the chart below.

A	2.00 (6'7")	2.20 (7'3")	3.00 (9'10")
X	0.23 (9")	0.25 (10")	0.34 (1'1")
E	1.02 (3'4")	1.12 (3'8")	1.53 (5')
G*	2.41 (7'11")	2.65 (8'8")	3.60 (11'10")

Test conditions required by EN 16005
Floor :Grey paper
Detection object : EN 16005 CA reference body
Sensitivity : Middle
Speed of detection object : 50mm / sec.

The values above are those of the **Detection area** when tested referring to the test conditions of EN 16005. (The emitting area is as shown in **Emitting area** above.)
*: When installed at higher than 3.0m(9'10"), EN 16005 requirements are fulfilled only within the area width "G" of 3.6m(11'10").

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

1

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.)
2. Drill two mounting holes of ø3.4mm (ø1/8").
3. To pass the cable through the header, drill a wiring hole of ø8mm (ø5/16").
4. Remove the mounting template.
5. Remove the housing cover. Fix the sensor to the mounting surface with the two mounting screws.

Header
Sensor
Y
X
Door
Floor
H

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)　　[m (feet,inch)]

X ＼ H	2.00 (6' 7")	2.30 (7' 7")	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")	-	-	-	-	-	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

OA-PRESENCE TN

Power supply　1.White　2.Brown
Safety output　3.Pink (+)　4.Blue (-)
Safety input　5.Red (+)　6.Black (-)

1	12 to 24VAC±10% / 12 to 30VDC±10%
2	Opto coupler(NPN) / Voltage: 5 to 50VDC
3	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

1. Plug the connector.
2. 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.
After changing the dipswitch settings, make sure to push the function switch for 2 seconds.

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	

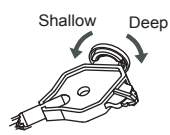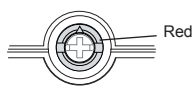## 1 Area depth angle adjustment

Depth angle
adjustment screw

Area adjustment tool

A

B

When adjusting the 1st row close to the door,
see **Table 2** 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.
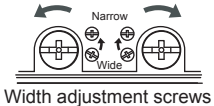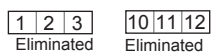
Depth angle adjustment screw
for the area

Shallow   Deep

Red

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

[m(feet,inch)]

Deep Shallow

2.0(6'7")

3.0(9'10")
3.5(11'6")

1.0   0   1.0   0   -1.0
(3'3")   (3'3")   (-3'3")
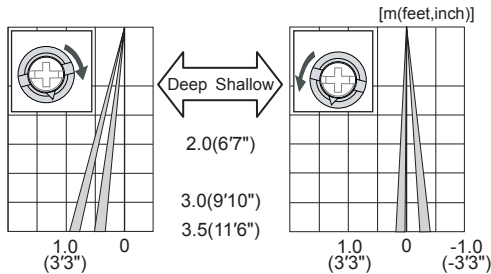
2 Area width adjustment

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

1 2 3   10 11 12
Eliminated   Eliminated

Narrow
Wide

Width adjustment screws

Please adjust
by using the tool **(B)**

Front view   [m(feet,inch)]

0

1 ~ 12 :Wide
4 ~ 9 :Narrow

2.0
(6'7")

1 2 3 4 5 6 7 8 9 10 11 12

3.0
(9'10")
3.5
(11'6")
2.0   1.0   0   1.0   2.0
(6'7")   (3'3")   (3'3")   (6'7")

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

3 Dipswitch settings

After changing the dipswitch settings, make sure to push the function
switch for 2 seconds.

push 2 seconds

Table 2

	Function	Setting				Comment
Dipswitch 1 / Dipswitch 2	Sensitivity	Low 1 2 2.0 to 3.0m	Middle 1 2 2.0 to 3.0m	High 1 2 2.5 to 3.2m	S-High 1 2 3.0 to 3.5m	Set the sensitivity according to the mounting height. Values below dipswitches are reference only. Adjust the sensitivity according to your risk assessment.
Dipswitch 3 / Dipswitch 4	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 5 / Dipswitch 6	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 7	Safety output (to door controller)	High 7	Low 7			The delay time between Safety input and Safety output is 10msec..
Dipswitch 8	Safety input (from door controller)	High 8	Low 8			
Dipswitch 14	Self monitoring	Enable 14	Disable 14			When the door remains open and the operation indicator shows Fast/Slow Green Blinking, refer to **TROUBLESHOOTING**. If the door still remains open, set dipswitch 14 to "Disable". To comply with EN 16005, set dipswitch 14 to "Enable".
Dipswitch 16	Installation mode	OFF 16	ON 16			Set dipswitch 16 to "ON" to adjust the 1st row. During the installation mode only the 1st row remains active and the operation indicator shows yellow. After setting the row set dipswitch 16 "OFF".

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

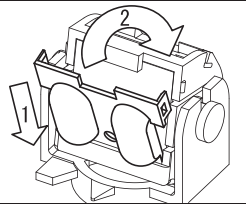| Entry		Power OFF	Outside of detection area	Entry into 2nd row	Entry into 1st row
Status		-	Stand-by	Motion / Presence detection active	
Operation indicator		None	Green	Red	Red Blinking
Safety output 7	High	OFF	ON	OFF	
	Low	OFF	OFF	ON	

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

Detection area

Detection area

INFRARED FINDER

3. 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).

⚠ 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 an 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. 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.)

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.
		Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Wrong detection area positioning.	Check **ADJUSTMENTS 1, 2**.
		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.
	Proper	Wrong wiring or connection failure.	Check the wires and connector.
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 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).
		Sensitivity is too high.	Set the sensitivity lower.(*)
	Proper	Wrong setting of dipswitches.	Check **Table 2** dipswitch 7, 8.(*)
Door remains open	Proper	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.
	Yellow	Installation mode is set to "ON".	Set dipswitch 16 to "OFF".(*)
	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.	Remove highly reflecting objects from the detection area. Or lower the sensitivity.(*) Or change the area depth angle.
		The detection area overlaps with the door/header.	Adjust the detection area to "Deep" (Outside).
	Red & Green Blinking	Setting error.	After changing the dipswitch settings, make sure to push the function switch for 2 seconds.

*After changing the dipswitch settings, make sure to push the function switch for 2 seconds.

OPTEX

OM-105C / 106C

ENGLISH

CE 1731 !

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
1. This sensor is a non-contact switch intended for header mount / ceiling mount of an automatic door. Do not use for any other applications.
2. When setting the sensor's detection area, 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 equipments that are connected to the sensor.
4. Only use the sensor as specified in the operation manual provided.
5. Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
6. 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.
7. 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.

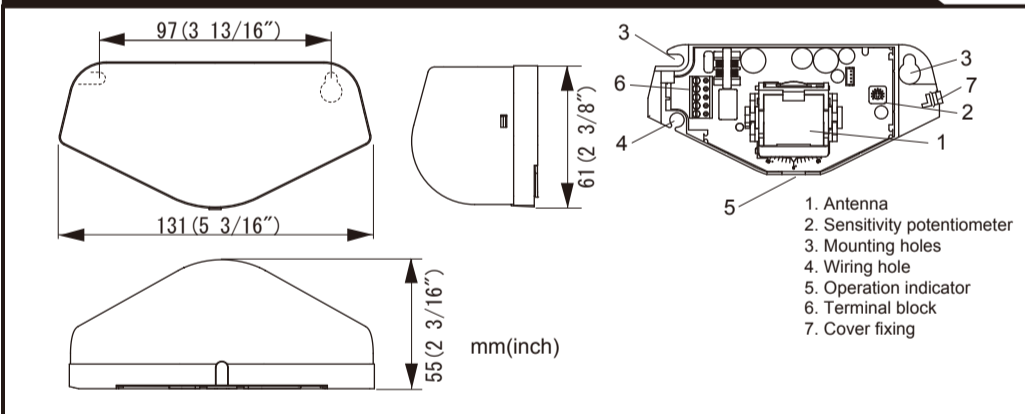| ⚠ WARNING Danger of electric shock.	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of equipments.

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	: OM-105C / 106C	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	: 0.5sec. / 2.0sec.
Detection method	: Microwave doppler effect	Response time	: <0.3 sec.
Power frequency	: 24.125GHz	Operating humidity	: <80%
Power density	: <20dBm	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)	Weight	: 140g (4.9oz)
	+20° to +80° (Ceiling mount)	Accessories	: 1 Cable 3m (9'10")
Horizontal adjustment	: 30° to left or right		1 Operation manual
Power supply	: 12 to 24VAC(±10%)		2 Mounting screws
	12 to 30VDC(±10%)		1 Mounting template
Power consumption	: < 1.5W(<2VA at AC)		1 Narrow lens*
Minimum speed	: 5cm(1 15/16")/sec.		
Operation indicator	: Green / Stand-by		* At the back of housing cover
	Red / Detection		
	Green blinking / Set-up		

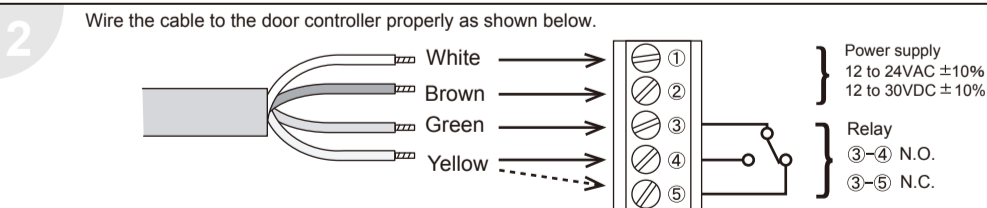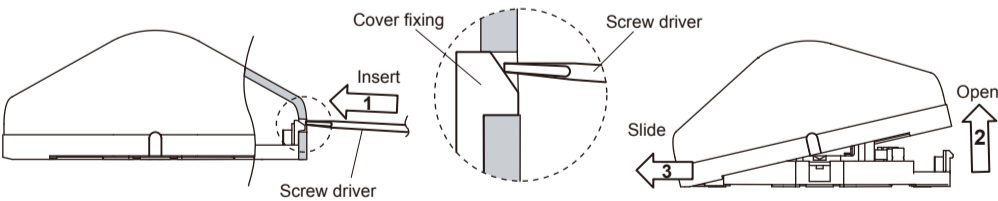**NOTE** The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES

97(3 13/16″)
131(5 3/16″)
61(2 3/8″)
55(2 3/16″)
mm(inch)

1. Antenna
2. Sensitivity potentiometer
3. Mounting holes
4. Dipswitches
5. Wiring hole
6. Narrow lens
7. Operation indicator
8. Terminal block
9. Cover fixing

*Narrow lens is stored at the back of housing cover.

INSTALLATION

1
1. 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.

Cover fixing   Screw driver
Insert 1
Screw driver
Slide 3
Open 2

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

White ① } Power supply 12 to 24VAC ±10% 12 to 30VDC ±10%
Brown ②
Green ③
Yellow ④ } Relay ③-④ N.O.
⑤ ③-⑤ 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.

3
1. 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**)
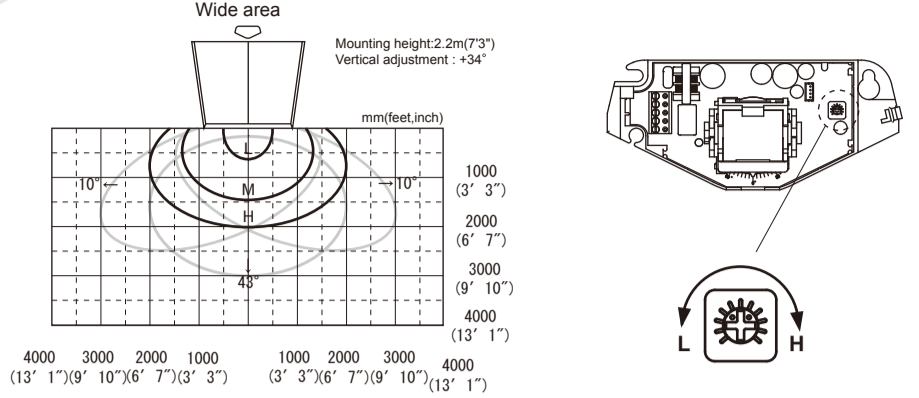
NOTE Make sure to connect the cable correctly to the door controller before turning the power ON. The sensor does not detect objects for 10 seconds after supplying power.

4 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 Danger of electric shock.	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.

ADJUSTMENTS

1 Detection area
Adjust the detection area with Sensitivity potentiometer.

Wide area
Mounting height:2.2m(7'3")
Vertical adjustment : +34°
mm(feet,inch)
10° 10°
48°
1000 (3' 3")
2000 (6' 7")
3000 (9' 10")
4000 (13' 1")
4000 3000 2000 1000 0 1000 2000 3000 4000
(13'1")(9' 10")(6' 7")(3' 3") (3' 3")(6' 7")(9'10")(13'1")

Narrow area
Mounting height:2.2m(7'3")
Vertical adjustment : +34°
mm(feet,inch)
10° 10°
43°
0
1000 (3' 3")
2000 (6' 7")
3000 (9' 10")
4000 (13' 1")
3000 2000 1000 0 1000 2000 3000
(9' 10")(6' 7")(3' 3") (3' 3")(6' 7")(9' 10")

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

2 Detection area angle adjustment

	Adjustment	Scale	Angle
Vertical adjustment	Front View	3° X 20 steps Side View	Header / Ceiling +80° +70° +20° +10° Side View
Horizontal adjustment	Front View	5° X 12 steps -30° 0° +30° Front View	+30° +30° Front View

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

3 Narrow area
To obtain Narrow area, place Narrow lens attached at the back of housing cover.
To place Narrow lens, follow step1&2 as shown on the right.

4 Dipswitches settings
Set Dipswitch1&2 to enable the direction recognition. (OM-106C Only.)

Bi-direction(Bi) — Door
1 2 Detection area

Uni-direction(Uni)
1 2

⇨ : Detection
⇨ : Non-Detection

Bi-direction
1 2
When Dipswitch1 is set to OFF, Bi-direction mode is effective, regardless of Dipswitch2 setting.

Uni-direction with Auto -caution mode*(ACM)
1 2

*Auto-caution mode(A person wavering in the detection area to be detected.)

Dipswitch3:Output hold time
0.5sec. 2.0sec.
3 3

Dipswitch4:Immunity
If there is external interference, set Dipswich 4 to ON.
4

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

⚠ WARNING
1. Always keep the housing cover clean. If dirty, wipe the housing cover lightly with a cloth. (Do not use any cleaner or 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. Always contact your installer or service engineer when changing the settings.
5. Do not paint the housing cover.

NOTE
1. When turning the power ON, always walk-test the 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.)
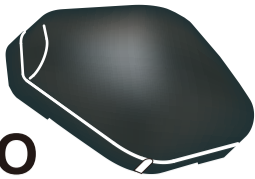
CHECKING

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.	Set the sensitivity higher.
		Wrong detection area positioning.	Check **ADJUSTMENTS**.
	Green blinking	The sensor is being set up.	Wait for the set-up to complete.
Door opens when no one is in the detection area. (Ghosting)	Red	Water drops on the housing cover.	Wipe the housing cover with a cloth.
		The detection area is overlaping with the door.	Adjust the detection area away from the door. Or set Dipswitch4 to ON.
		Sensitivity is too high.	Set the sensitivity lower.
		Raining or snowing.	Set Dipswitch1 to ON.(OM-106C Only) Or Dipswitch4 to ON.
Door remains open	Green	Wrong wiring or connection failure.	Check the wiring and Terminal block.

OPTEX
OM-105C (L)

CE 1731 !

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
1. This sensor is a non-contact switch intended for header mount / ceiling mount of an automatic door.
   Do not use for any other applications.
2. When setting the sensor's detection area, 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 equipments that are connected to the sensor.
4. Only use the sensor as specified in the operation manual provided.
5. Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
6. 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.
7.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.
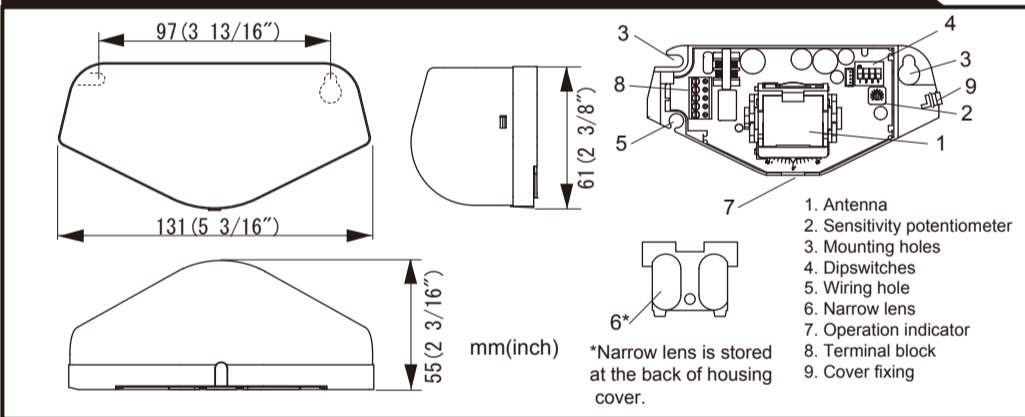-Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity.

SPECIFICATIONS

Model : OM-105C(L)
Cover color : Black
Mounting height : 2.0 (6'7") to 3.0m (9'10")
Detection method : Microwave doppler effect
Power frequency : 24.125GHz
Power density : <20dBm
Detection area : See Detection area
Vertical adjustment : +10° to +70° (Header mount)
  +20° to +80° (Ceiling mount)
Horizontal adjustment : 30° to left or right
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

Output : Form C relay
  50V 0.3A Max.(Resistance load)
Output hold time : 0.5sec.
Response time : <0.3 sec.
Operating humidity : <80%
Operating temperature : -20℃ to +55℃(-4°F to 131°F)
IP rate : IP54
Weight : 140g (4.9oz)
Accessories : 1 Cable 3m (9'10")
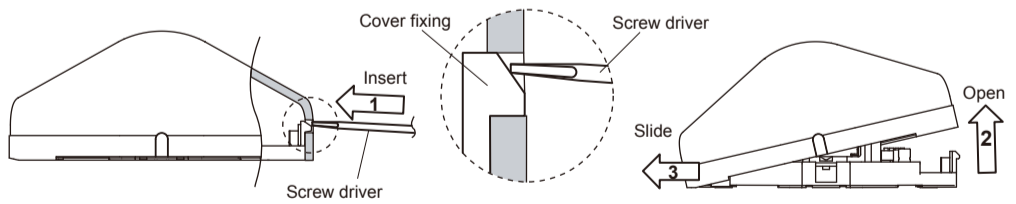 1 Operation manual
  2 Mounting screws
  1 Mounting template

● NOTE The specifications herein are subject to change without prior notice due to improvements.
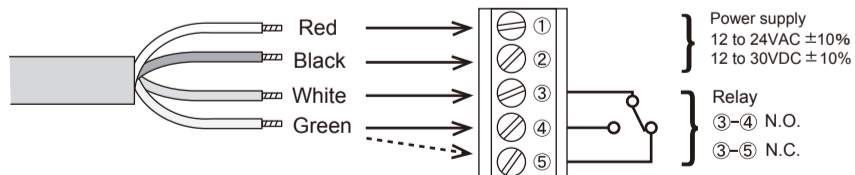
OUTER DIMENSIONS AND PART NAMES

97(3 13/16")
131(5 3/16")
61(2 3/8")
55(2 3/16")
mm(inch)

1. Antenna
2. Sensitivity potentiometer
3. Mounting holes
4. Wiring hole
5. Operation indicator
6. Terminal block
7. Cover fixing

INSTALLATION

1
1. 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.

Cover fixing   Screw driver
Insert
1
Screw driver
Slide
3
Open
2

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

White — ① } Power supply
Brown — ② } 12 to 24VAC ±10%
Green — ③ } 12 to 30VDC ±10%
Yellow — ④ } Relay
⑤ ③-④ N.O.
③-⑤ N.C.

| ⚠ 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. | |

3
1.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.
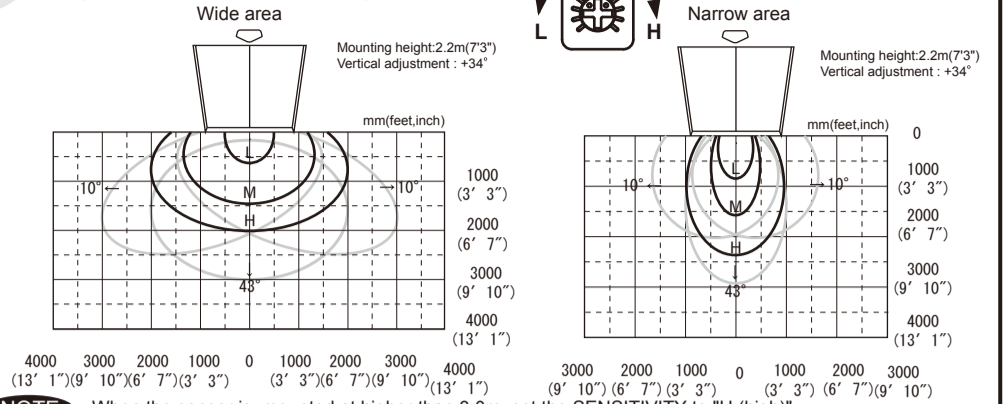 The sensor does not detect objects for 10 seconds after supplying power.

4 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

1 ### Detection area
Adjust the detection area with Sensitivity potentiometer.
Wide area
Mounting height:2.2m(7'3")
Vertical adjustment : +34°
mm(feet.inch)
1000 (3' 3")
2000 (6' 7")
3000 (9' 10")
4000 (13' 1")
-10°   -10°
M
H
43°
4000 3000 2000 1000   1000 2000 3000 4000
(13' 1")(9' 10")(6' 7")(3' 3")   (3' 3")(6' 7")(9' 10")(13' 1")

L   H

2 ### Detection area angle adjustment

	Adjustment	Scale	Angle
Vertical adjustment	Front View	3° X 20 steps Side View	Header Ceiling +80° +70° +20° +10° Side View
Horizontal adjustment	Front View	5° X 12 steps 0° Front View	+30° +30° Front View

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

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

⚠ WARNING
1. Always keep the housing cover clean. If dirty, wipe the housing cover lightly with a cloth.
   (Do not use any cleaner or 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. Always contact your installer or service engineer when changing the settings.
5. Do not paint the housing cover.

● NOTE
1. When turning the power ON, always walk-test the 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.)

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.	
	Green blinking	The sensor is being set up.	Wait for the set-up to complete.
Door opens when no one is in the detection area. (Ghosting)	Red	Water drops on the housing cover.	Wipe the housing cover with a cloth.
		The detection area is overlapping with the door.	Adjust the detection area away from the door.
		Sensitivity is too high.	Set the sensitivity lower.
Door remains open	Green	Wrong wiring or connection failure.	Check the wiring and Terminal block.

OPTEX

REACTION ONE / REACTION TWO

5916231 SEP 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 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

1. This sensor is a non-contact switch intended for header mount / ceiling mount of an automatic door.
   Do not use for any other applications.
2. When setting the sensor's detection area, 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 equipments that are connected to the sensor.
4. Only use the sensor as specified in the operation manual provided.
5. Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
6. 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.
7. 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	: <20dBm	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)	Weight	: 140g (4.9oz)
	+20° to +80° (Ceiling mount)	Accessories	: 1 Cable 3m (9'10")
Horizontal adjustment	: 30° to left or right		1 Operation manual
Power supply	: 12 to 24VAC(±10%)		2 Mounting screws
	12 to 30VDC(±10%)		1 Mounting template
Power consumption	: < 1.5W(<2VA at AC)		1 Narrow lens*
Minimum speed	: 5cm(1 15/16")/sec.		
Operation indicator	: Green / Stand-by		* At the back of housing cover
	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

97 (3 13/16")
131 (5 3/16")
61 (2 3/8")
55 (2 3/16")
mm(inch)

*Narrow lens is stored at the back of housing cover.

1. Antenna
2. Sensitivity potentiometer
3. Mounting holes
4. Dipswitches
5. Wiring hole
6. Narrow lens
7. Operation indicator
8. Terminal block
9. Cover fixing

INSTALLATION

1.
1. 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.

Cover fixing   Screw driver
Insert
Screw driver   Slide   Open

2.
Wire the cable to the door controller properly as shown below.

Red → ① } Power supply
Black → ② } 12 to 24VAC ±10%
White → ③ } 12 to 30VDC ±10%
Green → ④ } Relay
⑤ ③-④ N.O.
   ③-⑤ N.C.

⚠ 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.	

3.
1. 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.

4.
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

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

Wide area
Mounting height:2.2m(7'3")
Vertical adjustment : +34°

Narrow area
Mounting height:2.2m(7'3")
Vertical adjustment : +34°

mm(feet,inch)
1000 (3' 3")
2000 (6' 7")
3000 (9' 10")
4000 (13' 1")

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

2. **Detection area angle adjustment**

	Adjustment	Scale	Angle
Vertical adjustment	Front View	3° X 20 steps Side View	Header / Ceiling +80° +70° +20° +10° Side View
Horizontal adjustment	Front View	5° X 12 steps Front View	+30° +30° Front View

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

3. **Narrow area**
To obtain Narrow area, place Narrow lens attached at the back of housing cover.
To place Narrow lens, follow step1&2 as shown on the right.

4. **Dipswitches settings**
Set Dipswitch1&2 to enable the direction recognition. (REACTION TWO Only.)

Bi-direction(Bi) — Door
Detection area

Uni-direction(Uni)

⟹ : Detection
⟹ : Non-Detection

Bi-direction
When Dipswitch1 is set to OFF, Bi-direction mode is effective, regardless of Dipswitch2 setting.

Uni-direction with Auto -caution mode*(ACM)

*Auto-caution mode(A person wavering in the detection area to be detected.)

Dipswitch3:Output hold time
2.0sec.   4.0sec.
3   3

Dipswitch4:Immunity
If there is external interference, set Dipswich 4 to ON.
4

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

⚠ WARNING
1. Always keep the housing cover clean. If dirty, wipe the housing cover lightly with a cloth.
   (Do not use any cleaner or 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. Always contact your installer or service engineer when changing the settings.
5. Do not paint the housing 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.)

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.	Set the sensitivity higher.
	Green	Wrong detection area positioning.	Check **ADJUSTMENTS**.
	Green blinking	The sensor is being set up.	Wait for the set-up to complete.
Door opens when no one is in the detection area. (Ghosting)	Red	Water drops on the housing cover.	Wipe the housing cover with a cloth.
		The detection area is overlapping with the door.	Adjust the detection area away from the door. Or set Dipswitch4 to ON.
		Sensitivity is too high.	Set the sensitivity lower.
		Raining or snowing.	Set Dipswitch1 to ON.(REACTION TWO Only) Or Dipswitch4 to ON.
Door remains open	Green	Wrong wiring or connection failure.	Check the wiring and Terminal block.

OPTEX

PRO WAVE

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 devises 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

Status indicator
Front case
Sensor window (lens)
Detection area pattern display
Rear case
Mask
Knockout (for mounting)
FRONT
BACK
Plastic Anchor *2
Screw *2
Angle plate

Touch Free — Wave hand here to open door — Touchless Sticker
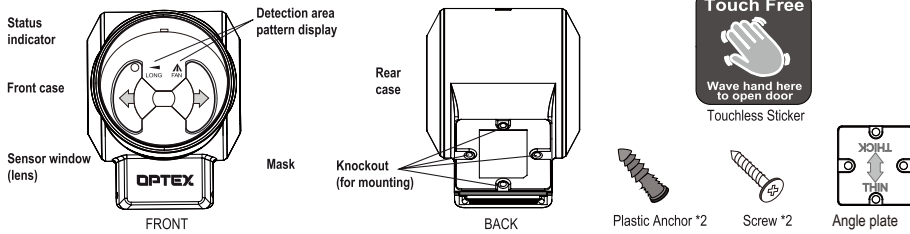
Note: When you recycle this product, please disassemble product and recycle according to state law.

③ TRANSMISSION RANGE (REFERENCE)

Transmission range must be changed according to the environment. Please check if system works properly on the site.

2000ft (Open field, line of sight)
150ft (Stucco/Plaster construction)
100ft (Concrete construction)

Air-Wave TX

Receiver Air-Wave RX
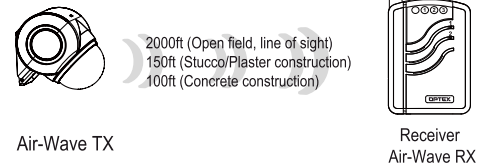
④ DETECTION AREA PATTERN

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)

PIR Sensor
Receiver
7 feet
Touch free
30 - 44"
7-8'
Sensitive area
Less than 8"
Detection area
Within 12" from mounting wall
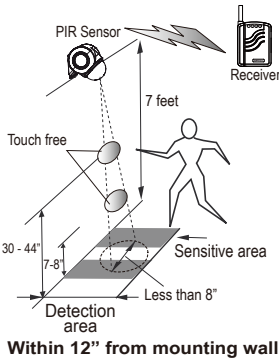
⑤ INSERT THE BATTERY

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 inplace using screws.
5. Close the casing.

[Inside]
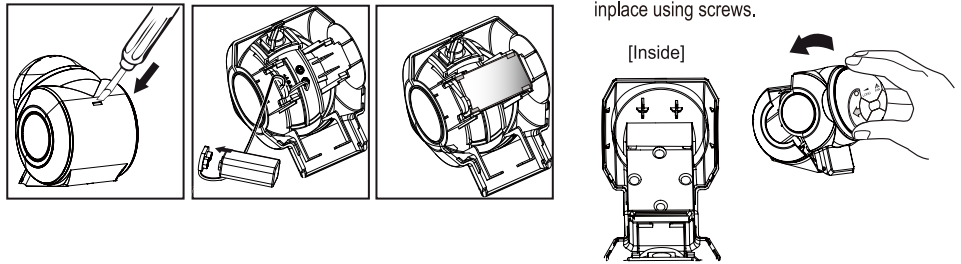
⑥ INSTALLATION

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.
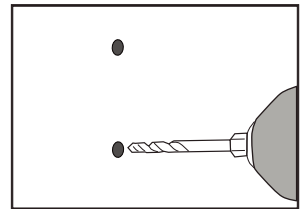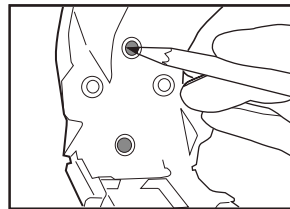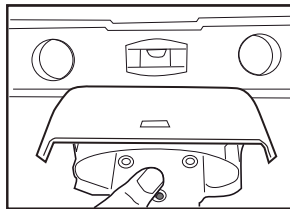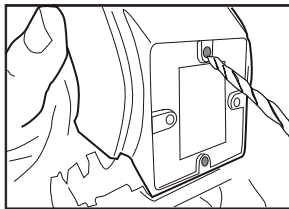
5. Knock in the two plastic anchors.
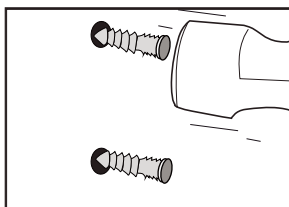
6. Install housing with supplied screws. (DO NOT FULLY TIGHTEN)

Holes with plastic anchors
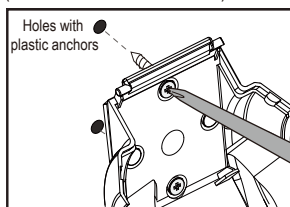
7. Ensure housing is level and tighten screws.
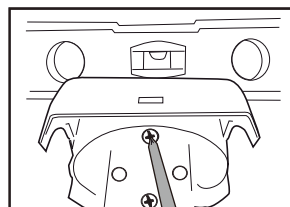
8. Close the sensor casing.

⑥ INSTALLATION

Before installing the sticker determine the mounting heights. Recommended heights are as follows:

For hand sticker: 30 to 44"

For foot sticker : 7 to 8"

30 to 44"

7 to 8"
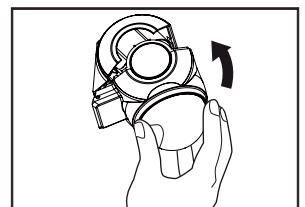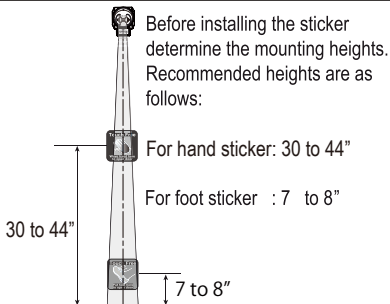
9. Hang a plum bob in line with the center of the sensor housing to identify center line of detection area.
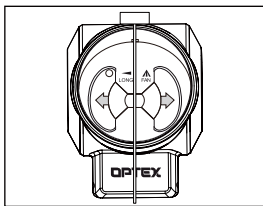
10. Affix the Touch Free sticker at desired height & centered on the plumb line.

Touch Free
Wave hand here to open door
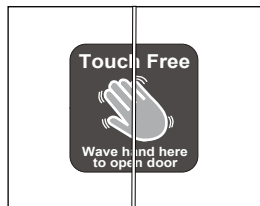
11. Make sure the sensor is detecting when you wave your hand in front of the sticker.

Touch Free
Wave hand here to open door

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.
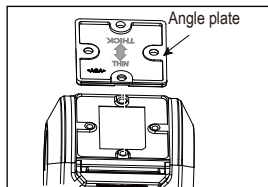
Angle plate

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

Angle Plate — Thick

Angle Plate — Thin
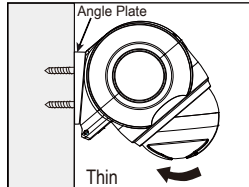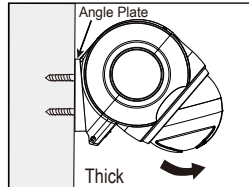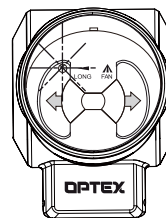
⑧ LOW BATTERY

• 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.
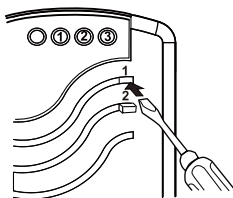
2. Activation
• Wave your hand in front of the Air-Wave TX to trigger it.
• Verify that the receiver has learned successfully by observing the zone indicators of the receiver. Zone indicators should have stopped flashing and remain continuously on.
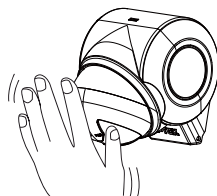
3. Verification
• After teaching all the transmitter codes (if you have multiple transmitters), return the receiver to normal operating status.
• Make sure that the receiver operates correctly with all the transmitters.
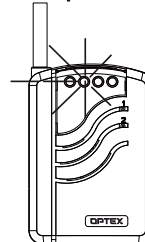
Note:
Cover the Air-Wave TX until you are ready to teach the receiver. Unwanted detection can cause the Air-Wave TX to be assigned to the wrong zone and override the data of other transmitters.

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 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.

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 × 2 Plastic Anchor x 2, Angle Plate x 1 Touchless Sticker for hand

Specifications may change without notice
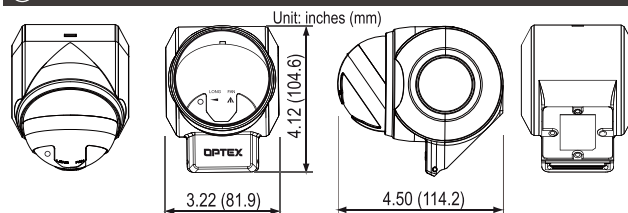
⑫ DIMENSIONS

Unit: inches (mm)

4.12 (104.6)

3.22 (81.9)

4.50 (114.2)

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.

⑬ COMPLIANCE

OPTEX
PRO WAVE

Air-Wave RX
SINGLE RELAY RECEIVER (RG-10U)

Air-Wave RX INSTALLATION INSTRUCTIONS
Please read this manual carefully before installation.

FEATURES
- Identifies zone (location) by 3 LED lights (3 zones + 1 continuous zone).
- Able to learn 12 transmission codes (Each zone can learn 3 transmitters maximum).
- Automatic "Learning" function facilitates to preset transmission codes to Air-Wave RX.
- Over 8 million codes possible, eliminates interference from neighbors.
- Latches into alarm with "Continuous mode" function.
- Adjustable duration for terminal output.
- Low battery indicator to recognize transmission units' battery status.

① CAUTION AND WARNING

WARNING

1. Harsh environments
Using the Air-Wave RX outdoors in severe conditions such as extreme temperatures, rapid temperature change, high humidity, steam or fog may cause malfunction.

2. Tampering
Any changes or modifications not expressly approved by OPTEX could void the user's authority to operate the equipment
(see FCC note in section 13 COMPLIANCE of this manual).

CAUTION

1. Impact/Shock
Impact or Shock can cause severe damage or break the Air-Wave RX.

2. Electric Devices
Use Air-Wave RX at least 3ft (1m) away from electronic devices such as TVs, Radios, PCs, Microwave ovens. This may cause the unit to malfunction.

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

4. 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

Function	
Switch 1	Activating "Learn Mode" and "Output Duration Mode"
Switch 2	Making selection
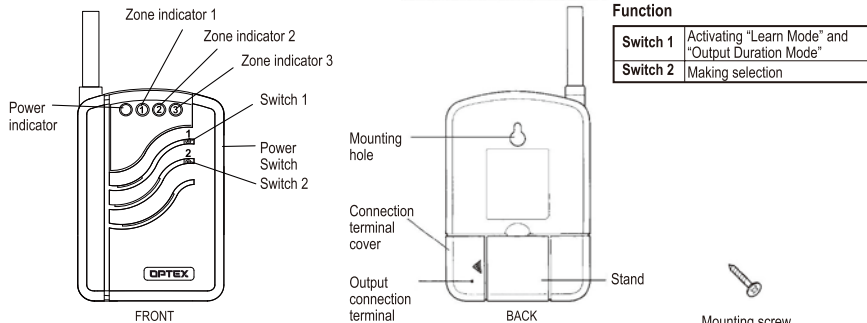
Note: When you recycle this product, please disassemble product and recycle according to state law.

③ TRANSMISSION RANGE (REFERENCE)

Transmission range must be changed according to environment. Please check if system works properly for the site.

Sensor unit Air-Wave TX
- 1000ft (Open field, line of sight)
- 150ft (Stucco/Plaster construction)
- 100ft (Concrete construction)

Button unit TS-10U
- 700ft (Open field, line of sight)
- 110ft (Stucco/Plaster construction)
- 70ft (Concrete construction)

Receiver Air-Wave RX
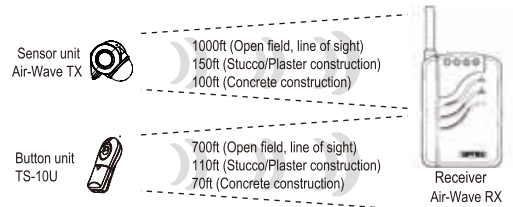
④ INSTALLATION

How to connect the Terminal
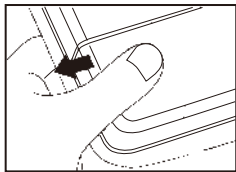
Remove the connection terminal cover
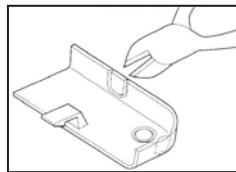
Remove knockouts according to wiring needs.

Wiring
Use a power source within the following range; 12~24V AC/DC

Door controller
POWER 12 - 24 V AC/DC
COM
ACTIVATE
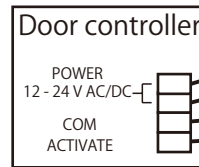
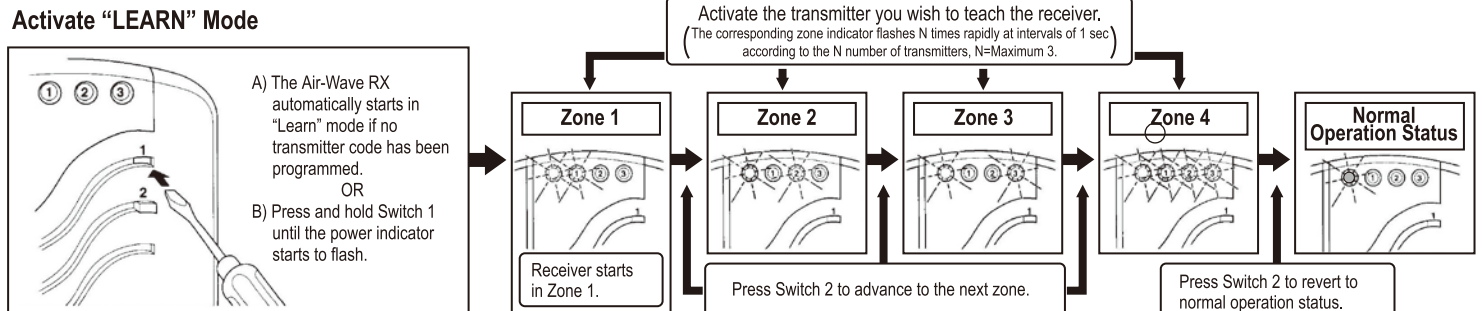When using for door controller, connect NO and COM to activate input. Usually the activate input is NO.
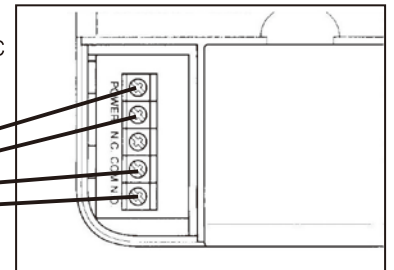
⑤ TEACH TRANSMITTER CODES TO Air-Wave RX "LEARN MODE"

Each transmitter has a unique transmission code, which can be automatically "learned" by the Air-Wave RX. The Air-Wave RX's zones must be taught to respond to the appropriate transmitter. The zone characteristics can be programmed as shown below.

Zone 1:	Timed utility output
Zone 2:	Timed utility output
Zone 3:	Timed utility output
Zone 4:	Continuous terminal output (latches until Switch 2 is pressed to deactivate)

Teach the transmitter code to the receiver

Activate the transmitter you wish to teach the receiver.
(The corresponding zone indicator flashes N times rapidly at intervals of 1 sec according to the N number of transmitters, N=Maximum 3.)

Activate "LEARN" Mode

A) The Air-Wave RX automatically starts in "Learn" mode if no transmitter code has been programmed.
OR
B) Press and hold Switch 1 until the power indicator starts to flash.

Zone 1 — Receiver starts in Zone 1.

Zone 2 — Press Switch 2 to advance to the next zone.

Zone 3

Zone 4 — Press Switch 2 to revert to normal operation status.
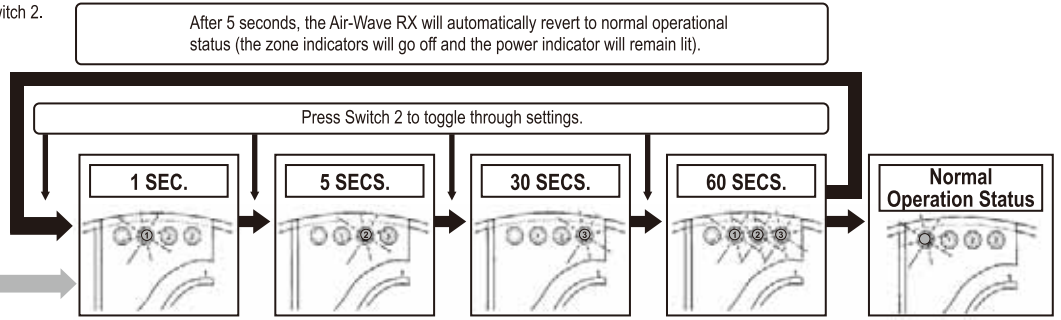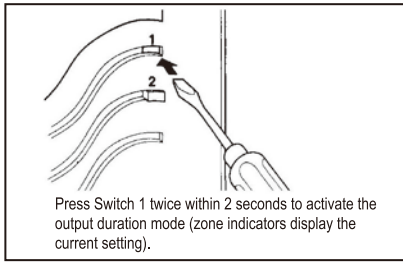
Normal Operation Status

Note:
- Revert to normal operation status before use.
- Verify that each transmitter has been learned by the receiver by triggering them.
- Each zone can accept a maximum of 3 transmitters, and the zone indicator shows the activated transmitter based on the number of flashes.
  (e.g. If transmitter 2 in zone 1 is activated, the zone 1 indicator flashes twice)
- A single transmitter cannot be learned by multiple zones.
- Turning off the devices, or losing power will not affect the transmitter or the Air-Wave RX's code memory.
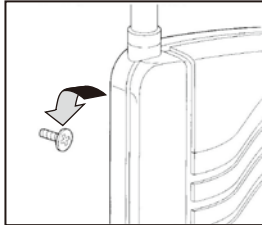
Erasing Codes from the Air-Wave RX's Memory
1) Hold down switch 1 until the power indicator starts to flash.
2) Press Switch 2 until the appropriate zone indicator is lit.
3) Press Switch 1 to erase. The zone indicator will start to flash.
   (Note: All programming in that particular zone will be erased.)
4) Press Switch 2 a few times until the power indicator stops flashing and remains lit.
(Note: To erase all programming and revert to the factory default setting, turn on the power while pressing and holding Switch 1.)

⑥ ADJUSTING THE TERMINAL OUTPUT DURATION

• The terminal output duration can be set for zones 1-3 only as a group. Zone 4 always latches until it is reset by pressing Switch 2.
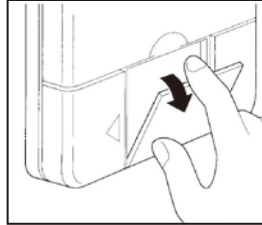• The factory setting is 1 sec.

After 5 seconds, the Air-Wave RX will automatically revert to normal operational status (the zone indicators will go off and the power indicator will remain lit).

Press Switch 1 twice within 2 seconds to activate the output duration mode (zone indicators display the current setting).

Press Switch 2 to toggle through settings.

| 1 SEC. | 5 SECS. | 30 SECS. | 60 SECS. | Normal Operation Status |

⑦ INSTALLATION

Mounting On A Wall
Use the mounting screw on a wall. Leave some length of the screw out for the mounting hole of the Air-Wave RX.

Desktop
Pull out the stand on the back of the Air-Wave RX and place it on any flat surface.

⑧ LOW BATTERY INDICATION

Zone indicator on Air-Wave RX and TX start slow flashing whenever the corresponding transmitters have low battery. Any operation cannot be done until one of operations below below are conducted.

1) Replace transmitter's batteries.
2) Press switch 2.

Air-Wave RX will not need to relearn transmitter after replacing the batteries.
Note: Check low battery status at the corresponding transmitter in case several units are learned in 1 channel.

⑨ TROUBLESHOOTING

1. The system is not operating

Check the transmitter.

Does the status indicator light up when you trigger the transmitter?	→ Check to see whether the battery is inserted correctly. If the battery is old, replace it with a new one.
Is the status indicator of the transmitter flashing?	→ The battery is old. Replace the battery.

Check the receiver.

Is the power indicator of the Air-Wave RX lit ?	→ Is the receiver on? Check the wiring and connection.
Have all the transmitter codes have been taught correctly?	→ Teach the transmitter codes correctly. The system will not operate without this process.
Are there other high power appliances using the same electrical power outlet?	→ Please connect the Air-Wave RX to a different electrical outlet.
The zone indicator of the Air-Wave RX is on, but nothing happens.	→ Check to see whether the terminal is properly connected to other devices.
Is there anything blocking the transmission?	→ Relocate the receiver and/or the Air-Wave RX Metal objects can shorten the effective transmission range.
Are the zone indicators flashing slowly?	→ Follow directions in ⑧ LOW BATTERY INDICATION.

2. The system is not operating correctly.

The Air-Wave RX does not learn the transmitter codes.	→ Check whether the transmitter codes have already been learned in a different zone. If so, erase the memory and teach again.
The Air-Wave RX gets reception in the wrong zone.	→ Erase memory in the zone in which the Air-Wave RX responds and teach using the correct zone.
The Air-Wave RX does not respond to some of the transmitters.	→ You may have taught multiple transmitter codes in the same zone. Teach the transmitter codes for which no response is received using an empty zone.
A certain zone seem to malfunction.	→ This is probably the transmitter's problem. Check the transmitter that corresponds to that zone.
Before contacting the supplier!	→ Go through the setups again after turning on the power while holding down switch 1.

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

⑩ DIMENSIONS

Unit: inches (mm)

⑪ SPECIFICATION

Product Series	Prowave Air-Wave RX
Product Name	Single Relay Receiver
Model Number	RG-10U
Power Source	12~24V AC/DC Standby: 65mA Operating : 210mA
Relay Output	Form "C" MAX 1A/50VAC DC24VAC
Output Timer	Selectable: 1/5/30/60sec
Status Indicator	Power Indicator: Green Zone Indicator: Red × 3
Frequency	418MHz
Operating Temperature	-10°C ~ +40°C
Installation Location	Indoors
Weight	120g
Accessories	Mounting Screw × 1

Specifications may change without notice

⑫ COMPLIANCE

FCC ID : DC9RG-10U
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 grantee 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.
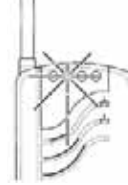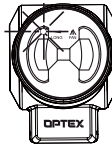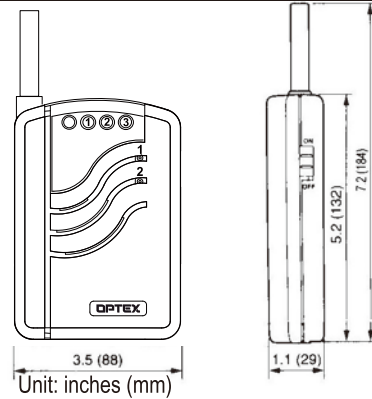
IC : CAN4012104524A
This device complies with Industry Canada licence-exempt RSS standard(s).
Operation is subject to the following two conditions.(1)this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of 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.

⑬ 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 receiver. 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 damege will not be covered.
 • No copy of the dated sales receipt has been submitted together with the product to be serviced.

OPTEX

5918732

OPTEX
PRO SWING PREMIER Mk2 Specification manual
CE

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

1. 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.
2. 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.
3. When setting the sensor's detection area, make sure that there is no traffic around the installation site.
4. Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the sensor.
5. Only use the sensor as specified in the operation manual provided.
6. 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.
7. 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.
8. 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
Power supply	: 12 to 24 VAC ±10% (50 / 60 Hz)
	12 to 30 VDC
Power consumption	: < 2.2W (< 4VA at AC)
	at 1 OA-613 & 1 OC-913C
Output *	: CMOS. Relay Voltage / 5 VDC
Output hold time	: 0.5 sec. fixed (Activate output)
	0.5 sec. to 10sec.(Safety output)
Response time	: < 0.3 sec.
Operating temperature	: -20 to +55°C (-4 to 131°F)
	without dew condensation
Operating humidity	: < 80%
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 (Sensor head)	: OA-613
Cover color	: Black
Mounting height	: 2.0 (6'7") to 2.5m (8'2")
Detection area	: See DETECTION AREA
Detection method	: Active infrared reflection **
Depth angle adjustment	: 1st row area ±5°
	2nd & 3rd row area ±5°
IP rate	: IP44
Weight	: 230g (8.1oz)
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	
Stand-by	Solid Green	
1st row area detection	Blinking Red	
2nd or 3rd row area detection	Solid Red	
Waiting for next learning	Solid Yellow	
During learning	Blinking Yellow	
During opening or closing	Solid Orange	
Signal saturation	Slow Green blinking	
Sensor failure	Fast Green blinking	
Setting error	Slow Orange blinking	
Communication error	Twice Orange blinking	
Mixed version error	Red & Green blinking	

Operation indicator : OC-913C

Status	Color	
Door fully closed	Solid Green	
Door closing	Solid Orange	
Door fully opened	Solid Red	
Door Opening	Blinking Red	
During Learning	Slow Green blinking	
Communication error	Twice Orange blinking	
Mixed version error	Red & Green blinking	

Interface LED : OC-913C

	LED indication	Operation
Inhibit switch	Solid Green	When outputting
	OFF	When not outputting
Safety output	Solid Green	When 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
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

[mm (inch)]

275(10 13/16")
32(1 1/4")
56.5(3 1/4")
248(9 3/4")

(1) (3) (2) (4) (1)
(10) (10)
(5) (6) (9) (8) (7)

1 : Connector
2 : Sensitivity potentiometer
3 : Mode setting switches
4 : Area width setting switch
5 : 1st row angle screw
6 : 1st row area angle gauge
7 : 2nd & 3rd area angle screw
8 : 2nd & 3rd area angle gauge
9 : Operation indicator
10 : Mounting holes

Controller: OC-913C   [mm (inch)]

65(2 9/16")   29.3(1 1/8")

(1) (2) (3)
(4)
(5)
(6)
(7)
85(3 1/4")

Wiring cable

0.6(2')

1 2   5 6 7 8 9 10 13   16
3 4   14 15

1 : Power	Orange
2 : Power	Brown
3 : Motor voltage input positive(+)	Red
4 : Motor voltage input negative(-)	Black
5 : Activate Beam input(+)	White/Purple line
6 : Activate Beam input(-)	Purple
7 : Safety output	Blue
8 : Safety output	Blue
9 : Activate output	Yellow
10 : Activate output	Yellow
11 : N/A	
12 : N/A	
13 : Inhibit switch	Green
14 : Inhibit switch	Green
15 : Data input(+)	White/Red line
16 : Data input(-)	White

(1) : Safety output hold timer
(2) : Knowing Act timer
(3) : Lockout timer
(4) : Dipswitches
(5) : Operation indicator
(6) : Connector
(7) : Interface LED
   (Inhibit switch, Safety output, Activate output, Activate/Beam input, Motor input)
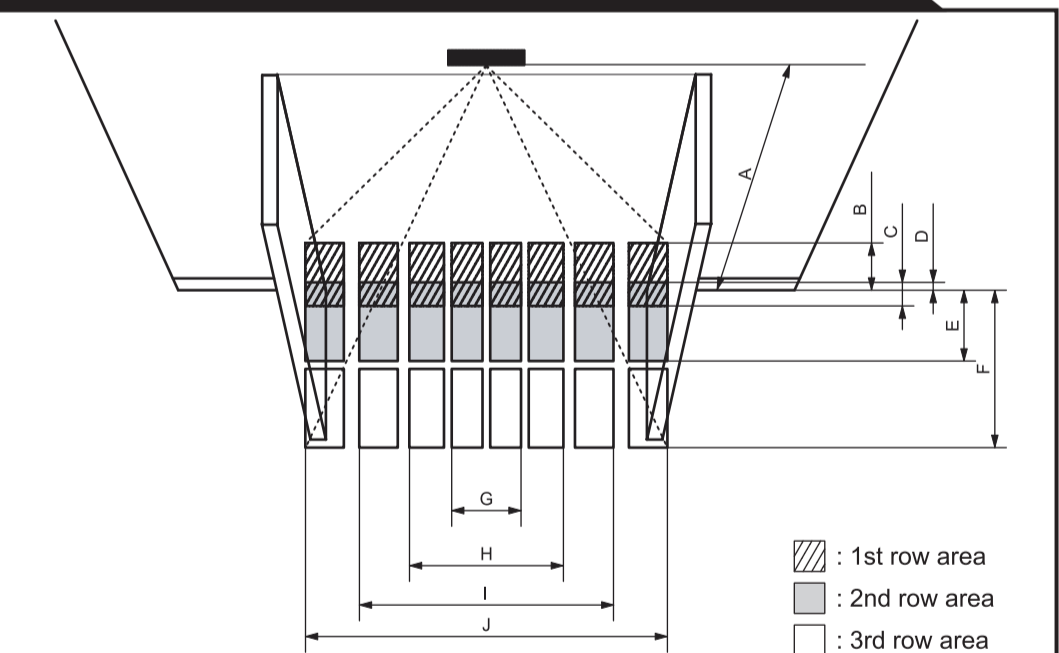
DETECTION AREA

A
B
C
D
E
F
G
H
I
J

▨ : 1st row area
▦ : 2nd row area
☐ : 3rd row 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.

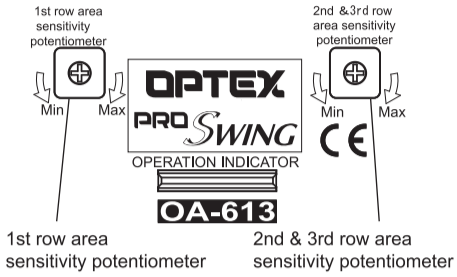## 1 Area depth angle adjustment

1st row area angle screw

2nd &3rd row area angle screw
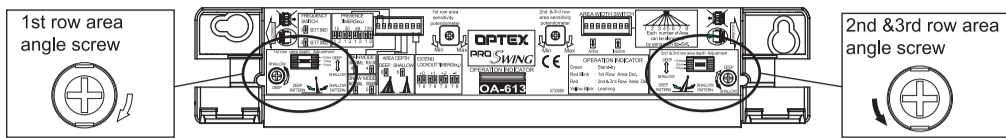
Start with 1st row area depth angle at -5 degrees(shallow).
If after walk test the pattern is too shallow, adjust towards deep as necessary.

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

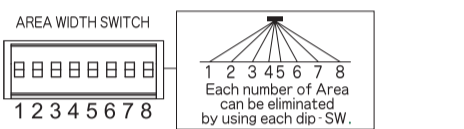1st row area sensitivity potentiometer

2nd &3rd row area sensitivity potentiometer

OPTEX
PRO SWING
OPERATION INDICATOR
OA-613

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 step 6 (**Premier Learn process**).

4 Area width setting switch (right bank)

Set the dipswitch as necessary.
Active : Enable area
Inactive : Disable area

Active   Inactive

AREA WIDTH SWITCH

1 2 3 4 5 6 7 8

1 2 3 4 5 6 7 8
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)
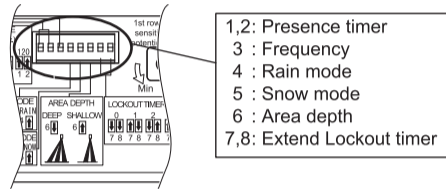
1,2: Presence timer
3 : Frequency
4 : Rain mode
5 : Snow mode
6 : Area depth
7,8: Extend Lockout timer

5-1.Setting the presence timer
To comply with ANSI standard, set to "30sec." or longer.

15 Sec.   30 Sec.   60 Sec.   120 Sec.
1 2   1 2   1 2   1 2
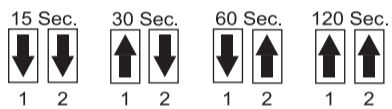
5-2.Setting the frequency
When using more than two sensors close to each other, set the different frequency for each sensor by dipswitch 3.

Setting1   Setting2
3   3
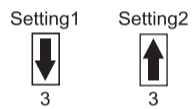
5-3.Setting the rain mode
Set dipswitch 4 to "Rain" if the sensor is used in a region with a lot of rain.

NOTE
When set to "Rain", the actual detection area may become smaller.

Normal   Rain
4   4
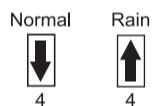
5-4.Setting the snow mode
Set dipswitch 5 to "Snow" if the sensor is used in a region with snow or a lot of insects.

Normal   Snow
5   5
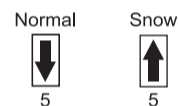
5-5.Setting the area depth

DEEP   SHALLOW
6   6
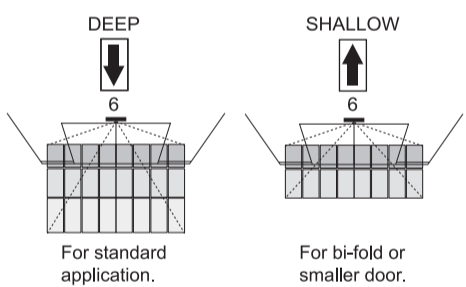
For standard application.

For bi-fold or smaller door.

5-6.Setting the Extend Lockout timer

+0 Sec.   +1Sec.   +2 Sec.   -1 Sec.
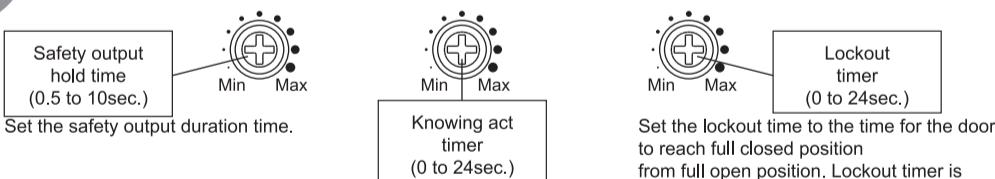7 8   7 8   7 8   7 8
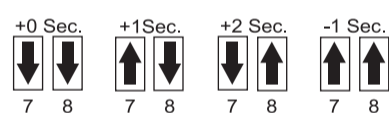
Fine-tune the lockout time after setting the lockout timer on OC-913C by volume (0-24 sec.)
Only effective when Dipswitch 3 is set to "Manual" and Dipswitch 5 is set to "OFF" on OC-913C.

NOTE   See ADJUSTMENTS for OC-913C

1 Timer adjustment

Safety output hold time (0.5 to 10sec.)
Set the safety output duration time.

Min   Max

Knowing act timer (0 to 24sec.)

Min   Max

Lockout timer (0 to 24sec.)

Min   Max

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".

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

1. Safety Relay Contact
   :Choose the Relay Contact.

2. Door Open Signal Switch
   : Determines safety output when door is open.

3. Auto Lock out
   : Set the lockout method
   ON : Manual (by volume setting on OC-913C)
   OFF : Auto (by motor voltage)

4. Knowing Act
   : If uses KnowingAct Function, set to "ON".

5. 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 PWM
   :If using PWM from door control for Lockout, set to ON.
   When using PWM,DipSwich5 also needs to be set to ON and setting of Auto Lock Out(dipswitch 3) is ignored.

7. Future Development (not used)

8. Stand Alone
   : Set to "ON" when door mount sensor and OC-913C are used for Knowing Act application without OA-613.

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	PWM	OFF	ON
7	Future Development		
8	Stand Alone	OFF	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 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
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	OC-913C		
Initial setup can not start.	None	None	Power supply voltage.	Set to the stated voltage.
			Wrong wiring cable (Brown &Orange wires) of OC-913C.	Check the wiring cable.
	Twice Orange blinking or None	Twice Orange blinking	Connection failure from OA-613 to OC-913C.	Check the connector.
			Defective communication cable.	Replace as necessary.
	Slow Orange blinking		When all the area are inactive. (Right bank dipswitches on OA-613)	Verify proper settings. See **installation manual step 5**.
			OC-913C Dip-SW 8 is ON, but OA-613 is also connected to OC-913C.	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.
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) and 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 step 5**.
			Wet floor.	Check the installation condition referring to **MANUFACTURER'S STATEMENT**.
			The exhaust emission or fog penetrate into the detection area.	
			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.	Adjust the sensitivity higher.
			Area width dipswitches set wrong. (Right bank dipswitches on OA-613)	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 detects but door operate.	Red or Blinking Red	Proper	OC-913C 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.

OPTEX

Pre- and Post-Installation Checklist

5916214 SEP 2013

This Pre- and Post-Installation Checklist will help identify and resolve some of the most common installation issues. This guide will also verify that all Dipswitch settings and Area Depth adjustments are properly set. If after verifying all nine steps proper operation has not been achieved, please contact our Technical Support Team at (800) 877-6656.

Note: this is **not** a substitute for the installation manual!

1 Proper Sensor and Loop Placement

For proper installation of the door position sensor, determine which side of the door (Swing Side or Approach Side) the position sensor will be installed on. This will determine how both mounting templates should be aligned with the pivot edge of the door.

When installing Door Loop on **Swing Side** of Door:

Template Labeled "Right Hinge Side"

Align template here
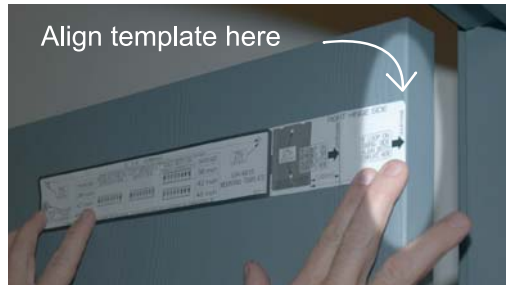
Note: *edge* of template aligned with edge of door

Template Labeled "Left Hinge Side"

Align template here

When Installing Door Loop on **Approach Side** (Non-Swing Side) of Door:

Template Labeled "Left Hinge Side"

Align template here
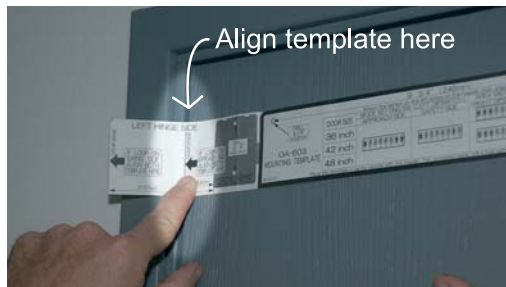
Note: *line* on template aligned with edge of door

Template Labeled "Right Hinge Side"

Align template here

2 Proper Angle Area Adjustment

Swing Area: Start with Swing Area angle adjustment at +5 degrees (deep). If after walk test the pattern is too deep, adjust towards shallow as necessary (after changing the angle adjustment please repeat initial setup. See Section 9 of this document).

Threshold Area: Area angle adjustment must be set to +5 degrees (deep).

SWING AREA DEPTH ADJUSTMENT

DEEP / SHALLOW

SHALLOW PATTERN

DEEP PATTERN

Using screwdriver, turn both adjustments clockwise towards "deep"

OPTEX PRO SWING OA-603

THRESHOLD AREA DEPTH ADJUSTMENT

SHALLOW PATTERN

DEEP PATTERN

SHALLOW / DEEP

3 Proper Dipswitch Settings

Verify proper dipswitch settings of OA-603 sensor heads (specifically dipswitches 7 & 8 of left bank and 1 thru 8 of right bank).

Safety/Swing Side

Dipswitch setting for sensor #1

36" Door

42" or 48" Door

OR

MODE SETTING/LEFT BANK   AREA WIDTH SWITCH/RIGHT BANK

Dipswitch setting for sensor #2

36" Door

42" or 48" Door

OR

MODE SETTING/LEFT BANK   AREA WIDTH SWITCH/RIGHT BANK

Top of Swing Door

Dipswitch setting for sensor #4

MODE SETTING/LEFT BANK   AREA WIDTH SWITCH/RIGHT BANK

36" Door

OR

42" or 48" Door

Dipswitch setting for sensor #3

MODE SETTING/LEFT BANK   AREA WIDTH SWITCH/RIGHT BANK

36" Door

OR

42" or 48" Door

Approach/Non-Swing Side

4 Proper Operation of Position Sensor

Manually move door panel from 0 to 90 degrees. Ensure collar on position sensor moves freely and loop does not bind.

Important:

Position sensor does not rotate 360 degrees until it is mounted on Mounting Plate due to the locking function.

The collar on the position sensor must move freely as the door opens and closes.

Here are **two** of the most common reasons the position sensor does not move freely:

Example 1:

The bottom of the loop is getting caught in the door.

Most common solution:

Remove wire cover and rotate 90° and re-install to move loop away from hinge.

Example 2:

The loop is stretched beyond recommended distance, preventing free movement of position sensor collar.

Average 8" to 10". Beyond 10" you may experience a problem
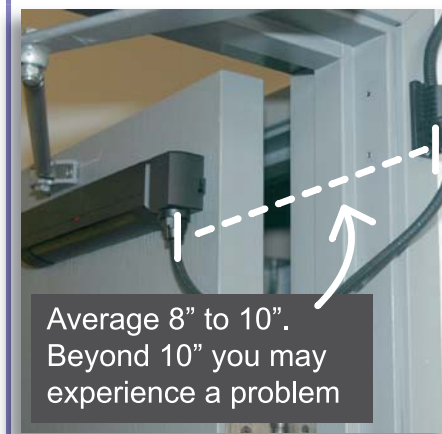
Most common solution:

1. Move wire base to inside of jamb **if possible.**

2. Then remove wire cover and rotate 90° and re-install to move loop away from hinge.

5 Proper Mounting of Position Sensor

Ensure position sensor is fully locked in place on the mounting plate, Place two fingers on top of position sensor and push down to ensure it is fully seated.

Push down here

Lock plate

In this view, the bottom of the mounting plate is visible. Position Sensor is not fully seated.

To fully seat mounting plate, push down on position sensor until it clicks into place with its Lock Plate in upright position.

With the position sensor in place, bottom of mounting plate is flush with sensor.

Once fully seated, push down lock plate to secure.

6 Properly Secure Wiring Cover to Wiring Base

Ensure set screw in wire cover is tight and wire cover does not move up or down on wire base.
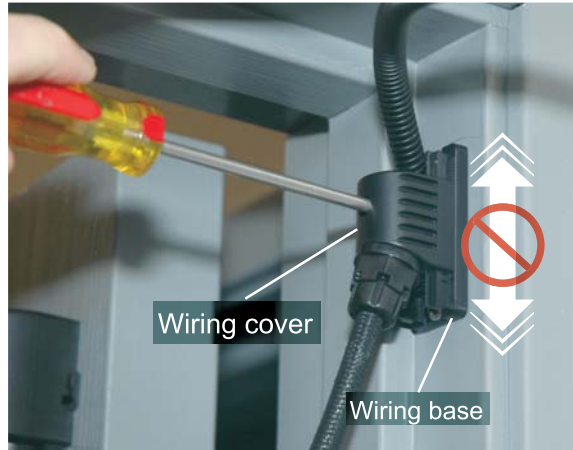
When installed properly, wire cover is tight and will not slide on wire base.

If wire cover is loose, tighten using screwdriver as shown. The cover must **not** move up and down.

Wiring cover

Wiring base

7 Proper Use of Purple Wires (Knowing Act Applications)

Ensure proper connection of wire harness in accordance with Wiring Matrix or Wiring Diagram (Note: if using purple wires ensure they are NOT connected to the Door Control).

Purple wires must not be connected to the Door Control. They are only for Knowing Act devices.

Note: when using purple wires verify that dipswitch 3 of the 904 is in the ON position.

ttings	Note :
s in install Notes	Purple wires connect to Kowing Act devices only.
ch 3 up.	DO NOT connect purple wires to door control
	See Note Above
ORANGE power	PURPLE
	N.O. & Com of Knowing act Device (See Note Above)
INSTALL NOTES:	

L.H Operator Black Motor wire +,RH Operator White wire+. Set 904 dipswitch 3.4 No.(up). On single swings place a jumper from pin 17 to 18

Pin 8

Min Max   Min Max

1 2 3 4

Knowing Act
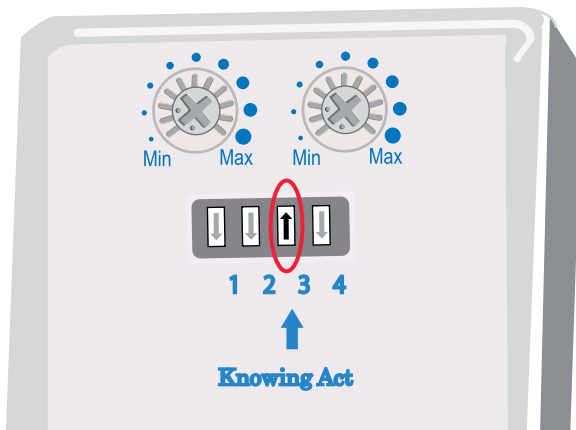
8 Proper Connection to Motor Voltage

Follow these steps to verify proper connection of Red & Black wires from OC-904:

POWER ON
OFF
AUTO ON
HOLD OPEN

1 Place door in power hold open.

2 Check for proper voltage at red & black wire at the metal pads on the wiring harness. With a multi-meter set to VDC, place the red meter lead to the metal pad at the red wire of the OC-904 and place the black meter lead to the metal pad of the black wire of the OC-904. Meter should read a positive voltage.
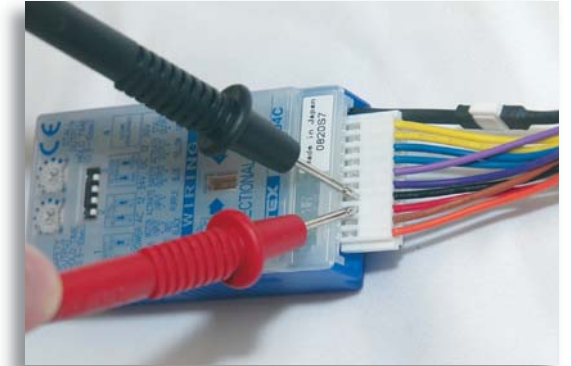
3 If reading a negative voltage, the red & black OC-904 wires need to be reversed.
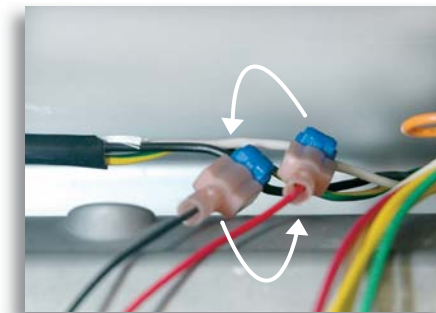
4 If reading 0 VDC, there may be a bad or improper connection on the red or black wire (find the bad connection and correct).

After correcting wiring, an initial set-up must be done (Refer to Section 9).

9

Review the initial setup sequence document to ensure proper understanding of initial setup. Review the proper Operation LED indications to help identify proper operation of sensors when walk testing AFTER initial setup.

A successful learn:

1) On either the swing or approach side OA-603 sensor head **flip any dipswitch and then flip it back to the original position** (necessary on only one sensor per door panel only).
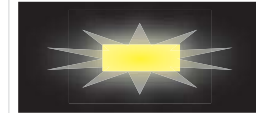
Both sensors should blink yellow for approx. 10 seconds, then turn solid yellow.

2) Solid Yellow → Activate Door

Once LEDs are solid yellow, activate door.

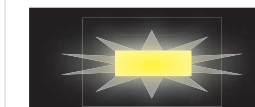**3) When door starts to open:**

Blinking yellow on swing/safety side
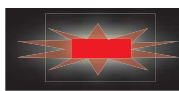
and...

solid orange on approach side

4) Full Open

Blinking yellow on swing/safety side

and on approach side...
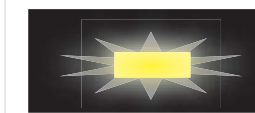
Solid orange, (approx. 6 secs.)

flashing red, (approx. 2 secs)

flashing yellow

5) Closing Cycle

Flashing yellow.

6) Full Closed - 3 seconds flashing yellow then solid green. If more than 4 seconds, you must repeat learning cycle.

3 seconds ... then green

OPTEX PRO SWING OA-EDGE T

ENGLISH CE

TÜV NORD CERT GmbH — Type Tested

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.
EN16005	Setting to meet the requirements by EN16005.

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.
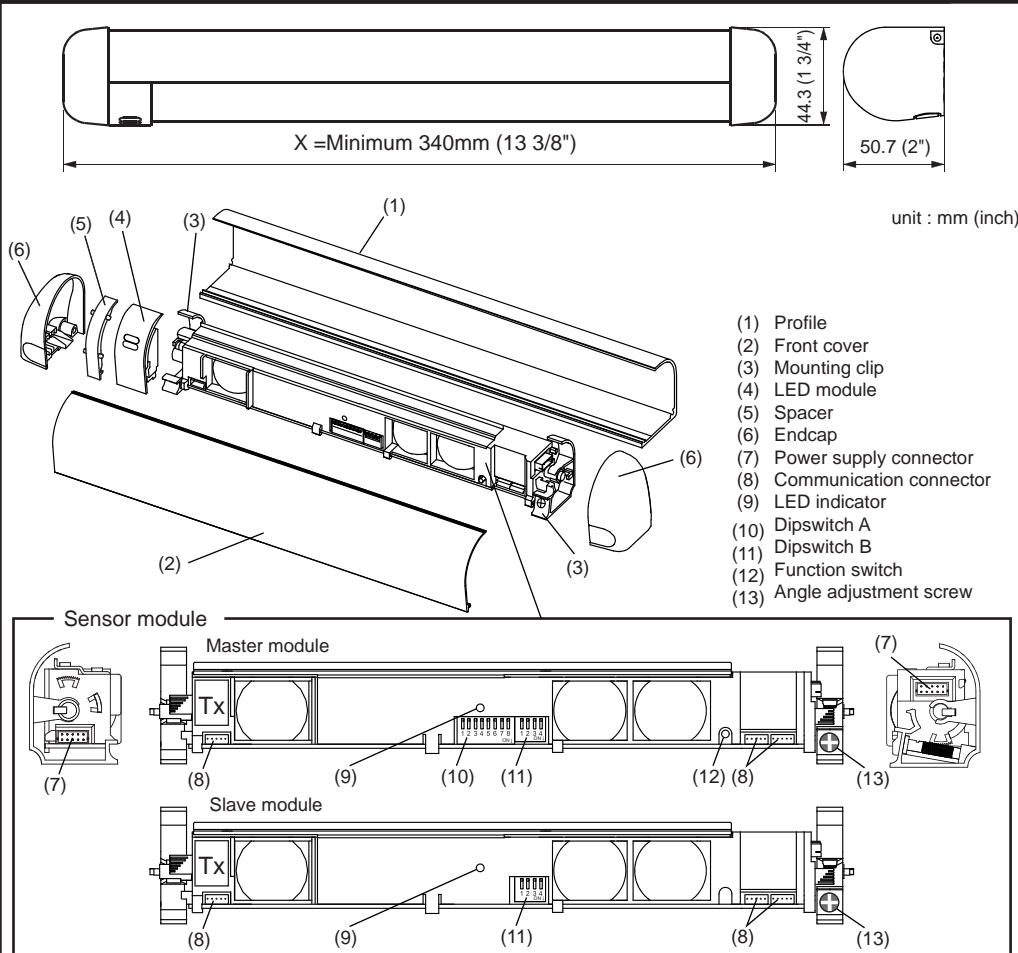- Wet floor.
- Grating floor.

SPECIFICATION

Model	: OA-EDGE 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%	ESPE	: Type 2
Power consumption	: < 1.3W (< 2VA at AC) at Min. configuration < 3.5W (< 4.5VA at AC) at Max. configuration		
LED indicator	: See chart below	* : 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.	
Test input	: Opto coupler 10 to 30VDC Current / 6mA Max.		
Safety / Test output 1	: Form C relay		
Safety / Test output 2	: Voltage / 42VDC Current / 0.3A Max (Resistance load) Output : see **INSTALLATION** chapter **3. Wiring**		

EN16005 Install the sensor at 1.8m (5'11") to 2.5m (8'2").

LED indicator

Status	Sensor module indicator	
Stand-by	Solid Green	
Opening side detection (output 1)	Solid Red	
Closing 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 / Test output 1
OFF : Solid Green
ON : Solid Red

Safety / Test output 2
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

44.3 (1 3/4")
X =Minimum 340mm (13 3/8")
50.7 (2")

unit : mm (inch)

(1) Profile
(2) Front cover
(3) Mounting clip
(4) LED module
(5) Spacer
(6) Endcap
(7) Power supply connector
(8) Communication connector
(9) LED indicator
(10) Dipswitch A
(11) Dipswitch B
(12) Function switch
(13) Angle adjustment screw

Sensor module

Master module
(7) (8) (9) (10) (11) (12) (8) (13)

Slave module
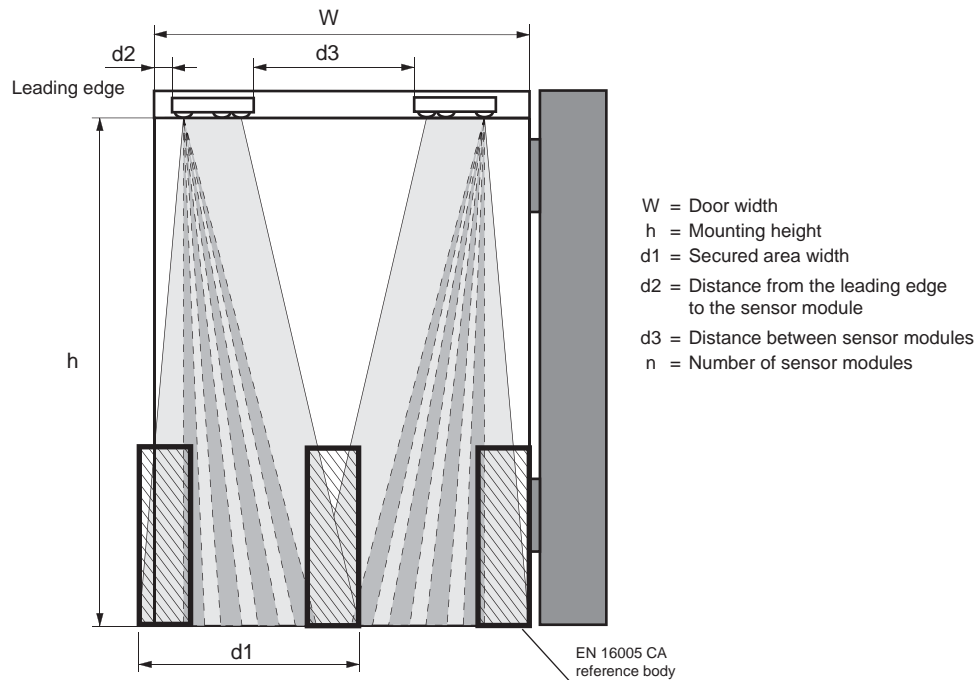(8) (9) (11) (8) (13)

DETECTION AREA

Detection area at 2200mm (7' 2 5/8") : Depth 140 (5 1/2") x Width 870 (2'10")

Test conditions required by EN 16005   Detection object : EN 16005 CA reference body

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 = Secured area width
d2 = Distance from the leading edge to the sensor module
d3 = Distance between sensor modules
n = Number of sensor modules

EN 16005 CA reference body

unit : mm (inch)

W			900 (2'12")		1100 (3'7")		1200 (3'11")	
h	d1	d2	n	d3	n	d3	n	d3
1900 (6'3")	760 (2'6")	70 (2 3/4")	2	175 (6 7/8")	2	375 (14 3/4")	2	475 (18 5/8")
2000 (6'7")	790 (2'7")	70 (2 3/4")	2	160 (6 3/8")	2	355 (14")	2	460 (18 1/8")
2100 (6'11")	825 (2'9")	70 (2 3/4")	2	145 (5 6/8")	2	345 (13 5/8")	2	445 (17 1/2")
2200 (7'3")	870 (2'10")	70 (2 3/4")	2	125 (5")	2	320 (12 5/8")	2	420 (16 4/8")
2300 (7'7")	895 (2'11")	70 (2 3/4")	2	115 (4 1/2")	2	315 (12 3/8")	2	415 (16 2/8")
2400 (7'11")	920 (3')	70 (2 3/4")	2	110 (4 1/2")	2	310 (12 2/8")	2	410 (16 1/8")
2500 (8'2")	950 (3'1")	70 (2 3/4")	2	110 (4 3/8")	2	300 (11 6/8")	2	400 (15 3/4")

NOTE Decrease the area depth angle, increase the non detection zone or move the sensor module (see d2 in the chart) away from the leading edge to optimize the sensor performance.
For installtion heigth <1900mm the installation of an extra module will be mandatory in order to comply with the regulations.

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**)

Silver screw
Black screw (small)
Min. 20mm (13/16")
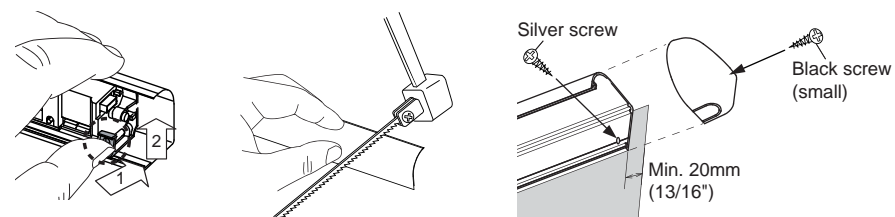
NOTE Make sure there is some space between the mounting clips and the mounting screws.
Make sure not to scratch the profile when making a hole.

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.

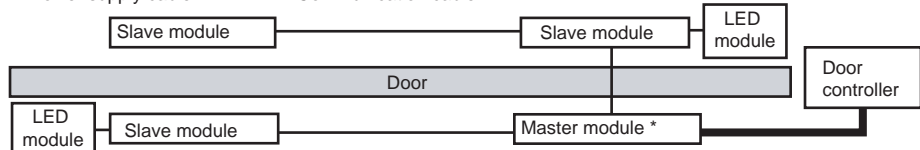**NOTE** Make sure to fix the sensor modules firmly by the mounting clips.
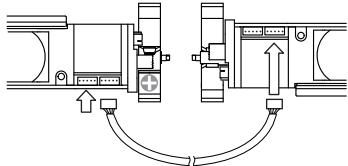
1   2   3
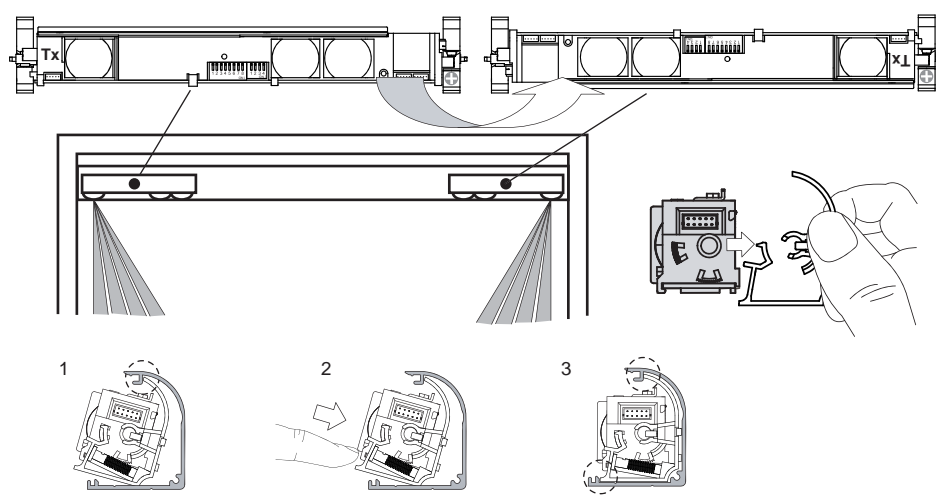
3 Wiring

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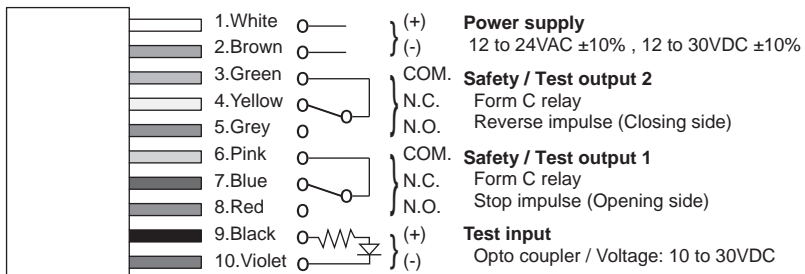
━ Power supply cable   ─ Communication cable

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.

To the power supply connector of the master module	1.White (+) / 2.Brown (−)	**Power supply** 12 to 24VAC ±10% , 12 to 30VDC ±10%
	3.Green COM. / 4.Yellow N.C. / 5.Grey N.O.	**Safety / Test output 2** Form C relay Reverse impulse (Closing side)
	6.Pink COM. / 7.Blue N.C. / 8.Red N.O.	**Safety / Test output 1** Form C relay Stop impulse (Opening side)
	9.Black (+) / 10.Violet (−)	**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.

To Master / Slave module
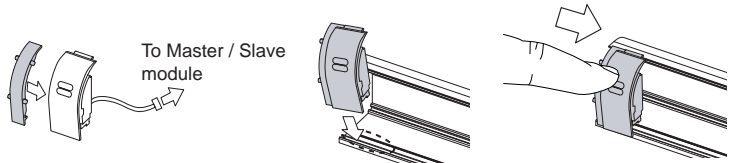
NOTE For LED status see **SPECIFICATION**

5 Placing the front cover

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

1 Dipswitch settings

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

Dipswitch A

A1	Non detection zone (A)
A2	Frequency
A3	Immunity
A4	Presence timer
A5	For future use
A6	
A7	Test input
A8	Test input delay

Dipswitch B

B1	Non detection zone (B)
B2	Area width
B3	Self monitoring
B4	Mounting side (Output select)

NOTE Only correctly initialising the sensor ensures the correct functioning of the dipswitches (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: A2 OFF   Setting2: 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: A3 OFF   Immunity on: A3 ON
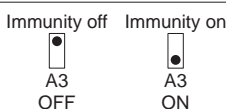
1-4.Setting the presence timer
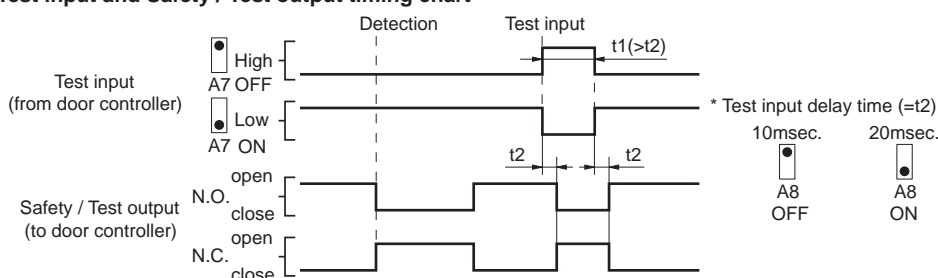
The presence timer can be set by Dipswitch A4.

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**

Test input (from door controller)   A7 OFF High / A7 ON Low

Safety / Test output (to door controller)

10msec.: A8 OFF   20msec.: A8 ON

* 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.

4spots: B2 OFF   2spots: B2 ON
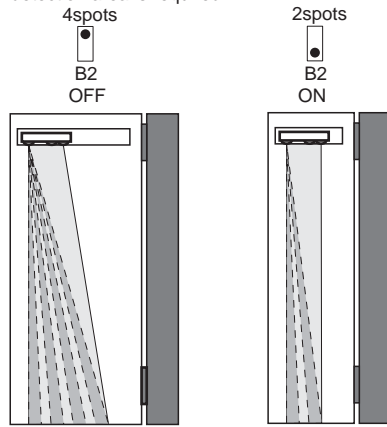
1-7.Setting the self monitoring

EN16005 Set Dipswitch B3 to "Enable".

Enable: B3 OFF   Disable: 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 & 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 > 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 < 2sec.

Action	First power supply	Dipswitch setting change	
Initialization Push the function switch for more than 2sec.	Red & Green blinking		LED indicator
—	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

Adjustable angle : 0° to +25°

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**.
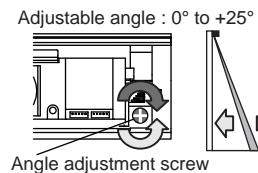
EN16005 After the adjustment, check the detection area.

Angle adjustment screw

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.
Safety / Test output2 (Reverse impulse)		COM. N.O. N.C.	COM. N.O. N.C.	COM. N.O. N.C.

⚠ WARNING

1. Always keep the front cover clean. If dirty, wipe it 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 LED indicator blinks Fast Red without any object in the detection area, contact your installer or service engineer.
5. Always contact your installer or service engineer when changing the settings.
6. 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.)

Problem	Possible cause	Possible countermeasures
The sensor has no function	Wrong power supply voltage	Set to the stated voltage.
	Wrong wiring or connection failure	Check the wiring and connectors.
Incomplete initialization (Red & Green blinking)	Initialization has not been conducted.	Push the function switch for more than 2 sec. for initialization.
	Dipswitch setting is changed.	
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.)	Remove the objects.
	Same frequency setting on double swing door application.	Set the different frequencies. (Dipswitch A2)
	The modules are affecting each other.	Change the module positions or adjust angles or adjust the area width (Dipswitch B2).
	Signal saturation.	Set the immunity (Dipswitch A3) to "ON".
	The floor pattern is not plain or , the door movement is irregular.	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.	Check the module angles.
	The front cover is dirty.	Wipe the front cover with a damp cloth. (Do not use any cleaner or solvent.)
	The front cover is scratched	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.	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.

OPTEX

OA-4500S(E)

CE

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.

NOTE

1. This product is a non-contact switch intended for header mount to use on industrial doors.
   Do not use for any other applications.
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 product.
4. Only use the product 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 product is installed.
6. 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.
7. 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.
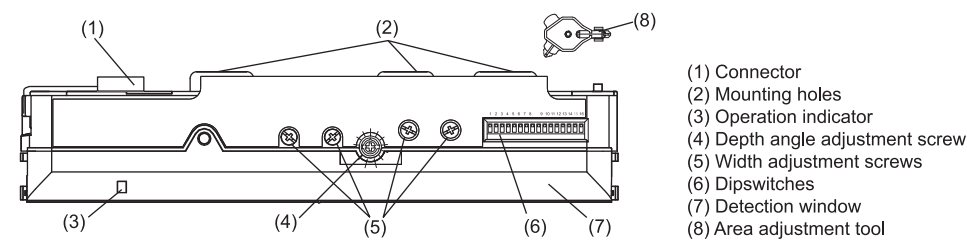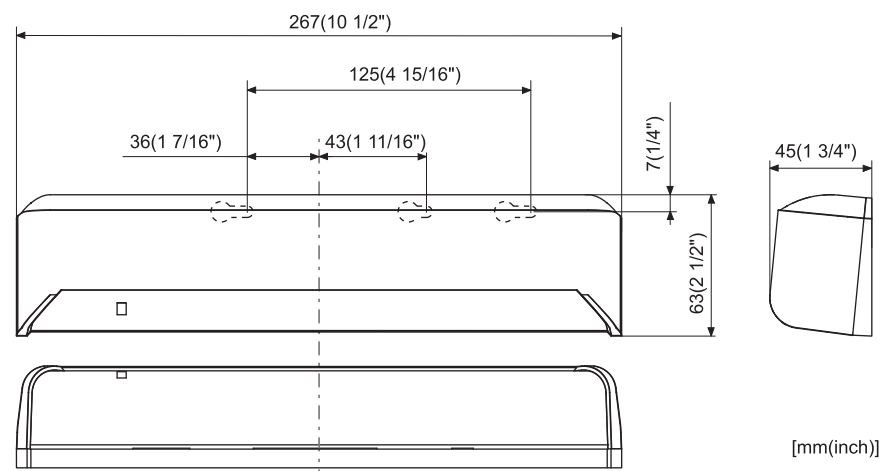- Highly reflecting floor or highly reflecting objects around the door.
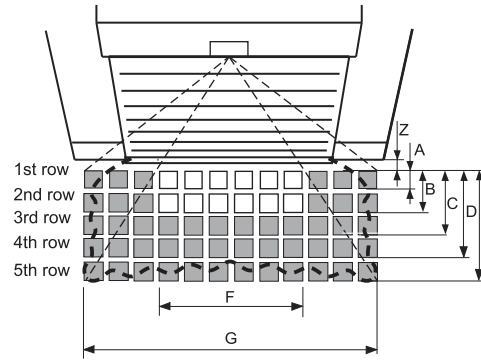
SPECIFICATIONS

Model	: OA-4500S(E)	Activation output	: When 3rd, 4th or 5th row detects.
Color	: Black		N.C. / N.O. selectable
Mounting Height	: 2.5m(8'2") to 4.5m(14'9)		50V0.3A MAX.(Resistance load)
Detection area	: See **DETECTION AREA**	Safety output	: When 1st or 2nd row detects.
Detection method	: Active infrared reflection method		N.C. / N.O. selectable
	(All presence detection)		50V0.3A MAX.(Resistance load)
Depth adjustment	: 1st to 3rd rows: -6° to +6°	Output hold time	: Approx. 0.5 sec.
	4th and 5th rows: +26° to +44°	Response time	: <0.3 sec.
Power supply	: 12 to 24V AC ±10% (50/60Hz)	Operation temperature	: -20°C to +55°C(-4°F to 131°F)
	12 to 30V DC ±10%	Operating humidity	: <80%
Power consumption	: < 2.5W (< 4VA at AC)	IP rate	: IP54
Operation indicator	: Green / Stand-by	Weight	: 320g(11.3oz)
	Red / 1st row detection	Accessories	: 1 Cable 4m(13'2")
	Orange / 2nd to 5th rows detects		2 Mounting screws
			1 Mounting template
			1 Operation manual
			1 Area adjustment tool

NOTE The specifications herein are subject to change without prior notice due to improvements.
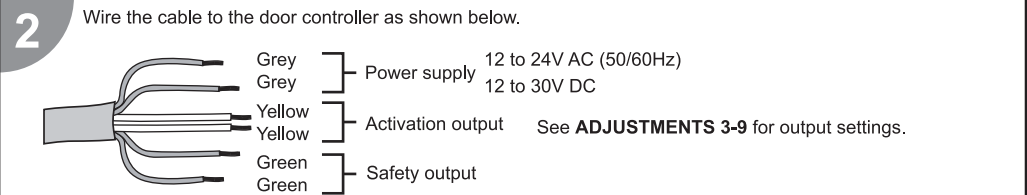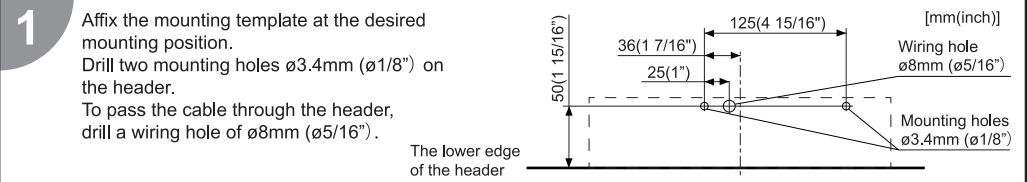
OUTER DIMENSIONS AND PART NAMES

267(10 1/2")
125(4 15/16")
36(1 7/16")
43(1 11/16")
7(1/4")
45(1 3/4")
63(2 1/2")

[mm(inch)]

(1) Connector
(2) Mounting holes
(3) Operation indicator
(4) Depth angle adjustment screw
(5) Width adjustment screws
(6) Dipswitches
(7) Detection window
(8) Area adjustment tool

DETECTION AREA

[mm(feet,inch)]

Mounting Height	2,500 (8'2")	3,000 (9'10")	3,500 (11'6")	4,000 (13'2")	4,500 (14'9")
A	160 (6")	200 (8")	230 (9")	260 (10")	290 (11")
B	480 (1'7")	580 (1'11")	670 (2'2")	760 (2'6")	850 (2'9")
C	930 (3'6")	1,100 (3'7")	1,300 (4'3")	1,480 (4'11")	1,660 (5'5")
D	1,540 (5'1")	1,850 (6'1")	2,160 (7'1")	2,460 (8'1")	2,760 (9'1")
E	2,170 (7'1")	2,600 (8'6")	3,030 (9'11")	3,460 (11'4")	3,890 (12'9")
F	1,510 (4'11")	1,810 (5'11")	2,110 (6'11")	2,400 (7'11")	2,700 (8'10")
G	3,150 (10'4")	3,790 (12'5")	4,420 (14'6")	5,050 (16'7")	5,680 (18'8")
Z	250 (10")	300 (12")	350 (1'2")	400 (1'4")	450 (1'6")

1st row
2nd row
3rd row
4th row
5th row

☐ : Emitting spots   ⌐¬ : Detection Area
▨ : Emitting spots (Can be eliminated)

Values of the chart are based on the following depth angle adjustment settings; 1st to 3rd rows : +6° 4th and 5th rows: +44°

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.
Drill two mounting holes ø3.4mm (ø1/8") on the header.
To pass the cable through the header, drill a wiring hole of ø8mm (ø5/16").

[mm(inch)]
125(4 15/16")
36(1 7/16")
25(1")
50(1 15/16")
Wiring hole ø8mm (ø5/16")
Mounting holes ø3.4mm (ø1/8")
The lower edge of the header

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

Grey / Grey — Power supply : 12 to 24V AC (50/60Hz) / 12 to 30V DC
Yellow / Yellow — Activation output   See **ADJUSTMENTS 3-9** for output settings.
Green / Green — Safety output

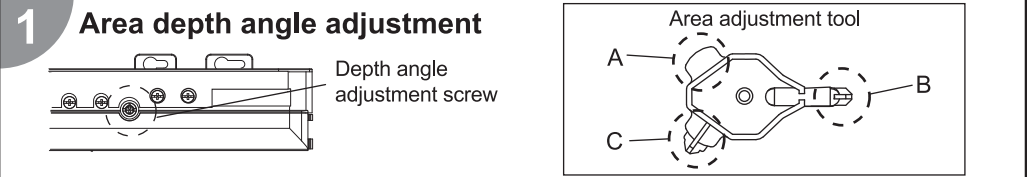| ⚠ WARNING | Before starting the procedure, make sure that the power is turned OFF. When passing the cable through the hole, do not tear the shield otherwise it may cause electric shock or breakdown of the sensor. |
| Danger of electric shock. | |

3
1. Plug the connector of the sensor.
2. Supply power to the sensor.
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.
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.

Knockout.

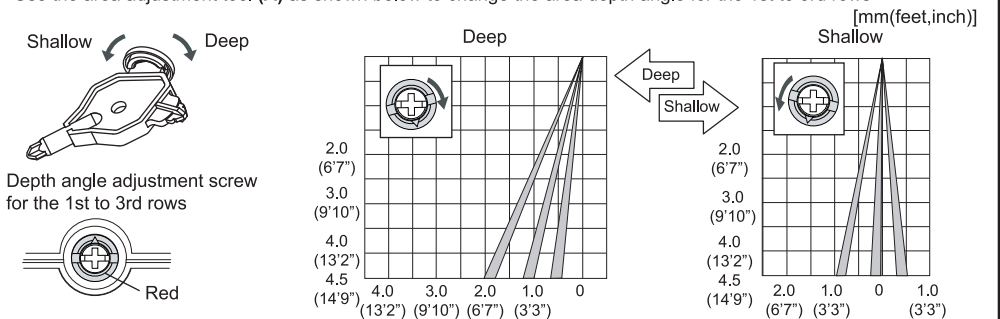| ⚠ WARNING | Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain-cover (Separately available) otherwise electric shock or breakdown of the sensor may occur. |
| Danger of electric shock. | |

ADJUSTMENTS

1 Area depth angle adjustment

Depth angle adjustment screw

Area adjustment tool
A
B
C

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.
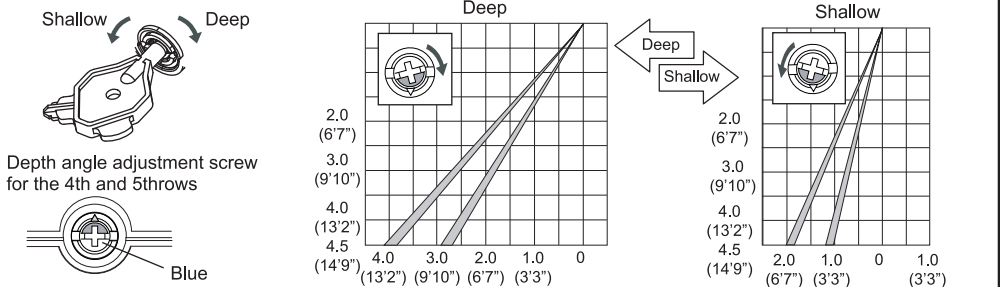
1-1.Independent adjustment

1st to 3rd rows
Use the area adjustment tool **(A)** as shown below to change the area depth angle for the 1st to 3rd rows.
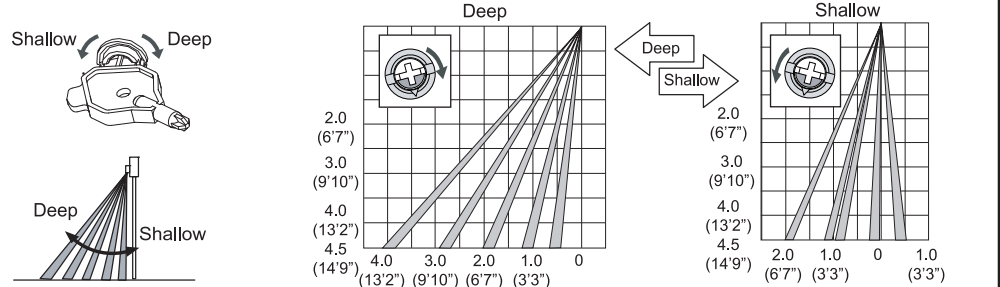
[mm(feet,inch)]

Shallow Deep
Depth angle adjustment screw for the 1st to 3rd rows
Red

Deep
Shallow
Deep / Shallow

2.0 (6'7")
3.0 (9'10")
4.0 (13'2")
4.5 (14'9")
4.0 (13'2") 3.0 (9'10") 2.0 (6'7") 0 (3'3")
2.0 (6'7") 1.0 (3'3") 0 1.0 (3'3")

4th and 5th rows
Use the area adjustment tool **(B)** as shown below to change the area depth angle for the 4th and 5th rows.

[mm(feet,inch)]

Shallow Deep
Depth angle adjustment screw for the 4th and 5throws
Blue

Deep
Shallow
Deep / Shallow

2.0 (6'7")
3.0 (9'10")
4.0 (13'2")
4.5 (14'9")
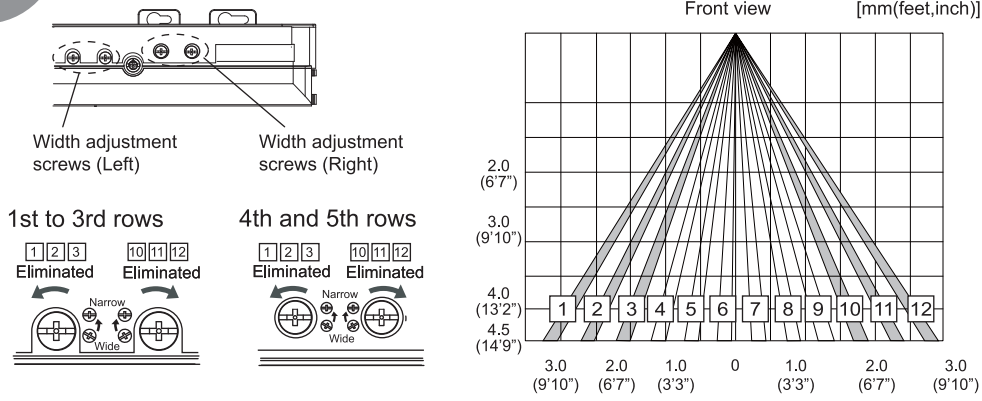4.0 (13'2") 3.0 (9'10") 2.0 (6'7") 1.0 (3'3") 0
2.0 (6'7") 1.0 (3'3") 0 1.0 (3'3")

1-2.Simultaneous adjustments

Use the area adjustment tool **(C)** as shown below to change the area depth angle for all rows.   [mm(feet,inch)]

Shallow Deep
Deep
Shallow

Deep
Shallow
Deep / Shallow

2.0 (6'7")
3.0 (9'10")
4.0 (13'2")
4.5 (14'9")
4.0 (13'2") 3.0 (9'10") 2.0 (6'7") 1.0 (3'3") 0
2.0 (6'7") 1.0 (3'3") 0 1.0 (3'3")

2 Area width adjustment

Width adjustment screws (Left)
Width adjustment screws (Right)

1st to 3rd rows
1 2 3 Eliminated   10 11 12 Eliminated
Narrow — Wide

4th and 5th rows
1 2 3 Eliminated   10 11 12 Eliminated
Narrow — Wide

Front view [mm(feet,inch)]

2.0 (6'7")
3.0 (9'10")
4.0 (13'2")
4.5 (14'9")

1 2 3 4 5 6 7 8 9 10 11 12

3.0 (9'10") 2.0 (6'7") 1.0 (3'3") 0 1.0 (3'3") 2.0 (6'7") 3.0 (9'10")

NOTE When adjusting the width adjustment screws, make sure to turn until they click otherwise proper operation may not be obtained.
1 2 3 cannot be eliminated separately, neither can 10 11 12 .

3 Dipswitch settings

Dipswitches
1 2 3 4 5 6 7 8   9 10 11 12 13 14 15 16
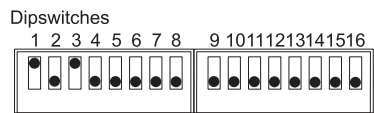
1,2 : Sensitivity	12 : Presence area
3,4 : Presence detection timer	13 : Activation output
5,6 : Frequency	14 : Safety output
7,8 : Row adjustment	15 : Simultaneous output
9 : Door cancel function	16 : N/A
10 : ON delay	
11 : Automatic infinite presence detection	

3-1.Setting the sensitivity

Recommended sensitivity setting in accordance with the following mounting height.

L (Low)   : 2.5m(8'2") to 3.5m(11'6")
M (Middle) : 3.0m(9'10") to 4.0m(13'2")
H (High)   : 3.5m(11'6") to 4.5m(14'9")
S-High(Super high) : 4.0m(13'2") to 4.5m(14'9")

Low Middle High S-High
1 2 1 2 1 2 1 2
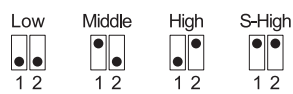
NOTE Adjust the sensitivity to suit each installation site.

3-2.Setting the presence detection timer

Presence detection timer can be selected by dipswitch 3 and 4.
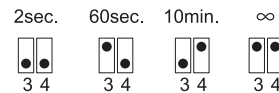
2sec. 60sec. 10min. ∞
3 4 3 4 3 4 3 4

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 a different frequency for each sensor by dipswitches 5 and 6.

Setting1 Setting2 Setting3 Setting4
5 6 5 6 5 6 5 6
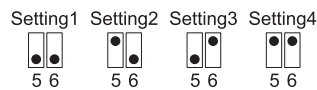
3-4.Setting the row adjustment

Set the rows with dipswitches 7 and 8.

5rows 4rows 3rows 2rows
7 8 7 8 7 8 7 8

NOTE When "2rows" is selected, the activation output is disabled.
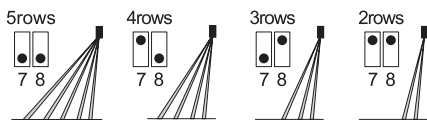
3-5.Setting the door cancel function

When dipswitch 9 is "ON" the sensor is less influenced by the door movement, i.e. caused by wind.
If the sensor does not detect for 10 sec., the 1st row will be disabled when door cancel function is"ON".
(The 1st row will be enabled again when there is detection at other rows.)

ON OFF
9 9
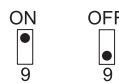
⚠ WARNING
Risk of getting caught.

With this fuction, 1st row is disabled if there are no diction for 10sec.
If a person or vehicle enter the first row without any detection in other rows (e.g. enter from the other side), it might cause an accident.

3-6.Setting the ON delay 2 sec.

To avoid unnecessary openings due to passing objects/persons set dipswitch 10 "ON".
The sensor only activates when a person or object stays in the detection area for more then 2 seconds.

ON OFF
10 10
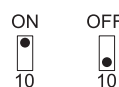
⚠ WARNING
Risk of getting caught.

Please do not set ON delay 2sec. to "ON" when door cancel function is "ON".
If both are "ON" , the sensor does not output signal unless it detects a person or object more than 2sec and 1st row is inactive.
If the person or object enter the fist row, the sensor does not detect and door never opens.

3-7.Setting the automatic infinite presence detection

When people or objects enter more than 2 spot areas, this function automatically sets the presence detection timer to infinity to increase safety and avoid unwanted door opening due to sudden change in floor condition.

ON OFF
11 11
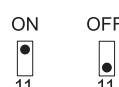
3-8.Setting the presence area

With dipswitch 12 "1st & 2nd" , presence detection timer for 1st & 2nd rows belong to dipswitch 3 and 4. Presence detection timer for 3th to 5th row automatically becomes 2 sec..
With dipswitch 12 "1st to 5th" , presence detection timer will be same as all detection area, set by combining dipswitch 3 and 4.

1st & 2nd 1st to 5th
12 12
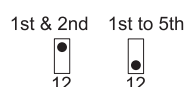
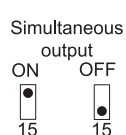NOTE When dipswitch 11 is set to "ON" the automatic infinite presence detection has priority over this function.

3-9.Setting the outputs

The activation and safety outputs can be selected separately (N.C. or N.O. by dipswitch 13 and 14)

Activation output   Safety output
N.C. N.O.   N.C N.O
13 13   14 14
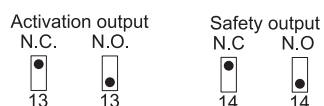
The output timing from "Activation output" and "Safety output" can be changed by dipswitch 15.
With dipswitch 15 set to "ON" the output timing will be the same.
With dipswitch 15 set to "OFF" the output timing will be different.
See **CHECKING**.

Simultaneous output
ON OFF
15 15

Check the operation 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 / Presence detection active			Stand-by
Image						
Operation indicator	None	Green	Orange		Red	Green

Simultaneous output OFF 15	Activation output	N.O. 13						
		N.C. 13						
	Safety output	N.O. 14						
		N.C. 14						
Simultaneous output ON 15	Activation output	N.O. 13						
		N.C. 13						
	Safety output	N.O. 14						
		N.C. 14						

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 is twice geen blinking, 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. 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.)

Alarm display
Refer to the **TROUBLESHOOTING** below when the following appears.

Status	Life cycle notification	Signal Saturation
Operation indicator	Twice green blinking	Slow green blinking

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.
		Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Wrong detection area positioning.	Check **DETECTION AREA** & **ADJUSTMENTS**
		Sensitivity is too low.	Set the sensitivity higher.
		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.)
	Green	Wrong (Safety/Activation) output setting.	Check **ADJUSTMENTS 3-9**.
		Both ON delay and door cancel function are "ON".	Set either function to "OFF" Check **ADJUSTMENTS 3-5 & 3-6.**
	Orange	Wrong wiring	Check the wires and connector.
Door opens when no one is in the detection area. (Ghosting)	Unstable	The detection area overlaps with that of another sensor.	Check **ADJUSTMENTS 3-3**.
		Water drops on the detection window.	Use the rain-cover (Separately available). Or install the sensor in a place keeping the water -drops off.
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside).
		Sensitivity is too high.	Set the sensitivity lower. Check **ADJUSTMENTS 3-1**.
		Wrong (Safety/Activation) output setting.	Check **ADJUSTMENTS 3-9**.
Door remains open	Proper	Presence timer is "∞" and sudden change in the detection area happened.	Check **ADJUSTMENTS 3-2 & 3-7**. 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.
		The automatic infinite presence detection is "ON" and the objects or people enter more than two spot areas.	Remove the objects. Or check **ADJUSTMENTS 3-7**.
	Green	Wrong (Safety/Activation) output setting.	Check **ADJUSTMENTS 3-9**.
Proper	Twice Green blinking	Output relay(s) is reaching the end of its life cycle.	Replace the sensor.
	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).

OPTEX

OA-6500S(E)

ENGLISH ORIGINAL

CE

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.

NOTE

1. This product is a non-contact switch intended for header mount for use on industrial door.
   Do not use for any other applications.
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 product.
4. Only use the product 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 product is installed.
6. 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.
7. 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.

SPECIFICATIONS

Model	: OA-6500S(E)	Activation output	: When 3rd rows detect.
Color	: Black		N.C. / N.O. selectable
Mounting Height	: 2.5m(8'2") to 6.5m(21'4")		50V0.3A MAX.(Resistance load)
Detection area	: See **DETECTION AREA**	Safety output	: When 1st or 2nd row detects.
Detection method	: Active infrared reflection method		N.C. / N.O. selectable
	(All presence detection)		50V0.3A MAX.(Resistance load)
Depth adjustment	: 1st and 2nd rows: -15° to +5°	Output hold time	: Approx. 0.5 sec.
	3rd row: +30° to +50°	Response time	: <0.3 sec.
Power supply	: 12 to 24V AC ±10% (50/60Hz)	Operation temperature	: -20°C to +55°C(-4°F to 131°F)
	12 to 30V DC ±10%	Operating humidity	: <80%
Power consumption	: <2.5W (< 3.5VA at AC)	IP rate	: IP44
Operation indicator	: Green / Stand-by	Weight	: 600g(21.2 oz)
	Red / 1st row detection	Accessories	: 1 Cable 4m(13'2")
	Orange / 2nd and 3rd rows detection		2 Mounting screws
			1 Mounting template
			1 Operation manual
			1 High mount window
			1 Protection sticker

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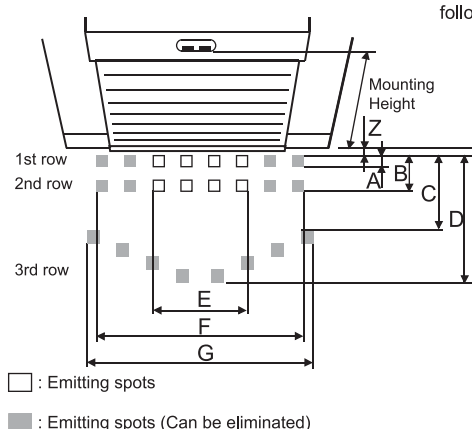
DETECTION AREA

[Standard window]

□ : Emitting spots
▨ : Emitting spots (Can be eliminated)

[mm(feet,inch)]
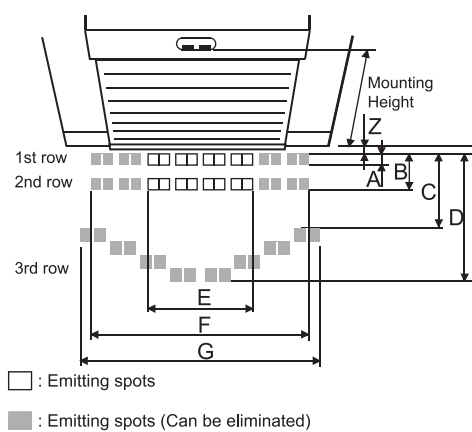
Window	Standard window			High mount window	
Mounting Height	2,500 (8'2")	3,500 (11'6")	4,500 (14'9")	5,500 (18'1")	6,500 (21'4")
A	150 (6")	210 (8")	280 (11")	340 (1'1")	400 (1'4")
B	560 (1'10")	790 (2'7")	1010 (3'4")	1240 (4'1")	1470 (4'10")
C	680 (2'3")	960 (3'2")	1240 (4'1")	1510 (4'11")	1790 (5'11")
D	1340 (4'5")	1870 (6'2")	2410 (7'11")	2940 (9'8")	3480 (11'5")
E	1530 (5'1")	2150 (7'1")	2760 (9'1")	2790 (9'2")	3300 (10'10")
F	3640 (11'11")	5100 (16'9")	6560 (21'7")	7230 (23'9")	8550 (28'1")
G	3840 (12'7")	5380 (17'8")	6910 (22'8")	7620 (25')	9010 (29'7")
Z	150 (6")	220 (9")	280 (11")	340 (1'1")	410 (1'4")

Values of the chart are based on the following depth angle adjustment settings;
1st and 2nd rows : +5°
3rd row : +30°

[High mount window]

□ : Emitting spots
▨ : Emitting spots (Can be eliminated)

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

371(1'2 5/8")
338(1'1 5/16")
10(3/8")
72(2 13/16")
73(2 7/8")

[mm(inch)]

(1) 1st and 2nd rows adjustment screw
(2) 3rd row adjustment screw
(3) Detection Window
(4) Mounting holes
(5) Dipswitches
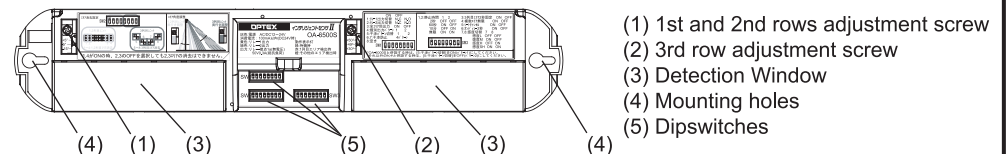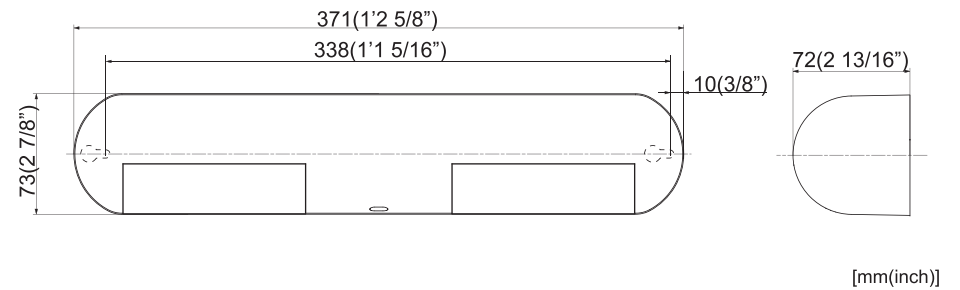
INSTALLATION

1 Drill two mounting holes ø3.4mm (ø1/8") on the header.
To pass the cable through the header, drill a wiring hole of ø8mm (ø5/16").

3(1/8") 338(1'1 5/16") 36.5 (1 7/16") [mm(inch)]
Wiring hole ø8.0mm(ø5/16")
The lower edge of the header
16(5/8")
Mounting holes ø3.4mm(ø1/8")

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

Grey / Grey — Power supply   12 to 24V AC (50/60Hz)
                              12 to 30V DC
Yellow / Yellow — Activation output
Green / Green — Safety output

See **ADJUSTMENTS 3-1** for output settings.

| ⚠ 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 1.Plug the connector of the sensor.
2.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.
When changing the settings of dipswitch, see **ADJUSTMENTS 3 Dipswitch settings.**

4 1.Put the protection sticker as shown below.

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

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 **Detection window selection**

According to the mouting height, select proper detection window.
2.5m(8'2") to 5.0m(16'5"):Standard window(default)
5.0m(16'5") to 6.5m(21'4"):High mount window

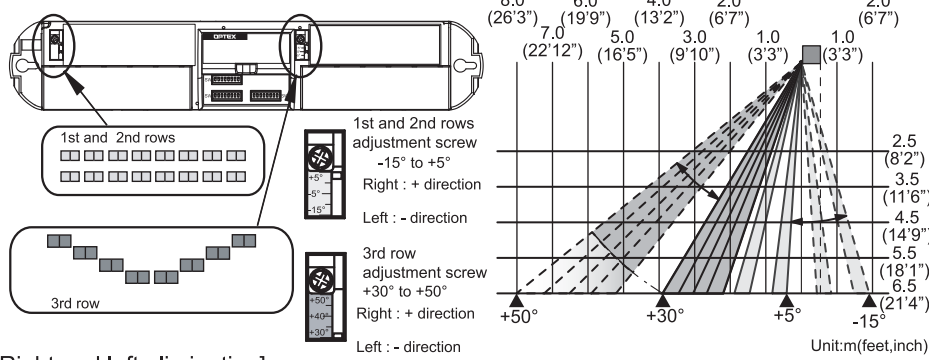When changing window follow procedure below.

1. Remove the screws

2.Take the windows off.

3.Attach the windows.

window

4.Fix the windows with the screws.

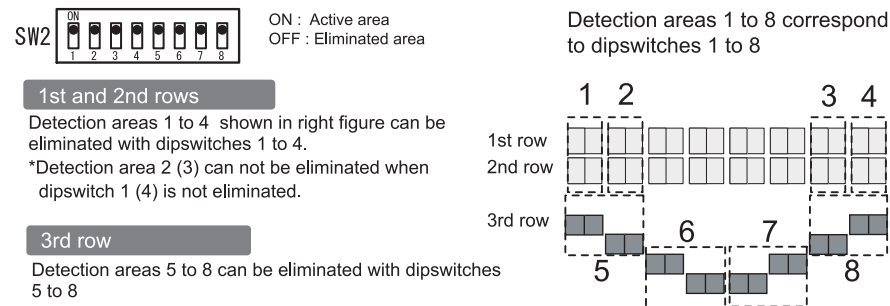**NOTE** Please carry out operation check after changing window.
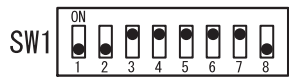
2 Area adjustment

[Depth adjustment]

1st and 2nd rows
3rd row

1st and 2nd rows adjustment screw
-15° to +5°
Right : + direction
Left : - direction

3rd row adjustment screw
+30° to +50°
Right : + direction
Left : - direction

8.0 (26'3") 7.0 (22'12") 6.0 (19'9") 5.0 (16'5") 4.0 (13'2") 3.0 (9'10") 2.0 (6'7") 1.0 (3'3") 1.0 (3'3") 2.0 (6'7")

2.5 (8'2")
3.5 (11'6")
4.5 (14'9")
5.5 (18'1")
6.5 (21'4")

+50°   +30°   +5°   -15°

Unit:m(feet,inch)

[Right and left elimination]

SW2   ON : Active area
       OFF : Eliminated area

Detection areas 1 to 8 correspond to dipswitches 1 to 8

1st and 2nd rows
Detection areas 1 to 4 shown in right figure can be eliminated with dipswitches 1 to 4.
*Detection area 2 (3) can not be eliminated when dipswitch 1 (4) is not eliminated.

3rd row
Detection areas 5 to 8 can be eliminated with dipswitches 5 to 8

1 2   3 4
1st row
2nd row
3rd row
5   6   7   8

3 Dipswitch settings

[1.Dipswitches <SW1>]

SW1

1 : Activation output
2 : Safety output
3 : Simultaneous output
4 : 2nd row output setting
5,6,7: Frequency
8 : N/A

### 3-1.Setting the outputs (SW1 Dipswitch 1,2,3 and 4)

The outputs from Activation output (2nd and 3rd rows) and Safety output (1st row) can be selected separately from N.C. and N.O. by dipswitch 1 and 2.

Activation output   Safety output
N.O. N.C.   N.O N.C
 1   1   2   2
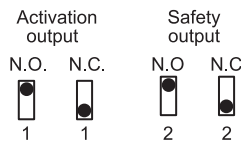
The output timing from "Activation output" and "Safety output" can be changed by dipswitch 3.
With dipswitch 3 set to "ON" the output timing will be the same.
With dipswitch 3 set to "OFF" the output timing will be different.
See **CHECKING**.

Simultaneous output
ON   OFF
 3   3
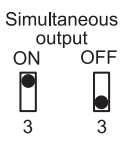
The 2nd row output selectable by dipswitch 4.
With dipswitch 4 set to "ON" the output from 2nd row will be sent from Activation output.
With dipswitch 4 set to "OFF" the output will be sent from Safety output.
See **CHECKING**.
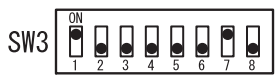
2nd row output
Activation   Safety
 4   4
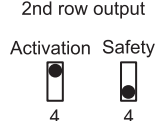
3-2.Setting the frequency (SW1 Dipswitch 6 and 7)

When using more than 2 sensors close to each other, set the different frequency for each sensor by combining dipswitch 6 and 7.

Setting1   Setting2   Setting3   Setting4
5 6 7   5 6 7   5 6 7   5 6 7
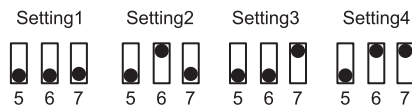
NOTE Make sure that Dipswitch 5 is set to "OFF" for any setting.

[2.Dipswitches <SW3>]

SW3

1,2 : Presence detection timer
3 : 2 sec. detection timer
4 : Automatic infinite presence detection
5 : Door cancel function
6 : ON delay
7,8 : Sensitivity

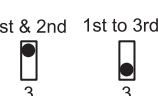### 3-3.Setting the presence detection timer (SW3 Dipswitch 1 and 2)

Presence detection timer can be selected by combining dipswitch 1 and 2.

2sec.   60sec.   10min.   ∞
1 2   1 2   1 2   1 2

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

### 3-4.Setting the presence area (SW3 Dipswitch 3)

With dipswitch 3 "1st & 2nd", presence detection timer for 1st and 2nd rows belong to dipswitch 1 and 2. Presence detection timer for 3th row automatically becomes 2 sec..
With dipswitch 3 "1st to 3rd", presence detection timer will be same as all detection area, set by combining dipswitch 1 and 2.

1st & 2nd   1st to 3rd
 3   3

NOTE When dipswitch 4 is set to "ON" the automatic infinite presence detection has priority over this function.

3-5.Setting the automatic infinite presence detection (SW3 Dipswitch 4)

When people or objects enter more than 2 spot areas, this function automatically sets the presence detection timer to infinity to increase safety and avoid unwanted door opening due to sudden change in floor condition.

ON   OFF
 4   4
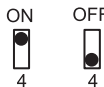
### 3-6.Setting the door cancel function (SW3 Dipswitch 5)

When dipswitch 5 is "ON" the sensor is less influenced by the door movement, i.e. caused by wind.
If the sensor does not detect for 10 sec., the 1st row will be disabled when door cancel function is"ON".
(The 1st row will be enabled again when there is detection at other rows.)

ON   OFF
 5   5
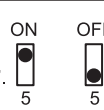
⚠ WARNING
Risk of getting caught.
With this fuction, 1st row is disabled if there are no dtection for 10sec.
If a person or vehicle enter the first row without any detection in other rows (e.g. enter from the other side), it might cause an accident.

3-7.Setting the ON delay 2 sec. (SW3 Dipswitch 6)

To avoid unnecessary openings due to passing objects/persons set dipswitch 6 "ON".
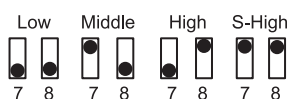The sensor only activates when a person or object stays in the detection area for more then 2 seconds.

ON   OFF
 6   6
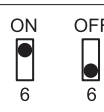
⚠ WARNING
Risk of getting caught.
Please do not set ON delay 2sec. to "ON" when door cancel function is "ON".
If both are "ON" , the sensor does not output signal unless it detects a person or object more than 2sec and 1st row is inactive.
If the person or object enter the fist row, the sensor does not detect and door never opens.

3-8.Setting the sensitivity (SW3 Dipswithch 7 and 8)

Recommended sensitivity setting in accordance with the following mounting height.

L (Low)   : 2.5m(8'2") to 3.5m(11'6")
M (Middle)   : 3.0m(9'10") to 4.5m(14'9")
H (High)   : 4.0m(13'2") to 5.5m(18'1")
S-High(Super high) : 5.0m(16'5") to 6.5m(21'4")

Low   Middle   High   S-High
7 8   7 8   7 8   7 8

NOTE Adjust the sensitivity to suit each installation site.

Check the operation according to the chart below.

Entry	Power OFF	Outside of detection area	Entry into 3rd row	Entry into 2nd row	Entry into 1st row	Outside of detection area
Status	-	Stand-by	Motion / Presence detection active			Stand-by
Image						
Operation indicator	None	Green	Orange		Red	Green

Dipswitches <SW1>

Simultaneous output OFF (3)
- 2nd row output Activation (4) — Activation output — N.C. (1) / N.O. (1)
- 2nd row output Safety (4) — Safety output — N.C. (2) / N.O. (2)

Simultaneous output ON (3)
- Activation output — N.C. (1) / N.O. (1)
- Safety output — N.C. (2) / N.O. (2)

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 is twice geen blinking, 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. 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.)

Alarm display
Refer to the **TROUBLESHOOTING** below when the following appears.

Status	Life cycle notification	Signal Saturation
Operation indicator	Twice green blinking	Slow green blinking

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.
		Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Wrong detection area positioning.	Check **DETECTION AREA** & **ADJUSTMENTS**
		Sensitivity is too low.	Set the sensitivity higher.
		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.)
	Green	Wrong (Safety/Activation) output setting.	Check **ADJUSTMENTS 3-1**.
		Both ON delay and door cancel function are "ON".	Set either function to "OFF"
	Orange	Wrong wiring	Check the wires and connector.
Door opens when no one is in the detection area. (Ghosting)	Unstable	The detection area overlaps with that of another sensor.	Check **ADJUSTMENTS 3-2**.
		Water drops on the detection window.	Use the rain-cover (Separately available). Or install the sensor in a place keeping the water-drops off.
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside).
		Sensitivity is too high.	Set the sensitivity lower.
		Wrong (Safety/Activation) output setting.	Check **ADJUSTMENTS 3-1**.
Door remains open	Proper	Presence timer is "∞" and sudden change in the detection area happened.	Check **ADJUSTMENTS 3-3 & 3-5**. 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.
		The automatic infinite presence detection is "ON" and the objects or people enter more than two spot areas.	Remove the objects. Or check **ADJUSTMENTS 3-5**.
	Green	Wrong (Safety/Activation) output setting.	Check **ADJUSTMENTS 3-1**.
Proper	Twice Green blinking	Output relay(s) is reaching the end of its life cycle.	Replace the sensor.
	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).