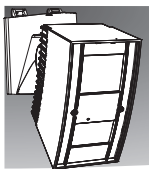
Quality detection system for video surveillance

REDWALL®

Unrivalled performance

No.59-1545-3 1001-01

INSTALLATION INSTRUCTIONS



Synthesized Intelligent PIR

CE

REDWALL-V series

FEATURES

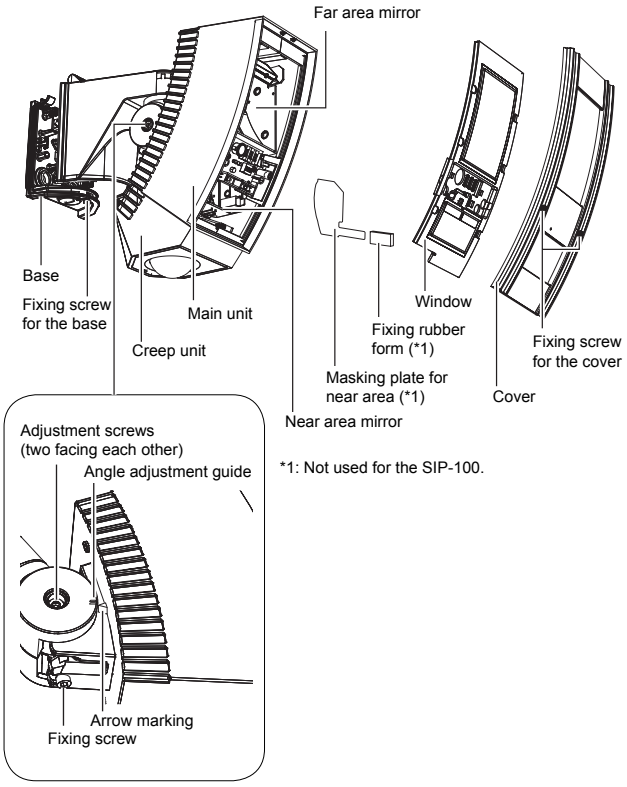
* Intelligent PIR Detection System
  - Detection of ambient temperature and illuminance for automatic sensitivity management
  - Advanced detection algorithm
  - Double Dual/One Quad pryo-elements with patented Double Conductive Shielding for main area
* Built-in creep zone detector (Double dual pyro-elements)
* Anti-vandalism functions
  - Anti-rotation function with 3-axis accelerometer
  - Anti-masking function with photo-beam
  - Reinforced polycarbonate housing
  - Max. 4 m (13 ft.) installation height
* Independent sensitivity selector for creep/near/far areas
* Independent N.C. and N.O. output for main area SIP-5030
* 2 x N.C. and N.O. independent output for main areas (Near and Far areas) SIP-100
* Adjustable alarm interval time

REDWALL-V

: Synthesized Intelligent PIR with creep zone

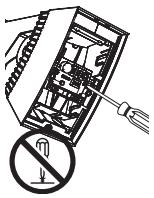
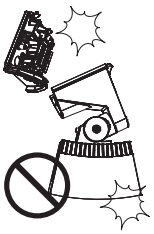
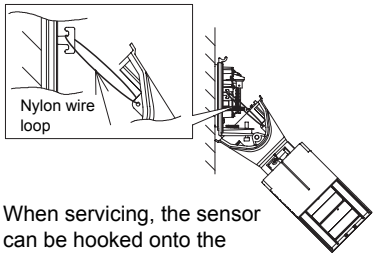
- ***SIP-5030***
- ***SIP-100***

1 PARTS IDENTIFICATION

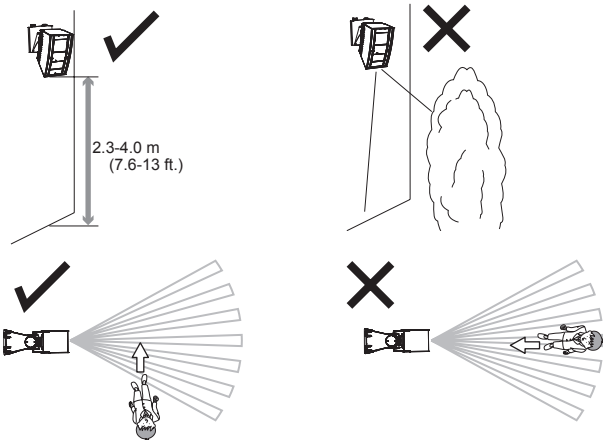


*1: Not used for the SIP-100.

2 INSTALLATION AND MAINTENANCE NOTES

⚠Warning	⚠Caution
 Never repair or modify product	 Hold the main unit securely when you install or service it. If you remove your hands from the main unit when cables are connected to it, the main unit may fall and the connector cables may break or the circuit board may be damaged.
 When servicing, the sensor can be hooked onto the base using the nylon wire loop.	⚠Caution Verify that the power is off before connecting the wiring.

2-1 INSTALLATION HINTS



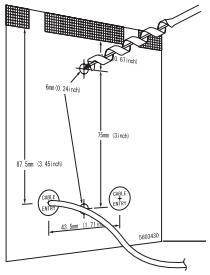
Mount the detector so that the majority of traffic flow is across the detection pattern.

ENGLISH
FRANÇAIS
DEUTSCH
ITALIANO
ESPAÑOL

3 INSTALLATION AND ANGLE ADJUSTMENT

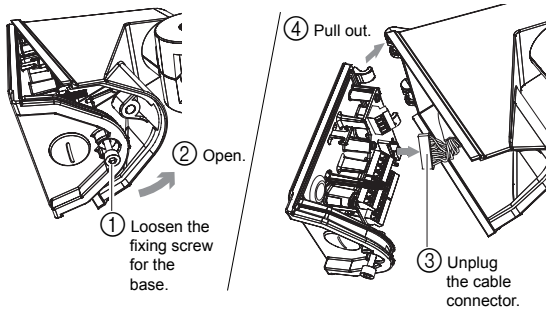
3-1 Wall Mounting

(1) Attach the paper template (an accessory) onto the wall, and drill a 6-mm dia. mounting hole and a cabling hole. Insert the anchor bolt (an accessory) into the board mount hole.

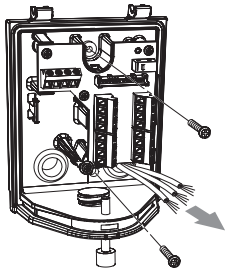


Distance from the ground to the bottom of the template must be between 2.3 m (7.6 ft.) and 4 m (13 ft.).

(2) Using an allen key, remove the main unit from the base.

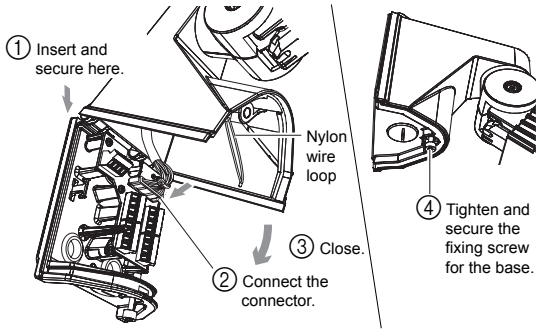


(3) Drill through the bushing of the wiring hole, pass the cable through the hole, and secure the base to the wall.



(4) Connect the cable to the terminal block (see Step 3-3).

(5) Mount the main unit onto the base.



Cautions>>

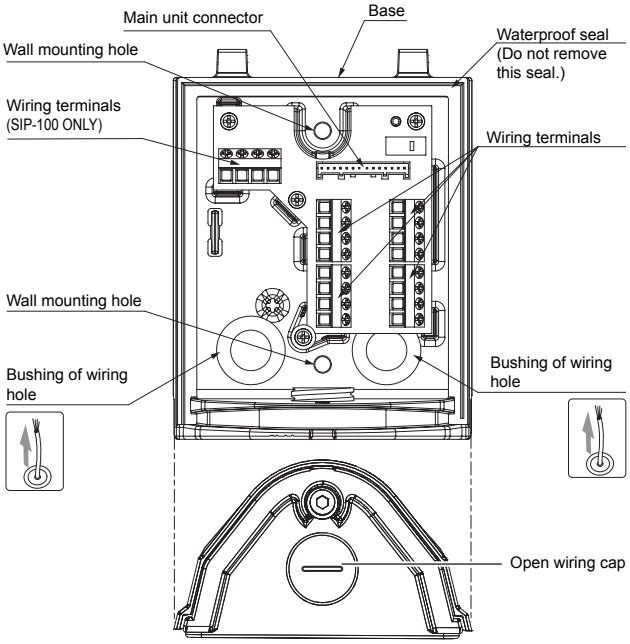
When mounting the main unit, take care not to trap the nylon wire loop. Also, take care not to get your fingers caught.

(6) Check to see that the various settings and operations are correct.

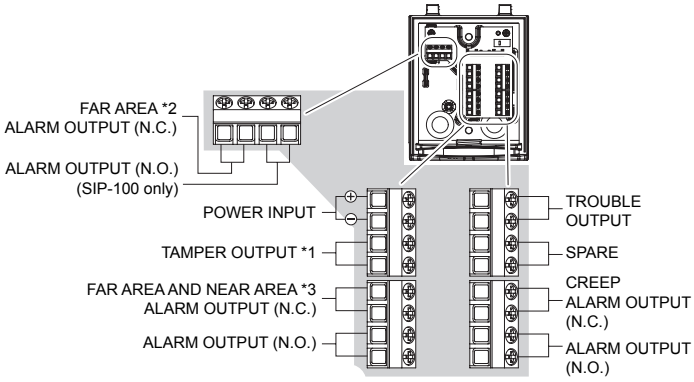
Caution>>

When the red LED flashes after the power turns on, this signifies that the system is warming up. Wait for approximately 60 seconds.

3-2 Inside View of the Base



3-3 WIRING



*1: TAMPER terminals to be connected to a 24 hour supervisory loop.
*2: FAR AREA ALARM OUTPUT, when the NUMBER OF OUTPUTS select switch is ON(3) (see Step 5-3).
*3: Both FAR AREA and NEAR AREA ALARM OUTPUT, when the NUMBER OF OUTPUTS select switch is OFF(2).
And Only NEAR AREA ALARM OUTPUT, when the NUMBER OF OUTPUTS select switch is ON(3) (see Step 5-3).

Name	Function
TROUBLE OUTPUT	Trouble out is used for anti-masking signal. When an object is placed close to the lens surface, for a period of more than 90 seconds (approx.), the IR anti-masking circuit will activate and generate a trouble signal.
TAMPER OUTPUT	It is detected when the cover is opened.
	It is detected when the main unit is removed from its base.
	Anti-Rotation: Damage sustained by the main unit is detected. When the system power switch is turned on while the cover is closed, the mounting position of the main unit itself will be determined and stored in memory after approximately 10 seconds. Then, if the main unit is impacted in a horizontal or vertical direction and if the position of the main unit has changed, damage sustained by the main unit will be detected. However, if you remove the cover while keeping the system power turned on, and if you close the cover again after correcting the position of the main unit, the new position of the main unit will be stored in memory after approximately 10 seconds.

Power wires should not exceed the following lengths.

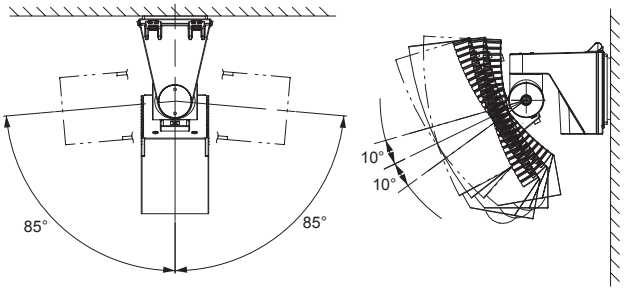
WIRE SIZE	SIP-5030			SIP-100		
	12V DC	14V DC	24V AC	12V DC	14V DC	24V AC
0.33 mm² (AWG22)	480 (1570)	640 (2100)	1370 (4490)	410 (1350)	550 (1800)	1280 (4200)
0.52 mm² (AWG20)	760 (2490)	1010 (3310)	2160 (7090)	650 (2130)	860 (2820)	2020 (6630)
0.83 mm² (AWG18)	1210 (3970)	1610 (5280)	3450 (11320)	1030 (3380)	1380 (4530)	3220 (10560)

m (ft.)

4 DETECTION AREA SETTING

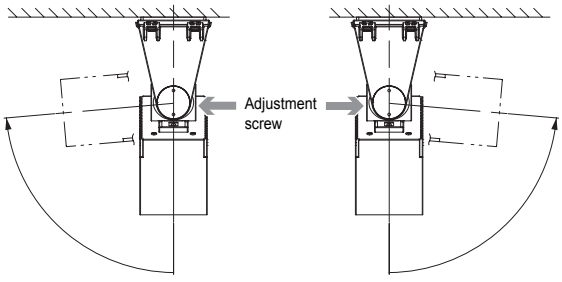
You can adjust the detection area by 90 degrees in a horizontal direction and by 10 degrees in a vertical direction.
Correct the vertical detection angle according to the mounting height of the sensor unit.

Applicable models: SIP-5030 | SIP-100



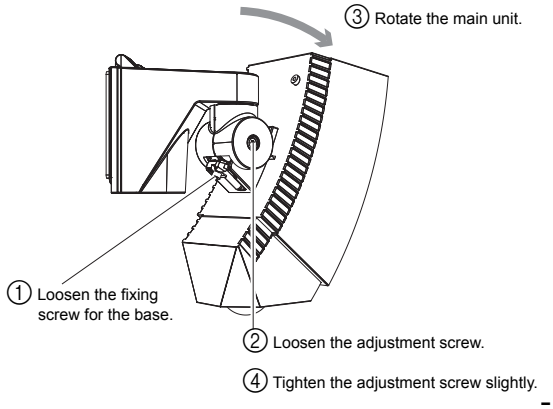
Cautions>>

To rotate the main unit counterclockwise, loosen the RHside adjustment screw. To rotate the main unit clockwise, loosen the LH-side adjustment screw. Otherwise, you may find it difficult to tighten or you may find that you cannot tighten the adjustment screw when you are securing the main unit.

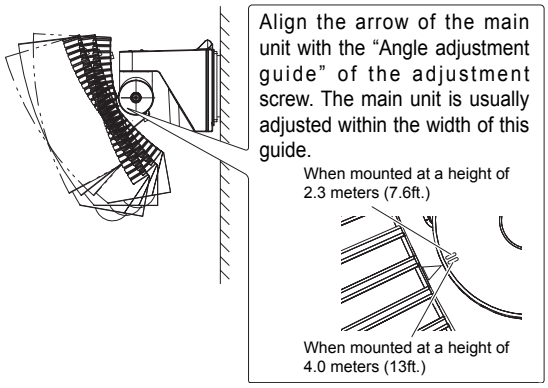


4-1 Main Detection Area Setting

(1) Adjust the angle of the main unit in a horizontal direction so that you can cover the desired detection area.



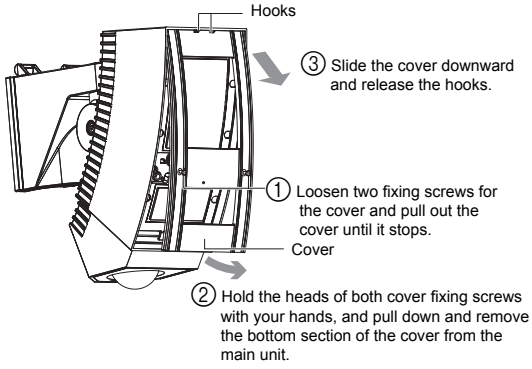
(2) Adjust the angle of the main unit in a vertical direction so that you can cover the desired detection area.



Cautions>>

If the mounting wall is at an angle, the arrow of the main unit may exceed the top or bottom limit of “Angle adjustment guide”. Always check this using the area viewfinder or the walk tester. If the detection area is too high or too low, an object outside the detection area may be detected or incorrect object detection may occur.

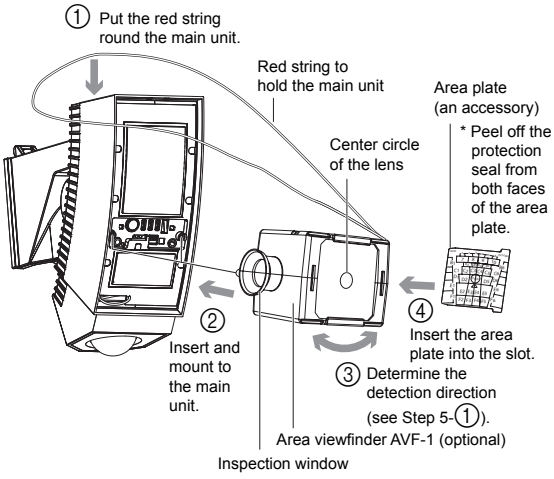
(3) Remove the cover.



Cautions>>

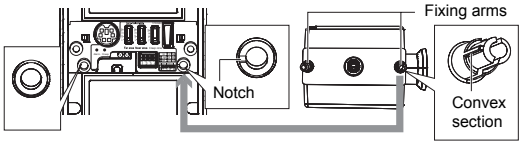
The cover is linked to the main unit by nylon wire loop so that the cover does not fall. Do not pull the cover using excessive force.

(4) Mount the area viewfinder.

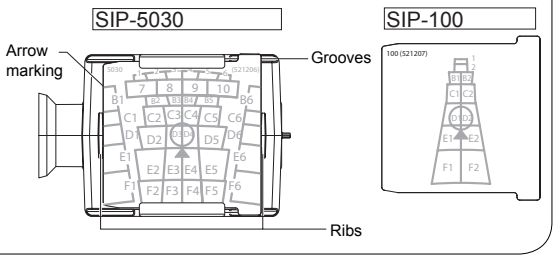


Mounting tips>>

- Engage the convex section of the area viewfinder fixing arms with the notches of the main unit, and insert and mount the arms.



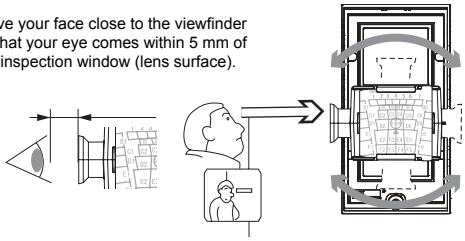
- Mount the area plate so that an arrow of the plate center section faces upward and the letter surface can be seen.
- Insert the area plate into the top and bottom grooves of the area viewfinder until the plate is stopped by the ribs.



(5) Fine adjust the main unit angle in vertical and horizontal direction by observing the target area through the area viewfinder.

① To change the direction of the inspection window, rotate the area viewfinder in a horizontal direction until it clicks and stops.

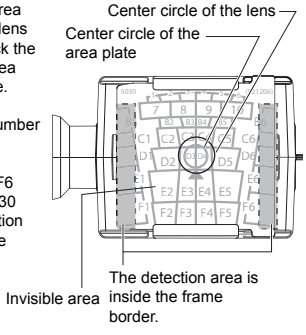
② Move your face close to the viewfinder so that your eye comes within 5 mm of the inspection window (lens surface).



③ Locate the center circle of the area plate on the center circle of the lens of the area viewfinder, and check the detection area pattern on the area plate and the background image.

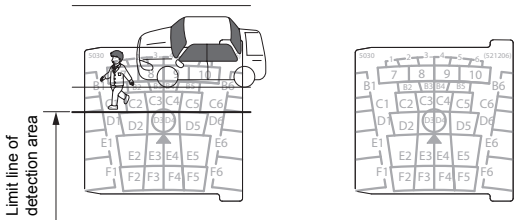
* Each letter on the area plate corresponds to each mirror number (see Step 8-2).

* You cannot observe mirror numbers B1 to F1 and B6 to F6 (shown at right) of the SIP-5030 area plate through the inspection window. Check them using the walk tester.



Adjusting tips>>

If you experience any of the following, see Step 10.



Cautions>>

- The area viewfinder is a supporting tool for detection area adjustment.
- After you have adjusted the detection area using the area viewfinder, always check the area using the walk tester.
- Never look directly into the sun through the area view finder.
- After you have used the area viewfinder, store it away from direct sunlight.

(6) Securely tighten the adjustment screw that you have loosened.

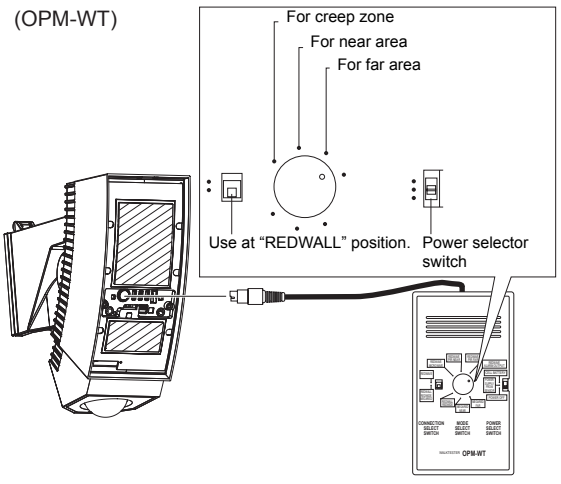
(7) Connect the walk tester (optional) to the sensor unit, and check that the detection area is correct.

① When the power selector switch is turned to “POWER SUPPLY FROM SENSOR” position after plugging the cable into the walk tester connector, a continuous beeping sound will be heard.

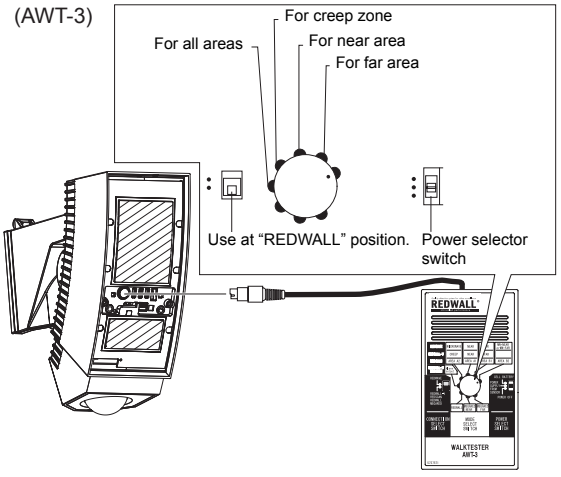
② When a pedestrian first enters the detection area, the strong and weak beeps will sound alternately.

③ When the entirety of a pedestrian’s body is detected, the strong beep will sound continuously.

(OPM-WT)



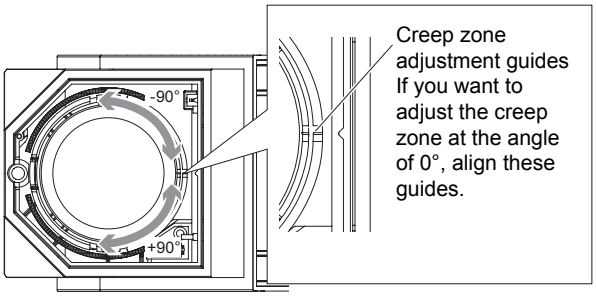
(AWT-3)

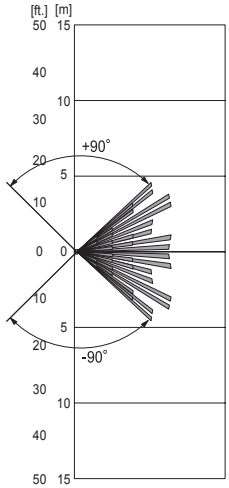


4-2 Creep Zone Detection Area Setting

(1) Adjust the creep zone horizontally.

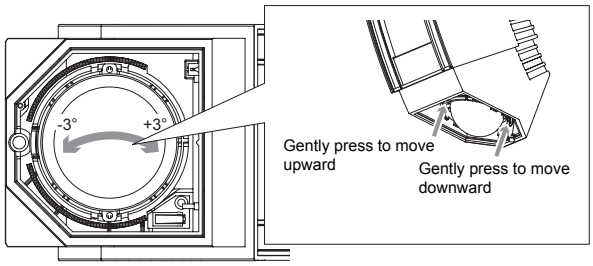
The creep zone detection area can be adjusted between -90° and 90° horizontally.

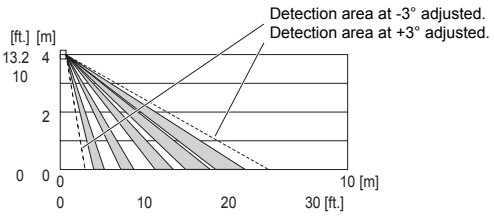




(2) Adjust the creep zone vertically.

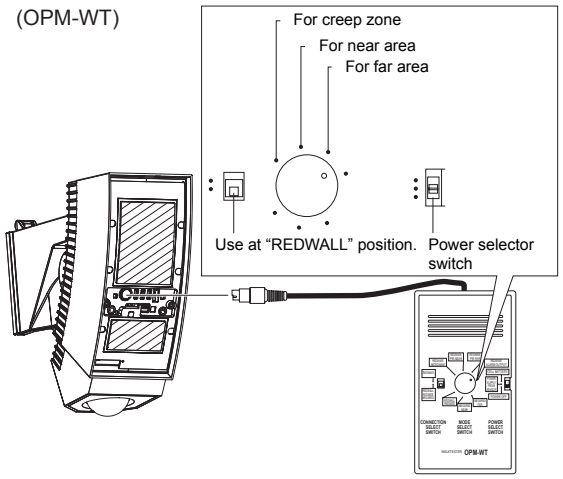
The creep zone detection area can be adjusted between -3° and 3° vertically.





(3) Connect the walk tester (optional) to the sensor unit, and check that the detection area is correct.

① When the power selector switch is turned to "POWER SUPPLY FROM SENSOR" position after plugging the cable into the walk tester connector, a continuous beeping sound will be heard.
② When a pedestrian first enters the detection area, the strong and weak beeps will sound alternately.
③ When the entirety of a pedestrian's body is detected, the strong beep will sound continuously.



Cautions>>

When you are checking the detection area, take care not to cover the shaded area of the window with the walk tester or its cable. If infrared beams to the sensor are partially shielded, the detection sensitivity will drop and the detection operation may fail.

If it is difficult to detect an object>>

1. Set the detection logic switch to the "OR" position (see Step 5-2). If the sensor is OK when you have completed the walk test, return the logic switch to the "AND" position.
2. Adjust the sensor sensitivity switch (see Step 5-1).

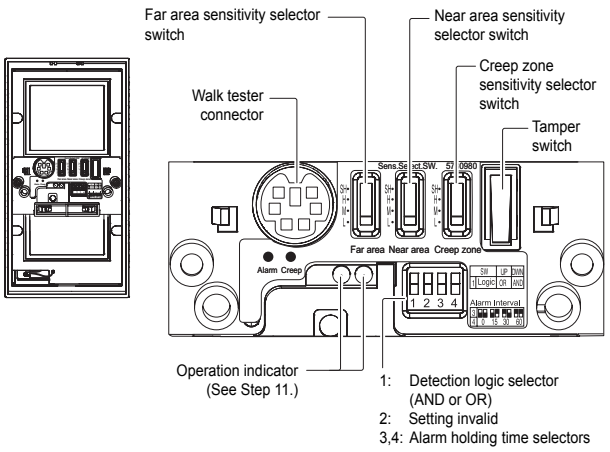
To mask the detection area>>

Detection area	How to mask the area		Reference
	SIP-5030	SIP-100	
Far area	Attach the masking seal (an accessory) to the area mirror surface.	Far area cannot be masked.	Step 7
Near area	Use the masking plate (mounted in the main unit).	Near area cannot be masked.	Step 8-1
	Attach the masking seal (an accessory) to the area mirror surface.		Step 8-2

* Creep zone cannot be masked.

5 FUNCTION SETTING

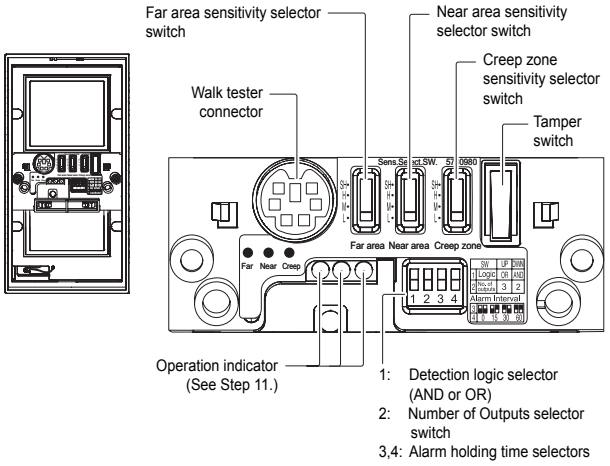
Applicable models: **SIP-5030** | SIP-100



Cautions>>

If the red LED keeps blinking for approx. 60 seconds after turning the power on, turn the power off and then on again.

Applicable models: SIP-5030 | **SIP-100**



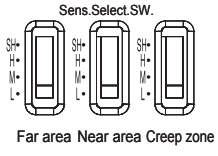
Cautions>>

If the red LED keeps blinking for approx. 60 seconds after turning the power on, turn the power off and then on again.

5-1 Sensitivity Selector Switch for Far Area, Near Area and Creep Zone

Applicable models: **SIP-5030** | **SIP-100**

You can change the sensitivity for far area detection, near area detection and creep zone detection independently.



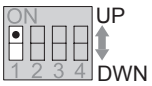
SELECTOR POSITION	FUNCTION
SH	Suitable for sites requiring a level of sensitivity higher than “H”
H	Suitable for sites requiring a level of sensitivity higher than “M”
M (Factory default)	Suitable for standard applications
L	Suitable for hostile and narrow area

5-2 Detection Logic Selector Switch

Dip switch **1**

Applicable models: **SIP-5030** | **SIP-100**

Detection area of SIP-5030 and SIP-100 consist of two types of plane detection areas in an alternative manner constructed by two pairs of pyro-elements (quad element for the far area), for the near area, far area and the creep zone.

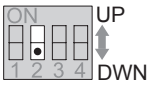


SELECTOR POSITION	STATUS	FUNCTION
UP	OR (Factory default)	A sensor signal is output when an object is detected in either of the two detection areas. * Use this mode when you adjust the detection area. Switch to AND mode after you have finished the detection area adjustment.
DWN	AND	Use this mode to reduce instances of incorrect detection of objects. The sensor signal is output only when an object is detected within the two detection areas. If any objects are blocking multiple detection areas, use OR mode.

5-3 Number of Outputs Selector Switch

Dip switch **2**

Applicable models: **SIP-5030** | **SIP-100**



SELECTOR POSITION	STATUS	FUNCTION	
		SIP-5030	SIP-100
UP	3	Setting invalid.	The three alarms, which are far area, near area and creep zone are output separately.
DWN (Factory default)	2	Setting invalid.	The two alarms, which are far/near area and creep zone are output separately.

Cautions>>

When you output far area alarm with Number of Output Selector Switch, far area detection area depends on the main unit installation height.
Detection area is approximately 35-100m for 4m (13ft.) installation height and 20-100m for 2.3m (7.6ft.) installation height.

5-4 Alarm Interval Switch

Dip switch **3-4**

Applicable models: **SIP-5030** | **SIP-100**

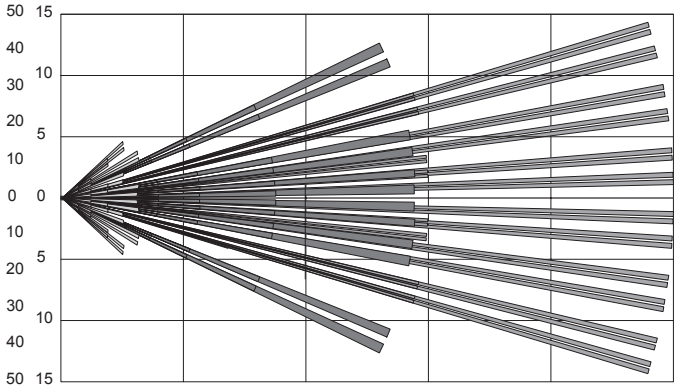
You can set an interval (4 different times) to suspend the alarm signal output.
For example, if you set this interval to 30 seconds, no more alarm signals will be output for 30 seconds after the output of the first alarm signal. If no pedestrians are detected for more than 30 seconds, the system returns to the standby mode.
Then, when a pedestrian is detected, the alarm signal will be output.

SELECTOR POSITION				
FUNCTION	0 sec (Factory default)	15 sec	30 sec	60 sec

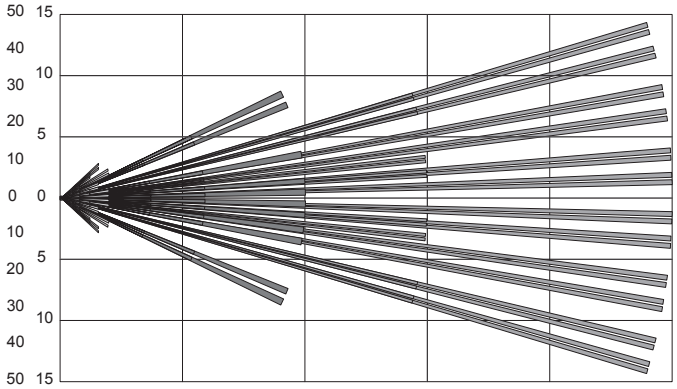
6 DETECTION AREA

Applicable models: **SIP-5030** | SIP-100

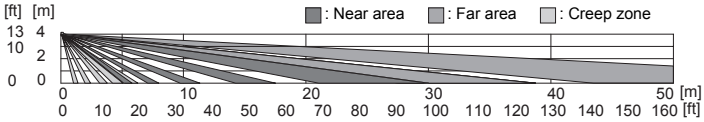
TOP VIEW (Installation height 4.0 m (13ft.))



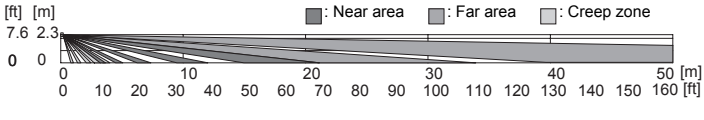
TOP VIEW (Installation height 2.3 m (7.6ft.))



SIDE VIEW (Installation height 4.0 m (13 ft.))



SIDE VIEW (Installation height 2.3 m (7.6 ft.))

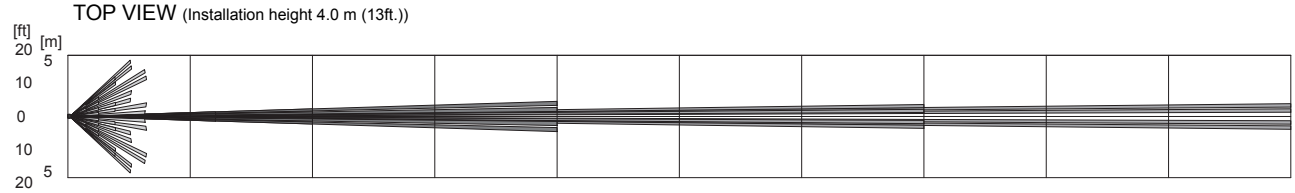


Applicable models: SIP-5030 | **SIP-100**

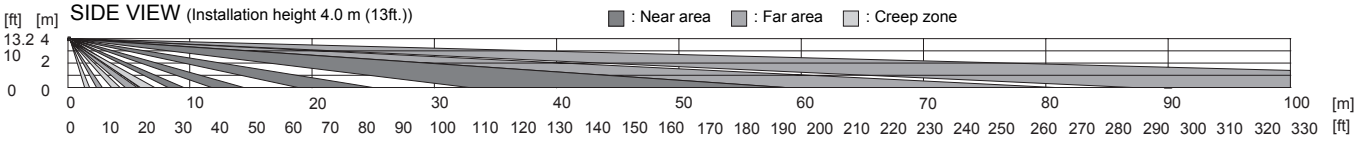
Cautions>>

When you output far area alarm with Number of Output Selector Switch, far area detection area depends on the main unit installation height.
Detection area is approximately 35-100m for 4m (13ft.) installation height and 20-100m for 2.3m (7.6ft.) installation height.

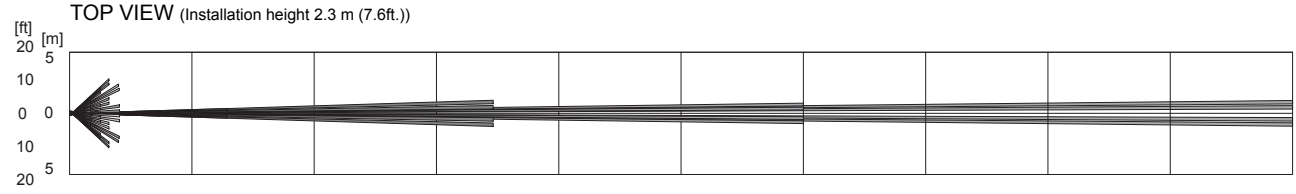
TOP VIEW (Installation height 4.0 m (13ft.))



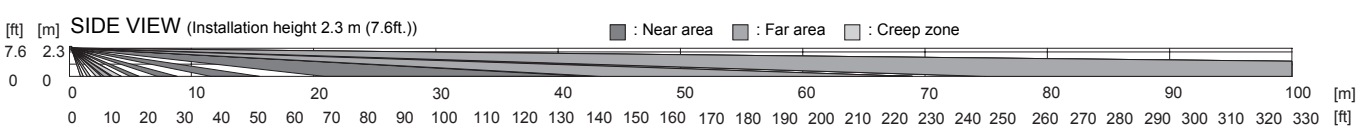
SIDE VIEW (Installation height 4.0 m (13ft.))



TOP VIEW (Installation height 2.3 m (7.6ft.))



SIDE VIEW (Installation height 2.3 m (7.6ft.))



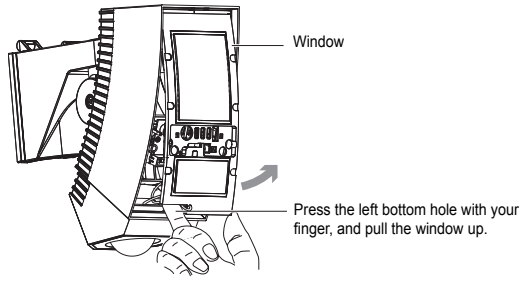
7 MASKING THE FAR AREA SENSOR

Applicable models: **SIP-5030** | SIP-100

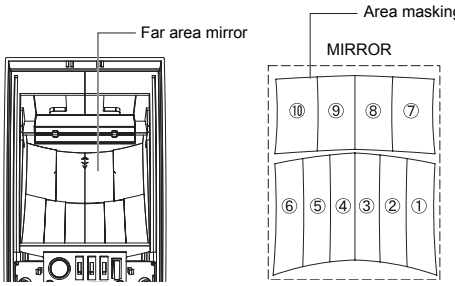
Cautions>>

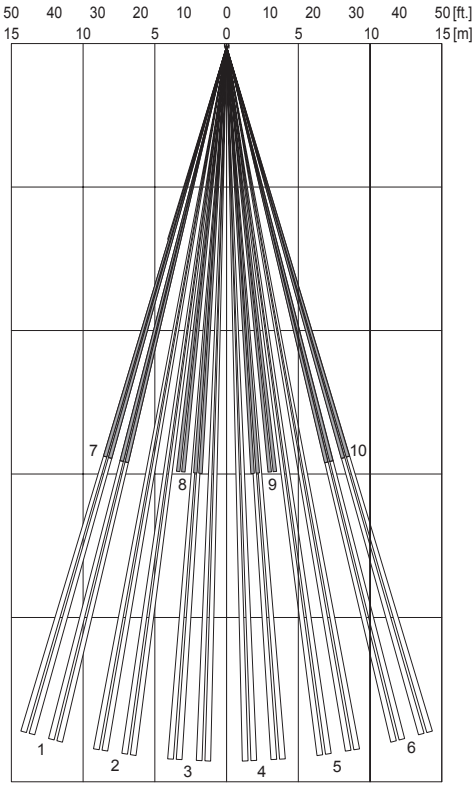
- The window is linked to the main unit by nylon wire loop so that the window does not fall. Do not pull the window using excessive force.
- After you have masked the detection areas, mount the window and place the excessive nylon wire loop inside the main unit.

How to remove the window>>



Using the tweezers (an accessory), carefully attach the area masking seals (an accessory) to the far area mirror.





8 MASKING THE NEAR AREA SENSOR

8-1 Masking the Detection Areas using Masking Plates

Applicable models: **SIP-5030** | SIP-100

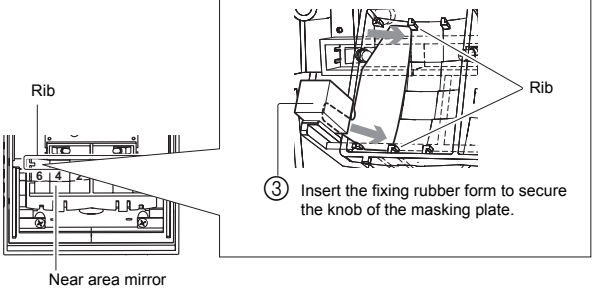
The near area mirror mounted in the main unit has 2 near masking plates; one at the right side of this mirror and another at the left side of this mirror. You can mask the detection area by changing the position of these masking plates.

Cautions>>

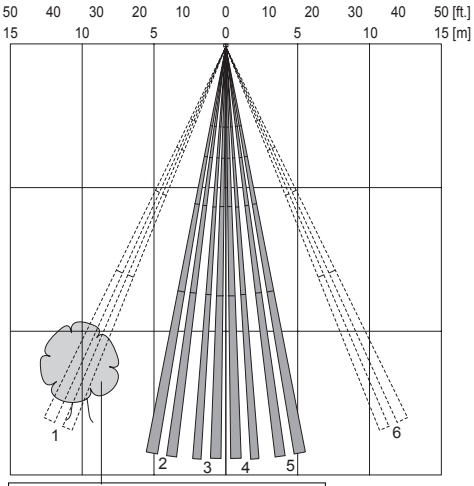
You can mask the outside detection areas only; they are areas 1 and 6. Use the area masking seals (an accessory) to mask the other detection areas (see Step 8-2).

① Remove the masking plate from the storage, and check the detection area and the mirror you use by referring to the area chart.

② Attach the masking plate to the mirror, and secure it to the ribs.



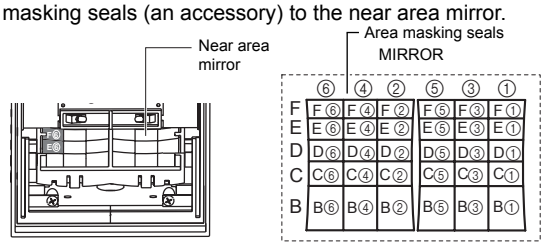
③ Insert the fixing rubber form to secure the knob of the masking plate.

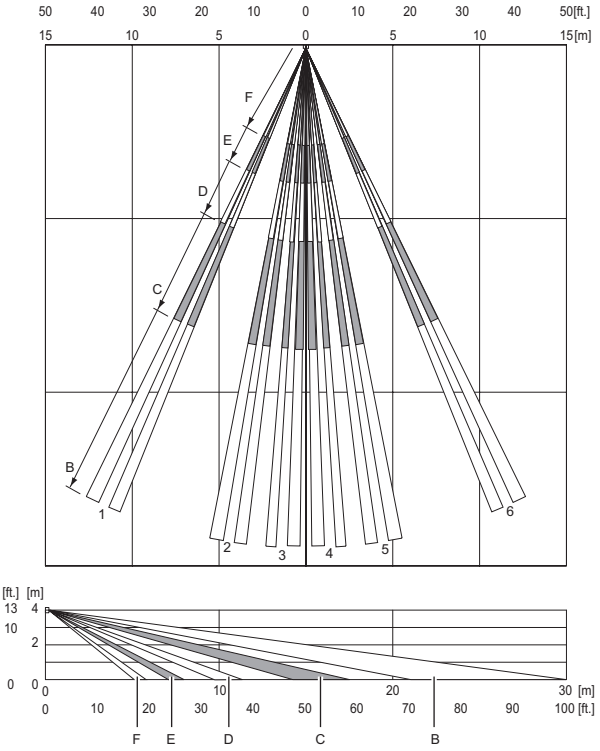


If tree branches or other moving objects are in the path of the detection beam.

8-2 Masking the Detection Areas using Masking Seals

Using the tweezers (an accessory), carefully attach the area masking seals (an accessory) to the near area mirror.

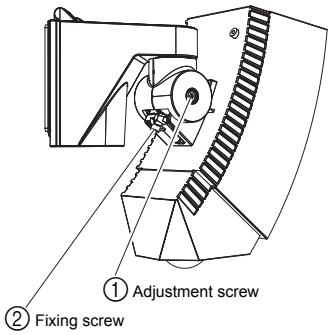




9 TERMINATION PROCEDURE

Applicable models: **SIP-5030** | **SIP-100**

(1) After you have adjusted all sensor items, securely tighten all adjustment screws that you have loosened. Finally, securely tighten the bottom fixing screws.



Cautions>>

- If you need to adjust the detection area again, be sure to loosen the fixing screw. If you try to move the main unit without loosening the fixing screw, the unit may be damaged.
- When you mount the cover, place the excessive nylon wire loop in the main unit. If the wire has been pinched by the window and the cover, rain drops may be able to enter into the main unit.

10 OPERATION TEST

10-1 If There is a Public Street Where People Walk or Cars Drive by the Detection Area

Points>>
Reduce the size of the detection area so that it does not include any public streets.

(1) Check to see that the arrow of the main unit is within the width of “Angle adjustment guide” on the adjustment screw.

(2) Using the area viewfinder, check to see that the detection area does not include any public streets.

(3) If the detection area does go beyond a public street, correct the vertical angle of the main unit.
However, exercise care so that the arrow does not move away significantly from the “Angle adjustment guide” position.

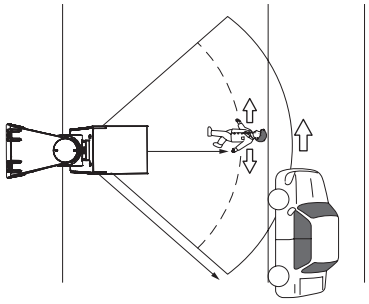
If the arrow does move away significantly from the “Angle adjustment guide” position:

For SIP-5030, mask the far area detection area using the masking seal. You may be required to also mask the near area detection area under specific sensor installation conditions (see Step 8).
For SIP-100, you cannot mask neither far area nor near area.

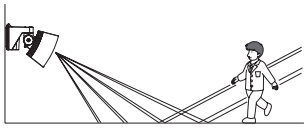
(4) When a person walks along the street or a car drives along it, check the detection area using the walk tester.

Points>>
You cannot mount and use both the area viewfinder and walk tester simultaneously.

Cautions>>
The detection area may increase if there is a large difference in temperature between the moving object and the background.



Cautions>>
A heat source beyond the detection area may cause a false alarm due to the reflection of heat off the ground. Examples of types of surfaces that reflect include water (puddles), wet roads, smooth concrete surfaces and asphalt roads.
If the source of the heat is strong and/or the reflection rate is high, the detection distance will be longer than required and may detect unnecessary objects beyond the target area. Therefore, select the detection range position according to the ground conditions of the installation site.



10-2 If Tree Branches or Grass are Detected When They Move Within the Detection Area

Points>>
Adjust the detection area so that it does not cover tree branches or grass that move when the wind blows.

(1) Check to see that the arrow of the main unit is within the width of “Angle adjustment guide” on the adjustment screw.

(2) Using the area viewfinder, check to see that the detection area does not cover tree branches or grass that may move when the wind blows.

(3) Use the walk tester to listen for sound level changes when there is no apparent activity in the detection area.
Adjust the detection area so that it does not detect unwanted areas.

If the sound level changes, some part of the detection area must be active (i.e.: an object is moving).

(4) Use the walk tester and locate the part of the detection area that is active. Change the walk tester selector switch position and determine whether the active part of the detection area is far area, near area or creep zone.

(5) Using the area viewfinder again, locate the active detection area.

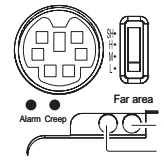
(6) Mask the active detection area. For SIP-5030, mask the far area detection area using the masking seal. You may be required to also mask the near area detection area using the masking plate or masking seal (see Step 8).
For SIP-100, the far area, near area and creep zones cannot be masked. Adjust the detection area for the area that cannot be masked.

(7) Using the walk tester again, check that the sound level changes. If the sound level does not change excessively, you can finish the adjustment.

Points>>
You cannot mount and use both the area viewfinder and the walk tester simultaneously.

11 LED STATUS

Applicable models: **SIP-5030** | SIP-100



Creep zone Operation indicator - Red LED

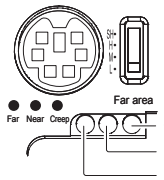
Far/Near area Operation indicator - Red LED

Cautions>>

If the red LED keeps blinking for approx. 60 seconds after turning the power on, turn the power off and then on again.

Detector Status	LED Status
During power ON	Blinks.
During standby	Turns OFF.
When detected (in far/ near area)	Lights.
When detected (in creep zone)	Lights.

Applicable models: SIP-5030 | **SIP-100**



Creep zone Operation indicator - Red LED

Near area Operation indicator - Red LED

Far area Operation indicator - Red LED

Cautions>>

If the red LED keeps blinking for approx. 60 seconds after turning the power on, turn the power off and then on again.

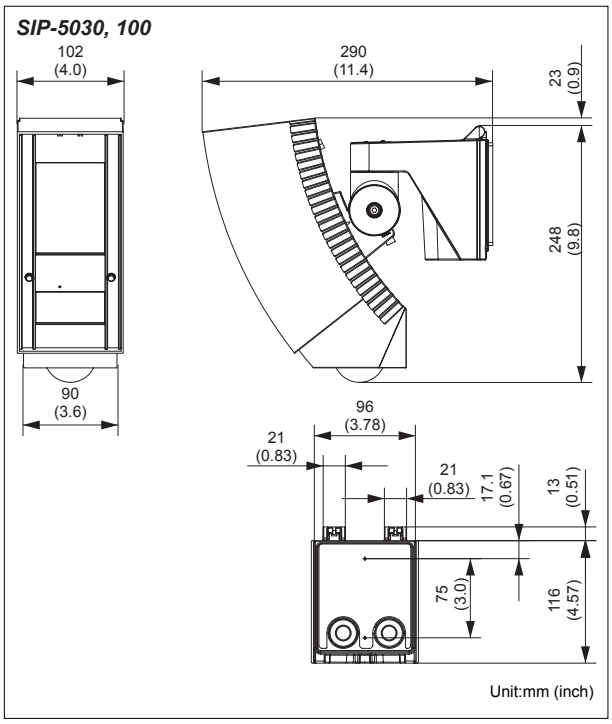
Detector Status	LED Status
During power ON	Blinks.
During standby	Turns OFF.
When detected (in far area)	Lights.
When detected (in near area)	Lights.
When detected (in creep zone)	Lights.

12 SPECIFICATIONS

Applicable models: **SIP-5030** | **SIP-100**

Model		SIP-5030	SIP-100
Detection method		Passive infrared	
Coverage (Main area)		50 x 30m (164 x 100ft.)	100 x 3m (330 x 10ft.)
Coverage (Creep zone)		3 x 5m (10 x 17ft.) at 2.3m (7.6ft.) height 6 x 9m (20 x 30ft.) at 4m (13ft.) height Detection angle adjustable	
Number of detection zones	Main area	100 zones	28 zones
	Creep zone	36 zones	
Mounting height		2.3 to 4m (7.6 to 13ft.)	
Power input		11 - 16V DC 22 - 26V AC	
	With optional heating unit	22 - 26V AC	
Current draw		40mA max. (12V DC) 75mA max. (24V AC)	45mA max. (12V DC) 80mA max. (24V AC)
	With optional heating unit	415mA. max. (24V AC)	420mA. max. (24V AC)
Indicator	Far alarm	Red LED	Red LED
	Near alarm		Red LED
	Creep zone alarm	Red LED	
Alarm period		Approx. 2 sec.	
Warm-up period		Approx. 60 sec.	
No. of outputs selector		—	Dip switch: 2 / 3
Alarm interval period		0 / 15 / 30 / 60 sec.	
Detection logic selector		AND/OR	
Tamper output		N.C. 28V DC, 0.1A max.	
Trouble output		N.C. 28V DC, 0.2A max.	
Alarm output	Far area	N.C.28V DC, 0.2A max. N.O.28V DC, 0.2A max.	N.C.28V DC, 0.2A max. N.O.28V DC, 0.2A max.
	Near area		N.C.28V DC, 0.2A max. N.O.28V DC, 0.2A max.
	Creep zone	N.C.28V DC, 0.2A max. N.O.28V DC, 0.2A max.	
Sensitivity selector		Far: SH/H/M/L Near: SH/H/M/L Creep zone: SH/H/M/L	
Operating temperature	Without optional heating unit	-25 to +60°C (-13 to +140°F)	
	With optional heating unit	-40 to +60°C (-40 to +140°F)	
IP rating		Main unit: IP65 Chassis : IP55	
Dimensions (H × W × D)		271 x 102 x 290 mm (10.7 x 4.0 x 11.4 in.)	
Weight		1.6 kg (56 oz.)	
Accessories		Screws, Paper template, Allen key, Area masking seal, Tweezers, Instruction manual, Area plate, Fixing rubber form	Screws, Paper template, Allen key, Instruction manual, Area plate

DIMENSION



OPTION

- OPM-WT, AWT-3 -Audio Walk Tester
- AVF-1 -Area View Finder
- SIP-MIDIHOOD -Sun/Snow shield
- SIP-HU -Heating unit

Cautions>>

When SIP-HU is used, the power for SIP unit should be 22 - 26V AC.

These units are designed to detect movement to activate CCTV system. Being only part of a complete surveillance system, we cannot accept responsibility for any damage or other consequences resulting form the activation of the unit.
This product confirms to the EMC Directive 2004/108/EC.

Specifications and design are subject to change without prior notice.

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