OPTEX
PRO WAVE
Air-Slide

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 of an automatic door.
   Do not use for any other applications. This sensor cannot be used for industrial doors or shutters, when used, proper operation and safety cannot be guaranteed.
2. When setting the sensor's detection area, make sure there is no traffic around the installation site.
3. Before turning the power on, check the wiring to prevent damage or malfunction of equipments that are connected to the sensor.
4. Only use the sensor as specified in the operation manual provided.
5. Be sure to install the sensor in accordance with the local laws and standards of the country in which the sensor is installed.
6. Before leaving the job site make sure that the sensor is operating properly and instruct the building owner/operator on proper operation of the door and the sensor.
7. The sensor setting can only be changed by an installer or service engineer. When changed, register the changed setting and dates in the maintenance logbook accompanying the door.

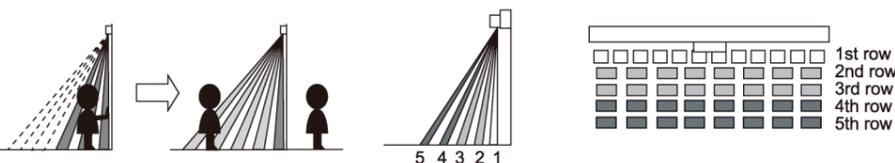| ⚠ WARNING	Do not wash, disassemble, rebuild or repair the sensor, otherwise it may cause electric shock or breakdown of equipments.
Danger of electric shock.	

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.

WORKING PRINCIPLE

This sensor is designed to detect a hand approaching to a touchless plate as a knowingact activation device.
Please make sure to understand the following working principle.
This sensor sends primary activation output when "1st and 2nd row" or "1st and 3rd row" detects an object.
After the detection until the door fully closes, 2nd to 5th rows work as a presence / secondary activation output.
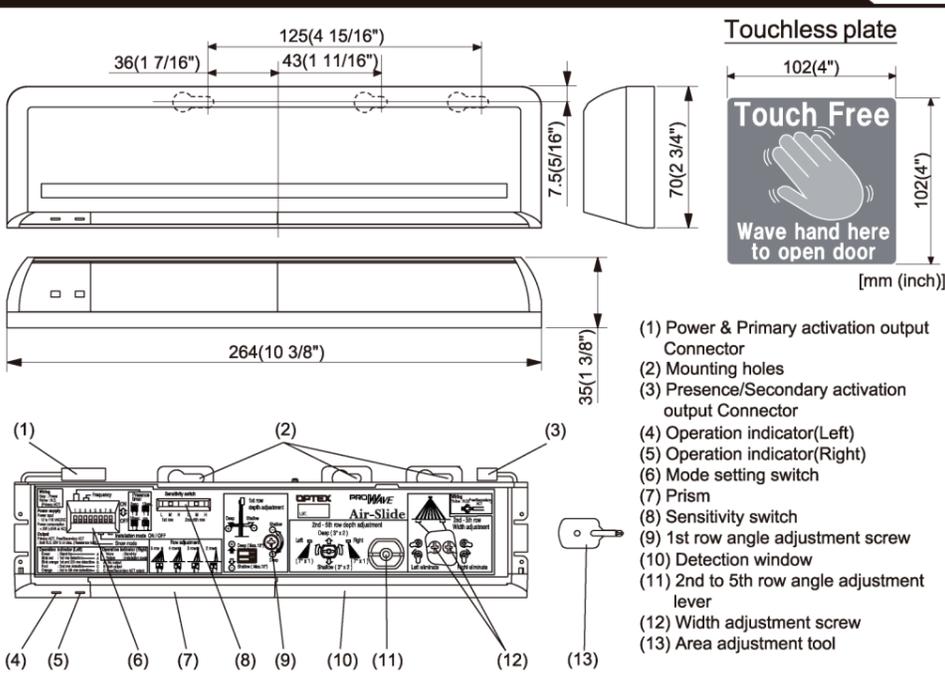

1st row
2nd row
3rd row
4th row
5th row

5 4 3 2 1

SPECIFICATIONS

Model	: Air-Slide
Cover color	: Black
Mounting height	: 2.0 (6'7") to 3.0m (9'10")
Detection area	: See ADJUSTMENTS
Detection method	: Active Infrared Reflection
Depth angle adjustment	: 1st row / -10° to +10°
	2nd to 5th rows / +1° to +13°
Width angle adjustment	: 1st row / selected prism
	2nd to 5th rows / ±7°
Power supply	: 12 to 24V AC (±10%)
	12 to 30V DC (±10%)
Power consumption	: <1.5W(<3VA at AC)
Operation indicator(left)	: Green / Stand-by
	Blinking Red / 1st row detection
	Blinking Orange /
	"1st and 2nd row" or
	"1st and 3rd row" detection
	Red / 2nd row detection
	Orange / 3rd to 5th rows detection

Operation indicator(right)	: None / Stand-by
	Yellow / 1st row adjustment mode
Output	: Form A relay
	50V 0.1A 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)
IP rate	: IP44
Weight	: 320g (11.2oz)
Accessories	: 1 Power & Primary activation output cable 2.5m (8'2")
	1 Presence / Secondary activation output cable 2.5m (8'2")
	1 Operation manual
	2 Mounting screws
	1 Mounting template
	1 Area adjustment tool
	1 Middle prism
	1 Right prism
	1 Left prism
	1 Touchless plate

**NOTE** The specifications herein are subject to change without prior notice due to improvements.
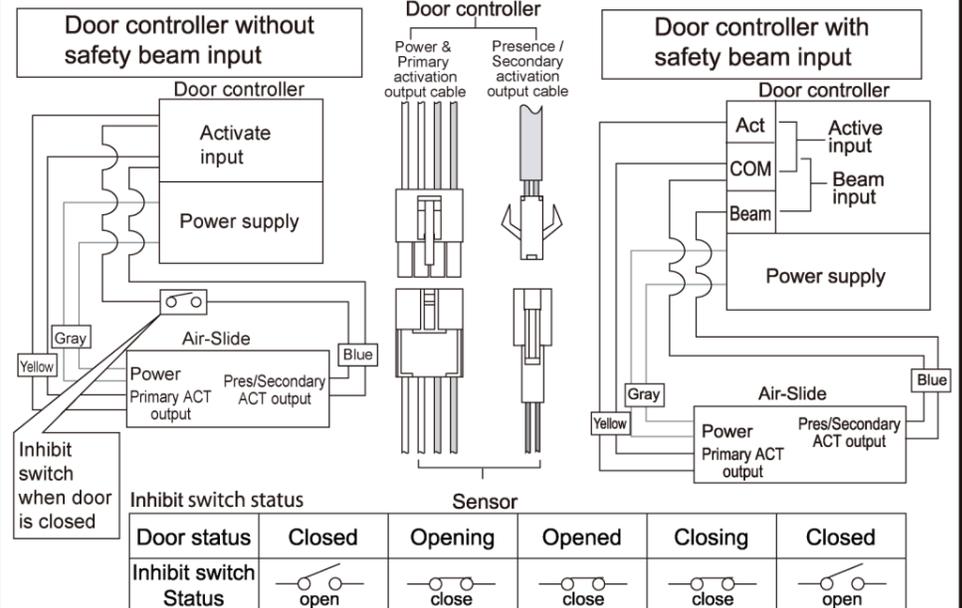
OUTER DIMENSIONS AND PART NAMES

125(4 15/16")
36(1 7/16")
43(1 11/16")
7.5(5/16")
264(10 3/8")
35(1 3/8")

Touchless plate
102(4")
70(2 3/4")
102(4")

Touch Free
👋
Wave hand here to open door
[mm (inch)]

(1) Power & Primary activation output Connector
(2) Mounting holes
(3) Presence/Secondary activation output Connector
(4) Operation indicator(Left)
(5) Operation indicator(Right)
(6) Mode setting switch
(7) Prism
(8) Sensitivity switch
(9) 1st row angle adjustment screw
(10) Detection window
(11) 2nd to 5th row angle adjustment lever
(12) Width adjustment screw
(13) Area adjustment tool

(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13)

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 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.

NOTE Make sure to install the sensor within 60mm (2 1/2") from the bottom of header.
Use shim plate (available as option) when the reveal is deeper than 90mm (3 1/2") to make the detection area closer to the door.

MOUNTING TEMPLATE

Should be less than 60mm(2 3/8")

If more than 90mm(3 1/2") use Shim plate

Shim plate (available as option)
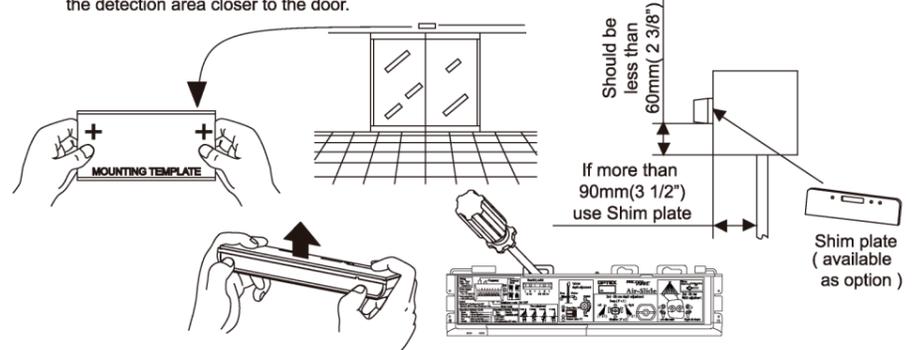
2
Wire the Power & Primary activation output cable and Presence / Secondary activation output cable to the door controller properly as shown in the drawing below.
The Presence / Secondary activation output requires an input at the door control that is inhibited (ignored) when the door controller has a safety beam input. If not then install a position / inhibit switch in series with the blue wire output (see drawing below).

Door controller without safety beam input

Door controller
Activate input
Power supply

Gray
Yellow
Air-Slide
Power
Primary ACT output
Pres/Secondary ACT output
Blue

Inhibit switch when door is closed

Door controller
Power & Primary activation output cable
Presence / Secondary activation output cable

Sensor

Door controller with safety beam input

Door controller
Act — Active input
COM
Beam — Beam input
Power supply

Gray
Yellow
Air-Slide
Power
Primary ACT output
Pres/Secondary ACT output
Blue

Door status	Closed	Opening	Opened	Closing	Closed
Inhibit switch Status	open	close	close	close	open

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

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.
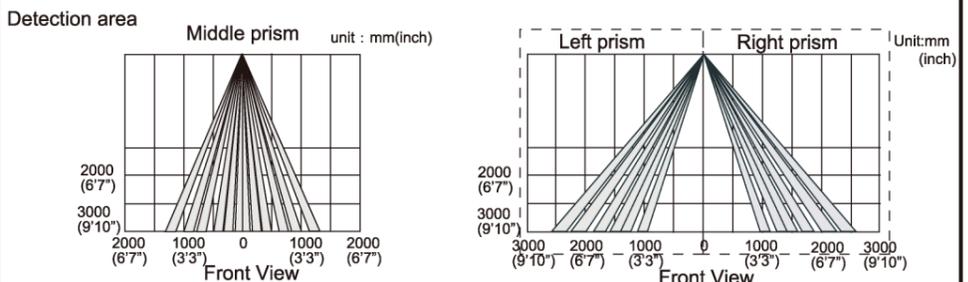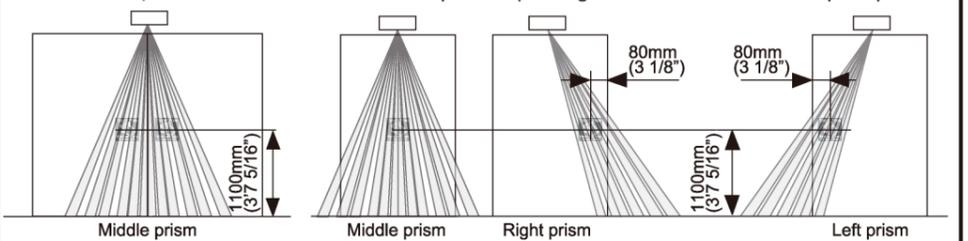
3
Affix the touchless plate on the appropriate position after adjusting the detection area.

Touch Free
👋 Wave hand here to open door

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

ADJUSTMENT

1
1st row area adjustment
1.Prism selection
Make sure to select the prism depending on the door type and the intended touchless plate position; otherwise the sensor does not send an output when a hand approaches.

●Double door
Use Middle prism

●Single door
Select the prism depending on the intended touchless plate position.

Middle prism
1100mm (37 5/16")
Middle prism
80mm (3 1/8")
Right prism
Left prism
80mm (3 1/8")
1100mm (37 5/16")

Detection area

unit : mm(inch)

Middle prism
2000 (6'7")
3000 (9'10")
2000 1000 0 1000 2000
(6'7") (3'3") (3'3") (6'7")
Front View

Left prism | Right prism
Unit:mm (inch)
2000 (6'7")
3000 (9'10")
3000 2000 1000 0 1000 2000 3000
(9'10") (6'7") (3'3") (3'3") (6'7") (9'10")
Front View

Prism change
Select the prism depending on the door type and the touchless plate position.
Factory setting : Middle prism

How to distinguish the prism
Check the engraved mark on the back of prism.
Engraved mark

2.Angle adjustment
Adjust the 1st row angle to detect a hand at touchless plate intended position.

To set the 1st row, follow the procedures below.
1. Switch dipswitch 8 to "ON". Only the first row of detection area becomes active.
   (Door open state,Operation indicator (right) glows yellow.)
2. Turn the 1st row angle adjustment screw to "-(minus)" or "+(plus)" to detect a waving hand. The sensor status can be checked by operation indicator(left).*
3. Set dioswitch 8 to "OFF".

*1st row detection : blinking red.
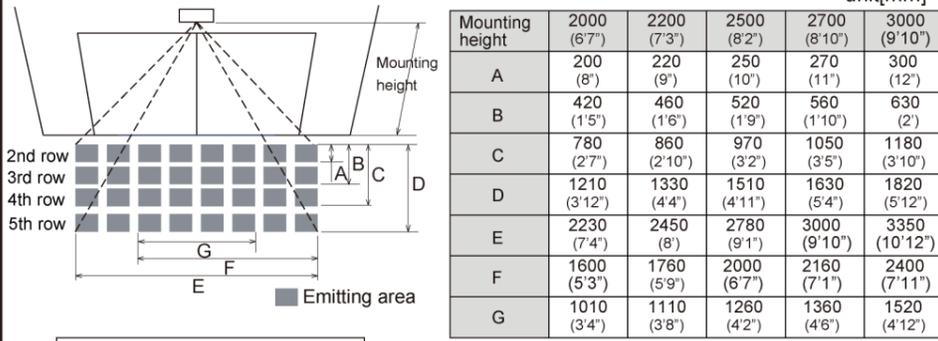The sensor might detect a hand where touch plate is not affixed.

1st row depth adjustment
Deep / Shallow
Shallow / Deep
Deep (Max.10°)
Shallow (Max.10°)
Deep
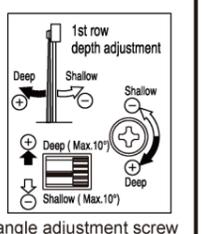
1st row angle adjustment screw

ADJUSTMENTS

2 Area adjustment (2nd to 5th row)

The 2nd to 5th rows work as a 2nd activation area to detect people who enter after the door opening by hand. The 2nd activation area becomes effective at the same time as the door opening.

unit[mm]

Mounting height	2000 (6'7")	2200 (7'3")	2500 (8'2")	2700 (8'10")	3000 (9'10")
A	200 (8")	220 (9")	250 (10")	270 (11")	300 (12")
B	420 (1'5")	460 (1'6")	520 (1'9")	560 (1'10")	630 (2')
C	780 (2'7")	860 (2'10")	970 (3'2")	1050 (3'5")	1180 (3'10")
D	1210 (3'12")	1330 (4'4")	1510 (4'11")	1630 (5'4")	1820 (5'12")
E	2230 (7'4")	2450 (8')	2780 (9'1")	3000 (9'10")	3350 (10'12")
F	1600 (5'3")	1760 (5'9")	2000 (6'7")	2160 (7'1")	2400 (7'11")
G	1010 (3'4")	1110 (3'8")	1260 (4'2")	1360 (4'6")	1520 (4'12")

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

■ Emitting area

The detection chart is when the pattern is changed to the shallowest.

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.
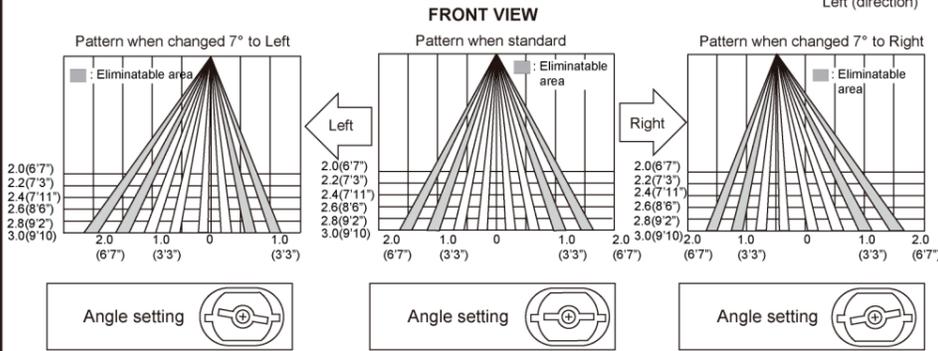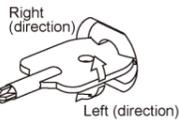
1 Adjusting the pattern width

1-1 Row adjustment

The right & left detection area can be eliminated by width adjustment screw.

Width adjustment screw				
Setting	All area open	A: Eliminated	B: Eliminated	A&B: Eliminated
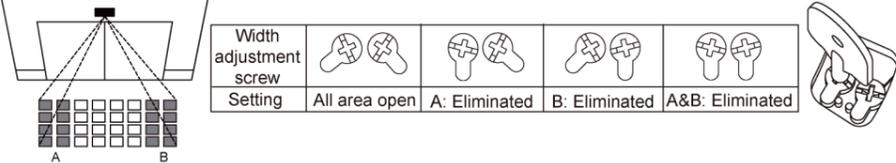
1-2 Angle adjustment

The width of the activation detection area (rows 3,4 and 5) can both be moved at the same time 7° either left or right in 1 step.

Right (direction)
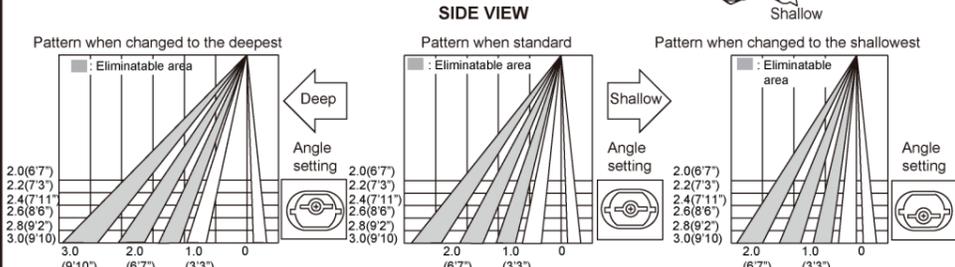Left (direction)

FRONT VIEW

Pattern when changed 7° to Left
☐ : Eliminatable area

Pattern when standard
☐ : Eliminatable area

Pattern when changed 7° to Right
☐ : Eliminatable area

2.0(6'7")
2.2(7'3")
2.4(7'11")
2.6(8'6")
2.8(9'2")
3.0(9'10)

Angle setting

2 Depth adjustment

2-1 Row adjustment

The 5th, 4th, and 3rd rows can be eliminated by combining dipswitches 6 and 7.

5 rows — 6 7
4 rows — 6 7
3 rows — 6 7
2 rows — 6 7
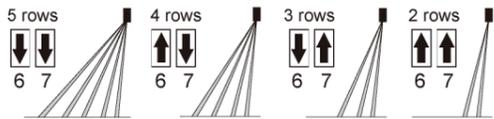
2-2 Angle adjustment

The area depth can be changed in 3 °×2 steps by moving the activation angle adjustment lever up and down.

Deep
Shallow

SIDE VIEW

Pattern when changed to the deepest
☐ : Eliminatable area

Pattern when standard
☐ : Eliminatable area

Pattern when changed to the shallowest
☐ : Eliminatable area

Deep / Shallow

Angle setting

2.0(6'7")
2.2(7'3")
2.4(7'11")
2.6(8'6")
2.8(9'2")
3.0(9'10)

NOTE Always check the area according to the expected entry speed and determine the appropriate number of rows.

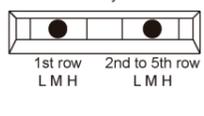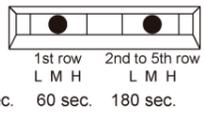Make sure not to create a gap between the 1st row and the 2nd row.

3

Mode setting switch

1 2 3 4 5 6 7 8
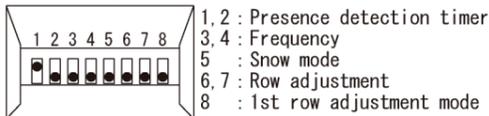
1, 2 : Presence detection timer
3, 4 : Frequency
5 : Snow mode
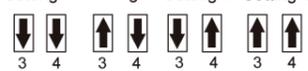6, 7 : Row adjustment
8 : 1st row adjustment mode

Sensitivity switch

1st row   2nd to 5th row
L M H   L M H

1 Setting the sensitivity

Normally set to "Middle". "Low" decreases the sensitivity and "H" increases the sensitivity.

Sensitivity switch

1st row   2nd to 5th row
L M H   L M H

2 Setting the presence detection timer

The 2nd and 3rd rows have the presence detection function.
The presence detection timer can be selected from 4 settings.

30 sec.   60 sec.   180 sec.   ∞
1 2   1 2   1 2   1 2

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

3 Setting the frequency

When using more than two sensors close to each other, set the different frequency for each sensor by combining dipswitch 3 and 4 .
1st row and 2nd to 5th row setting can be adjusted individually.

Setting 1 Setting 2 Setting 3 Setting 4
3 4   3 4   3 4   3 4

4 Setting the snow mode

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

OFF   ON
5   5

5 Setting the Row adjustment

See **ADJUSTMENT 2 2-1.Row adjustment**

6 Setting the 1st row adjustment mode

See **ADJUSTMENT 1 2.Angle adjustment**

CHECKING

Check the operation according to the chart below.

Entry	Power off	Outside of detection area	Entry to 3rd to 5th row	Entry to 2nd row	Entry to "1st and 2nd row" or "1st and 3rd row"	Entry to 1st row	Outside of detection area
Image							
Operation indicator(left)	None	Green	Orange	Red	Blinking Orange	Blinking Red	Green
Primary activation output	OFF	OFF	OFF		ON	OFF	OFF
Pres/Secondary ACT output	ON	OFF	ON			OFF	OFF

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

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. Always contact your installer or service engineer when changing the settings.
5. 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.)

Alarm display
Refer to the **TROUBLESHOOTING** below when the following status shows.

Status	Replacement notification	Life cycle notification	Saturation signal
Operation indicator (left)	Flashing green blinking	Twice green blinking	Slow green blinking

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TROUBLESHOOTING

Problem	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area and wave a hand.	None	Power supply voltage.	Set to the stated voltage.
		Wrong wiring or connection failure.	Check the wires and connector. Check **INSTALLATION 2**.
	Unstable	Wrong detection area positioning.	Check **ADJUSTMENT.**
		Sensitivity is too low.	Set the sensitivity higher. Check **ADJUSTMENT 3 1**.
		Short presence detection timer.	Set the presence detection timer longer. Check **ADJUSTMENT 3 2**.
		Dirty detection window.	Wipe the detection window with a damp cloth. (Do not use cleaner or solvent.)
	Blinking Orange	Miss-wiring for Power & Primary activation output.	Make sure the inhibit switch is open when door is on closed position. Check **INSTALLATION 2**.
Door does not open when people wave the hand.	Red/Orange	Miss-adjustment for 1st Row.	Make sure the choice of prism for 1st Row is correct. Check **ADJUSTMENT 1**. Increase the sensitivity of 1st Row. Check **ADJUSTMENT 3 1**. Adjust the depth of 1st Row. Check **ADJUSTMENT 1**.
Door closes when people are in the 2nd to 5th row after the primary activation.	Red/Orange	Miss-wiring for Pres/Secondary ACT output.	Make sure Pres/Secondary ACT output is connected to the proper input. Check **INSTALLATION 2**.
Door opens when people are in the 2nd to 5th row despite people did not activate the door by hand.	Red/Orange	Miss-adjustment for inhibit switch when door controller is without safety beam input.	Make sure the inhibit switch is open when door is on closed position. Check **INSTALLATION 2**.
		Miss-wiring for Pres/Secondary ACT output.	Make sure Pres/Secondary ACT output is connected to the proper input. Check **INSTALLATION 2**.
Door opens when no one is in the detection area. (Ghosting)	Red	The 2nd row overlaps with the door.	Adjust the 2nd row to "Deep" (Outside). Check **ADJUSTMENT 2 2-2**.
	Unstable	Vibration of the header.	Set the sensitivity lower. Check **ADJUSTMENT 3 1**.
		Water drops on the detection window.	Use the rain-cover (available as option). Or install in a place keeping the waterdrops off.
		The detection area overlaps with that of another sensor.	Select the different setting of frequency switch. Check **ADJUSTMENT 3 3**.
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside). Check **ADJUSTMENT 1** and **2 2-2**.
		Reflecting objects in the detection area. Or reflecting light on the floor.	Remove the objects.
		Sensitivity is too high.	Set the sensitivity lower. Check **ADJUSTMENT 3 1**.
		It snows and pours.	Set the snow mode to ON. Check **ADJUSTMENT 3 4**.
		Objects that move or emit light in the detection area. (Ex.Plant, illumination,etc.)	Remove the objects.
		Wet floor. The exhaust emission or fog penetrate into the detection area.	Check the installation condition.
Door remains open	Yellow	The 1st row adjustment mode is on.	Turn off dipswitch8 switch. Check **ADJUSTMENT 1 2**.
	Proper	Wrong wiring or connection failure.	Check the wires and connector. Check **INSTALLATION 2**.
		Presence timer is Infinite and sudden change in the detection area happened.	Check **ADJUSTMENTS 3 2**. If the problem still persists, hard-reset the sensor. (Turn the power OFF and ON again.)
Door remains closed	Proper	Wrong wiring or connection failure.	Check the wires and connector. Check **INSTALLATION 2**.
Indication	Fast Green blinking	The sensor failure.	Contact OPTEX tech support or the sales rep.
	Twice Green blinking	The relay is reaching the end of its life cycle.	Contact OPTEX tech support or the sales rep.
	Slow Green blinking	Signal saturation	Remove highly reflecting objects from the detection area.Change the area angle.
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside). Check **INSTALLATION 1**, **ADJUSTMENT 1**.