

5921350 JAN 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.

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

### NOTE

- 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.
- When setting the sensor's detection area, make sure that there is no traffic around the installation site.
- Before turning the power ON, check the wiring to prevent damage or malfunction of equipment connected to the product.
- Only use the product as specified in the operation manual provided.
- Be sure to install and adjust the sensor in accordance with the local laws and standards of the country in which the product is installed.
- 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.
- 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.

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

### 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	Safety output	Form A relay
Cover color	Black		50V 0.3A Max.(Resistance load)
Mounting height	6'7" to 9'10" (2.0 to 3.0m)	Output hold time	0.5 to 1.5sec.
Detection area	See <b>DETECTION AREA</b>	Response time	<0.3sec.
Detection method	Active infrared reflection	Operating temperature	-31°F to 131°F(-35°C to +55°C)
Depth angle	Approach area -15° to +10°	Operating humidity	<80%
adjustment	Presence/Motion area -10° to +8°	IP rate	IP54
Power supply	12 to 24VAC ±10% (50 / 60 Hz)	Weight	14.6oz (420g)
	12 to 30VDC ±10%	Accessories	1 Operation manual
Power consumption	< 2.5W (< 4VA at AC)		2 Mounting screws
Operation indicator	See <b>Operation indicator table</b>		1 Mounting template
Activation output	Form A relay		1 Area adjustment tool
	50V 0.3A Max.(Resistance load)		1 Cable 9'10" (3m)
Safety input	Opto coupler		
	Voltage 5 to 30VDC		

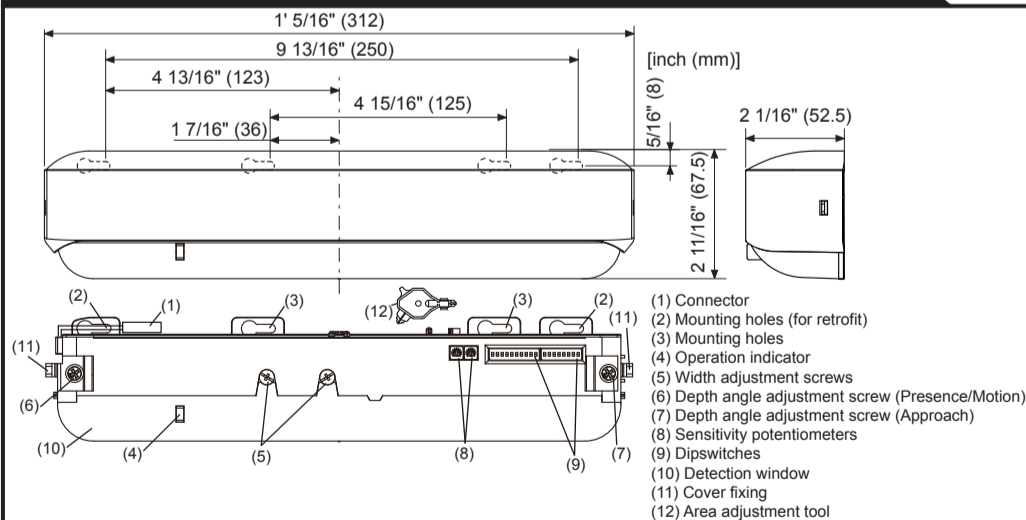
### Operation indicator table

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

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

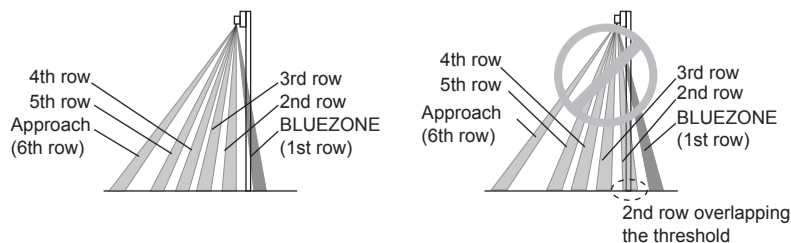
\*1 : See **BLUEZONE AREA**

## OUTER DIMENSIONS AND PART NAMES



## BLUEZONE AREA

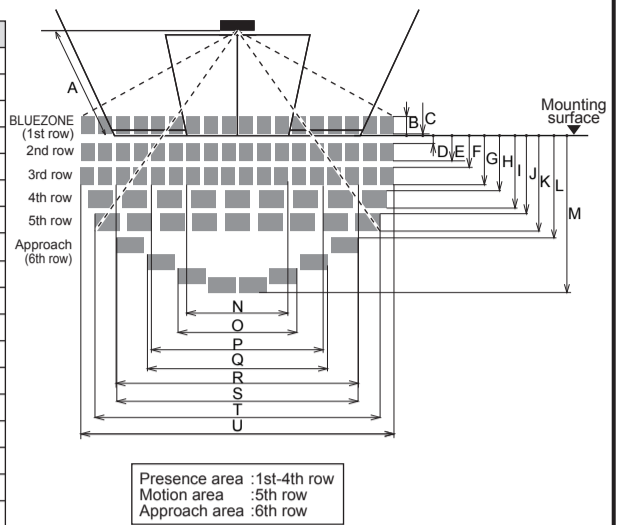
When dipswitch 5 is set to "ON", the BLUEZONE area, that provides extra safety over the threshold, is activated. In case the BLUEZONE function is not required, set dipswitch 5 to "OFF". Do not set the 2nd row overlapping the threshold regardless of the setting of dipswitch 5.



## DETECTION AREA

The chart shows the values at depth angle 0°

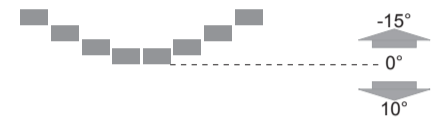
	[feet,inch(m)]		
A	7'3" (2.20)	8'2" (2.50)	9'10" (3.00)
B	9" (0.22)	10" (0.25)	1' (0.31)
C	6" (0.16)	7" (0.18)	8" (0.21)
D	2" (0.06)	3" (0.07)	3" (0.08)
E	7" (0.17)	8" (0.20)	9" (0.24)
F	1'7" (0.49)	1'10" (0.55)	2'2" (0.65)
G	1'8" (0.50)	1'11" (0.58)	2'4" (0.70)
H	2'8" (0.82)	3'1" (0.93)	3'8" (1.11)
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)
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)



### Approach area

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

	-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)



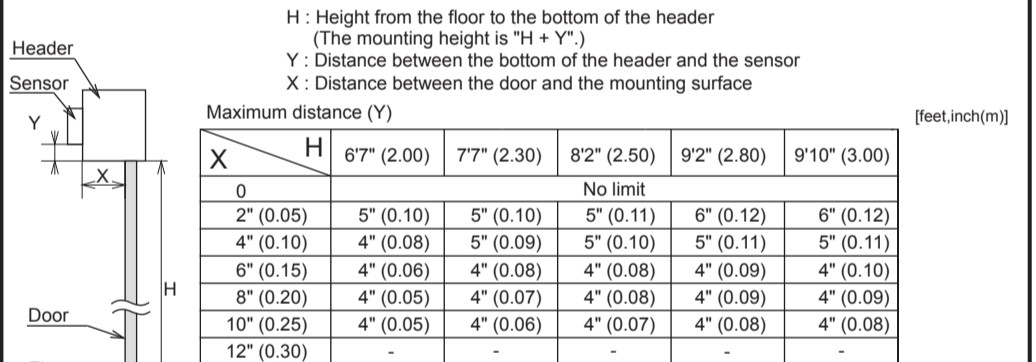
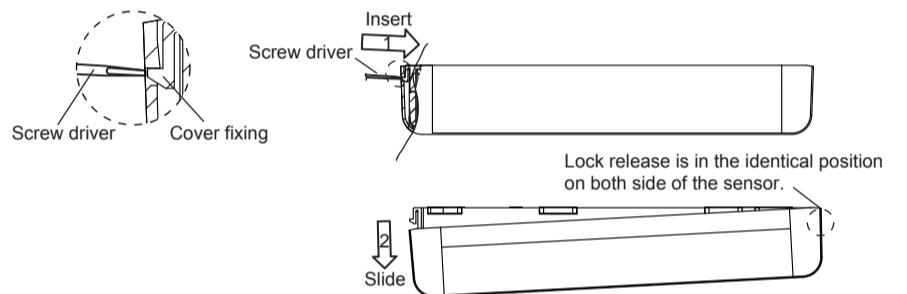
### NOTE

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

- Affix the mounting template at the desired mounting position. Refer to the chart in below.
- Drill two mounting holes of  $\phi 1/8"$  ( $\phi 3.4mm$ ).
- To pass the cable through the header, drill a wiring hole of  $\phi 5/16"$  ( $\phi 8mm$ ).
- Remove the mounting template.
- Remove the housing cover with screw driver as shown below. Fix the sensor to the mounting surface with the two mounting screws.



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

	<b>CAUTION</b>	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.
<b>Risk of getting caught</b>		

### 2

Wire the cable to the door controller as shown below.

Power supply 1	1. Grey	12 to 24VAC ±10% / 12 to 30VDC ±10%
Activation output 2	2. Grey	
	3. White	
	4. Yellow	
Safety output 3	5. White stripe	Form A relay 50V 0.3A Max.
	6. Yellow stripe	Form A relay 50V 0.3A Max.
Safety input 4	7. Red (+)	
	8. Black (-)	Opto coupler / Voltage: 5 to 30VDC

	<b>WARNING</b>	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.
<b>Danger of electric shock</b>		

### 3

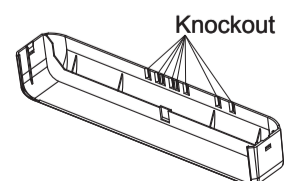
- Plug the connector.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **ADJUSTMENTS 5. Dipswitch settings, Table 1**)

### 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

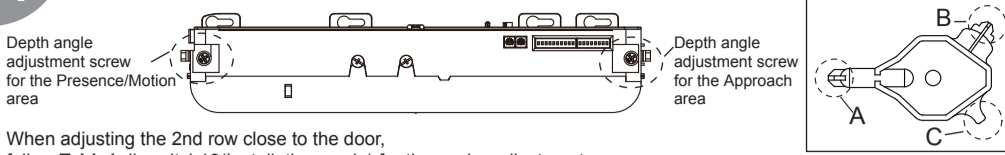
Place the housing cover. If wiring is to be exposed, break the knockout.



	<b>WARNING</b>	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.
<b>Danger of electric shock</b>		

## ADJUSTMENTS

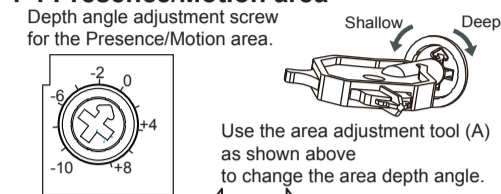
### 1 Area depth angle adjustment



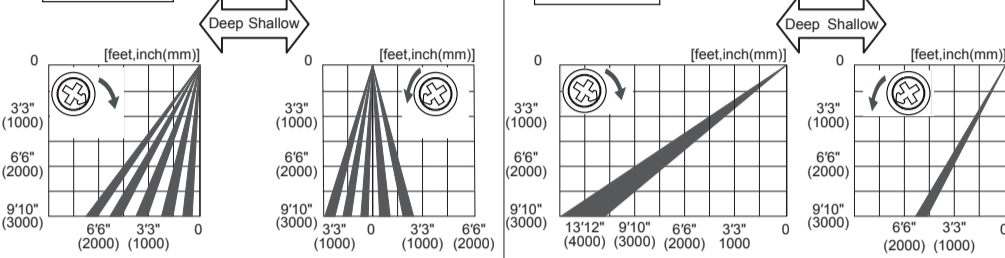
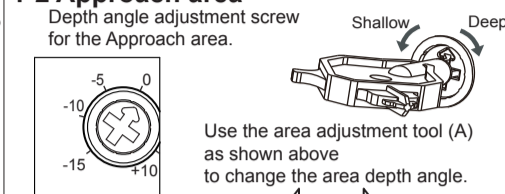
When adjusting the 2nd row close to the door, follow **Table 1** dipswitch 18 (Installation mode) for the easier adjustment. When dipswitch 18 is set to "ON", sensor automatically set back to the operation mode after 5 minutes. If the installation mode is required again, set dipswitch 18 to "OFF", then 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



#### 1-2 Approach area

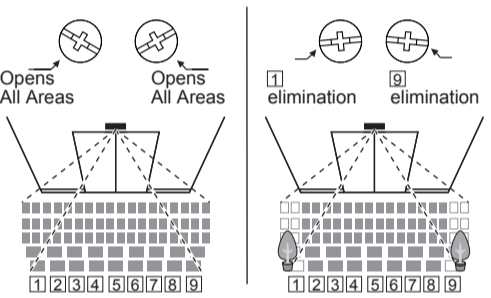


### 2 Area width adjustment

#### 2-1 Presence/Motion area

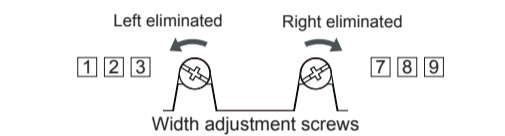
Adjust the Presence/Motion area width with the Width adjustment screws. Each side can be adjusted independently, allowing for asymmetrical settings. Use the area adjustment tool (A) to adjust area width.

**NOTE** When setting the Presence/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**.

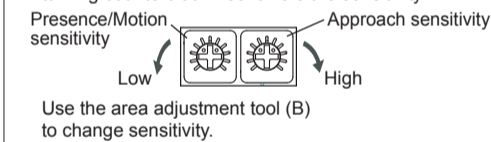


### 3 Presence/Motion area rows adjustment

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.



### 5 Dipswitch settings

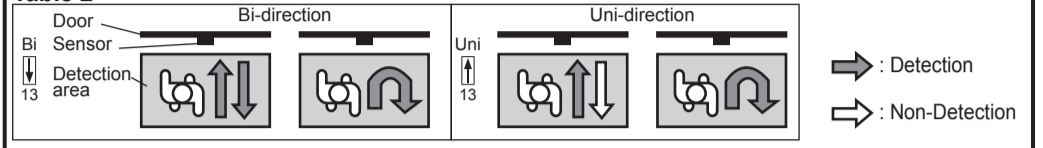
The area adjustment tool (C) can be used to change Dipswitch.

**Table 1**

Dipswitch	Function	Setting	Comment
Dipswitch 1	Presence timer	30sec. (Down arrow)	To enable the presence detection, do not enter the detection area for 10 seconds after setting the timer.
Dipswitch 2		60sec. (Up arrow)	
Dipswitch 3		180sec. (Down arrow)	
Dipswitch 4		600sec. (Up arrow)	
Dipswitch 3	Frequency	Setting 1 (Down arrow)	When using more than one sensor close to each other, set the frequency different for each sensor.
Dipswitch 4		Setting 2 (Up arrow)	
Dipswitch 5		Setting 3 (Down arrow)	
Dipswitch 6		Setting 4 (Up arrow)	
Dipswitch 5	BLUEZONE	OFF (Down arrow) / ON (Up arrow)	When dipswitch 5 is set to "ON", the BLUEZONE (1st row) is active and looks through the threshold.
Dipswitch 6	Presence/Motion area row adjustment	5rows (Down arrow)	Rows can be eliminated as shown below. 5rows 4rows 3rows 2rows
Dipswitch 7		4rows (Up arrow)	
Dipswitch 8		3rows (Down arrow)	
Dipswitch 9		2rows (Up arrow)	
Dipswitch 8	Approach area width adjustment	8 9 10 (Down arrow)	The width of Approach area can be adjusted by changing the Dipswitches as shown the left.
Dipswitch 9		1 2 3 4 5 6 7 8 (Up arrow)	
Dipswitch 10		9 10 1 2 3 4 5 6 7 8 (Down arrow)	
Dipswitch 11		1 2 3 4 5 6 7 8 (Up arrow)	
Dipswitch 11	Rain mode	Normal (Down arrow) / Rain (Up arrow)	Set this switch to "Rain" if the sensor is used in a region with a lot of rain.
Dipswitch 12	Snow mode	Normal (Down arrow) / Snow (Up arrow)	Set this switch to "Snow" if the sensor is used in a region with snow or a lot of insects.
Dipswitch 13	Direction	Bi (Down arrow) / Uni (Up arrow)	*Please refer to <b>Table 2</b> 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 (Down arrow) / ON (Up arrow)	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 Safety input.

Dipswitch	Function	N.O.	N.C.	Setting	Comment
Dipswitch 15	Safety output (to door controller)	Down arrow	Up arrow	15	Select "N.O." / "N.C." for Safety output.
Dipswitch 16	Safety input (from the door controller)	High (Down arrow)	Low (Up arrow)	16	The delay time between Safety input and Safety output is 10msec..
Dipswitch 17	For future use				
Dipswitch 18	Installation mode	OFF (Down arrow)	ON (Up arrow)	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	[Image]	[Image]	[Image]	[Image]	[Image]	[Image]	[Image]	[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 (Down arrow) / ON (Up arrow) 14							
Safety output	OFF (Down arrow) / ON (Up arrow) 14	N.O. (Down arrow) / N.C. (Up arrow) 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

- Always keep the detection window clean. If dirty, wipe the window with a damp cloth. Do not use any cleaner / solvent.
- Do not wash the sensor with water.
- Do not disassemble, rebuild or repair the sensor yourself, otherwise an electric shock may occur.
- When the operation indicator blinks green, contact your installer or service engineer.
- Always contact your installer or service engineer when changing the settings.
- Do not paint the detection window.

#### NOTE

- When turning the power ON, always walk-test the detection area to ensure the proper operation.
- 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.
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.
		Wrong detection area positioning.	Check <b>ADJUSTMENTS 1, 2, 3, 4, 5</b> .
		Sensitivity is too low.	Set the sensitivity higher.
Door opens when no one is in the detection area. (ghosting)	Proper	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.
	Unstable	Wrong wiring or connection failure.	Check the wires and connector.
		Objects that move or emit light in the detection area.	Remove the objects.
Door remains open	Proper	The detection area overlaps with that of another sensor.	Check <b>Table 1</b> 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).
	Fast Green blinking	Sensitivity is too high.	Set the sensitivity lower.
		Raining or snowing	Set dipswitch 11, 12 to "Rain", "Snow".
		Wrong setting of dipswitches	Check <b>Table 1</b> dipswitch 11, 12, 15.
Slow Green blinking	Sudden change in the detection area.	Check <b>ADJUSTMENTS 4 &amp; Table 1</b> 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.	
Proper operation	Slow 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.
Proper operation	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.

#### Manufacturer

**OPTEX Co., LTD.**  
5-8-12 Ogoto Otsu 520-0101, Japan  
TEL.: +81(0)77-579-8700  
FAX.: +81(0)77-579-7030  
WEBSITE:  
www.optex.co.jp/as/eng/index.html

#### North and South America Subsidiary

**OPTEX INCORPORATED**  
18730 S. Wilmington Avenue, Suite 100  
Rancho Dominguez CA 90220 U.S.A  
TEL.: +1-800-877-6656  
FAX.: +1(310)898-1098  
WEBSITE: www.optextechnologies.com

**East coast office**  
8510 McAlpines Park Drive, Suite 108  
Charlotte, NC 28211 U.S.A.  
TEL.: +1-800-877-6656  
FAX.: +1(704)365-0818  
WEBSITE: www.optextechnologies.com