OPTEX OA-AXIS I / II

ENGLISH

CE

5915030 MAY 2008

MANUFACTURER'S STATEMENT

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

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

NOTE

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.

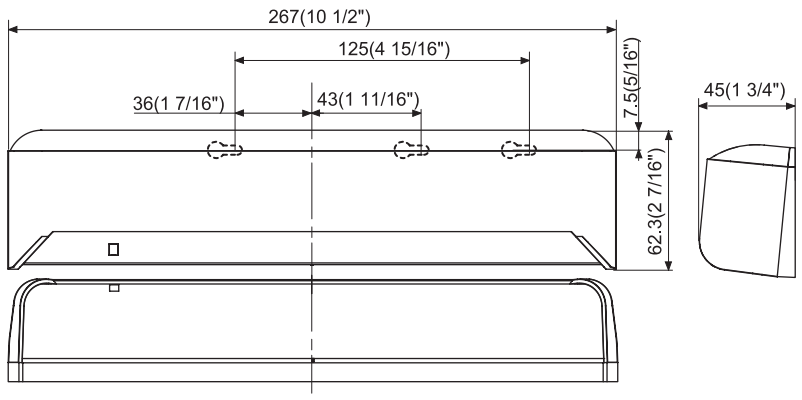
⚠ WARNING Danger of electric shock.	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of equipments.

SPECIFICATIONS

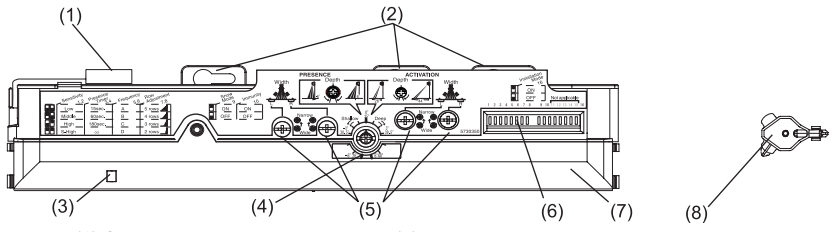
Model	: OA-AXIS I / OA-AXIS II	Output	: OA-AXIS I / Form C relay 50V 0.3A Max.(Resistance load) OA-AXIS II / 1st to 3rd rows / Form C relay 50V 0.3A Max. (Resistance load) 3rd to 5th rows / Form C relay 50V 0.3A Max.(Resistance load)
Cover color	: Silver / Black		
Mounting height	: 2.0 (6'7") to 3.5m (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%)	Output hold time	: Approx. 0.5 sec.
Power consumption	: OA-AXIS I < 3VA OA-AXIS II < 4VA	Response time	: <0.3 sec.
Operation LED	: Green / Stand-by Blinking Red / 1st row detection Red / 2nd row detection Orange / 3rd to 5th rows detection	Operating temperature	: -20 to +55°C(-4 to 131°F)
		IP rate	: IP44
		Weight	: 320g (11.2oz)
		Accessories	: 1 Cable 3m (9'10") 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool

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

OUTER DIMENSIONS AND PART NAMES

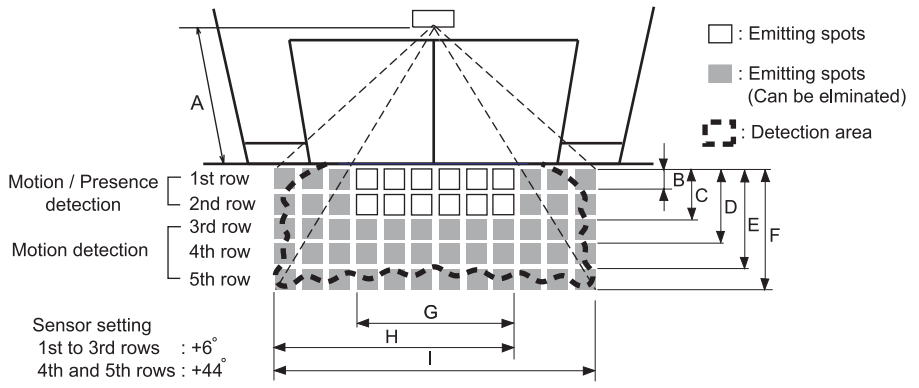


[mm (inch)]



(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



[m(feet,inch)]

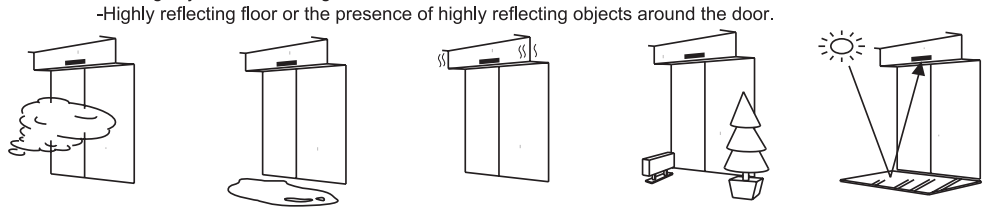
A	2.20(7'2 5/8")	2.50(8'2 7/16")	2.70(8'10 5/16")	3.00(9'10 1/8")	3.50(11'5 13/16")
B	0.14(5 1/2")	0.16(6 5/16")	0.18(7 1/16")	0.20(7 7/8")	0.23(9 1/16")
C	0.42(1'4 9/16")	0.48(1'6 7/8")	0.52(1'8 1/8")	0.58(1'10 13/16")	0.67(2'2 3/8")
D	0.82(2'8 5/16")	0.93(3' 5/8")	1.00(3'3 3/8")	1.10(3'7 5/16")	1.30(4'3 3/16")
E	1.35(4'5 1/8")	1.54(5' 5/8")	1.66(5'5 3/8")	1.85(6' 13/16")	2.16(7'1 1/16")
F	1.90(6'2 13/16")	2.17(7'1 7/16")	2.34(7'8 1/8")	2.60(8'6 3/8")	3.03(9'11 5/16")
G	1.33(4'4 3/8")	1.51(4'11 7/16")	1.63(5'4 3/16")	1.81(5'11 1/4")	2.11(6'11 1/16")
H	2.05(6'8 11/16")	2.32(7'7 5/16")	2.51(8'2 13/16")	2.79(9'1 13/16")	3.26(10'8 3/8")
I	2.78(9'1 7/16")	3.15(10'4")	3.40(11'1 7/8")	3.79(12'5 3/16")	4.42(14'6")

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

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

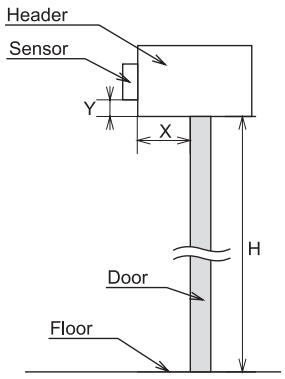
INSTALLATION

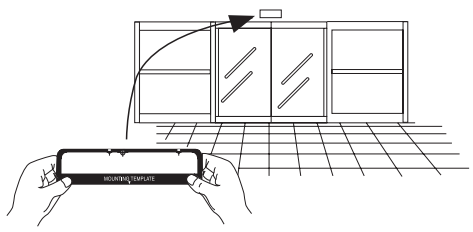
NOTE The following conditions are not suitable for the sensor installation.
- -Fog or exhaust emission around the door.
- -Wet floor
- -Vibrating header or mounting surface.
- -Moving objects or a heating radiator in the detection area.
- -Highly reflecting floor or the presence of highly reflecting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



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.





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")	-	-	-	-

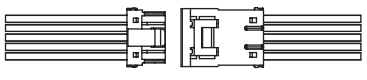
⚠ CAUTION Risk of getting caught.	Make sure to affix the mounting template as described in the above chart. Otherwise, it can be dangerous since there may be no presence detection area around the threshold. Install the sensor as low as possible on the header.

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

2

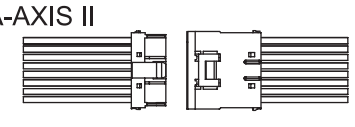
Wire the cable to the door controller properly as shown in the drawing below.

OA-AXIS I



Grey, Grey	Power supply: 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, Grey	Power supply: 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 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. 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.

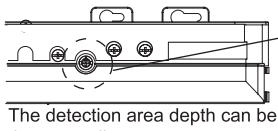
4

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

⚠ WARNING 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 (Separetely available) otherwise electric shock or breakdown of the sensor may occur.

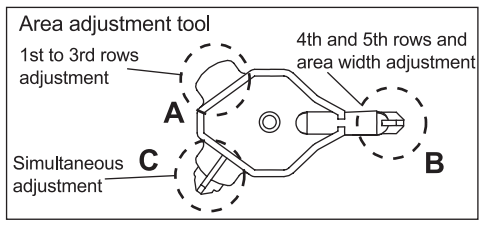
ADJUSTMENTS

1 Area depth angle adjustment



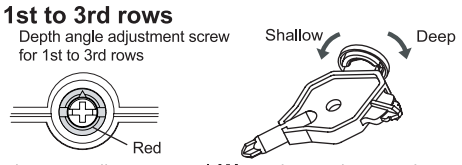
The detection area depth can be changed by the area adjustment tool.

When adjusting the 1st to 3rd rows close to the door, **follow 3-7 Installation mode**.



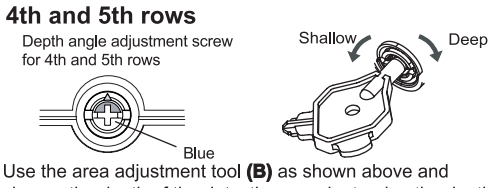
1-1. Independent adjustment

1st to 3rd rows

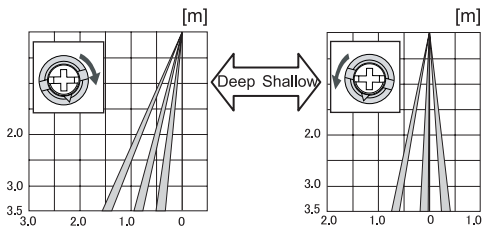


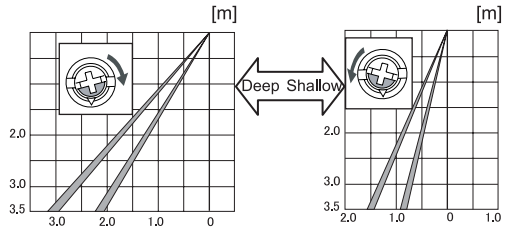
Use the area adjustment tool **(A)** as shown above and change the depth of the detection area by turning the depth angle adjustment screw.

4th and 5th rows



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



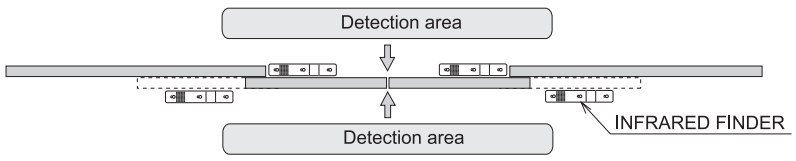


Check the area position with Red LED of the Operation LED using a tool such as a reflecting mirror.

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

REFERENCE **Area depth adjustment with INFRARED FINDER (Separately available)**

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.



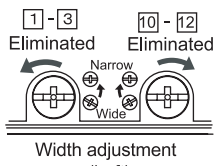
3. Turn the depth adjustment screw to the left (Shallow) until the emitting area is placed at the position where INFRARED FINDER is in the low detection status (Slow Red blinking).

1-2. Simultaneous adjustment

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

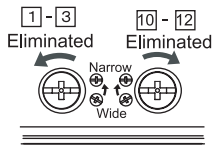
2 Width detection area adjustment

1st to 3rd rows

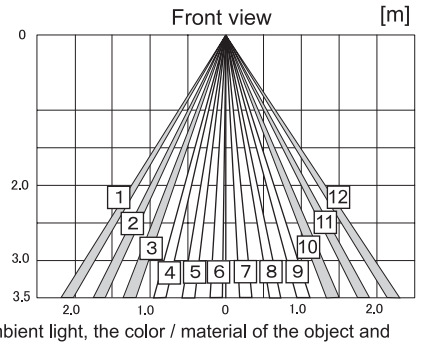


Width adjustment screw (Left)

4th and 5th rows

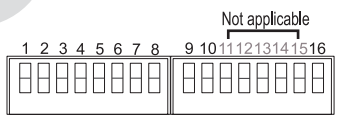


Width adjustment screw (Right)



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

3 Dipswitch settings



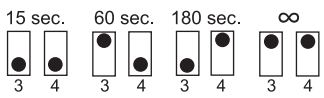
1,2	: Sensitivity	9	: Snow mode
3,4	: Presence detection timer	10	: Immunity
5,6	: Frequency	11 to 15	: Not applicable
7,8	: Row adjustment	16	: Installation mode

3-1 Setting the sensitivity

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

3-2 Setting the presence detection timer

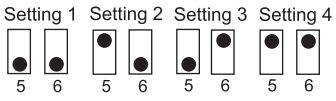
The 1st and 2nd rows have the presence detection function.
The presence detection timer can be selected from 4 settings.



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

3-3 Setting the frequency

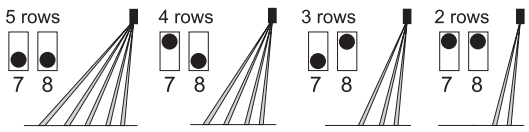
When using more than two sensors close to each other, set the different frequency for each sensor by combining dipswitch 5 and 6.



3-4 Setting the area depth

The 5th, 4th, and 3rd rows can be eliminated by combining dipswitches 7 and 8.

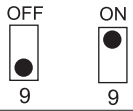
*When 2 rows setting is selected, only the presence detection area remains.



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

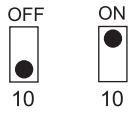
3-5 Setting the snow mode

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



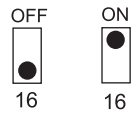
3-6 Setting the immunity

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



3-7 Installation mode

Use this switch to ON when adjusting the presence detection area close to the door face.
* During the installation mode, only the 1st row remain.
* Door open state
* Operation LED glows yellow.



CHECKING

Check the operation according to the chart below.

① White : COM. ④ White Str. : COM.
② Yellow : N.O. ⑤ Yellow Str. : N.O.
③ Green : N.C. ⑥ Green Str. : N.C.

Entry		Power off	Outside of detection area	Entry into 4th or 5th row	Entry into 3rd row	Entry into 2nd row	Entry into 1st row
Status		-	Stand-by	Motion detection active	Motion/Presence detection active	Presence detection	
Operation LED		None	Green	Orange		Red	Blinking Red
OA-AXIS I	Output	①②③	①②③	①②③			
OA-AXIS II	Output from 1st to 3rd rows*	④⑤⑥	④⑤⑥	④⑤⑥			
	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.

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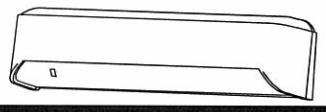
OA-AXIS T

ENGLISH



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TM-0045-2

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.
	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.

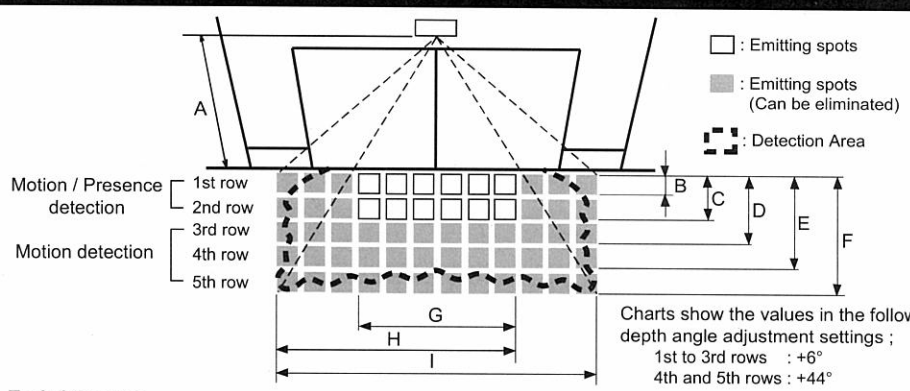
⚠ WARNING Danger of electric shock.	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of the equipment.

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.

COMPLIED STANDARDS

DIN 18650-1:2005 DIN 18650-2:2005 EN 12978:2003
EN 954-1:1997 ISO 13849-2:2003 prEN 12650-1:1999 prEN 12650-2:1999

DETECTION AREA



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 (6'6")	2.20 (7'2")	2.50 (8'2")	2.70 (8'10")	3.00 (9'10")
B	0.13 (5")	0.14 (6")	0.16 (6")	0.18 (7")	0.20 (8")
C	0.38 (1' 3")	0.42 (1' 5")	0.48 (1' 7")	0.52 (1' 8")	0.58 (1' 11")
D	0.74 (2' 5")	0.82 (2' 8")	0.93 (3' 1")	1.00 (3' 3")	1.10 (3' 7")
E	1.23 (4' 1")	1.35 (4' 5")	1.54 (5' 1")	1.66 (5' 5")	1.85 (6' 1")
F	1.74 (5' 9")	1.90 (6' 3")	2.17 (7' 1")	2.34 (7' 8")	2.60 (8' 6")
G	1.06 (3' 6")	1.33 (4' 4")	1.51 (4' 11")	1.63 (5' 4")	1.81 (5' 11")
H	1.86 (6' 1")	2.05 (6' 9")	2.32 (7' 7")	2.51 (8' 3")	2.79 (9' 2")
I (*)	2.52 (8' 3")	2.78 (9' 2")	3.15 (10' 4")	3.40 (11' 2")	3.79 (12' 5")
X	0.19 (8")	0.21 (8")	0.24 (9")	0.26 (10")	0.28 (11")

X is the distance between the 1st row and the mounting surface.

Detection area

To comply with DIN 18650, make sure that the detection area is within the values in the chart below.

A	2.00 (6'6")	2.20 (7'2")
C	0.23 (9")	0.24 (10")
G	1.02 (3' 4")	1.10 (3' 7")
I	2.41 (7' 11")	2.54 (8' 4")

Test conditions required by DIN 18650
Floor : Kodak Grey card
Detection object :
DIN 18650 Test body (Mat black)

The values above are when the sensitivity is set to "Middle" and speed of detection object is 50mm / sec..

The values above are those of the detection area when tested referring to the test conditions of DIN 18650.
(The emitting area is as shown in **Emitting area** above.)
*: When installed at higher than 2.35m(7'8"), DIN 18650 requirements are fulfilled only within the area width "I" of 3m(9'10").

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

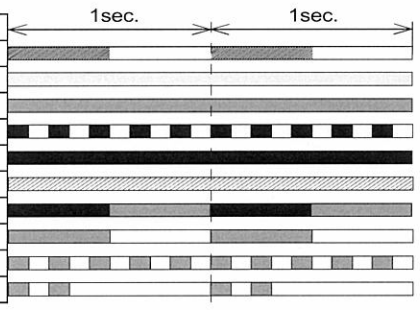
SPECIFICATION

Model	: OA-AXIS T
Cover color	: Silver / Black
Mounting height	: 2.0 (6'6") to 3.0m (9'10")
Detection area	: See **DETECTION AREA**
Detection method	: Active infrared reflection (*1)
Depth angle adjustment	: 1st to 3rd rows / -6 to +6° 4th and 5th rows / +26 to +44°
Power supply (*2)	: 12 to 24VAC ±10% (50 / 60 Hz) 12 to 30VDC ±10%
Power consumption	: < 2.5W (< 4VA at AC)
Operation indicator	: See chart below
Test input	: Opto coupler Voltage / 5 to 30VDC Current / 6mA Max. (30VDC)
Activation output	: When 3rd, 4th or 5th row detects. Form A relay 50V 0.3A Max. (Resistance load)
Safety / Test output	: When 1st or 2nd row detects. Opto coupler (NPN) Voltage / 5 to 50VDC Current / 100mA Max. Dark current / 600nA Max. (Resistance load)
Output hold time	: Approx. 0.5 sec.
Response time	: <0.3 sec.
Operating temperature	: -20 to +55°C (-4 to 131°F)
Operating humidity	: <80%
IP rate	: IP44
Category	: 2 (ISO 13849-2 : 2003)
Weight	: 320g (11.2oz)
Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Cable 3m (9'10") (8 × 0.29mm² AWG24) (*3)

*1 : The 1st and 2nd rows have presence detection function.
*2 : When using this sensor, the sensor has to be connected to a door system which has the SELV circuit.
*3 : Overcurrent protection with less than 2A.

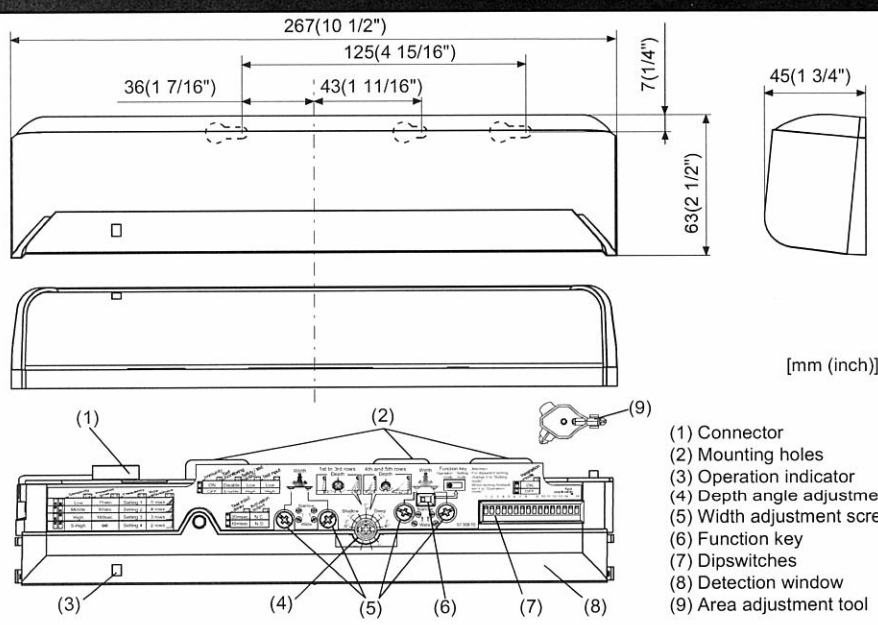
Operation indicator

Status	Operation indicator color
Stand-by (Setting mode)	Blinking Blue
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
Wrong dipswitch setting	Red & Green blinking
Signal saturation	Slow Green blinking
Sensor failure	Fast Green blinking
Life cycle notification	Twice Green blinking



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

OUTER DIMENSIONS AND PART NAMES

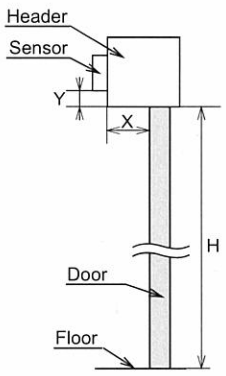


(1) Connector
(2) Mounting holes
(3) Operation indicator
(4) Depth angle adjustment screw
(5) Width adjustment screws
(6) Function key
(7) Dipswitches
(8) Detection window
(9) Area adjustment tool

INSTALLATION

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 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
(The mounting height is "H + Y".)

Maximum mounting distance (Y) [m (feet,inch)]

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

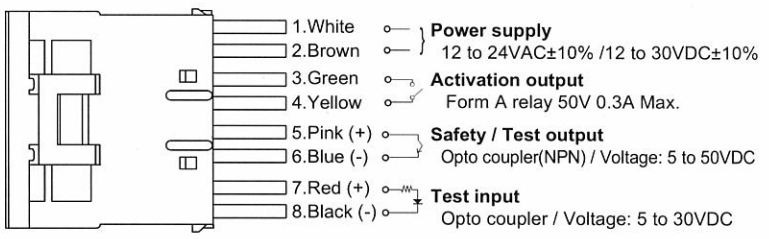
⚠ CAUTION Risk of getting caught.	Make sure to affix the mounting template as described in the above chart , otherwise it can be dangerous since there may be no detection area around the threshold. Install the sensor as low as possible on the header.

NOTE The sensor mounting position may be limited depending on the header thickness and the mounting height. To comply with DIN 18650, make sure that the sensor is installed within the values in the above chart.

2

Wire the cable to the door controller as shown below.

To the connector of the sensor



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

Activation output
Form A relay 50V 0.3A Max.

Safety / Test output
Opto coupler(NPN) / Voltage: 5 to 50VDC

Test input
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**.

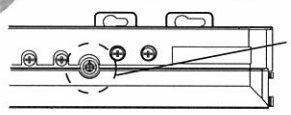
4

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.

ADJUSTMENTS

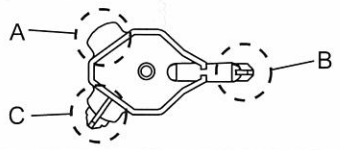
1 Area depth angle adjustment



Depth angle adjustment screw

When adjusting the 1st row close to the door, follow **3-9 Installation mode** for the easier adjustment.

Area adjustment tool

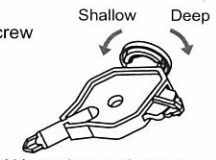


NOTE Make sure that the detection area does not overlap with the door / header, and there is no highly reflecting object near the detection area otherwise ghosting / signal saturation may occur.

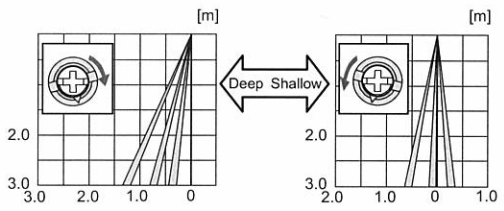
1-1.Independent adjustment

1st to 3rd rows

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

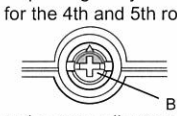


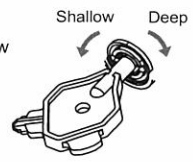
Use the area adjustment tool **(A)** as shown above to change the area depth angle for the 1st to 3rd rows.



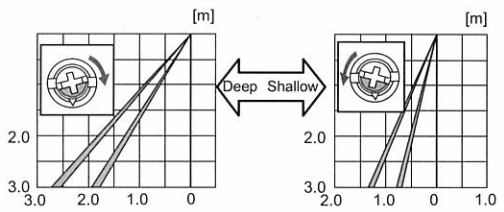
4th and 5th rows

Depth angle adjustment screw for the 4th and 5th rows





Use the area adjustment tool **(B)** as shown above to change the area depth angle for the 4th and 5th rows.

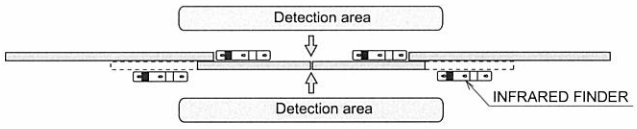


1-2.Simultaneous adjustment

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

REFERENCE Area depth adjustment with INFRARED FINDER (Separately available)

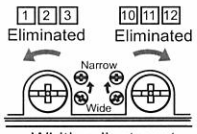
1. Turn the depth angle adjustment screw to the right (Deep) to place the detection area most away from the door.
2. Set INFRARED FINDER sensitivity to "H" (High) and place it on the floor as shown below.



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).

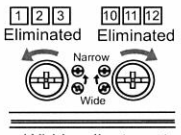
2 Area width adjustment

1st to 3rd rows

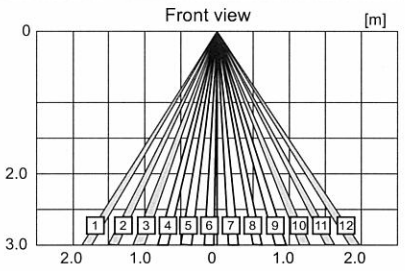


Width adjustment screws (Left)

4th and 5th rows



Width adjustment screws (Right)



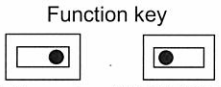
NOTE When adjusting the width adjustment screws, make sure to turn until it clicks otherwise the proper operation may not be obtained.
1 2 3 cannot be eliminated separately, neither can 10 11 12.

3 Dipswitch settings

Follow these steps to change the settings of dipswitches.

1. Change the function key from the "Operation mode" to the "Setting mode". During the "Setting mode", the operation indicator is blinking Blue (only when stand-by status) and the door remains open.
2. Change the dipswitch settings.
3. When the setting is finished, change the function key back to the "Operation mode".

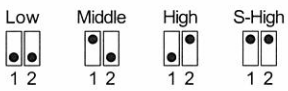
Function key



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

3-1.Setting the sensitivity

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

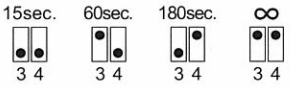


Floor condition	Mounting height [m (feet,inch)] 2.0 (6' 6")	2.2 (7' 2")	2.5 (8' 2")	3.0 (9' 10")	For example
Low reflection	Middle	Middle	High	S-High	-Carpet -Dark color floor
Middle reflection	Low	Middle	Middle	S-High	-Concrete
High reflection	Low	Low	Middle	High	-Tile -Marble

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

3-2.Setting the presence detection timer

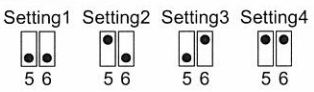
The 1st and 2nd rows have the presence detection function.
To comply with DIN 18650, set the timer to " 60sec." or more.



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

3-3.Setting the frequency

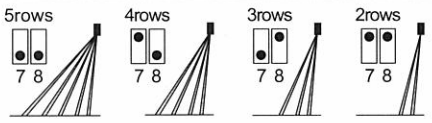
When using more than two sensors close to each other, set the different frequency for each sensor by dipswitches 5 and 6.



3-4.Setting the row adjustment

Set the depth rows with dipswitches 7 and 8.

NOTE When "2rows" are selected, the activation output is disabled.



3-5.Setting the immunity

Set dipswitch 9 to ON when the sensor operates by itself (Ghosting).

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

3-6.Setting the self monitoring

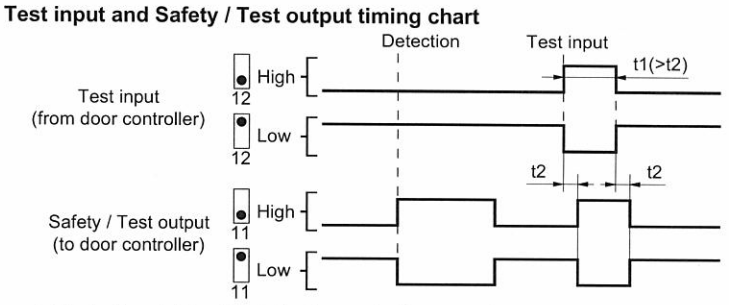
Set dipswitch 10 to "Disable" when the self monitoring is not required.
When set to "Disable", the sensor does not respond to the test input from the door operator.

NOTE To comply with DIN 18650, set the self monitoring to "Enable".

3-7.Setting the test input, safety / test output and test input delay time

Set dipswitches 11 to 13 according to the door controller.

Test input and Safety / Test output timing chart

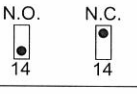


(*)Test input delay time (=t2)

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

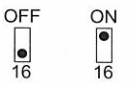
3-8.Setting the activation output

Set dipswitch 14 to "N.O." (Normally Open) or "N.C." (Normally Closed) .



3-9.Installation mode

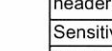
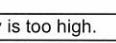
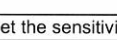
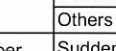
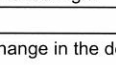
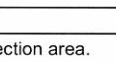
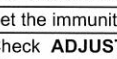
Set dipswitch 16 to ON when adjusting the 1st row close to the door.
When the setting is finished, set to OFF.
During the installation mode, only the 1st row remains, and the operation indicator glows Yellow.



NOTE If the function key is set back to the "Operation mode" while the installation mode is still ON, an error occurs.

CHECKING

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

Entry		Power OFF	Outside of detection area	Entry into 3rd to 5th row	Entry into 2nd row	Entry into 1st row	Outside of detection area
Status		-	Stand-by	Motion detection active	Motion / Presence detection active		Stand-by
Operation indicator		None	Green	Orange	Red	Blinking Red	Green
Activation output	14 ● N.O.						
	14 ● N.C.						
Safety / Test output	11 ● High	OFF	ON		OFF		ON
	11 ● Low	OFF	OFF		ON		OFF

INFORM BUILDING OWNER / OPERATOR OF THE FOLLOWING ITEMS

⚠ WARNING

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 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	Objects that move or emit light in the detection area.	Remove the objects.
		The detection area overlaps with that of another sensor.	Check **ADJUSTMENTS 3-3**.(*)
		Waterdrops on the detection window	Use the rain-cover (Separately available). Or install in a place keeping the waterdrops off.
		Detection area overlaps with door / header.	Adjust the detection area to "Deep" (Outside).
		Sensitivity is too high.	Set the sensitivity lower.(*)
		Others	Set the immunity to ON.(*)
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.
		Self monitoring is set to "Disable".	Set dipswitch10 to "Enable".(*)
		Wrong setting of dipswitches.	Check **ADJUSTMENTS 3-6 ,7 & 8**.(*)
	Yellow	Installation mode is set to ON.	Set installation mode to OFF.(*)
	Blinking Blue	Wrong setting of function key	Set to the"Operation mode".
	Fast Green blinking	Sensitivity is too low.	Set the sensitivity higher.(*)
		Dirty detection window	Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)
		Sensor failure	Contact your installer or service engineer.
	Slow Green blinking	Signal saturation (1st or 2nd row)	Remove highly reflecting objects from the detection area. Or lower the sensitivity.(*) Or change the area depth angle for 1st to 3rd rows.
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside).
	Red & Green blinking	Wrong setting of dipswitch	1. Set the function key to the "Setting mode". 2. Change the dipswitch 16 setting (ON➔OFF or OFF➔ON➔OFF). 3. Set the function key back to "Operation mode".
Door remains closed.	Proper	Wrong wiring or connection failure	Check the wires and connector.
Proper operation	Twice Green blinking	Life cycle notification	Contact your installer or service engineer.
	Slow Green blinking	Signal saturation (3rd, 4th or 5th row)	Remove highly reflecting objects from the detection area. Or lower the sensitivity.(*) Or change the area depth angle.

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

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