

5924691 JUN 2017

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

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

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

Specifications

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

Accessories

Silver self tap screw for extrusion	2pcs
Silver wood screw for extrusion	2pcs
Black small screw for endcap	4pcs
Black large screw for wire shroud cover	2pcs
Wire shroud	1pcs
Wire shroud cover	1pcs
Power supply cable	1pcs
Communication cable	Refer to matrix Manual
	1pcs

unit : inch(mm)

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

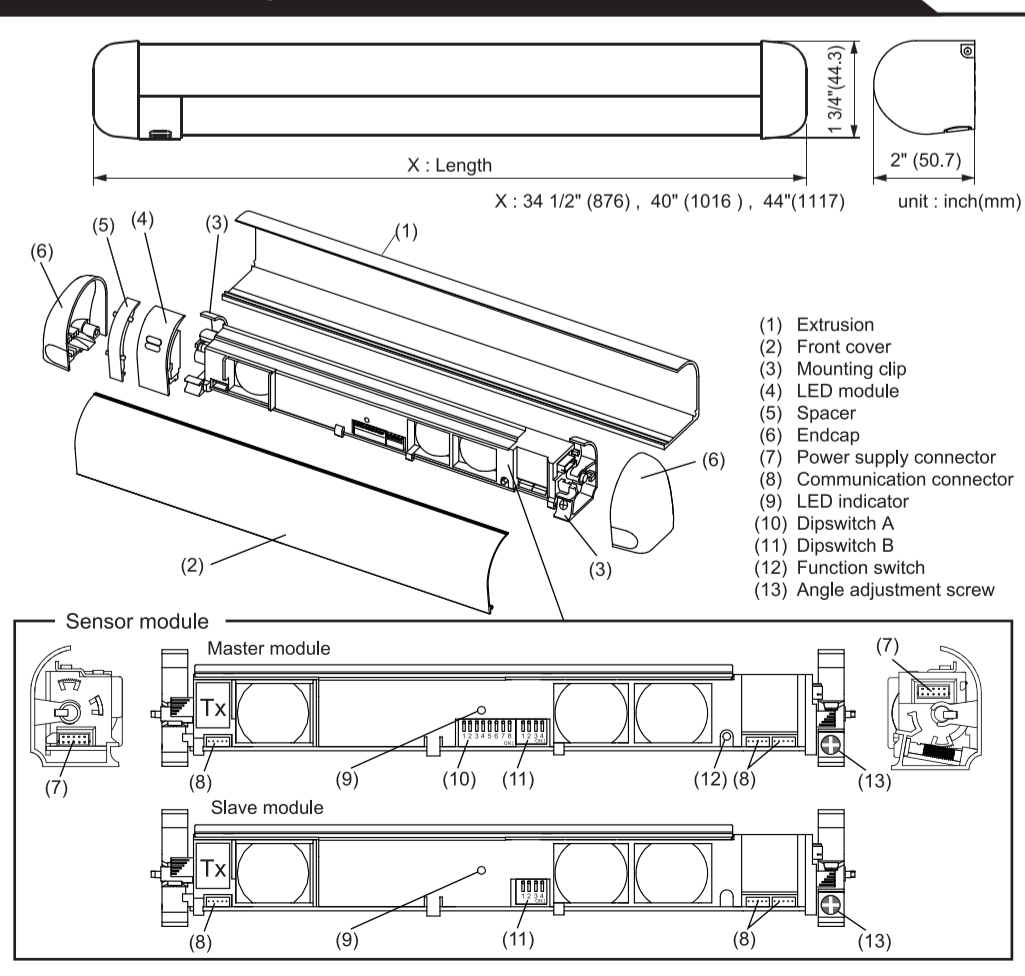
* : OA-EDGE1 T have 1 sensor module (Master only).
OA-EDGE2 T have 2 sensor modules (Master + Slave).
** : There are two types of output. (Reactivate & Stall)

LED indicator

Status	Sensor module indicator	1sec.	LED module indicator
Stand-by	Solid green	[Solid green bar]	The color depends on the state of the output.
Swing side detection (output 1)	Solid red	[Solid red bar]	Safety output 1 Swing side(Stall)
Approach side detection (output 2)	Solid orange	[Solid orange bar]	OFF : Solid green
Incomplete Initialization	Red & green blinking	[Red & green blinking bar]	ON : Solid red
Learning	Blinking yellow	[Blinking yellow bar]	Safety output 2 Approach side(Reactivate)
Incomplete learning	Yellow & red blinking	[Yellow & red blinking bar]	OFF : Solid green
Saturation	Slow red blinking	[Slow red blinking bar]	ON : Solid orange
Sensor failure	Fast red blinking	[Fast red blinking bar]	
Communication error	Twice orange blinking	[Twice orange blinking bar]	

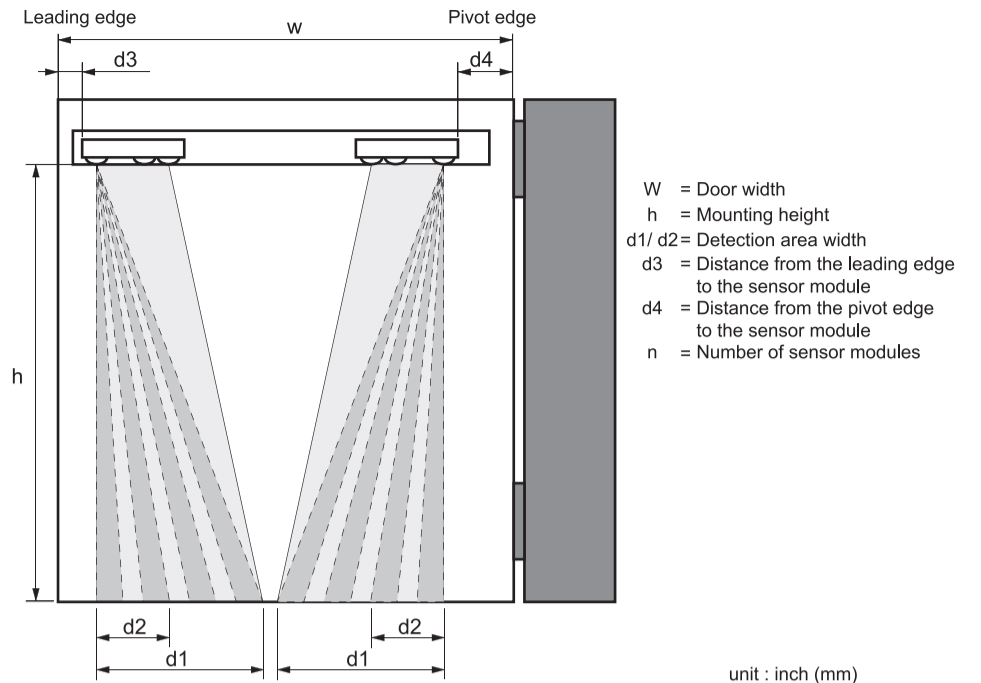
NOTE The specifications herein are subject to change without prior notice due to improvements.
*1 :LED will be turned off approx. 500ms when the sensor Test output signal works well.

Outer dimensions and part names



Detection area

Recommended installation position



unit : inch (mm)

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

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

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

Installation

1 Mounting the extrusion

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

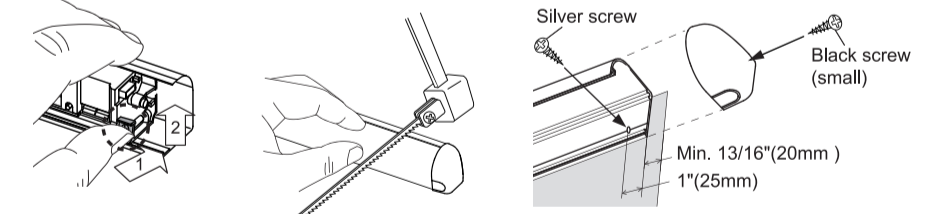
NOTE When cutting the extrusion it is recommended to assemble to the extrusion one end cap. Place the LED module and spacer against the end cap and install the lens cover tight to the LED module. Cut the assembled unit using a miter saw or similar device to ensure proper 90 degree angle. Cut the end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

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

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

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

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



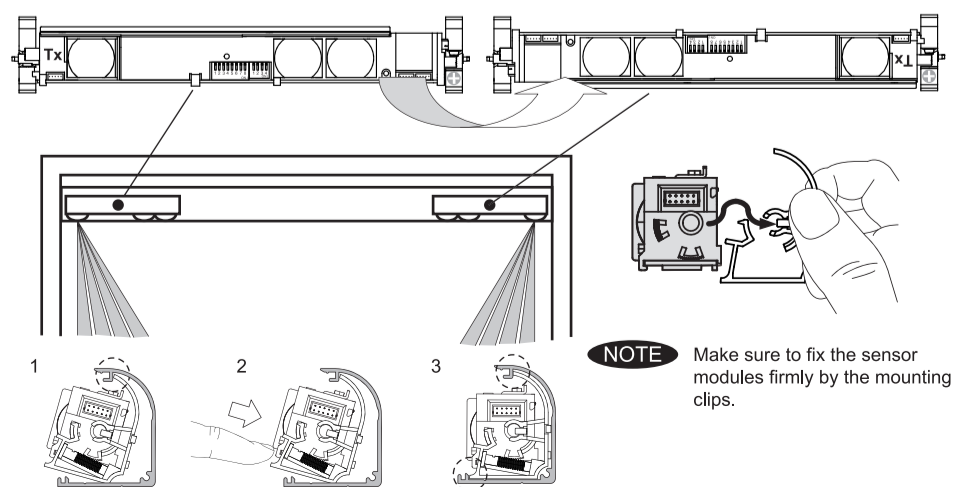
2 Inserting the sensor module

1. Approach side

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

2. Swing side

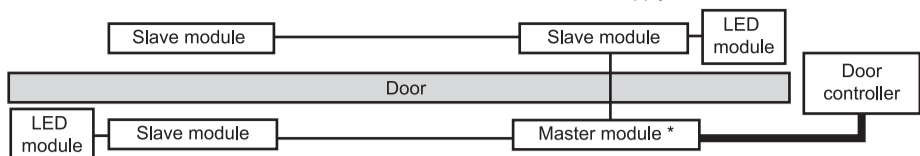
When installing on swing side in conjunction with an Overhead Presence Sensor see separate included chart for starting location. Requires two modules for this application to ensure conformance to ANSI/BHMA A156.10, Section 8. Must be walk tested and adjusted if necessary to confirm compliance with the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



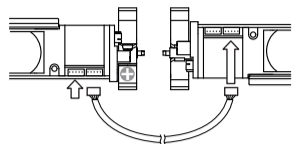
Installation

3 Wiring

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

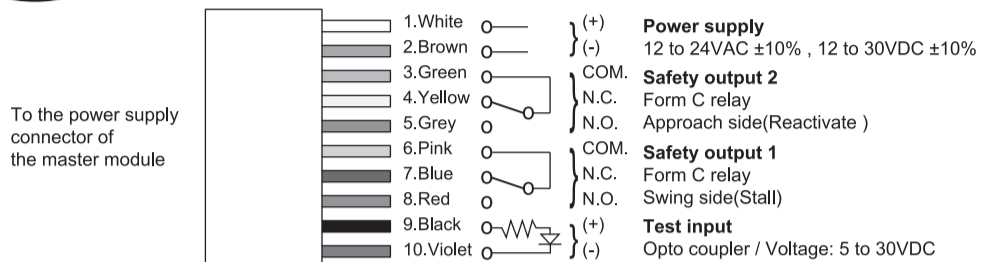


NOTE * When more than 1 master module is installed on the door leaf, make sure that only one power supply cable is connected to the operator otherwise initialization can not be completed. All other master units will automatically function as a slave unit.



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

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

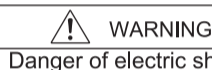


To the power supply connector of the master module

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



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



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

4 Inserting LED module

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



NOTE For LED status see Specifications.

5 Placing the front cover

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

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

Adjustments

1 Dipswitch settings

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

Dipswitch A	
A1	Non detection zone (A)
A2	Frequency
A3	Immunity
A4	Presence timer
A5	For future use
A6	Test input
A7	Test input delay
A8	Test input delay

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

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

1-1. Setting the Non detection zone

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

[Non detection zone value] = [Dipswitch A1 value] + [Dipswitch B1 value]

Side view	Dipswitch A1	Dipswitch B1	Total Non detection zone
OFF : 5 7/8" (15cm)	OFF : +0" (+0cm)	OFF : +0" (+0cm)	5 7/8" (15cm)
OFF : 5 7/8" (15cm)	ON : +3 15/16" (+10cm)	OFF : +0" (+0cm)	9 13/16" (25cm)
ON : 13 3/4" (+35cm)	OFF : +0" (+0cm)	ON : +3 15/16" (+10cm)	13 3/4" (35cm)
ON : 13 3/4" (+35cm)	ON : +3 15/16" (+10cm)	ON : +3 15/16" (+10cm)	17 11/16" (45cm)

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

1-2. Setting the frequency

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

Setting1	Setting2
A2 OFF	A2 ON

1-3. Setting the immunity

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

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

Immunity OFF	Immunity ON
A3 OFF	A3 ON

1-4. Setting the presence timer

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

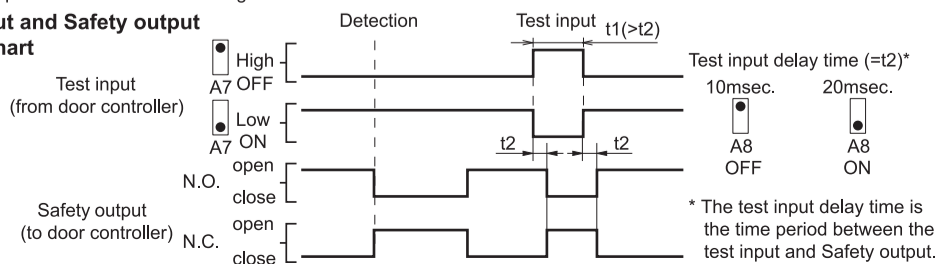
NOTE If an object remains in the detection area longer than the setting, LED indicator may blink fast red. In this case, it is not sensor failure. After an object is removed, LED indicator will show Solid Green.

30sec.	60sec.	180sec.	∞
A4 ON	A4 ON	A4 ON	A4 ON
A5 OFF	A5 OFF	A5 OFF	A5 ON

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

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

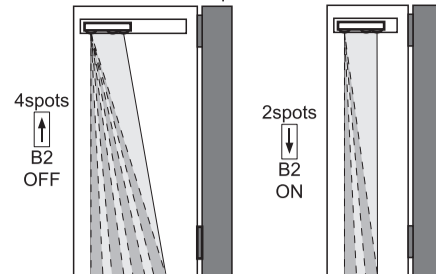
Test input and Safety output timing chart



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

1-6. Setting the area width

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



1-7. Self monitoring mode

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

A: Setting for USA
B: Setting for Europe



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

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

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

2 Function switch

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

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

2-1. Initialization & Learning

Initialization:

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

Learning:

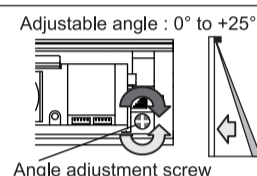
After an initialization or a change in the settings always make a learning cycle by pushing the function switch for **LESS THAN 2 SEC.**

Action	First power supply	Dipswitch setting change	LED indicator
Initialization Push the function switch for more than 2sec.	Red & green blinking		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	↕	LED indicator
—	Yellow blinking		
—	Solid green		

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

3 Area depth angle adjustment

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



Checking

Check the operation according to the chart below.

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

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

Inform building owner / operator of the following items

WARNING

- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise electric shock may occur.

CAUTION

- Do not paint the detection window.

NOTE

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. (Do not use any cleaner / solvent.)
- When LED indicator blinks fast red without any object in the detection area, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- When turning the power ON, always walk-test the detection area to ensure the proper operation.
- Do not place any objects that move or emit light in the detection area. (e.g. Plant, illumination, etc.)

Troubleshooting

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

Manufacturer

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.net

North and South America Subsidiary

OPTEX INCORPORATED
18730 S. Wilmington Avenue, Suite 100
Rancho Dominguez CA 90220 U.S.A
TEL.: +1-800-877-6656
FAX.: +1(310)898-1098
WEBSITE: www.ot-inc.com

East coast office
8510 McAlpines Park Drive, Suite 108
Charlotte, NC 28211 U.S.A.
TEL.: +1-800-877-6656
FAX.: +1(704)365-0818
WEBSITE: www.ot-inc.com