OPTEX

BLUEZONE

i-oneX T

5921352 MAY 2016

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 the warning symbol can cause improper operation which may cause death or serious injury.
⚠ CAUTION	Disregard of the caution symbol can cause improper operation which may cause injury of a person or damage the object.
NOTE	Special attention is required to the section of this symbol.

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.

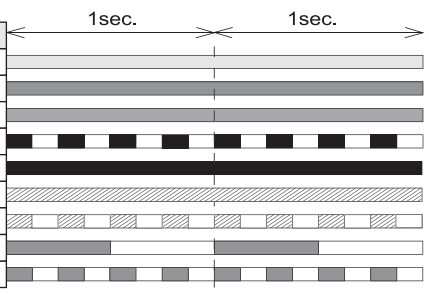
NOTE The following conditions are not suitable for sensor installation.
-Fog or exhaust emission around the door
-Wet floor
-Vibrating header or mounting surface
-Moving objects, steel plate, emergency lights or illumination in the detection area or in vicinity
-Highly reflecting floor or highly reflecting objects around the door

SPECIFICATIONS

Model	: i-oneX T
Cover color	: Black
Mounting height	: 6'7" to 9'10" (2.0m to 3.0m)
Detection area	: See **DETECTION AREA**
Detection method	: Active infrared reflection
Depth angle adjustment	: Approach area -15° to +10° Presence/Motion area -10° to +8°
Power supply	: 12 to 24VAC ±10% (50 / 60 Hz) 12 to 30VDC ±10%
Power consumption	: < 2.5W (< 4VA at AC)
Operation indicator	: See **Operation indicator table**
Activation output	: Form A relay 50V 0.3A Max.(Resistance load)
Test input	: Opto coupler Voltage 5 to 30VDC Current 6mA Max.(30VDC)
Safety output	: Form A relay 50V 0.3A Max.(Resistance load)
Output hold time	: 0.5 to 1.5sec.
Response time	: < 0.3sec.
Operating temperature	: -31°F to 131°F(-35°C to +55°C)
Operating humidity	: < 80%
IP rate	: IP54
Weight	: 14.6oz (420g)
Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Cable 9'10" (3m)

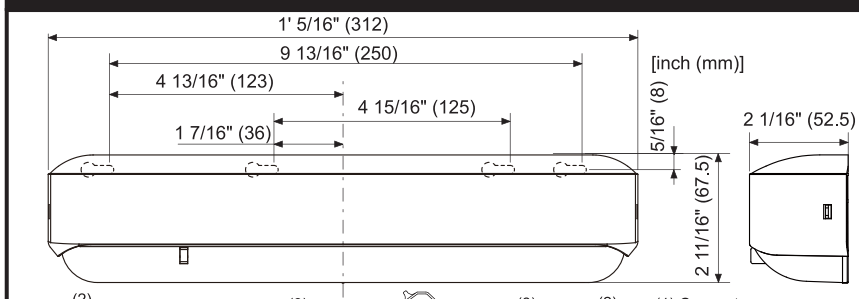
Operation indicator table

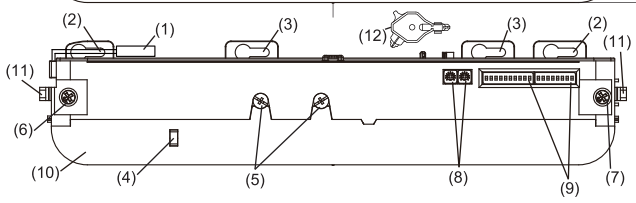
Status	Operation indicator color
Stand-by (installation mode)	Yellow
Stand-by (operation mode)	Green
BLUEZONE (1st row) detection(*1)	Blue
2nd row detection	Red blinking
3rd/4th row detection	Red
5th row detection	Orange
Approach (6th row) detection	Orange blinking
Signal saturation	Slow Green blinking
Sensor failure	Fast Green blinking



NOTE The specifications herein are subject to change without prior notice due to improvements.
*1 : See **BLUEZONE AREA**

OUTER DIMENSIONS AND PART NAMES

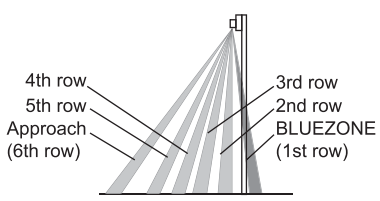


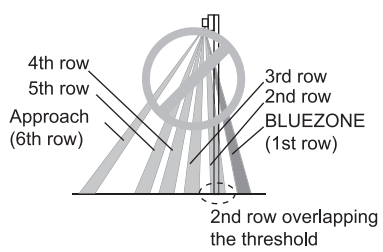


(1) Connector
(2) Mounting holes (for retrofit)
(3) Mounting holes
(4) Operation indicator
(5) Width adjustment screws
(6) Depth angle adjustment screw (Presence/Motion)
(7) Depth angle adjustment screw (Approach)
(8) Sensitivity potentiometers
(9) Dipswitches
(10) Detection window
(11) Cover fixing
(12) Area adjustment tool

BLUEZONE AREA

When dipswitch 5 is set to "ON", the BLUEZONE area, that provides extra safety over the threshold, is activated.
In case the BLUEZONE function is not required, set dipswitch 5 to "OFF".
Do not set the 2nd row overlapping the threshold regardless of the setting of dipswitch 5.



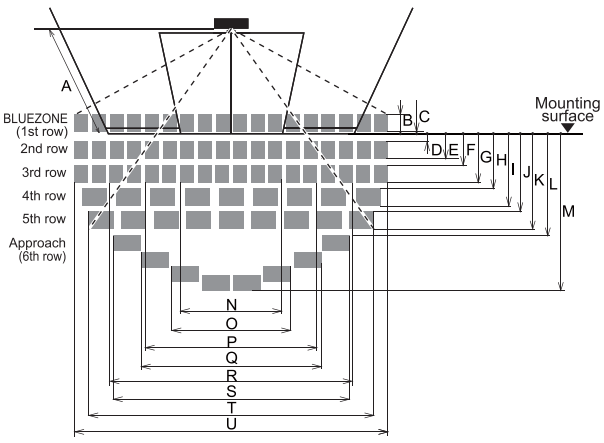


DETECTION AREA

The chart shows the values at depth angle 0°

[feet,inch(m)]

A	7'3" (2.20)	8'2" (2.50)	9'10" (3.00)
B	9" (0.22)	10" (0.25)	1' (0.31)
C	6" (0.16)	7" (0.18)	8" (0.21)
D	2" (0.06)	3" (0.07)	3" (0.08)
E	7" (0.17)	8" (0.20)	9" (0.24)
F	1'7" (0.49)	1'10" (0.55)	2'2" (0.65)
G	1'8" (0.50)	1'11" (0.58)	2'4" (0.70)
H	2'8" (0.82)	3'1" (0.93)	3'8" (1.11)
I	2'10" (0.86)	3'3" (0.99)	3'11"(1.19)
J	3'5" (1.04)	3'10" (1.18)	4'8" (1.41)
K	3'7" (1.09)	4'1" (1.24)	4'11" (1.49)
L	4'9" (1.45)	5'5" (1.65)	6'6" (1.98)
M	8'1" (2.46)	9'2" (2.79)	11' (3.35)
N	4'6" (1.38)	5'2" (1.57)	6'2" (1.89)
O	7'1" (2.15)	8' (2.45)	9'8" (2.95)
P	8'4" (2.53)	9'5" (2.88)	11'4" (3.45)
Q	10'6" (3.20)	12' (3.65)	14'4" (4.38)
R	12'1" (3.68)	13'9" (4.18)	16'6" (5.02)
S	14' (4.27)	15'11" (4.86)	19'2" (5.84)
T	13'5" (4.10)	15'4" (4.67)	18'4" (5.60)
U	16'9" (5.10)	19' (5.79)	22'10" (6.95)

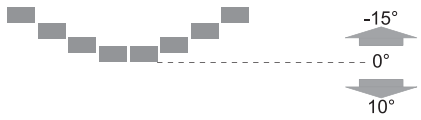


Presence area :1st-4th row
Motion area :5th row
Approach area :6th row

Approach area
*Mounting Height = 7'3"(2.2m)

[feet,inch(m)]

	-15°	0°	+10°
L	2'2" (0.67)	4'9" (1.45)	6'9" (2.06)
M	5'1" (1.54)	8'1" (2.46)	12' (3.65)
O	5'7" (1.69)	7'1" (2.15)	8'2" (2.50)
Q	8'3" (2.52)	10'6" (3.20)	11'8" (3.56)
S	12' (3.66)	14' (4.27)	15'7" (4.76)

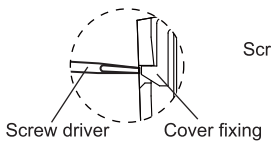


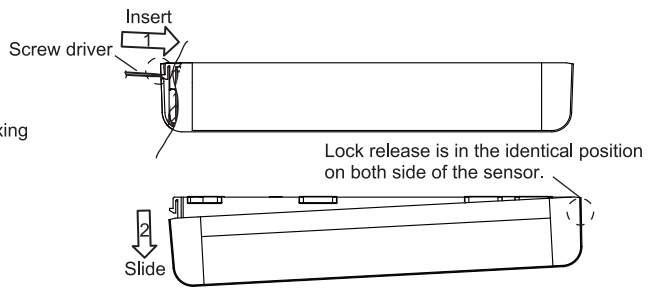
NOTE The actual detection area may become smaller depending on the ambient light, the color / material of the object or the floor as well as the entry speed of the object.
The sensor may not be activated when the entering speed of the object or a person is slower than 2"(50mm) / sec. or faster than 4'11"(1500mm) / sec.

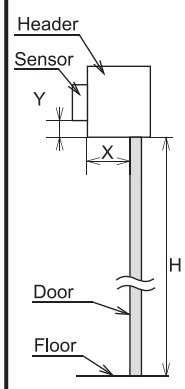
INSTALLATION

1

1. Affix the mounting template at the desired mounting position. Refer to the chart in below.
2. Drill two mounting holes of ø1/8" (ø3.4mm).
3. To pass the cable through the header, drill a wiring hole of ø5/16" (ø8mm).
4. Remove the mounting template.
5. Remove the housing cover with screw driver as shown below. Fix the sensor to the mounting surface with the two mounting screws.







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 distance (Y)

[feet,inch(m)]

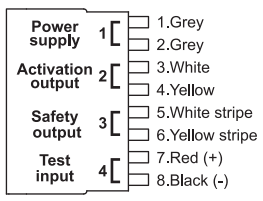
X \ H	6'7" (2.00)	7'7" (2.30)	8'2" (2.50)	9'2" (2.80)	9'10" (3.00)
0	No limit				
2" (0.05)	4" (0.10)	4" (0.10)	4" (0.11)	5" (0.12)	5" (0.12)
4" (0.10)	3" (0.08)	4" (0.09)	4" (0.10)	4" (0.11)	4" (0.11)
6" (0.15)	2" (0.06)	3" (0.08)	3" (0.08)	4" (0.09)	4" (0.10)
8" (0.20)	2" (0.05)	3" (0.07)	3" (0.08)	4" (0.09)	4" (0.09)
10" (0.25)	2" (0.05)	2" (0.06)	3" (0.07)	3" (0.08)	3" (0.08)
12" (0.30)	-	-	-	-	-

NOTE Make sure not to mount the bottom of the sensor lower than the bottom of the 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

Wire the cable to the door controller as shown below.



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

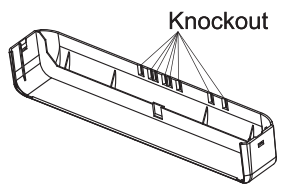
3

1.Plug the connector.
2.Supply power to the sensor. Adjust the detection area and set the dipswitches.
(See **ADJUSTMENTS 5. Dipswitch settings, Table 1)**

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.

4

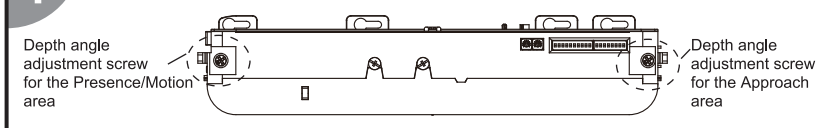
Place the housing cover.
If wiring is to be exposed, break the knockout.

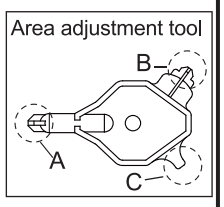


⚠ WARNING Danger of electric shock	Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.

ADJUSTMENTS

1 Area depth angle adjustment



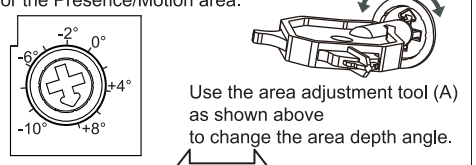


When adjusting the 2nd row close to the door,
follow **Table1** dipswitch18(Installation mode) for the easier adjustment.
When dipswitch 18 is set to "ON", sensor automatically set back to the operation mode after 5 minutes.
If the installation mode is required again, set dipswitch 18 to "OFF", then set to "ON".

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.

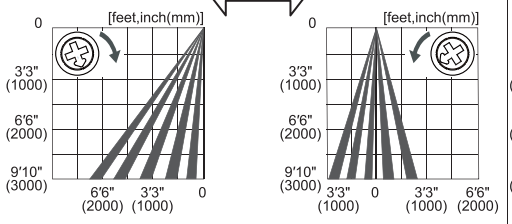
1-1 Presence/Motion area

Depth angle adjustment screw for the Presence/Motion area.



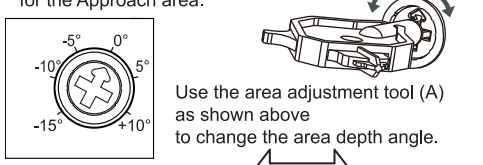
Use the area adjustment tool (A) as shown above to change the area depth angle.

Deep Shallow



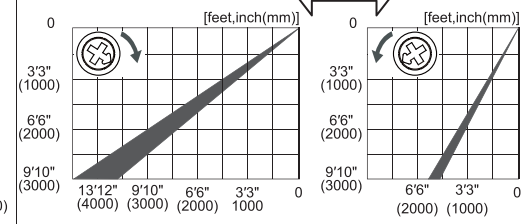
1-2 Approach area

Depth angle adjustment screw for the Approach area.



Use the area adjustment tool (A) as shown above to change the area depth angle.

Deep Shallow

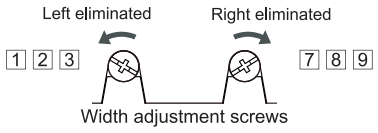


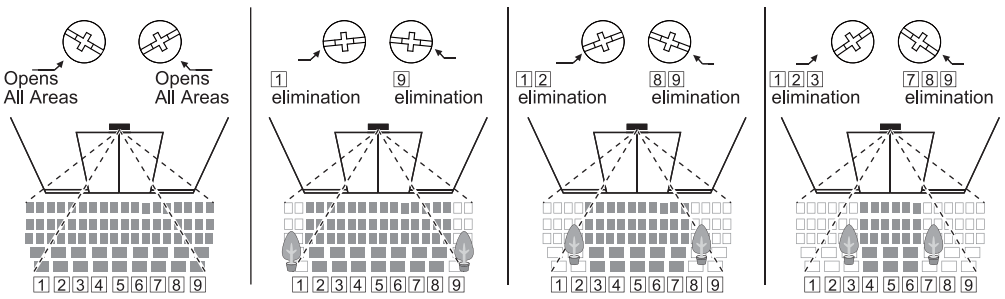
2 Area width adjustment

2-1 Presence/Motion area

Adjust the Presence/Motion area width with the Width adjustment screws.
Each side can be adjusted independently, allowing for asymmetrical settings. Use the area adjustment tool (A) to adjust area width.

NOTE When setting the Presense/Motion area width, make sure to turn the width adjustment screws until it clicks.





2-2 Approach area

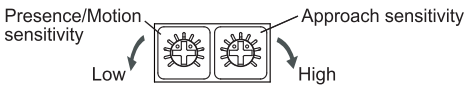
Approach area width can be adjusted by changing the Dipswitches 8,9,10.
See **5.Dipswitch settings, Table 1**.

3 Presence/Motion area rows adjustment

Presence/Motion area rows can be adjusted by changing the Dipswitches 6 & 7.
See **5.Dipswitch settings, Table 1**.

4 Sensitivity adjustment

Adjust the Approach area and Motion/Presence area with potentiometer.
Turning it clockwise increases the sensitivity and turning counterclockwise lowers the sensitivity.



Use the area adjustment tool (B) to change sensitivity.

5 Dipswitch settings

The area adjustment tool (C) can be used to change Dipswitch.

Table1

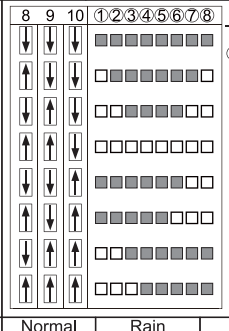
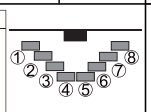
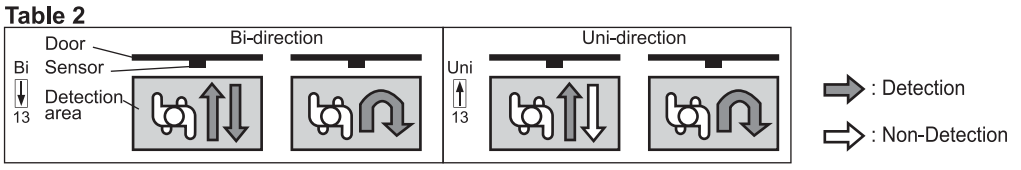
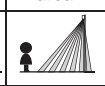
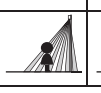
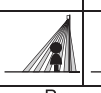
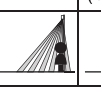
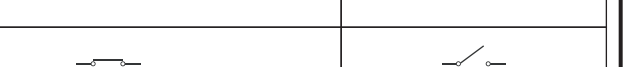
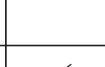
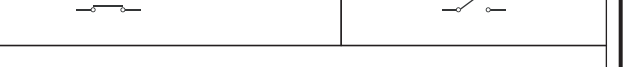
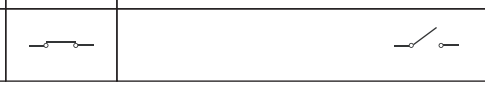
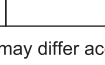
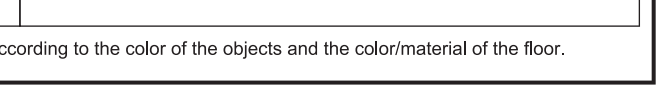
	Function	Setting				Comment
Dipswitch 1 Dipswitch 2	Presence timer	30sec. 1 2	60sec. 1 2	180sec. 1 2	600sec. 1 2	To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.
Dipswitch 3 Dipswitch 4	Frequency	Setting1 3 4	Setting2 3 4	Setting3 3 4	Setting4 3 4	When using more than one sensor close to each other, set the frequency different for each sensor.
Dipswitch 5	BLUEZONE	OFF 5	ON 5			When dipswitch 5 is set to "ON", the BLUEZONE (1st row) is active and looks through the threshold.
Dipswitch 6 Dipswitch 7	Presence/Motion area row adjustment	5rows 6 7	4rows 6 7	3rows 6 7	2rows 6 7	Rows can be eliminated as shown below. 5rows 4rows 3rows 2rows
Dipswitch 8 Dipswitch 9 Dipswitch 10	Approach area width adjustment	8 9 10 ①②③④⑤⑥⑦⑧ 				 ■ Active area □ Inactive area The width of Approach area can be adjusted by changing the Dipswitches as shown the left.
Dipswitch 11	Rain mode	Normal 11	Rain 11			Set this switch to "Rain" if the sensor is used in a region with a lot of rain.
Dipswitch 12	Snow mode	Normal 12	Snow 12			Set this switch to "Snow" if the sensor is used in a region with snow or a lot of insects.
Dipswitch 13	Direction	Bi 13	Uni 13	*Please refer to **Table 2** for the details.		When dipswitch 13 is set to "Uni", this setting enables the door to close faster when a person walks away from the door.
Dipswitch 14	Simultaneous output	OFF 14	ON 14			When Dipswitch 14 is set to "ON", both the activation & safety relay outputs will operate simultaneously regardless of detection area. But only the Safety output relay will respond back with a Safety output when it receives a Test input.
Dipswitch 15	Safety output (to door controller)	N.O. 15	N.C. 15			Select "N.O." / "N.C." for Safety output.
Dipswitch 16	Test input (from the door controller)	High 16	Low 16			The delay time between Test input and Safety output is 10msec..
Dipswitch 17	Future use					
Dipswitch 18	Installation mode	OFF 18	ON 18			Set dipswitch 18 to "ON" to adjust the 2nd row. During the installation mode only the 2nd row remains active and the operation indicator shows yellow. After setting the row, switch dipswitch 18 "OFF".

Table 2



CHECKING

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

Entry		Power OFF	Outside of detection area	Entry into Approach area (6th row)	Entry into 5th row	Entry into 4th row	Entry into 3rd row	Entry into 2nd row	Entry into BLUEZONE (1st row)
Image									
Status		-	Stand-by	Approach detection active	Motion detection active	Presence detection active			
Operation indicator		None	Green	Orange Blinking	Orange	Red		Red Blinking	Blue
Activation output	OFF 14								
	ON 14								
Safety output	OFF 14 N.O. 15								
	OFF 14 N.C. 15								
	ON 14 N.O. 15								
	ON 14 N.C. 15								

NOTE The response time may differ according to the color of the objects and the color/material of the floor.

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 ,3 ,4 , 5**.
		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 connection failure.	Check the wires and connector.
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 **Table1** dipswitch 3 & 4.
		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.
		Detection area overlaps with door / header.	Adjust the detection area to "Deep"(Outside).
		Sensitivity is too high.	Set the sensitivity lower.
		Raining or snowing	Set dipswitch 11, 12 to "Rain","Snow".
	Proper	Wrong setting of dipswitches	Check **Table 1** dipswitch 11, 12, 15.
Door remains open	Proper	Sudden change in the detection area.	Check **ADJUSTMENTS 4 & Table 1** dipswitch 1, 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.
	Fast Green blinking	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	Remove highly reflecting objects from the detection area. Or change the area depth angle.
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep"(Outside).
Proper operation	Slow Green blinking	Signal saturation (BLUEZONE)	Remove highly reflecting objects from the detection area. Or change the area depth angle.

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