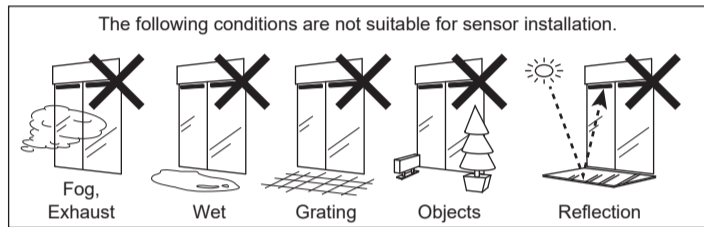


**Manufacturer's statement**

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.

	<b>WARNING</b> Failure to follow the instructions that accompany this indication and improper handling may result in serious injury or death.
	<b>CAUTION</b> Failure to follow the instructions that accompany this indication and improper handling may result in injury and/or damage to property.
	<b>NOTE</b> Pay special attention to sections with this symbol.
	It is required to check the operation manual if this symbol is shown on the product.
	<b>EN 16005</b> Setting to meet the requirements by EN 16005.

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

**Specifications**

Model : OA-EDGE T	Output hold time : Approx. 500 ms
Profile color : Silver/Black	Response time : < 75 ms
Mounting height : 1.5 (4'11") to 3.0 m (9'10")	Operating temperature : -20 to +55°C (-4 to 131°F)
Detection area : See <b>Detection area</b>	Operating humidity : < 80 %
Detection method : Triangulation	Noise level : < 70 dBA
Min. configuration : 1 main module +1 LED module	Test input : Opto coupler 10 to 30 VDC
Max. configuration : 4 sensor modules +2 LED modules	Current 0.3 A Max.
Depth angle adjustment : 0° to +25°	Safety/Test output 1 : Form C relay
Power supply (*1) : 12 to 24 VAC ±10 % (50/60 Hz)	Safety/Test output 2 : Voltage 42 VDC
Power consumption : < 1.3 W	Output : See <b>Installation 3</b>
( < 2 VA at AC ) at Min. configuration	IP rate : IP54
( < 3.5 W ) at Max. configuration	Category (*2) : 2 (EN ISO13849-1:2015)
LED indicator : See <b>LED indicator below</b>	Performance level (*2) : d (EN ISO13849-1:2015)
	ESPE : Type 2

- 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 is equipped with a SELV circuit. The overcurrent protection of power supply cable has to be less than 2A.
- \*2 : According to EN ISO13849-1:2015

**EN 16005** Install the sensor at 1.8 m (5'11") to 3.0 m (9'10").

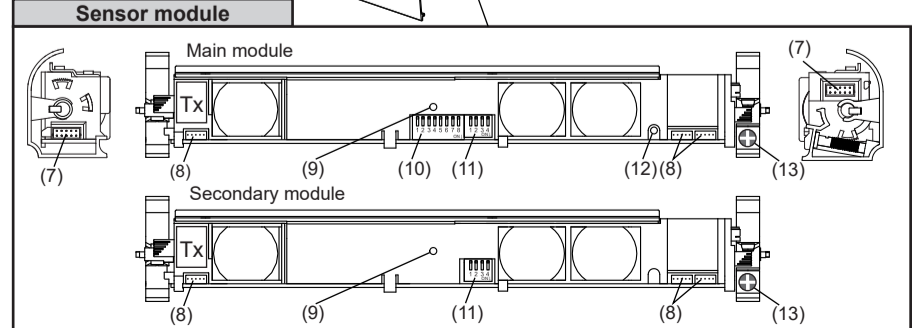
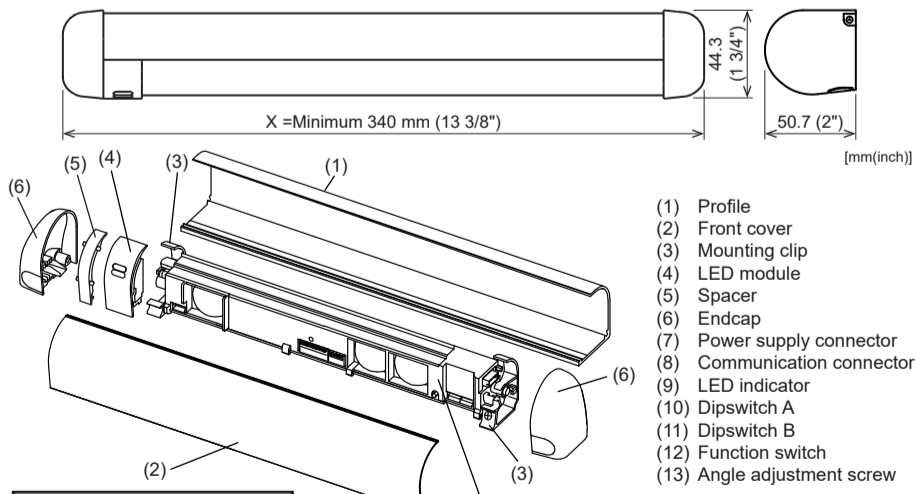
**LED indicator**

Status	Sensor module indicator
Stand-by	Green
Opening side detection (output 1)	Red
Closing side detection (output 2)	Orange
Incomplete Initialization	Red & Green blinking
Learning	Yellow blinking
Incomplete learning	Yellow & Red blinking
Signal 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	Green
ON	Red
Safety/Test output 2	
OFF	Green
ON	Orange

**Dimensions and part names**

**Complied standards and extract from EC declaration of conformity**

EN 16005:2012/AC:2015 Chapter 4.6.8 and Annex C	EN 61000-6-3:2007 +A1:2011/AC:2012	EN ISO 13849-1:2015
EN 61496-3:2001 clause 4. 3. 5 and 5. 4. 7. 3	EN 61000-6-2:2005/AC:2005	EN ISO 13849-2:2012
DIN 18650-1:2010 Chapter 5.7.4 ESPE	EN 12978:2003 +A1:2009	
Machinery Directive 2006/42/EC	EMC Directive 2014/30/EU	
Notified Body 0044 : TÜV NORD CERT GmbH Am TÜV 1, 45307 Essen Germany		A. Maekawa General Manager OPTEX CO., LTD. Quality Control Dept.

For technical document, see European Subsidiary

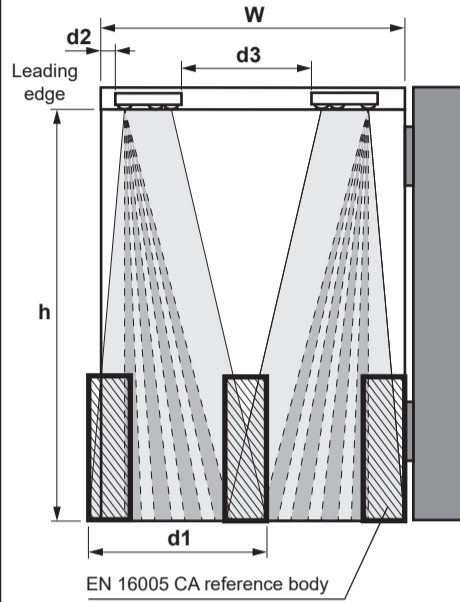
**Detection area**

**Detection area at 2200 mm (7' 2 5/8") : Depth 140 (5 1/2") x Width 870 (2'10")**

Test conditions according to EN 16005 Detection object : EN 16005 CA reference body

**Emitting area at 2200 mm (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**


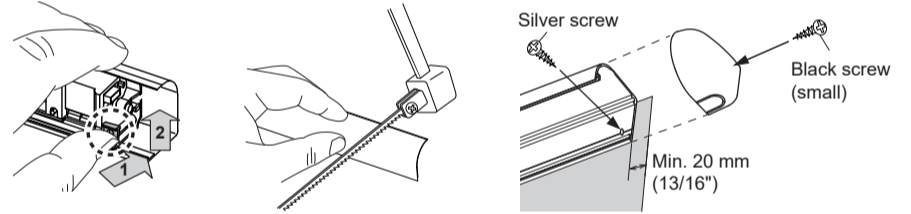
W = Door width  
 h = Mounting height  
 d1 = Secured area width  
 d2 = Distance from the leading edge to the sensor module  
 d3 = Distance between sensor modules  
 n = Number of sensor modules

h	W		900 (2'12")		1100 (3'7")		1200 (3'11")	
	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	360 (14 2/8")	2	460 (18 1/8")
2100 (6'11")	825 (2'8")	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	120 (4 3/4")	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 (7'10")	920 (3')	70 (2 3/4")	2	110 (4 3/8")	2	310 (12 2/8")	2	410 (16 1/8")
2500 (8'2")	950 (3'1")	70 (2 3/4")	2	100 (3 7/8")	2	300 (11 6/8")	2	400 (15 3/4")
3000 (9'10")	1140 (3'8")	70 (2 3/4")	2	30 (1 1/8")	2	230 (9")	2	330 (13")

**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 installation height < 1900 mm the installation of an extra module will be mandatory in order to comply with the regulations.

**Installation**
**1. Mounting the profile**

- Take the sensor modules out of the profile.
- If the profile is longer than the door width, cut the profile. Make sure not to scratch the front cover.
- Affix the profile on the intended mounting position leaving more than 20 mm (13/16") from door edge to attach the endcap.
- If necessary, drill two mounting holes of ø3.4 mm (ø1/8") and fix the profile.
- When mounting a sensor on each side of the door, it is necessary to drill a wiring hole of ø12 mm to connect the sensor modules. (See **3. Wiring**)

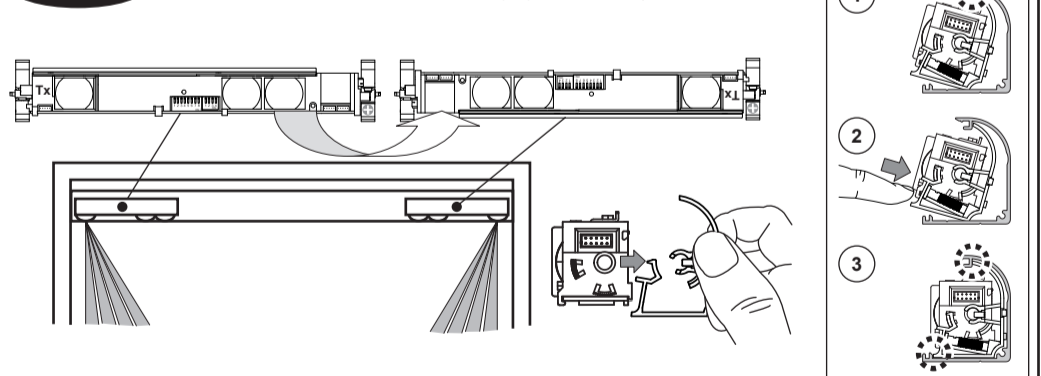


**NOTE** Make sure there is some space between the mounting clips and the mounting screws. Make sure not to scratch the profile when making a hole.

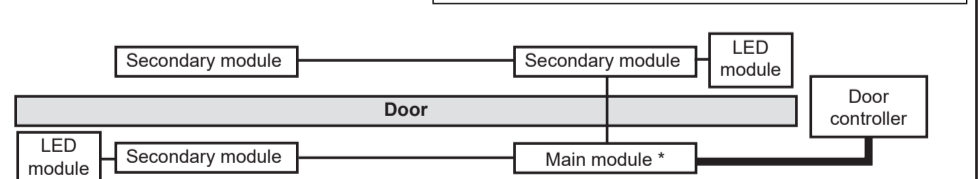
**2. Inserting the sensor module**

The lens that is marked "Tx" must be positioned onto the corresponding door edge. Refer to **Detection area** for the sensor module position. The sensor module can be inserted in reverse as shown below. To do this, detach the mounting clip and rotate the sensor module by 180° and reattach the mounting clips.

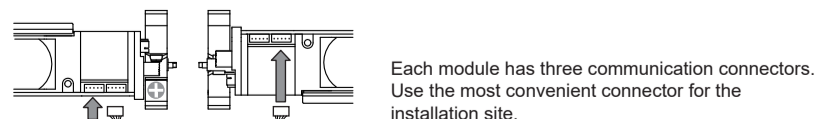
**NOTE** Make sure to fix the sensor modules firmly by the mounting clips.


**3. Wiring**

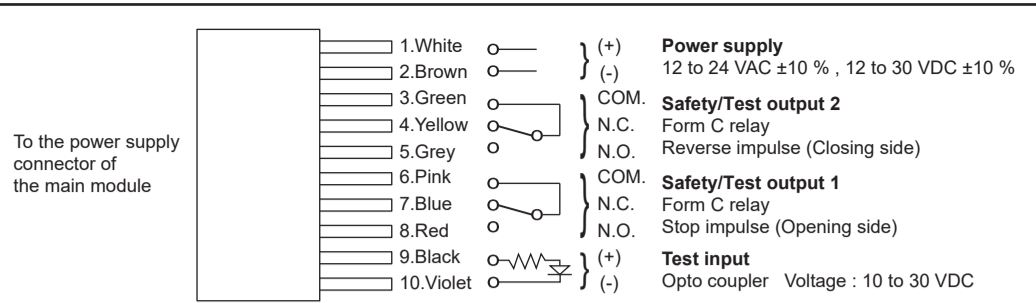
Wire the cable to the door controller as shown below.



**NOTE** \* When more than 1 main 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 main units will automatically function as a secondary unit.



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



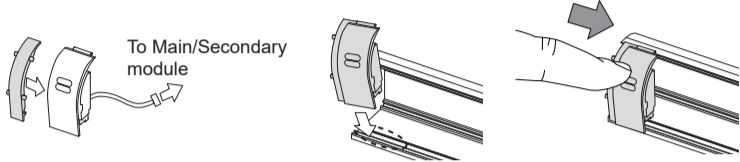
**NOTE** When a test input is not required, set the dipswitch A7 to OFF.

**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 main or secondary module. Attach the spacer on the endcap side. Insert the LED module to the profile as shown below. The LED module can be inserted to both side of the profile.



**NOTE** For LED status see Specification.

**5. Placing the front cover**

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

**5. Function switch**

Only the main module is equipped with a function switch. The function switch of the main 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.

**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 s to initialize the complete sensor configuration.

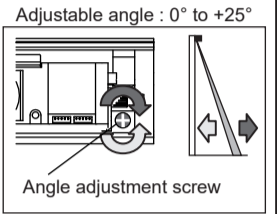
**Learning** : After an initialization or a change in the settings always make a learning cycle by pushing the function switch < 2 s.

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

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

**6. 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 5. Function switch. When the sensor module on the leading edge is installed ≥ 2000 mm, d2 is set to 70 mm and the non-detection zone is set to 15 cm, make sure that the area angle adjustment is ≤ 10°. If a deeper detection field is required you can increase the non-detection zone for extra coverage or increase d2 slightly.



**EN 16005** After the adjustment, check the detection area.

**Adjustments**

**1. Dipswitch settings**

Each main module is equipped with dipswitch A and dipswitch B and each secondary module is equipped with only dipswitch B. Only dipswitch A of the main module connected to the door controller is applicable and will reflect the settings to all connected main and secondary units automatically.

**Dipswitch A**

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

**Dipswitch B**

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

**NOTE** Only correctly initialising the sensor ensures the correct functioning of the dipswitches. (See 5. Function switch)

**2. 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 (15 cm (5 7/8"))	OFF (0)	15 cm (5 7/8")
ON (15 cm (5 7/8"))	ON (+10 cm (3 15/16"))	25 cm (9 13/16")
OFF (+35 cm (13 3/4"))	OFF (0)	35 cm (13 3/4")
ON (+35 cm (13 3/4"))	ON (+10 cm (3 15/16"))	45 cm (17 11/16")

Factory default settings

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

**3. Other setting for Dipswitch A**

Factory default settings

No.	Function	Setting	Setting	Comment
A2	Frequency	Setting1 A2	Setting2 A2	When installing the sensors on a double swing door make sure that the frequency on each sensor is set differently.
A3	Immunity	OFF A3	ON A3	Set dipswitch A3 to ON when the sensor operates by itself (ghosting). When dipswitch A3 is set to ON, the actual detection area may become smaller than set to OFF.
A4	Presence timer	60 s A4	∞ A4	The presence timer can be set by dipswitch A4. 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 Green.
A7	Test input	OFF (High) A7	ON (Low) A7	Set dipswitches A7 and A8 according to the instructions from the door controller.
A8	Test input delay time * (=t2)	10 ms A8	20 ms A8	

**Test input and safety/test output timing chart**

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

**4. Other setting for Dipswitch B**

Factory default settings

No.	Function	Setting	Setting	Comment
B2	Area width	4 spots B2	2 spots B2	Set dipswitch B2 to "2 spots" when a narrow detection area is required.
B3	Self monitoring mode	ON B3	OFF B3	<b>EN 16005</b> Set dipswitch B3 to "ON". When dipswitch B3 is set to "OFF", it excludes conformity of the door system according to EN 16005.
B4	Mounting side (Output select)	Opening side (Output 1) B4	Closing side (Output 2) B4	By selecting the sensor position the outputs & LED indicator will function as shown below :

Mounting side	Output	LED indicator
Opening side (Output 1)	Safety/Test output 1 (Stop impulse)	Red (Detection)
Closing side (Output 2)	Safety/Test output 2 (Reverse impulse)	Orange (Detection)

**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	Green	Red	Orange
Safety/Test output 1 (Stop impulse)	COM. ○ N.O. ○ N.C. ○	COM. ○ N.O. ○ N.C. ○	COM. ○ N.O. ○ N.C. ○	COM. ○ N.O. ○ N.C. ○
Safety/Test output 2 (Reverse impulse)	COM. ○ N.O. ○ N.C. ○	COM. ○ N.O. ○ N.C. ○	COM. ○ N.O. ○ N.C. ○	COM. ○ N.O. ○ N.C. ○

**Inform building owner/operator of the following items**

**WARNING**

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

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

**Troubleshooting**

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

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