Ditec PAS024ADT



ENGLISH

5927992 JUN 2023 Original instructions NI-0102-1

Manufacturer's statement

ASSA ABLOY Entrance System AB hereby declares that the PAS024ADT is in conformity with the basic requirements and the other relevant provisions of the directives 2014/53/EU. The complete declaration of conformity is available on our web site:www.ditecautomations.com

Read this operation manual carefully before use to ensure proper operation of this product.

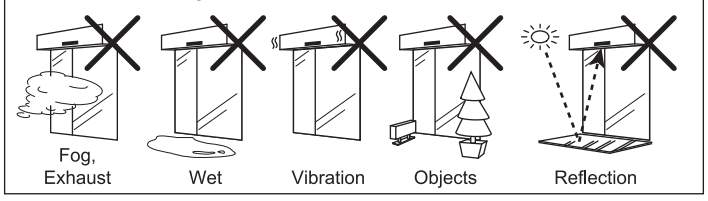
Failure to read this operation manual may cause improper operation and may result in serious injury or death of a person.The meanings of the symbols are as follows.

⚠ 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

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.

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	: PAS024ADT	Activation input	: Opto coupler Voltage 5 to 30 VDC
Cover color	: Black		Current 6 mA Max. (30 VDC)
Mounting height	: 2.0 to 3.5 m (6'7" to 11'6")	Activation output	: Form A relay 50 V 0.3 A Max.
Detection area	: See **Detection area**	Test input	: Opto coupler Voltage 5 to 30 VDC
Detection method	: Active infrared reflection (*1)		Current 6 mA Max. (30 VDC)
	Microwave doppler effect	Safety/Test	: Opto coupler (NPN)
Transmitter frequency	: 24.125 GHz	output	Voltage 5 to 50 VDC
Transmitter radiated power	: < 20 dBm		Current 100 mA Max.
Depth angle adjustment	: AIR area -6 to +6 °		Dark current 600 nA Max.
	Microwave area +25 to +45 °		(Resistance load)
Power supply (*2)	: 12 to 24 VAC ±10 % (50/60 Hz)	IP rate	: IP54
	12 to 30 VDC ±10 %	Category	: See **Table 1**
Power consumption	: < 2.5 W (< 4 VA at AC)	Performance level	: See **Table 1**
Operation indicator	: See **Operation indicator table**	ESPE	: Type 2
Output hold time	: < 0.5 s	Weight	: 270 g (9.5 oz)
Response time	: < 0.3 s	Accessories	: 1 Operation manual
Operating temperature	: -35 to +55 °C (-31 to 131 °F)		2 Mounting screws
Operating humidity	: < 80 %(non-condensing)		1 Mounting template
Noise level	: < 70 dBA		1 Area adjustment tool
			1 Cable 3 m (9'10") (*3)

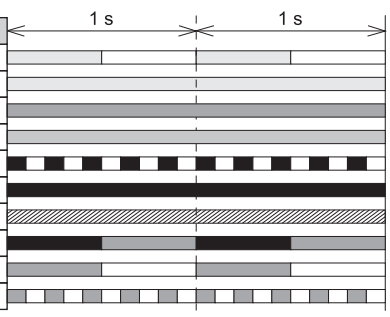
Table 1

AIR part	Cat.	2 (EN ISO13849-1:2015)
	PL	d (EN ISO13849-1:2015)

Microwave part	Cat.	2 (EN ISO13849-1:2015)
	PL	d (EN ISO13849-1:2015)

Operation indicator table

Status	Operation indicator color
Warm-up	Yellow blinking
Stand-by (Installation mode)	Yellow
Stand-by (Operation mode)	Green
BLUEZONE (Lookback) detection (*4)	Blue
2nd row detection	Red blinking
3rd row detection	Red
Microwave detection	Orange
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 : Active infrared reflection has a presence detection function.

*2 : The sensor has to be connected to a door system which has a SELV circuit.

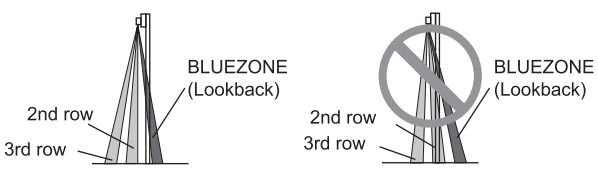
*3 : Overcurrent protection with less than 2 A.

*4 : See **BLUEZONE (Lookback) area**

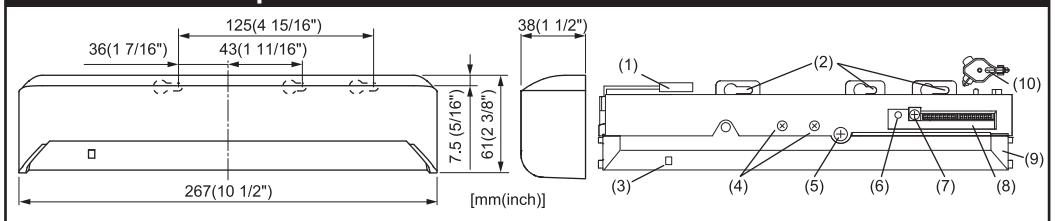
BLUEZONE (Lookback) area

When dipswitch 15 is set to "ON", the BLUEZONE (Lookback) area, that provides extra safety over the threshold, is activated. In case the BLUEZONE (Lookback) function is not required, set dipswitch 15 to "OFF".

Do not set the 2nd row overlapping the threshold regardless of the setting of dipswitch 15.



Dimensions and part names



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

Complied standards and extract from EC declaration of conformity

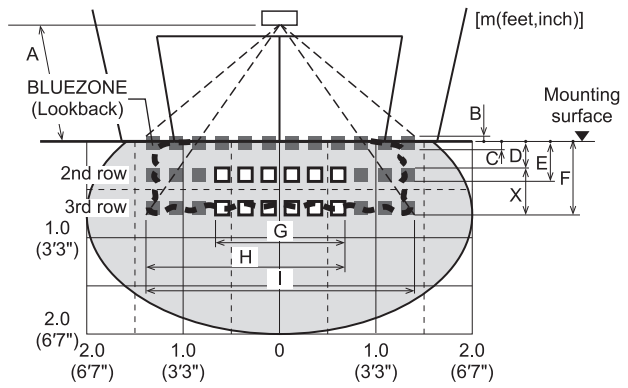
DIN 18650-1:2010 Chapter 5.7.4 ESPE Chapter 5.8.2.4.3
EN 16005:2012/AC:2015 Chapter 4.6.8 and Annex C , Chapter 4.7.2.3
EN 61496-3:2001 clause 4. 3. 5 and 5. 4. 7. 3
EN 61000-6-3:2007 +A1:2011/AC:2012
EN 61000-6-2:2005/AC:2005
Machinery Directive 2006/42/EC
EN 12978:2003 +A1:2009
EMC Directive 2014/30/EU
EN ISO 13849-1:2015
EN ISO 13849-2:2012
AutSchR

Notified Body 0044 : TÜV NORD CERT GmbH Am TÜV 1, 45307 Essen Germany

Technical documentation see manufacturer address

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Detection area



AIR
Mounting height : 2.2 m (7'3")
Angle adjustment : +6 °
Sensitivity : Middle
□ : Emitting spots
■ : Emitting spots (can be eliminated)
⬚ : Detection area

Microwave
Mounting height : 2.2 m (7'3")
Vertical adjustment : +35 °
Sensitivity : High
Area width : Wide
Speed of detection object : 50 mm/s
⬭ : Detection area

AIR emitting area

The chart shows the values at depth angle +6 °

[m(feet,inch)]

A	2.00 (6'7")	2.20 (7'3")	2.50 (8'2")	2.70 (8'10")	3.00 (9'10")	3.50 (11'6")
B	0.05 (2")	0.06 (2")	0.07 (3")	0.07 (3")	0.08 (3")	0.09 (4")
C	0.07 (3")	0.08 (3")	0.09 (4")	0.10 (4")	0.11 (4")	0.12 (5")
D	0.23 (9")	0.25 (10")	0.28 (11")	0.31 (1')	0.34 (1'1")	0.39 (1'3")
E	0.35 (1'2")	0.39 (1'3")	0.44 (1'5")	0.48 (1'7")	0.53 (1'9")	0.61 (2')
F	0.59 (1'11")	0.65 (2'2")	0.74 (2'5")	0.80 (2'7")	0.89 (2'11")	1.03 (3'5")
G	1.21 (3'12")	1.33 (4'4")	1.51 (4'11")	1.63 (5'4")	1.81 (5'11")	2.11 (6'11")
H	1.86 (6'1")	2.05 (6'9")	2.32 (7'7")	2.51 (8'3")	2.79 (9'2")	3.25 (10'8")
I	2.52 (8'3")	2.78 (9'1")	3.15 (10'4")	3.40 (11'2")	3.79 (12'5")	4.42 (14'6")

AIR detection area

To comply with EN 16005, make sure that the detection area is within the values of the chart below.

[m(feet,inch)]

A	2.00 (6'7")	2.20 (7'3")	3.00 (9'10")
X	0.23 (9")	0.25 (10")	0.34 (1'1")
G	1.02 (3'4")	1.12 (3'8")	1.53 (5')
I*	2.41 (7'11")	2.65 (8'8")	3.60 (11'10")

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

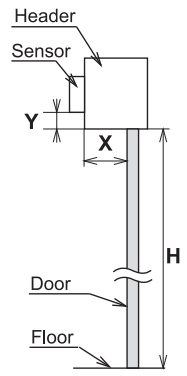
The values above are those of the **AIR detection area** when tested referring to the test conditions of EN 16005.
(The emitting area is as shown in **AIR emitting area** above.)
* When installed at higher than 3.0 m(9'10"), EN 16005 requirements are fulfilled only within the area width "I" of 3.6 m(11'10").

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

a. 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.)
b. Drill two mounting holes of ø3.4 mm(ø1/8").
c. To pass the cable through the header, drill a wiring hole of ø8 mm(ø5/16").
d. Remove the mounting template.
e. 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**) [m (feet,inch)]

X \ H	2.00 (6'7")	2.30 (7'7")	2.50 (8'2")	2.80 (9'2")	3.00 (9'10")	3.50 (11'6")
0	No limit					
0.05 (2")	0.13 (5")	0.13 (5")	0.13 (5")	0.14 (6")	0.14 (6")	0
0.10 (4")	0.11 (4")	0.12 (5")	0.12 (5")	0.12 (5")	0.12 (5")	0
0.15 (6")	0.10 (4")	0.10 (4")	0.11 (4")	0.11 (4")	0.11 (4")	0
0.20 (8")	-	0.09 (4")	0.10 (4")	0.10 (4")	0.10 (4")	0
0.25 (10")	-	-	0.09 (4")	0.09 (4")	0.09 (4")	0
0.30 (12")	-	-	-	-	-	0

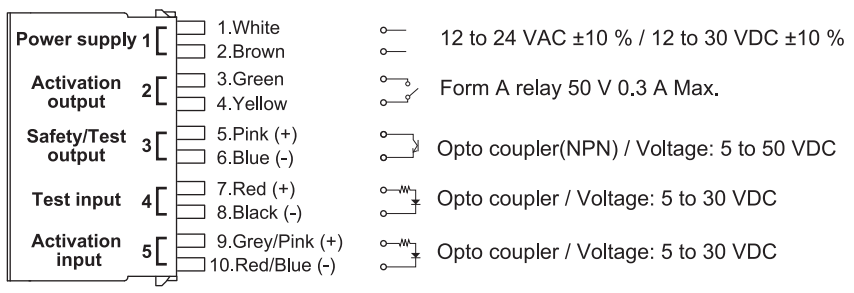
NOTE Make sure not to mount the sensor lower than the bottom of header.

⚠ 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.



⚠ 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. Turn ON the power

a. Plug the connector.
b. Supply power to the sensor. Adjust the detection area and set the dipswitches.
(See **Adjustments 4. 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 and/or potentiometer settings, make sure to push the function switch for 2 s.

4. Mounting the housing cover

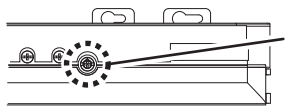
Place the housing cover.
If wiring is to be exposed, break the knockout.

⚠ WARNING **Danger of electric shock**

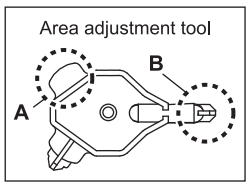
Do not use the sensor without the cover. When using the cable knockout, install the sensor indoors or use the rain cover (Separately available) otherwise electric shock or breakdown of the sensor may occur.

Adjustments

1. Area depth angle adjustment



When adjusting the 2nd row close to the door, see **Table 2** dipswitch 16 for the easier adjustment.



NOTE

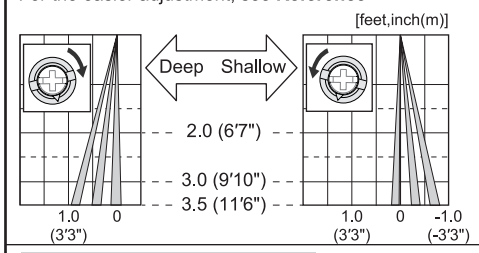
Make sure that the detection area does not overlap with the door/header, and there is no highly reflecting object near the detection area otherwise ghosting/signal saturation may occur.

a. AIR adjustment

Depth angle adjustment screw for the AIR area.

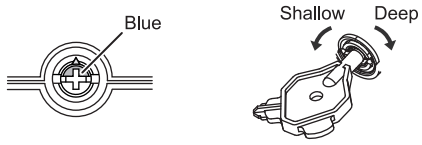


Use the area adjustment tool **(A)** as shown above to change the area depth angle.
For the easier adjustment, see **Reference**.

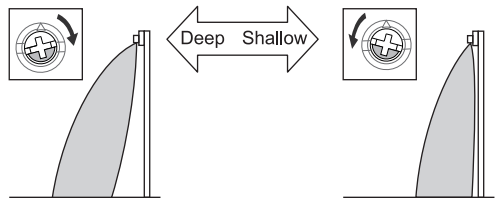


b. Microwave adjustment

Depth angle adjustment screw for the microwave area.



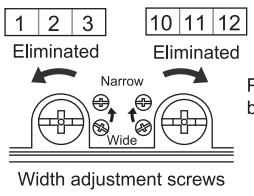
Use the area adjustment tool **(B)** as shown above to change the area depth angle.



2. Area width adjustment

a. AIR adjustment

To adjust the AIR detection area width, use the adjustment screws as shown in the picture below.

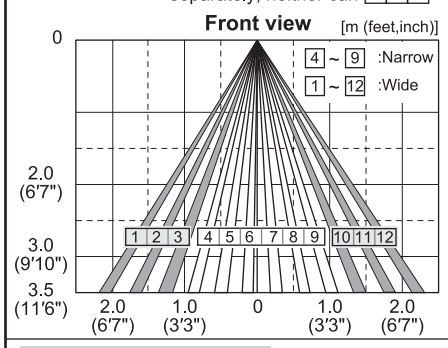


Width adjustment screws

Please adjust by using the tool **(B)**

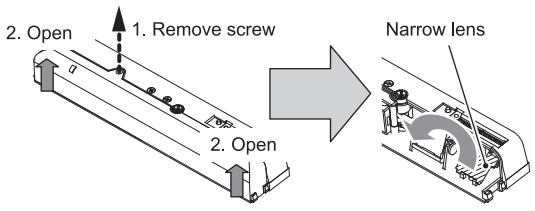
NOTE

When setting the detection area width, make sure to turn the adjustment screws until it clicks. [1][2][3] cannot be eliminated separately, neither can [10][11][12].



b. Microwave adjustment

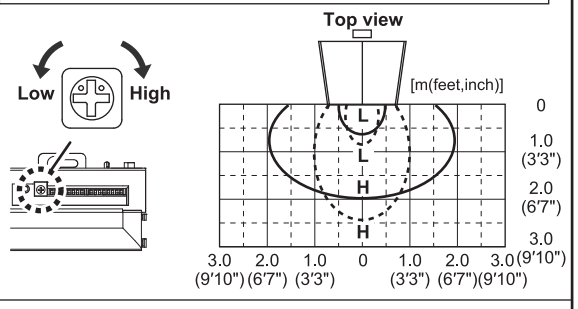
To adjust the microwave detection area width, use the narrow lens as shown in the picture below.



3. Microwave sensitivity

Adjust the microwave detection area with potentiometer. Afterwards, make sure to push the function switch for 2 s.

Mounting height : 2.2 m (7'3")
Vertical adjustment : +35 °
Wide area
Narrow area



4. Dipswitch settings

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

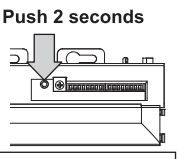


Table 2 ■ AIR settings ■ Microwave settings □ Other setting

Dip switch No.	Function	Setting				Comment
1	Sensitivity	Low 1 2 2.0 to 3.0m	Middle 1 2 2.0 to 3.0m	High 1 2 2.5 to 3.2m	S-High 1 2 3.0 to 3.5m	Set the sensitivity according to the mounting height. Values below dipswitches are reference only. Adjust the sensitivity according to your risk assessment.
2						
3	Presence timer	30sec. 3 4	60sec. 3 4	180sec. 3 4	600sec. 3 4	To enable the presence detection, do not enter the detection area for 10 s after setting the timer.
4						
5	Frequency	Setting1 5 6	Setting2 5 6	Setting3 5 6	Setting4 5 6	When using more than one sensor close to each other, set the frequency different for each sensor.
6						
7	Safety/Test output (to door controller)	High 7	Low 7			The delay time between Test input and Safety/Test output is 10 ms.
8	Test input (from door controller)	High 8	Low 8			
9	Direction	Bi 9	Uni 9			When dipswitch 9 is set to "Uni", this setting enables the door to close faster when a person walks away from the door.
10	Autocaution (A.C.M.)	OFF 10	ON 10			When dipswitch 10 is set to "ON", a person wavering in the microwave detection area can be detected. This is only effective when dipswitch 9 is set to "Uni".
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 (to door controller)	N.O. 12	N.C. 12			Select "N.O."/"N.C." for Activation output.
13	AIR output	Safety 13	Safety + Activation 13			When dipswitch 13 is set to "Safety + Activation", the sensor outputs safety and activation simultaneously.
14	Self monitoring	Enable 14	Disable 14			When the door remains open and the operation indicator shows Fast/Slow Green blinking, refer to **Troubleshooting**. If the door still remains open, set dipswitch 14 to "Disable". To comply with EN 16005, set dipswitch 14 to "Enable".
15	BLUEZONE (Lookback)	OFF 15	ON 15			When dipswitch 15 is set to "ON", the BLUEZONE (Lookback) is active and looks through the threshold.
16	Installation mode	OFF 16	ON 16			Set dipswitch 16 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 set dipswitch 16 "OFF".

Checking

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

Entry				Power OFF	Outside of detection area	Entry into microwave area	Entry into 3rd row	Entry into 2nd row	Entry into BLUEZONE (Lookback)
Status				-	Stand-by	Motion detection	Motion/Presence detection		
Operation indicator				None	Green	Orange	Red	Red blinking	Blue
Activation output	12	N.O.	13 Safety						
		N.C.							
	12	N.O.	Safety + Activation						
		N.C.							
Safety/Test output	7	High		OFF	ON		OFF		
		Low		OFF	OFF		ON		

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

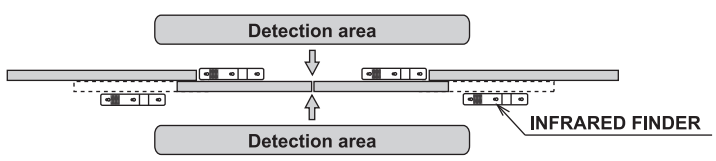
Door operation	Operation indicator	Possible cause	Possible countermeasures
Door does not open when a person enters the detection area.	None	Wrong power supply voltage.	Set to the stated voltage.
		Wrong wiring or connection failure.	Check the wires and connector.
	Unstable	Wrong detection area positioning.	Check **Adjustments 1, 2, 3**. (*)
		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 settings.	Check the wires and/or dipswitches.
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 **Table 2** dipswitch 5, 6. (*)
		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.
		The detection area overlaps with the door/header.	Adjust the detection area to "Deep"(Outside). Or set dipswitch 11 to "ON". (*)
		Sensitivity is too high.	Set the sensitivity lower. (*)
		Raining or snowing.	Set dipswitch 9 to "Uni" and/or dipswitch 11 to "ON".(*)
		Others	Set dipswitch 11 to "ON". (*)
	Proper	Wrong setting of dipswitches.	Check **Table 2** dipswitch 7, 8, 12. (*)
Door remains open	Proper	Sudden change in the detection area.	Check **Table 2** dipswitch 1 to 4. (*) 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.
	Yellow	Installation mode is set to "ON".	Set dipswitch 16 to "OFF". (*)
	Fast Green blinking	Sensitivity is too low.	Set the sensitivity higher. (*)
		Dirty detection window.	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.(2nd or 3rd row)	Remove highly reflecting objects from the detection area. Or lower the sensitivity. (*) Or change the area depth angle for AIR area.
		The detection area overlaps with the door/header.	Adjust the detection area to "Deep"(Outside).
	Red & Green blinking	Setting error.	After changing the dipswitch and/or potentiometer settings, make sure to push the function switch for 2 s.
Proper operation	Slow Green blinking	Signal saturation. (BLUEZONE)	Remove highly reflecting objects from the detection area. Or lower the sensitivity. (*) Or change the area depth angle for AIR area.

*** After changing the dipswitch and/or potentiometer settings, make sure to push the function switch for 2 s.**

Reference

Area depth adjustment with **INFRARED FINDER** (Separately available)

1. Turn the depth angle adjustment screw to the right (Deep) to place the detection area most away from the door.
2. Set INFRARED FINDER sensitivity to "H" (High) and place it on the floor as shown below.



3. 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).

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