



DIN 18650-1:2010 Chapter 5.7.4 ESPE Chapter 5.8.2.4.3  
 EN 16005:2012/AC:2015 Chapter 4.6.8 and Annex C  
 EN 61000-6-2:2005/AC:2005  
 EN 61000-6-3:2007 +A1:2011/AC:2012  
 EMC Directive 2014/30/EU  
 Machinery Directive 2006/42/EC

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

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

A. Maekawa  
 General Manager  
 OPTEX CO., LTD.  
 Quality Control Dept.

### Manufacturer's statement

Read this operation manual carefully before use to ensure proper operation of this product. Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person. The meanings of the symbols are as follows.

**WARNING** Failure to follow the instructions that accompany this indication and improper handling may result in serious injury or death.

**CAUTION** Failure to follow the instructions that accompany this indication and improper handling may result in injury and/or damage to property.

**NOTE** Pay special attention to sections with this symbol.

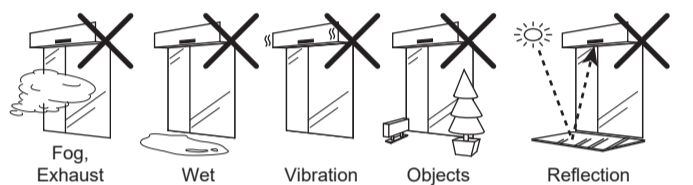


It is required to check the operation manual if this symbol is shown on the product.

### NOTE

- 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.

The following conditions are not suitable for sensor installation.



### WARNING

#### Danger of electric shock

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

### Specifications

Model	: OA-AXIS T	Activation output	: When 3rd, 4th or 5th row detects. Form A relay 50 V 0.3 A Max.
Cover color	: Silver/Black	Safety output	: When 1st or 2nd row detects. Form A relay 50 V 0.3 A Max.
Mounting height	: 2.0 to 3.5 m (6'7" to 11'6") (2.0 m(6'7") to 3.0 m (9'10") for EN16005 compliance)	Test input	: Opto coupler Voltage 5 to 30 VDC Current 6 mA Max. (30 VDC)
Detection area	: See <b>Detection area</b>	IP rate	: IP54
Detection method	: Active infrared reflection (*1)	Category	: 2 (EN ISO 13849-1:2015)
Depth angle adjustment	: 1st to 3rd rows : -6° to +6° 4th and 5th rows : +26° to +44°	Performance level	: d (EN ISO 13849-1:2015)
Power supply (*2)	: 12 to 24 VAC ±10% (50/60 Hz) 12 to 30 VDC ±10%	ESPE	: Type 2
Power consumption	: < 2.5 W (< 4 VA at AC)	Weight	: 320 g (11.2 oz)
Operation indicator	: See <b>Operation indicator table</b>	Accessories	: 1 Operation manual 2 Mounting screws 1 Mounting template 1 Area adjustment tool 1 Cable 3m (9'10") (*3)
Output hold time	: < 500 ms		
Response time	: < 300 ms		
Operating temperature	: -20 to +55°C (-4 to 131°F)		
Operating humidity	: < 80% (non-condensing)		
Noise level	: < 70 dBA		

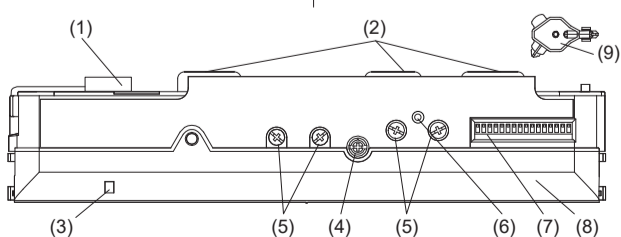
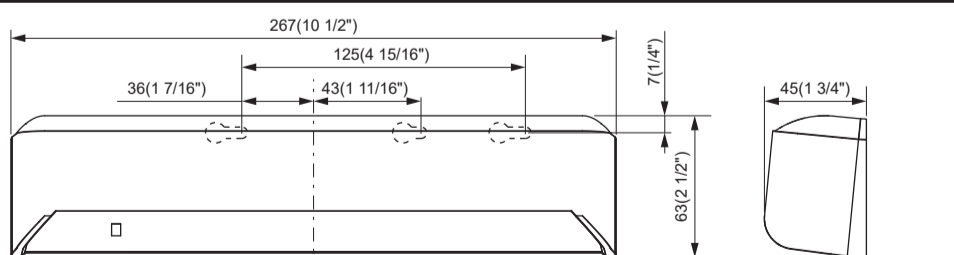
### Operation indicator table

Status	Operation indicator color	Timing
Warm-up	Yellow blinking	1000 ms
Stand-by (Installation mode)	Yellow	
Stand-by (Service mode)	Yellow & Green blinking	
Stand-by (Operation mode)	Green	
1st row detection	Red blinking	
2nd row detection	Red	
3rd, 4th, or 5th row detection	Orange	
Communication Test output	Turn off 500 ms (*4)	
Setting error	Red & Green blinking	
Signal saturation	Slow Green blinking	
Sensitivity too low(or Sensor failure)	Fast Green blinking	

### NOTE

- The specifications herein are subject to change without prior notice due to improvements.
- \*1 : The 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.
  - \*4 : LED will be turned off approx. 500 ms when the sensor Test output signal works well.

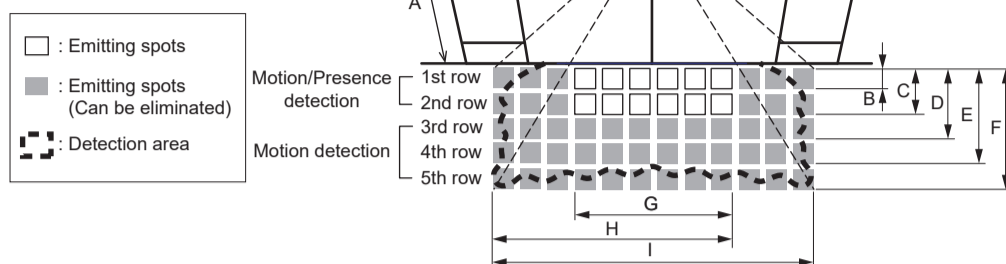
### Outer dimensions and part names



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

### 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 (6'7")	2.20 (7'3")	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')	1.35 (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 (9'1")	3.15 (10'4")	3.40 (11'2")	3.79 (12'5")
X	0.19 (7")	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 EN 16005, make sure that the detection area is within the values in the chart below.

	[m(feet,inch)]	
A	2.00 (6'7")	2.20 (7'3")
C	0.23 (9")	0.24 (9")
G	1.02 (3'4")	1.10 (3'7")
I (*)	2.41 (7'11")	2.54 (8'4")

Test conditions required by EN 16005

Floor : Grey paper  
 Detection object : EN 16005 CA reference body  
 Sensitivity : Middle  
 Speed of detection object : 50 mm/s

The values above are those of the **Detection area** when tested referring to the test conditions of EN 16005. (The emitting area is as shown in **Emitting area** above.)

\*: When installed at higher than 2.2 m(7'3"), EN 16005 requirements are fulfilled only within the area width "I" of 2.54 m(8'4").

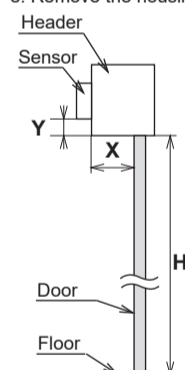
### NOTE

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

### Installation

#### 1. Mounting

- Place the mounting template at the desired mounting position. (When setting the detection area close to the door, mount the sensor according to the chart below.)
- Drill two mounting holes of  $\phi 3.4$  mm ( $\phi 1/8$ ").
- To pass the cable through the header, drill a wiring hole of  $\phi 8$  mm ( $\phi 5/16$ ").
- Remove the mounting template.
- 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  
 (The mounting height is "H + Y".)  
 Y : Distance between the bottom of the header and the sensor  
 X : Distance between the door and the mounting surface

#### Maximum mounting distance (Y)

X	H	2.00 (6'7")	2.30 (7'7")	2.50 (8'2")	2.80 (9'2")	3.00 (9'10")
0		No limit				
0.05 (2")		0.20 (8")	0.20 (8")	0.20 (8")	0.20 (8")	0
0.10 (4")		0.20 (8")	0.20 (8")	0.20 (8")	0.20 (8")	0
0.15 (6")		0.13 (5")	0.15 (6")	0.19 (7")	0.20 (8")	0
0.20 (8")		-	0.12 (5")	0.14 (6")	0.15 (6")	0
0.25 (10")		-	-	0.11 (4")	0.12 (5")	0
0.30 (12")		-	-	-	-	-

### NOTE

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

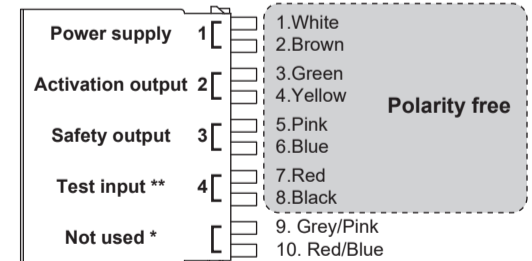
### CAUTION Risk of getting caught

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

### 2. Wiring

Wire the cable to the door controller.  
 \* The following 2 cables are not used.  
 9. Grey/Pink  
 10. Red/Blue

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



### 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.

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

### 3. Turn ON the power

- Plug the connector.
- Supply power to the sensor. Adjust the detection area and set the dipswitches. (See **Adjustments 3. Dipswitch settings**)

### NOTE

Make sure to connect the cable correctly to the door controller before turning the power ON. When turning the power ON or after adjusting the settings, do not enter the detection area for more than 10 s in order to enable the presence detection. Do not touch the dipswitches before turning the power ON, otherwise an error occurs. After changing the dipswitch settings, make sure to push the function switch for 2 s.

### 4. Mounting the housing cover

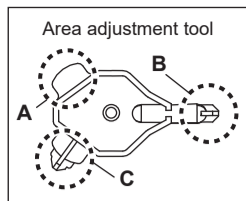
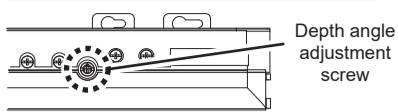
Place the housing cover. If wiring is to be exposed, break the knockout.

### WARNING Danger of electric shock

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

## Adjustments

### 1. Area depth angle adjustment



#### 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.

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

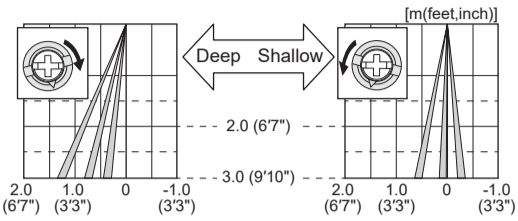
### a. Independent adjustment

#### 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.

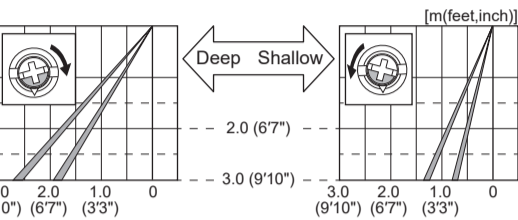


#### 4th and 5th rows

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.

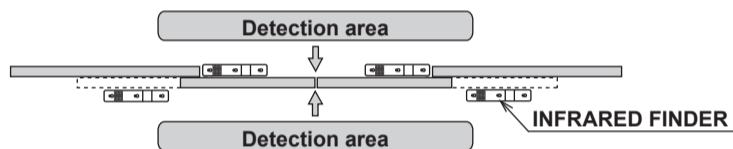


### b. Simultaneous adjustment

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

## Reference Area depth adjustment with INFRARED FINDER (Separately available)

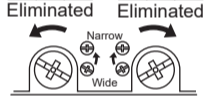
- Turn the depth angle adjustment screw to the right (Deep) to place the detection area most away from the door.
- Set INFRARED FINDER sensitivity to "H" (High) and place it on the floor as shown below.
- Turn the depth angle adjustment screw to the left (Shallow) until the emitting area is placed at the position where INFRARED FINDER is in the low detection status. (Slow Red blinking)



### 2. Area width adjustment

#### 1st to 3rd rows

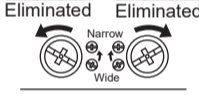
Eliminated Eliminated



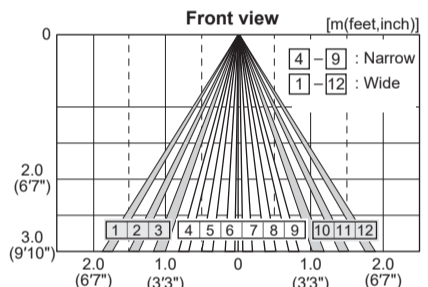
Width adjustment screws (Left)

#### 4th and 5th rows

Eliminated Eliminated



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

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

Push 2 s

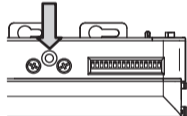


Table 1

■ Safety settings ■ Activation settings □ Other settings □ Factory default settings

Dip switch No.	Function	Setting				Comment
1	Sensitivity	Low 1 2	Middle 1 2	High 1 2	S-High 1 2	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.
2		*Floor condition 2.0 to 2.2 m (*High reflection)	2.0 to 2.5 m	2.5 to 3.0 m	2.5 to 3.0 m (*Low reflection)	
3	Presence timer	30 s	60 s	600 s	2 s (Motion)*	The 1st and 2nd rows have the presence detection function. To enable the presence detection, do not enter the detection area for 10 s after setting the timer.
4		3 4	3 4	3 4	3 4	
5	Frequency	Setting1	Setting2	Setting3	Setting4	When using more than one sensor close to each other, set the frequency different for each sensor.
6		5 6	5 6	5 6	5 6	
7	Safety output (to door controller)	N.C. 7	N.O. 7	Dipswitch 8 Test input		10 ms delay time between Test input and Safety output. If the door controller has no Test, put Test input to "OFF" and do not connect Black and Red wires. "High" or "Low" indicates the Test input signal level from door controller.
8	Test input (from door controller)	OFF (High) 8	ON (Low) 8	OFF (High) 0 V	ON (Low) 0 V	
9	Row adjustment	5 rows 9 10	4 rows 9 10	3 rows 9 10	2 rows 9 10	Set the depth rows with dipswitches 9 and 10. When "2 rows" are selected, the Activation output is disabled.
10						
11	Immunity	OFF 11	ON 11	Set dipswitch 11 to "ON" when the sensor operates by itself (Ghosting). When dipswitch 11 is set to "ON" the actual detection area may occur smaller.		
12	Activation output	N.O. 12	N.C. 12	Dipswitch 12 is for the Activation output to door controller.		
13	Simultaneous output	OFF 13	ON 13	When Dipswitch 13 is set to "ON", both Activation & Safety output will operate simultaneously regardless of detection area. But only Safety output will respond back with Safety output when it receives Test input.		
14	Self monitoring	ON 14	OFF* 14	When the door remains open and the operation indicator shows Fast/Slow Green blinking, refer to <b>Troubleshooting</b> . If the door still remains open, set dipswitch 14 to "OFF".		

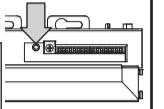
Dip switch No.	Function	Setting		Comment
15	Direction	Bi 15	Uni 15	When dipswitch 15 is set to "Uni", this setting enables the door to close faster when a person walks away from the door. Uni-directional function is disabled in case the detection at 1st and/or 2nd row continues for more than 5 s.
16	Installation mode	OFF 16	ON 16	Set dipswitch 16 to "ON" to adjust the 1st row. During the Installation mode only the 1st row remains active and the operation indicator shows yellow.

\* No EN 16005 compliance.

## Service mode

- During the "Service mode", 1st row and 3rd to 5th row are transmitting. The operation indicator shows Yellow & Green blinking.
- After installation, be sure to turn to the "Operation mode" because it does not comply with EN 16005.
- The sensor automatically returns to "Operation mode" after 15 min from the transition.

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



## 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
Status	-	Stand-by	Motion detection	Motion/Presence detection	Motion/Presence detection
Operation indicator	None	Green	Orange	Red	Red blinking
Activation output	12	N.O.	OFF	ON	ON
		N.C.	ON	ON	ON
	13	N.O.	OFF	ON	ON
		N.C.	ON	ON	ON
Safety output *	7	N.C.	OFF	ON	ON
		N.O.	ON	ON	ON
	13	N.C.	OFF	ON	ON
		N.O.	ON	ON	ON

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

## 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. Wrong wiring or connection failure.	Set to the stated voltage. Check the wires and connector.
	Unstable	Wrong detection area positioning. Sensitivity is too low. Short presence timer.	Check <b>ADJUSTMENTS 1, 2, 3.</b> (*) Set the sensitivity higher. (*) Set the presence 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)	Proper	Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Objects that move or emit light in the detection area. The detection area overlaps with that of another sensor.	Remove the objects. Check <b>Table 1</b> dipswitch 5, 6. (*)
		Waterdrops on the detection window. The detection area overlaps with the door/header.	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. Adjust the detection area to "Deep" (Outside).
		Sensitivity is too high. Others	Set the sensitivity lower. (*) Set dipswitch 11 to "ON". (*)
	Proper	Wrong setting of dipswitches.	Check <b>Table 1</b> dipswitch 7, 8, 12. (*)
	Door remains open	Proper	Sudden change in the detection area. Wrong wiring or connection failure.
Yellow		Installation mode is set to "ON".	Set dipswitch 16 to "OFF". (*)
Fast Green Blinking		Sensitivity is too low. Dirty detection window.	Set the sensitivity higher. (*) Wipe the detection window with a damp cloth. Do not use any cleaner or solvent.
		Sensitivity too low or sensor failure.	Contact your installer or service engineer.
Slow Green Blinking		Signal saturation. (1st or 2nd row) The detection area overlaps with the door/header.	Remove highly reflecting objects from the detection area. Or lower the sensitivity. (*) Or change the area depth angle for 1st to 3rd rows. Adjust the detection area to "Deep" (Outside).
Proper operation	Red & Green Blinking	Setting error.	After changing the dipswitch settings, make sure to push the function switch for 2 s.
	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.
Proper operation	Yellow & Green blinking	Service mode is enabled.	Switch to the Operation mode that keep pushing function switch until the operation indicator goes off.

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

Manufacturer

**OPTEX CO., LTD.**

5-8-12 Ogoto Otsu 520-0101, Japan  
Tel : +81(0)77 579 8700  
www.optex.net

EMEA Subsidiary

**OPTEX Technologies B.V.**

Henricuskade 17, 2497 NB The Hague, The Netherlands  
Tel : +31(0)70 419 41 00  
info@optex.eu  
www.optex.eu

