



5918981 APR 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 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.

NOTE

- This product is a non-contact switch intended for header mount to use on industrial doors. 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.

	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.
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- 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.

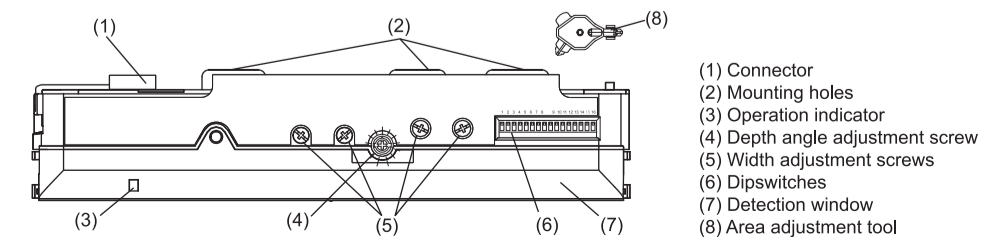
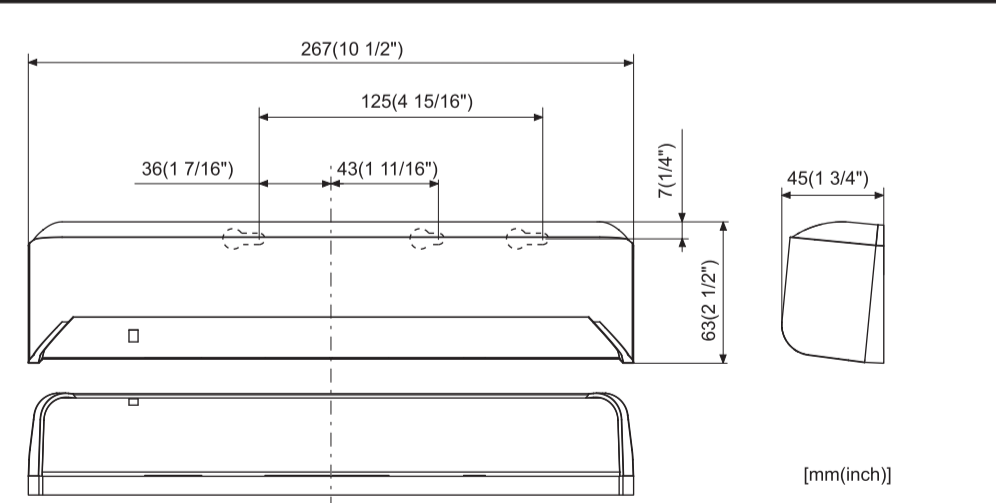


SPECIFICATIONS

Model	: OA-4500S(E)	Activation output	: When 3rd, 4th or 5th row detects. N.C. / N.O. selectable
Color	: Black		
Mounting height	: 2.5m(8'2") to 4.5m(14'9")		
Detection area	: See DETECTION AREA	Safety output	: When 1st or 2nd row detects. N.C. / N.O. selectable
Detection method	: Active infrared reflection method (All presence detection)		
Depth adjustment	: 1st to 3rd rows: -6° to +6° 4th and 5th rows: +26° to +44°	Output hold time	: Approx. 0.5sec.
Power supply	: 12 to 24VAC ±10% (50/60Hz) 12 to 30VDC ±10%	Response time	: < 0.3sec.
Power consumption	: < 2.5W (< 4VA at AC)	Operation temperature	: -20°C to +55°C(-4°F to 131°F)
Operation indicator	: Green / Stand-by Red / 1st row detection Orange / 2nd to 5th rows detects	Operating humidity	: < 80%
		IP rate	: IP54
		Weight	: 320g(11.3oz)
		Accessories	: 1 Cable 4m(13'2") 2 Mounting screws 1 Mounting template 1 Operation manual 1 Area adjustment tool

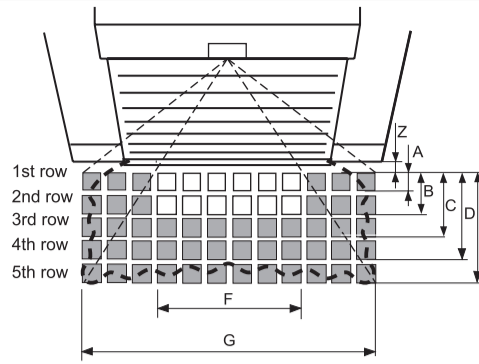
NOTE The specifications herein are subject to change without prior notice due to improvements.

OUTER DIMENSIONS AND PART NAMES



- Connector
- Mounting holes
- Operation indicator
- Depth angle adjustment screw
- Width adjustment screws
- Dipswitches
- Detection window
- Area adjustment tool

DETECTION AREA



Mounting Height	[mm(feet,inch)]				
	2,500 (8'2")	3,000 (9'10")	3,500 (11'6")	4,000 (13'2")	4,500 (14'9")
A	160 (6")	200 (8")	230 (9")	260 (10")	290 (11")
B	480 (1'7")	580 (1'11")	670 (2'2")	760 (2'6")	850 (2'9")
C	930 (3'6")	1,100 (3'7")	1,300 (4'3")	1,480 (4'11")	1,660 (5'5")
D	1,540 (5'1")	1,850 (6'1")	2,160 (7'1")	2,460 (8'1")	2,760 (9'1")
E	2,170 (7'1")	2,600 (8'6")	3,030 (9'11")	3,460 (11'4")	3,890 (12'9")
F	1,510 (4'11")	1,810 (5'11")	2,110 (6'11")	2,400 (7'11")	2,700 (8'10")
G	3,150 (10'4")	3,790 (12'5")	4,420 (14'6")	5,050 (16'7")	5,680 (18'8")
Z	250 (10")	300 (12")	350 (12")	400 (14")	450 (16")

□ : Emitting spots ■ : Detection Area
■ : Emitting spots (Can be eliminated)

Values of the chart are based on the 1st to 3rd rows : +6° following depth angle adjustment settings; 4th and 5th rows: +44°

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.

INSTALLATION

- Affix the mounting template at the desired mounting position. Drill two mounting holes ø3.4mm (ø1/8") on the header. To pass the cable through the header, drill a wiring hole of ø8mm (ø5/16").
- Wire the cable to the door controller as shown below.

WARNING 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.

- Plug the connector of the sensor. 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.

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

WARNING 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

- 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.

1-1. Independent adjustment

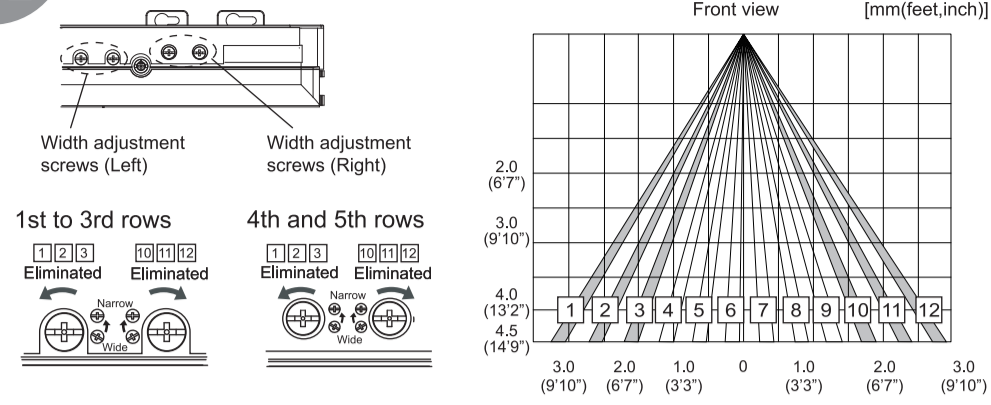
1st to 3rd rows
Use the area adjustment tool (A) as shown below to change the area depth angle for the 1st to 3rd rows.

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

1-2. Simultaneous adjustments
Use the area adjustment tool (C) as shown below to change the area depth angle for all rows.

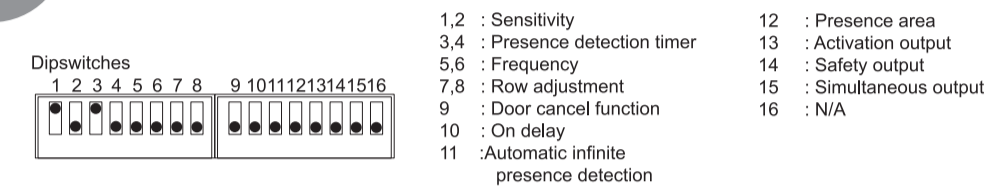
ADJUSTMENTS

2 Area width adjustment



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

3 Dipswitch settings



3-1. Setting the sensitivity

Recommended sensitivity setting in accordance with the following mounting height.

Setting	Low	Middle	High	S-High
L (Low)	2.5m(8'2") to 3.5m(11'6")			
M (Middle)		3.0m(9'10") to 4.0m(13'2")		
H (High)			3.5m(11'6") to 4.5m(14'9")	
S-High(Super high)				4.0m(13'2") to 4.5m(14'9")

NOTE Adjust the sensitivity to suit each installation site.

3-2. Setting the presence detection timer

Presence detection timer can be selected by dipswitch 3 and 4.

Setting	2sec.	60sec.	10min.	∞
	[3 4]	[3 4]	[3 4]	[3 4]

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 one sensor close to each other, set a different frequency for each sensor by dipswitches 5 and 6.

Setting	Setting1	Setting2	Setting3	Setting4
	[5 6]	[5 6]	[5 6]	[5 6]

3-4. Setting the row adjustment

Set the rows with dipswitches 7 and 8.



3-5. Setting the door cancel function

When dipswitch 9 is "ON" the sensor is less influenced by the door movement, i.e. caused by wind.
 If the sensor does not detect for 10 sec., the 1st row will be disabled when door cancel function is "ON".
 (The 1st row will be enabled again when there is detection at other rows.)

Setting	ON	OFF
	[9]	[9]

WARNING Risk of getting caught.	With this function, 1st row is disabled if there are no detection for 10sec. If a person or vehicle enter the first row without any detection in other rows (e.g. enter from the other side), it might cause an accident.
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3-6. Setting the On delay 2sec.

To avoid unnecessary openings due to passing objects/persons set dipswitch 10 "ON". The sensor only activates when a person or object stays in the detection area for more than 2 seconds.

Setting	ON	OFF
	[10]	[10]

WARNING Risk of getting caught.	Please do not set On delay 2sec. to "ON" when door cancel function is "ON". If both are "ON", the sensor does not output signal unless it detects a person or object more than 2sec and 1st row is inactive. If the person or object enter the first row, the sensor does not detect and door never opens.
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3-7. Setting the automatic infinite presence detection

When people or objects enter more than 2 spot areas, this function automatically sets the presence detection timer to infinity to increase safety and avoid unwanted door opening due to sudden change in floor condition.

Setting	ON	OFF
	[11]	[11]

3-8. Setting the presence area

With dipswitch 12 "1st & 2nd", presence detection timer for 1st & 2nd rows belong to dipswitch 3 and 4. Presence detection timer for 3th to 5th row automatically becomes 2 sec..
 With dipswitch 12 "1st to 5th", presence detection timer will be same as all detection area, set by combining dipswitch 3 and 4.

NOTE When dipswitch 11 is set to "ON" the automatic infinite presence detection has priority over this function.

3-9. Setting the outputs

The activation and safety outputs can be selected separately (N.C. or N.O. by dipswitch 13 and 14)

Output	N.C.	N.O.	Safety output	N.C.	N.O.
	[13]	[13]	[14]	[14]	[14]

The output timing from "Activation output" and "Safety output" can be changed by dipswitch 15.

With dipswitch 15 set to "ON" the output timing will be the same.
 With dipswitch 15 set to "OFF" the output timing will be different.
 See CHECKING.

Setting	ON	OFF
	[15]	[15]

CHECKING

Check the operation 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 / Presence detection active			Stand-by
Image						
Operation indicator	None	Green	Orange		Red	Green
Simultaneous output OFF	Activation output	N.O. [13]	N.C. [13]	N.C. [13]	N.C. [13]	N.O. [13]
	Safety output	N.O. [14]	N.C. [14]	N.C. [14]	N.C. [14]	N.O. [14]
Simultaneous output ON	Activation output	N.O. [13]	N.C. [13]	N.C. [13]	N.C. [13]	N.O. [13]
	Safety output	N.O. [14]	N.C. [14]	N.C. [14]	N.C. [14]	N.O. [14]

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 electric shock may occur.
- When the operation indicator is twice green blinking, 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.)

Alarm display

Refer to the TROUBLESHOOTING below when the following appears.

Status	Life cycle notification	Signal Saturation
Operation indicator	Twice green blinking	Slow green blinking

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 detection timer. Dirty detection window.	Check DETECTION AREA & ADJUSTMENTS Set the sensitivity higher. Set the presence detection timer longer. Wipe the detection window with a damp cloth. (Do not use any cleaner or solvent.)
	Green	Wrong (Safety/Activation) output setting. Both On delay and door cancel function are "ON".	Check ADJUSTMENTS 3-9 . Set either function to "OFF" Check ADJUSTMENTS 3-5 & 3-6 .
	Orange	Wrong wiring.	Check the wires and connector.
Door opens when no one is in the detection area. (Ghosting)	Unstable	The detection area overlaps with that of another sensor.	Check ADJUSTMENTS 3-3 .
		Water drops on the detection window.	Use the rain-cover (Separately available). Or install the sensor in a place keeping the water -drops off.
		The detection area overlaps with the door / header.	Adjust the detection area to "Deep" (Outside).
		Sensitivity is too high.	Set the sensitivity lower. Check ADJUSTMENTS 3-1 .
Door remains open	Proper	Presence timer is "∞" and sudden change in the detection area happened.	Check ADJUSTMENTS 3-2 & 3-7 . 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.
		The automatic infinite presence detection is "ON" and the objects or people enter more than two spot areas.	Remove the objects. Or check ADJUSTMENTS 3-7 .
Proper	Twice Green blinking	Wrong (Safety/Activation) output setting.	Check ADJUSTMENTS 3-9 .
	Slow Green blinking	Output relay(s) is reaching the end of its life cycle. Signal saturation The detection area overlaps with the door / header.	Replace the sensor. Remove highly reflecting objects from the detection area. Change the area angle. Adjust the detection area to "Deep" (Outside).

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

European Subsidiary

OPTEX Technologies B.V.
 Henricuskade 17, 2497 NB The Hague, The Netherlands
 TEL.: +31(0)70 419 41 00 FAX.: +31(0)70 317 73 21
 E-MAIL: info@optex.eu WEBSITE: www.optex.eu

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