OPTEX

OA-PRESENCE TN

CE ENGLISH

TÜV NORD CERT GmbH — Type Tested

Complied standards and extract from EC declaration of conformity

DIN 18650-1:2010 Chapter 5.7.4 ESPE
EN 16005:2012/AC:2015 Chapter 4.6.8 and Annex C
EN 61000-6-2:2005/AC:2005
EN 61000-6-3:2007 +A1:2011/AC:2012
EMC Directive 2014/30/EU
Machinery Directive 2006/42/EC

EN 61496-3:2001 clause 4. 3. 5 and 5. 4. 7. 3
EN 12978:2003 +A1:2009
EN ISO 13849-1:2015
EN ISO 13849-2:2012

Notified Body 0044 : TÜV NORD CERT GmbH Langemarckstr. 20 45141 Essen Germany
For technical document, see European Subsidiary

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 | Failure to follow the instructions that accompany this indication and improper handling may result in serious injury or death. |
⚠ CAUTION	Failure to follow the instructions that accompany this indication and improper handling may result in injury and/or damage to property.
NOTE	Pay special attention to sections with 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.

The following conditions are not suitable for sensor installation.

Fog, Exhaust | Wet | Vibration | Objects | Reflection
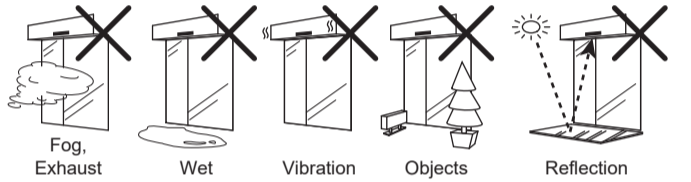
⚠ WARNING

Danger of electric shock

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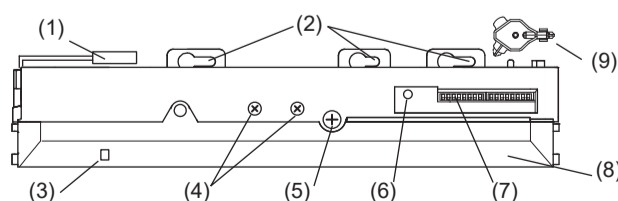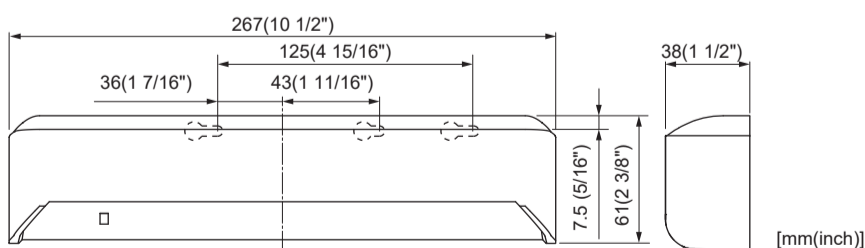
Specifications

Model	: OA-PRESENCE TN	Safety output	: Form A relay 50 V to 0.3 A Max.
Cover color	: Silver/Black	Test input	: Opto coupler
Mounting height	: 2.0 (6'7") to 3.5 m (11'6")		Voltage 5 to 30 VDC
Detection area	: See **Detection area**		Current 6 mA Max. (30 VDC)
Detection method	: Active infrared reflection	IP rate	: IP54
Depth angle adjustment	: -6 to +6°	Category	: 2 (EN ISO13849-1:2015)
Power supply (*1)	: 12 to 24 VAC ±10% (50/60 Hz)	Performance level	: d (EN ISO13849-1:2015)
	12 to 30 VDC ±10%	ESPE	: Type 2
Power consumption	: < 1W (< 2 VA at AC)	Weight	: 250 g (8.8 oz)
Operation indicator	: See **Operation indicator table**	Accessories	: 1 Operation manual
Operating temperature	: -20 to +55 °C (-4 to 131 °F)		2 Mounting screws
Operating humidity	: < 80 % (non-condensing)		1 Mounting template
Output hold time	: < 500 ms		1 Area adjustment tool
Response time	: < 300 ms		1 Cable 3 m (9'10") (*2)
Noise level	: < 70 dBA		

Operation indicator table

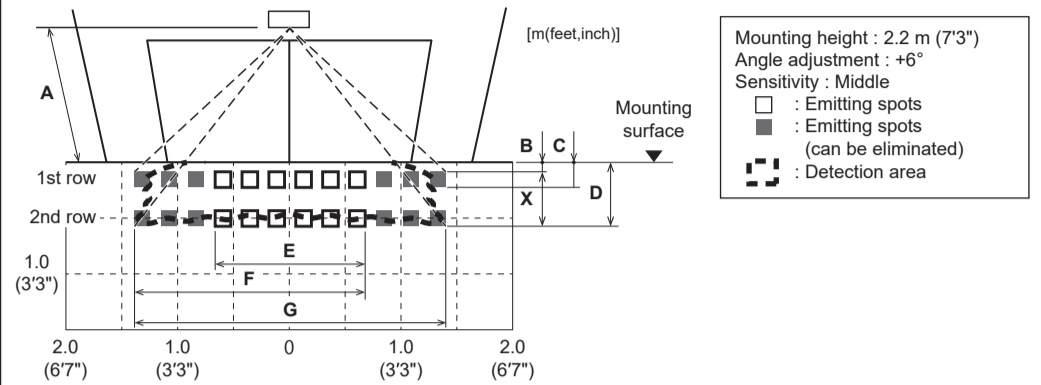| Status	Operation indicator color	1000 ms	1000 ms
Warm-up	Yellow blinking		
Stand-by (Installation mode)	Yellow		
Stand-by (Service mode)	Yellow & Green blinking		
Stand-by (Operation mode)	Green		
1st row detection	Red blinking		
2nd row detection	Red		
Communication Test output	Turn off 500 ms (*3)		
Setting error	Red & Green blinking		
Signal saturation	Slow Green blinking		
Sensitivity too low(or 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.
*3 : LED will be turned off approx. 500 ms when the sensor Test output signal works well.

Outer dimensions and part names

267(10 1/2")
125(4 15/16")
36(1 7/16") 43(1 11/16")
38(1 1/2")
7.5(5/16") 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

[m(feet,inch)]

Mounting height : 2.2 m (7'3")
Angle adjustment : +6°
Sensitivity : Middle
□ : Emitting spots
■ : Emitting spots (can be eliminated)
▢ : Detection area

Mounting surface

1st row
2nd row

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

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")	2.06 (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.

[m(feet,inch)]

	2.00 (6'7")	2.20 (7'3")	3.00 (9'10")
A			
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 : 50 mm/s

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 3.0 m(9'10"), EN 16005 requirements are fulfilled only within the area width "G" of 3.6 m(11'10").
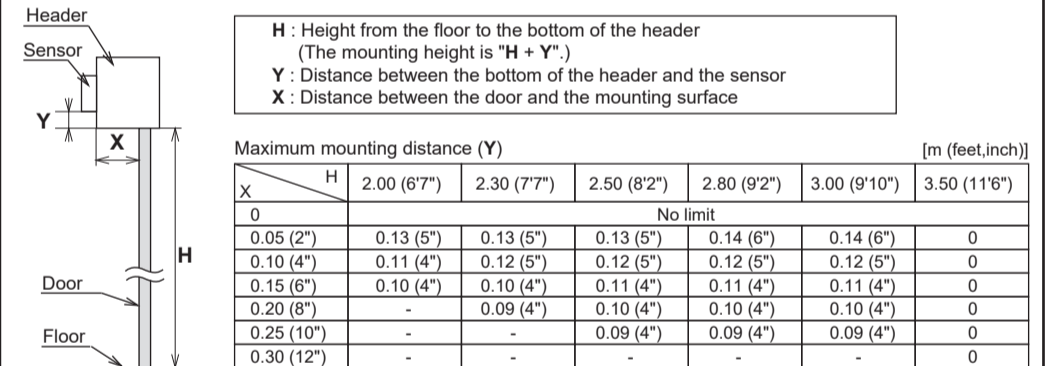
NOTE
The actual detection area may become smaller depending on the ambient light, the color/material of the object or the floor as well as the entry speed of the object. The sensor may not be activated when the entering speed of the object or a person is slower than 50 mm/s or faster than 1500 mm/s.

Installation

1. Mounting

a. Place 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.)
b. Drill two mounting holes of ø3.4 mm (ø1/8").
c. To pass the cable through the header, drill a wiring hole of ø8 mm (ø5/16").
d. Remove the mounting template.
e. 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.
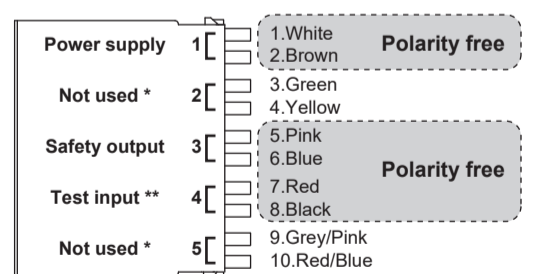
⚠ CAUTION   Risk of getting caught
Make sure to affix the mounting template as described in the above chart, otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible on the header.

2. Wiring

Wire the cable to the door controller.
* The following 4 cables are not used.
   3. Green   9. Grey/Pink
   4. Yellow   10. Red/Blue

** See DIP 8(Test input) comment in "**3. Dipswitch settings**".

Power supply	1	1.White / 2.Brown	**Polarity free**
Not used *	2	3.Green / 4.Yellow	
Safety output	3	5.Pink / 6.Blue / 7.Red / 8.Black	**Polarity free**
Test input **	4	
Not used *	5	9.Grey/Pink / 10.Red/Blue	

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

⚠ 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. Turn ON the power

a. Plug the connector.
b. 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 s 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 s.

4. Mounting the housing cover

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

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

Adjustments

1. Area depth angle adjustment

Depth angle adjustment screw
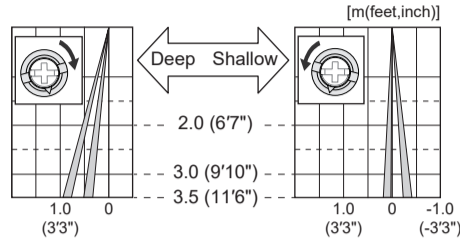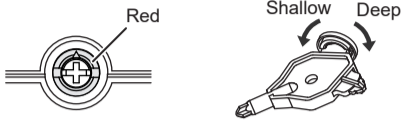
Area adjustment tool

A   B
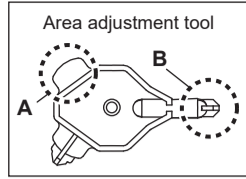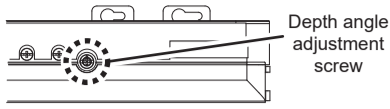
When adjusting the 1st row close to the door, see **Table 1** dipswitch 16 for the easier adjustment.

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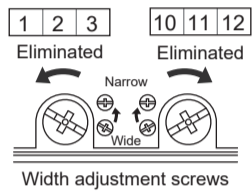
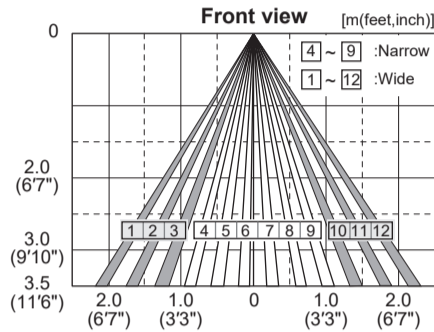Depth angle adjustment screw for the area.

Red

Shallow   Deep

Deep   Shallow

[m(feet,inch)]

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")

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

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

4 ~ 9 :Narrow
1 ~ 12 :Wide

2.0 (6'7")
3.0 (9'10")
3.5 (11'6")

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

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 s.
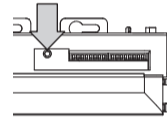
Push 2 s

Table 1

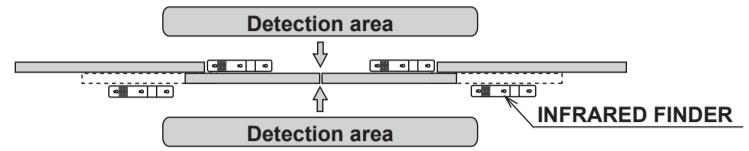■ Safety setting   □ Other setting   ▢ Factory default settings

Dip switch No.	Function	Setting				Comment
1 2	Sensitivity	Low 1 2 2.0 to 3.0 m	Middle 1 2 2.0 to 3.0 m	High 1 2 2.5 to 3.2 m	S-High 1 2 3.0 to 3.5 m	Set the sensitivity according to the mounting height. Values below dipswitches are reference only. Adjust the sensitivity according to your risk assessment.
3 4	Presence timer	30 s 3 4	60 s 3 4	600 s 3 4	2 s (Motion)* 3 4	To enable the presence detection, do not enter the detection area for 10 s after setting the timer.
5 6	Frequency	Setting 1 5 6	Setting 2 5 6	Setting 3 5 6	Setting 4 5 6	When using more than one sensor close to each other, set the frequency different for each sensor.
7	Safety output (to door controller)	N.C. 7	N.O. 7	**Dipswitch 8 Test input** OFF (High) 0 V ON (Low) 0 V	Test Test	10 ms delay time between Test input and Safety output. If the door controller has no Test, put Test input to "OFF" and do not connect Black and Red wires. "High" or "Low" indicates the Test input signal level from door controller.
8	Test input (from door controller)	OFF (High) 8	ON (Low) 8			
14	Self monitoring	ON 14	OFF* 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 "OFF".
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 to "OFF".

* No EN 16005 compliance.
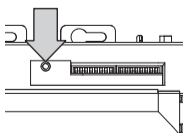
Service mode

- During the "Service mode", only the 1st row remains transmitting and the operation indicator shows Yellow & Green blinking.
- After installation, be sure to turn to the "Operation mode" because it does not comply with EN 16005.
- The sensor automatically returns to "Operation mode" after 15 min from the transition.

To Service mode
Keep pushing function switch for 5 s until the operation indicator starts to blink after off.

To Operation mode
Keep pushing function switch until the operation indicator goes off.

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.
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)

Detection area

Detection area

INFRARED FINDER

Checking

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	
Operation indicator		None	Green	Red	Red blinking
Safety output *	7 ● N.C.	⟋	⟋	⟋	
	● N.O.	⟋	⟋	⟋	

* : During warm-up, Safety output is constantly active.

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**.
		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 settings.	Check the wires and/or dipswitches.
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 1** 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 1** dipswitch 7, 8. (*)
Door remains open	Proper	Sudden change in the detection area.	Check **Table 1** 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 detection window with a damp cloth. Do not use any cleaner or solvent.
		Sensitivity too low or 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 s.
Proper operation	Yellow & Green blinking	Service mode is enabled.	Switch to the Operation mode that keep pushing function switch until the operation indicator goes off.

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