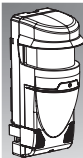


REDWALL®
Unrivalled performance**INSTALLATION INSTRUCTIONS****REDSKAN**

Laser Scan Detector

RLS-3060**FEATURES**

- * 30 m (Approx. 100 ft.) radius for 190 degrees
- * Vertical and horizontal mounting
- * Unique detection algorithm
- * Four independently adjustable detection areas for PTZ camera control
- * Four independent N.O. outputs
- * Form C master alarm outputs
- * Automatic area setting function
- * Environmental disqualification (EDQ) circuit
- * Trouble output
- * Tamper output

REDSKAN is an area sensor that configures a fan-like detection area of 30 m (Approx. 100 ft.) radius over 190 degrees arc, using laser beams.

REDSKAN detects target objects by emitting laser beams at the target and measuring the time required for the emitted beams to be reflected and returned to the detector.

There are 3 modes for detecting an intruder. Horizontal Detection Area1, Horizontal Detection Area2 and Vertical Detection Area. Each one is configured with an independent detection algorithm.

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1**INTRODUCTION****1-1 BEFORE OPERATION**

- Read this instruction manual carefully prior to installation.
- This manual uses the following warning indications to provide information regarding correct usage of the product to prevent you and other people from being harmed, and your assets from being damaged. These warning indications are described below.

Ensure you understand these precautions before reading the rest of this manual.

Warning

Failure to follow the instructions provided by this warning and improper handling may cause death or serious injury.

Caution

Failure to follow the instructions provided by this caution and improper handling may cause injury and/or property damage.



This symbol indicates prohibition.

The specific prohibited action is provided in and/or around the figure.



This symbol requires an action or gives an instruction.

Warning

Do not use the product for purposes other than the detection of moving objects such as people and vehicles.

Do not use the product to activate a shutter, etc., which may cause an accident.



Do not touch the unit base or power terminals of the product with a wet hand (do not touch when the product is wet with rain, etc.). It may cause electric shock.



Never attempt to disassemble or repair the product. It may cause fire or damage to the devices.



Do not exceed the voltage or current rating specified for any of the terminals, doing so may cause fire or damage to the devices.



Ensure the power is turned off before connecting wiring.



Confirm the signal name of every terminal to ensure wiring is carried out correctly.



Whenever a commercial switching regulator is used, be sure to connect PE (Protective Earth Terminal).



Hold the main unit securely when you install or service it. Exercise care not to bump the product against nearby objects or drop it inadvertently.



This product is not capable of detecting objects in the dead zone of the laser scan.

Do not use this product for an application where it is not capable of covering the detection area required by the task.



Please note that the product can malfunction, including producing an irregular output and committing a detection error, if it is exposed to unfavorable environmental conditions such as strong ambient light, electronic noises or mechanical vibrations.

**Caution**

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.



Clean and check the product periodically for safe use. If any problem is found, do not attempt to use the product as it is.



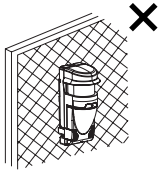
When disposing of this product, be sure to follow the waste-disposal regulations of the country or region where it is used.



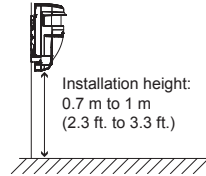
This product is intended to detect an intruder(s) and is not designed to prevent theft, disasters or accidents. The manufacturer shall not be held liable for any damage to user's property resulting from theft, disasters or accidents.

1-2 PRECAUTIONS

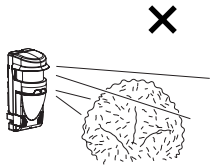
Install the product only on a solid surface.



In the Horizontal Detection Area, this product must normally be used within the recommended installation height in order to detect an intruder.



Install the product so that the detection area is not influenced by interference from tall grass or tree branches waving in the wind.



Do not install or leave the product in a location exposed to heat, vibrations or impacts beyond the noted rating.

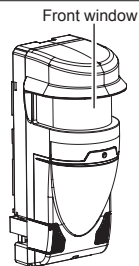
Do not use the product in an environment where solvent fumes or corrosive gases are present.

Do not use this product in environments where there may be oil mist particles which may contaminate the window of the detector; thus causing detection errors and possible corrosion which may lead to product failure.

The symbol "X" indicates prohibited actions.

Cleaning the Product

Clean the front window on a regular basis using a wet cloth. A smeared front window can limit the detection area due to the reduced laser sensitivity. In addition, heavy soiling of the window can induce detection errors.



On Safety of Laser

This product is categorized as a Class 1 product in terms of the Safety Standard.

Average Power : Max. 0.015 mW (AEL)
Wavelength : 905 nm
Pulse With : 4 ns
Emission period : 36 μ s
Standard : IEC60825-1

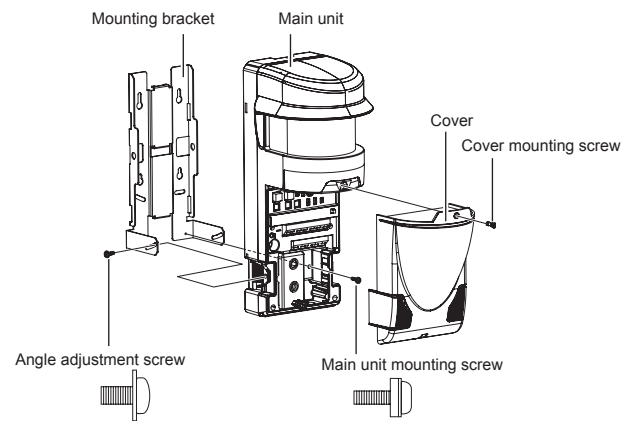
Class 1 of the Laser Safety Standard means that the safety of laser products belonging to this class is warranted under normal operating conditions (reasonably predictable operating conditions). The user is simply required to indicate that this product is laser equipment. No additional safety measures are necessary.

Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No.50, dated June 24, 2007.

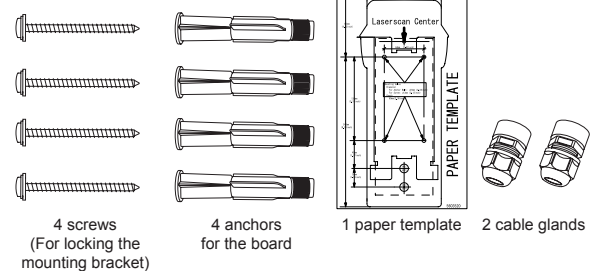
Class 1 laser product

Do not expose your eyes directly to the laser beam.

1-3 PARTS IDENTIFICATION



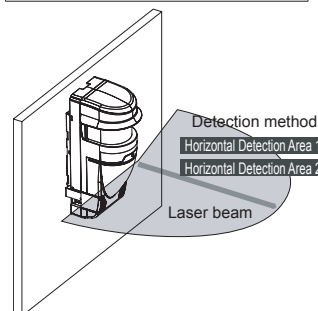
Accessories>>



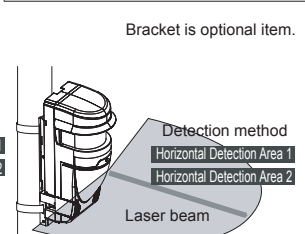
2 TYPES OF INSTALLATION METHOD AND DETECTION AREAS

2-1 TYPES OF INSTALLATION METHOD

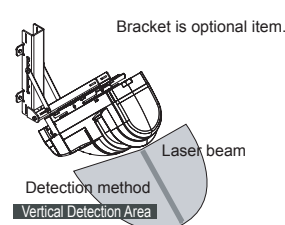
Installing to a wall



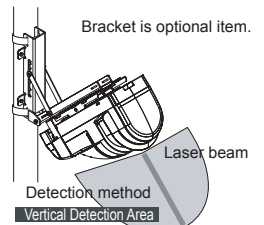
Installing to a pole



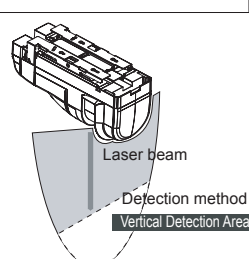
Installing at an angle to a wall



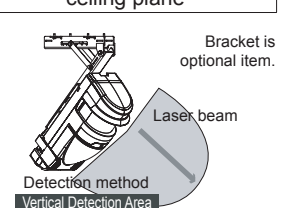
Installing at an angle to a pole



Installing to a ceiling plane



Installing at an angle to a ceiling plane



2-2 TYPES OF DETECTION METHOD

The detection method comprises the three modes of Horizontal Detection Area 1, Horizontal Detection Area 2 and Vertical Detection Area.

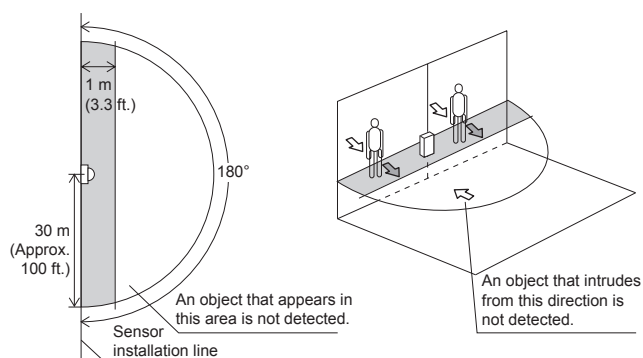
-Horizontal Detection Area 1 H1 H2 V

This mode allows setting of a fan-like detection area in the horizontal direction with a maximum radius of 30 m (Approx. 100 ft.), a spread angle of 180 degrees, and a width of 1 m (3.3 ft.).

This mode detects intrusion of an object that appears from the rear side of the sensor or in a position within 1 m (3.3 ft.) from the sensor installation line and that moves toward the front of the sensor.

Cautions>>

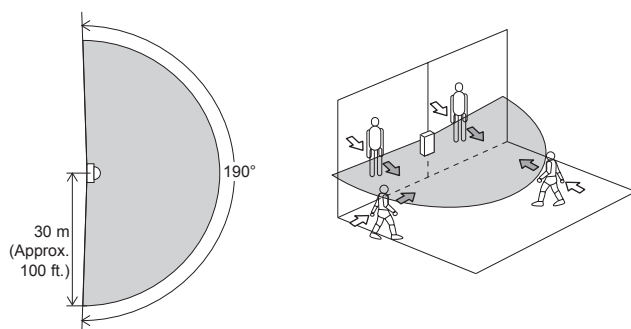
This mode does not detect an object that appears in a position more than 1 m (3.3 ft.) away from the sensor installation line.



-Horizontal Detection Area 2 H1 H2 V

This mode allows setting of a fan-like detection area in the horizontal direction with a maximum radius of 30 m (Approx. 100 ft.), a spread angle of 190 degrees.

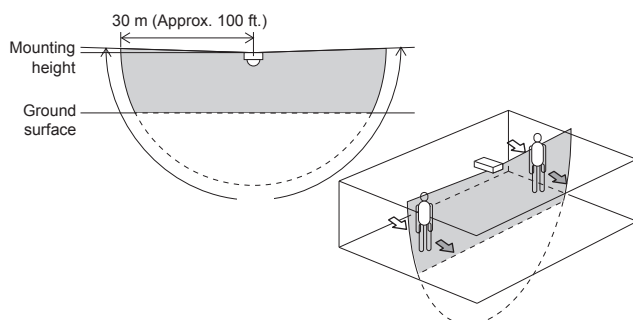
This mode detects intrusion into the detection area from any direction.



-Vertical Detection Area H1 H2 V

This mode allows setting of a fan-like detection area in the vertical direction with a maximum radius of 30 m (Approx. 100 ft.), a spread angle of 190 degrees and a maximum recommended height above the ground of 15 m (Approx. 50 ft.).

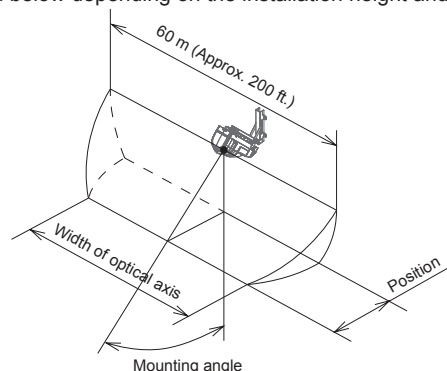
This mode detects an object that traverses the detection area.



-Vertical Detection Area when the product is installed at an angle

H1 H2 V

When you have installed this product at an angle with the optional adjustable angle mounting bracket, the detection area varies as shown below depending on the installation height and angle.



Width of laser optical axis and positional dimension (Laser center standard)

		Mounting angle							
		0°		20°		30°		45°	
		Width of optical axis	Position	Width of optical axis	Position	Width of optical axis	Position	Width of optical axis	Position
Installation height	4 m (13 ft.)	59	0	59	1.5	59	2.3	59	4.0
		195	0	195	4.8	195	7.6	193	13.1
	10 m (33 ft.)	57	0	56	3.6	55	5.8	53	10.0
		186	0	184	11.9	182	18.9	174	32.8
15 m (49 ft.)		52	0	51	5.5	49	8.7	42	15.0
		170	0	167	17.9	161	28.4	139	49.2

[Upper row: m/Lower row: ft.]

2-3 AREA SETTING PROCEDURE

The Manual and Auto modes are available for setting the area. The Auto setting procedure comprises the two options of P1 and P2.

The setting procedure in each mode varies depending on which detection method of either H1, H2 or Vertical detection Area is selected.

-Horizontal Detection Area 1/Horizontal Detection Area 2

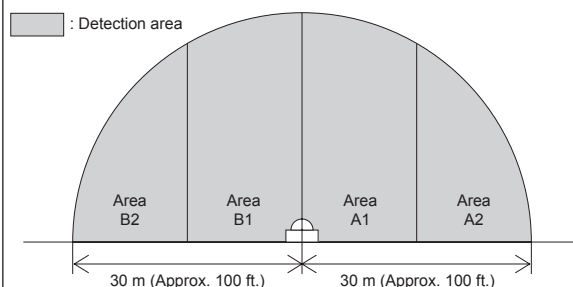
Manual

In this mode, set up a detection area by specifying a radius of the fan-like detection area.

The rough alignment rotary switch can specify the radius in the range of 0 to 30 m in 2 m steps.

Using the fine adjustment potentiometer the area setting can be increased or decreased by up to +/- 1 m.

The detection area is divided into Area A and Area B, allowing you to specify a different radius for each. Each of Areas A and B is halved to A1, A2, B1 and B2 areas.



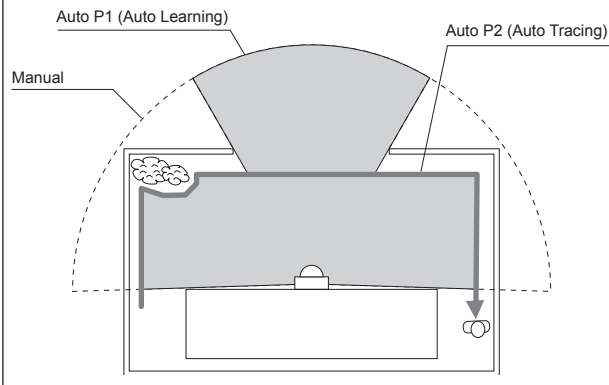
Auto

P1 Auto Learning

The area automatically learnt by the sensor within the boundary defined by the rough alignment rotary switches and fine adjustment potentiometers.

P2 Auto Tracing

The area automatically learnt by tracing a person walking a boundary within the area set by the rough alignment rotary switches and fine adjustment potentiometers.



-Vertical Detection Area

Manual

Vertical Detection Area is not available in Manual mode. Turn on the Auto mode to use it.

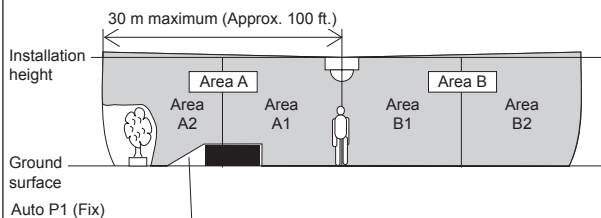
Auto

P1 Fix

The area being automatically recognized by the sensor scanner within the fan-like area set by the rough alignment rotary switches and the fine adjustment potentiometers.

P2 Refresh

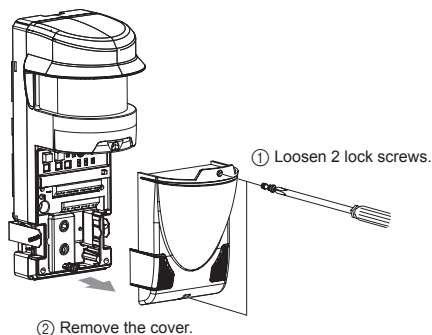
The area being detected is automatically adapted every hour to compensate for objects blocking the areas.



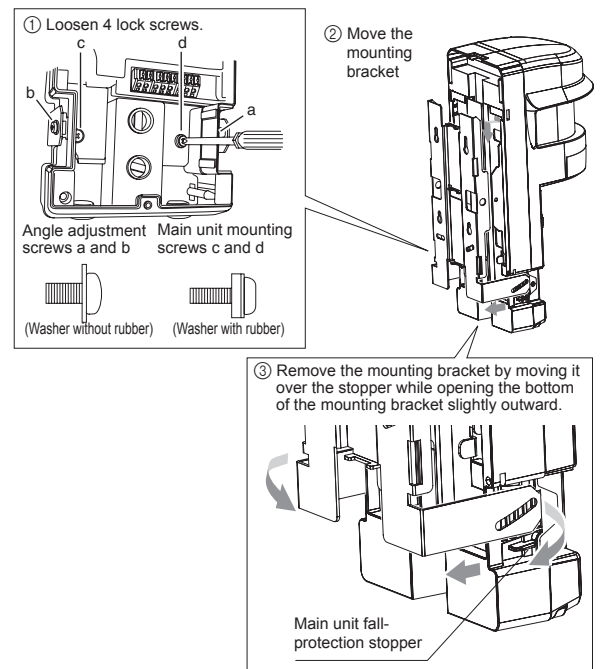
3 INSTALLATION AND ANGLE ADJUSTMENT

3-1 INSTALLING TO WALL AND ANGLE ADJUSTMENT

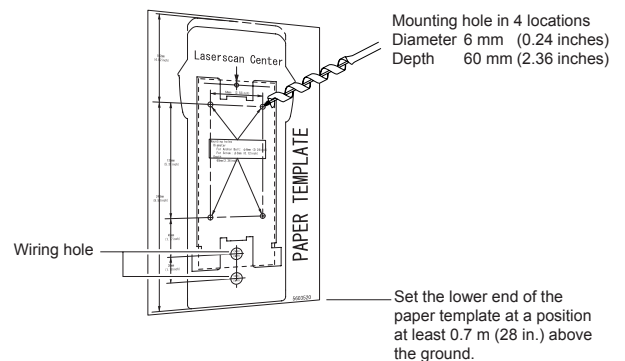
1 Remove the cover from the main unit.



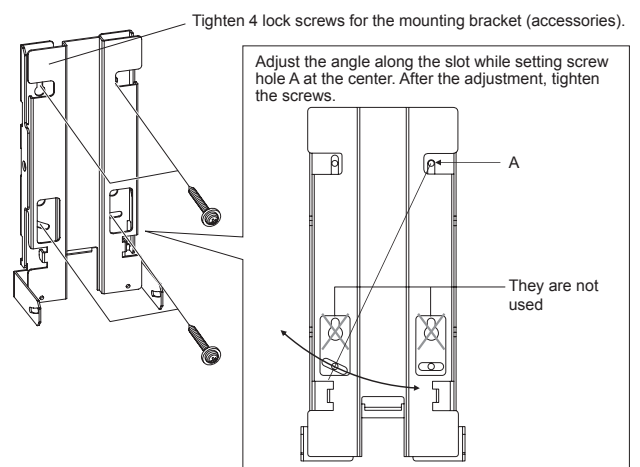
2 Remove the mounting bracket from the main unit.



3 Attach the paper template (an accessory) onto the wall, and drill 4 mounting holes in it. Drill 2 wiring holes as required. Insert the anchor bolt (an accessory) into the board mounting holes.



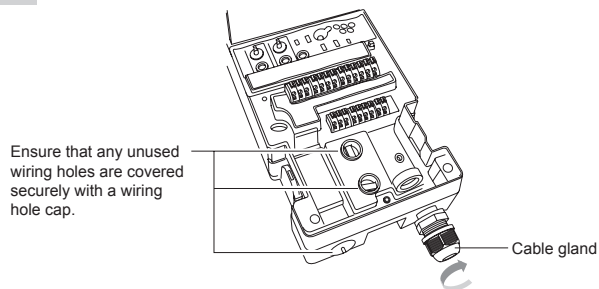
4 Fix the mounting bracket on the wall. Adjust the angle so that the inclination in the horizontal plane becomes parallel to the ground.



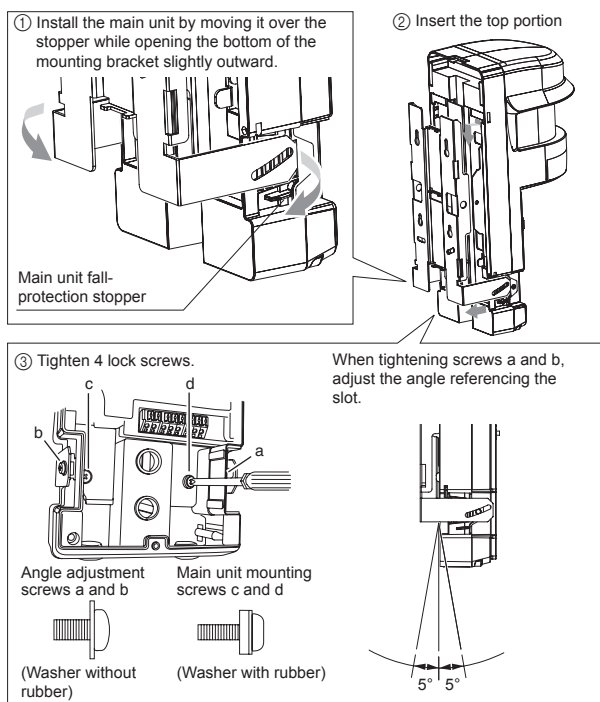
Cautions>>

When installing the product to the wall, fix the mounting bracket parallel to the ground. If the mounting bracket is set at an angle, the laser beam will not be emitted parallel to the ground, which may result in the non-detection of an intruder. An inclination of 1 degree varies the shape of the detection area of 30 m (Approx. 100 ft.) ahead by approximately 0.5 m (1.6 ft.).

5 Install the cable gland.



6 Install the main unit and fix it to the mounting bracket. Adjust the angle so that the inclination in the vertical direction becomes parallel to the ground.



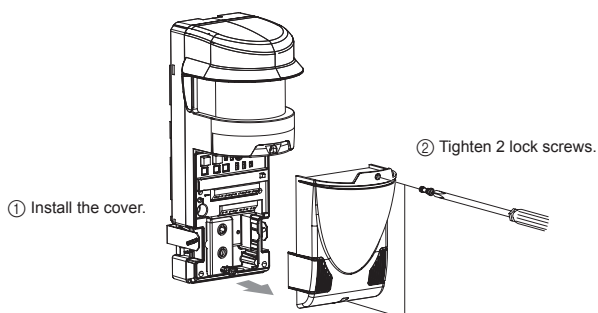
7 See section "4-1" and connect the wires to the terminal block.

Cautions>>

When the indicators (A1, A2, B1, B2, Status and Power) light after the power turns on, this signifies that the system is warming up. Wait for approximately 30 seconds until the indicators go out.

8 See Chapters [5], [6] and [7], make various settings and confirm that the equipment operates correctly.

9 The installation work is complete when the various settings and operational check are finished. Mount the cover.

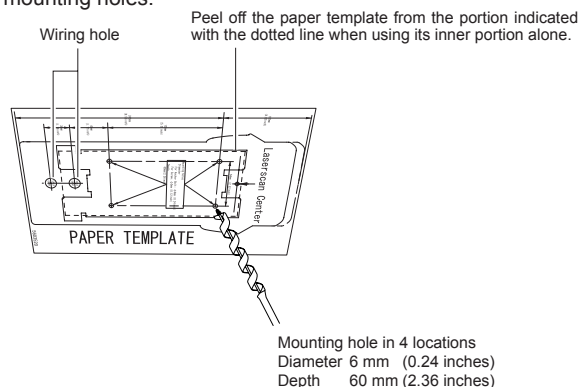


3-2 INSTALLING TO CEILING PLANE AND ANGLE ADJUSTMENT

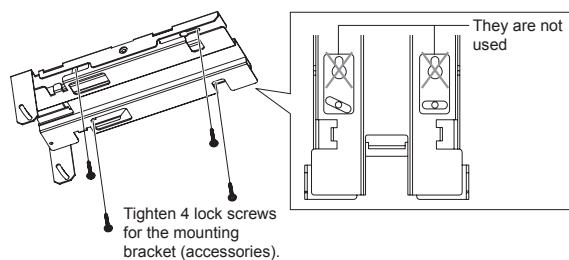
When you have selected the Vertical Detection Area for detection purposes, install the product to the ceiling plane.

1 Implement steps 1 and 2 in "3-1" to remove the cover and mounting bracket.

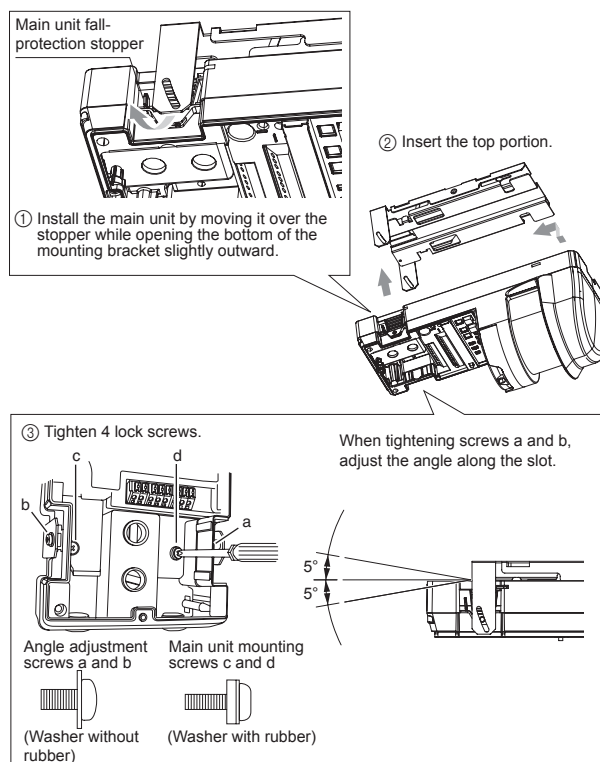
2 Attach the paper template (an accessory) to the ceiling plane and drill 4 mounting holes in it. Drill 2 wiring holes as required. Insert the anchor bolt (an accessory) into the board mounting holes.



3 Fix the mounting bracket to the ceiling plane.



4 Install the main unit and fix it to the mounting bracket. Adjust the angle so that the inclination in the vertical direction becomes parallel to the ground.

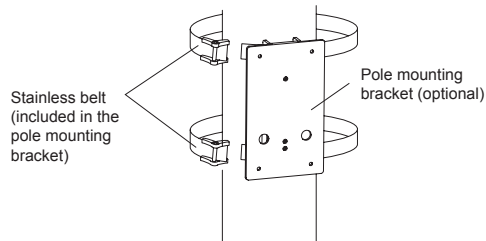


5 Take steps 6 through 9 in "3-1" to do wiring, check the setup and operation, and then install the cover.

3-3 INSTALLING TO POLE

When installing the product to a pole, use the optional pole mounting bracket (RLS-PB).

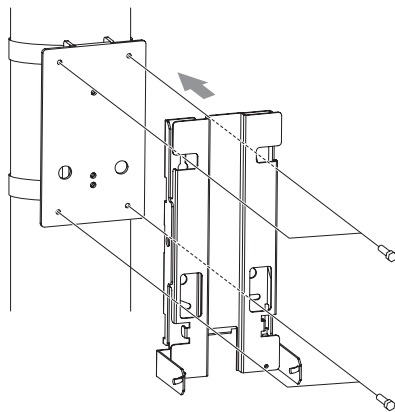
- 1 Take steps 1 and 2 in "3-1" to remove the cover and mounting bracket.
- 2 Fix the pole mounting bracket (optional) to the pole using 2 stainless belts (included in the pole mounting bracket).



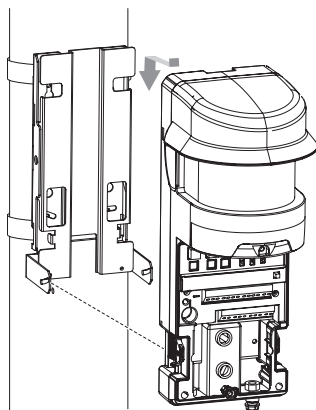
Points >>

For detailed handling procedures, see the manual attached to the pole mounting bracket.

- 3 Fix the mounting bracket to the pole mounting bracket. For the fixing, use the screw with the washer attached to the pole mounting bracket. Adjust the angle so that the inclination in the horizontal plane becomes parallel to the ground.



- 4 Take step 6 in "3-1" to install and fix the main unit to the mounting bracket.



- 5 Take steps 7 through 9 in "3-1" to do wiring, check the setup and operation, and then install the cover.

3-4 INSTALLING AT AN ANGLE TO WALL OR CEILING PLANE

When installing the product at an angle to a wall or ceiling plane, use the optional adjustable angle mounting bracket (RLS-SB).

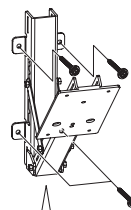
- 1 Take steps 1 and 2 in "3-1" to remove the cover and mounting bracket.
- 2 When installing the product at an angle to a wall, attach the paper template (attached to the main unit) to the wall and drill 4 mounting holes in it in the same way as described in "3-1 3". For the ceiling plane, follow the procedures described in "3-2 2".

Points >>

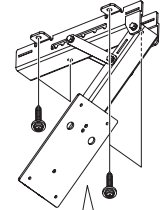
The mounting holes for the adjustable angle mounting bracket must be provided in the same position, diameter and depth as that for the main unit mounting holes indicated on the paper template.

- 3 Fix the optional adjustable angle mounting bracket to the wall or ceiling plane using 4 screws attached to the main unit.

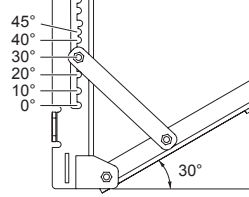
Wall



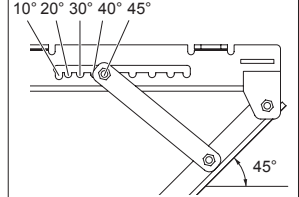
Ceiling plane



The angle varies according to the bolt insertion position.



The angle varies according to the bolt insertion position.

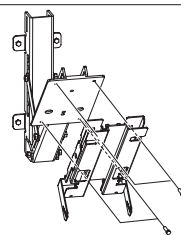


Points >>

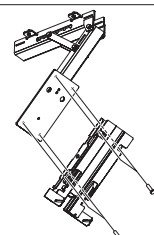
For detailed handling procedures, see the manual attached to the adjustable angle mounting bracket.

- 4 Fix the mounting bracket with 4 lock screws with the washer attached to the optional adjustable angle mounting bracket.

Wall

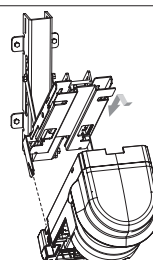


Ceiling plane

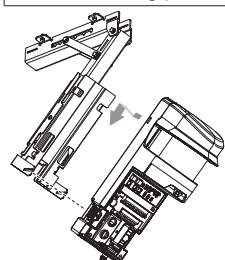


- 5 Take step 6 in "3-1" to install and fix the main unit to the mounting bracket.

Wall



Ceiling plane

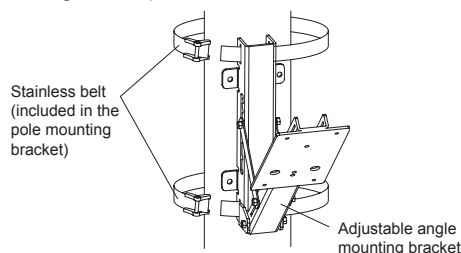


- 6 Take steps 7 through 9 in "3-1" to carry out wiring, check the setup and operation, and then install the cover.

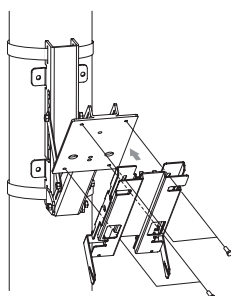
3-5 INSTALLING AT AN ANGLE TO POLE

When installing the product at an angle to a pole, use the optional adjustable angle mounting bracket for pole (RLS-SB).

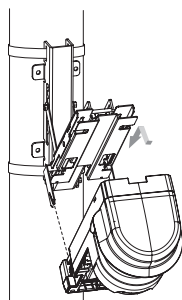
- Take steps 1 and 2 in "3-1" to remove the cover and mounting bracket.
- Fix the optional adjustable angle mounting bracket to the pole using 2 stainless belts (included in the adjustable angle mounting bracket).



- Fix the mounting bracket with 4 lock screws with the washer attached to the optional adjustable angle mounting bracket.



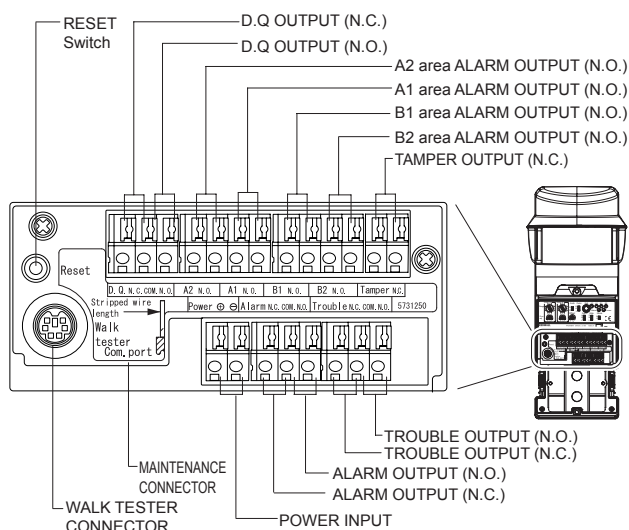
- Take step 6 in "3-1" to install and fix the main unit to the mounting bracket.



- Take steps 7 through 9 in "3-1" to do wiring, check the setup and operation, and then install the cover.

4 PARTS LAYOUT INSIDE THE COVER AND THEIR FUNCTIONS

4-1 WIRING

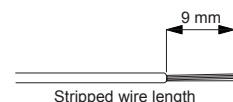


*1: TAMPER terminals to be connected to a 24 hour supervisory loop.

Power wires should not exceed the following lengths.

WIRE SIZE	24V DC	24V AC
AWG20 (0.52 mm ²)	120 (394)	60 (197)
AWG18 (0.83 mm ²)	200 (656)	100 (328)

m (ft.)



Wires must be stripped back 9 mm. Use the gauge on the panel for correct measurement.

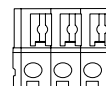
4-2 RESET SWITCH



This switch is used for restarting the system. Do not touch it during normal operation.

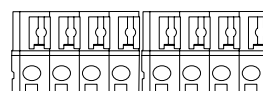
4-3 SIGNAL OUTPUT

-D.Q. output



The algorithm specific to REDSCAN allows detecting an intrusion amid the fog. However, during severe conditions such as heavy rain, dense fog or snow storms the Environmental DisQualification (EDQ) output is activated.

-Alarm output



Upon detecting an intruder, this product outputs the alarm specific to the area (Area A1, Area A2, Area B1 or Area B2) where the intrusion happened.

When combined with an area monitoring system using a PTZ camera, this product works efficiently to provide early detection of intruders.

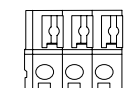
-Tamper output



This output is enabled when the terminal cover is removed.

-Trouble output

Trouble N.C. COM. N.O.

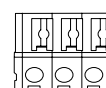


It is generated when an error has occurred on the sensor.

Name	Function
Anti-masking	It is activated when an obstacle has been placed in front of the sensor in order to block the detection area. It is reset after such obstacles are removed.
Anti-rotation	It is activated when the area being scanned changes by a significant amount as a result of the unit being rotated from its original settings. Not applicable in Manual mode.
Soiling of the window	It is activated when the front window is heavily soiled and it induces detection errors. Clean the front window using a wet cloth.
Sensor error	It is activated when the sensor has detected an internal self check error.

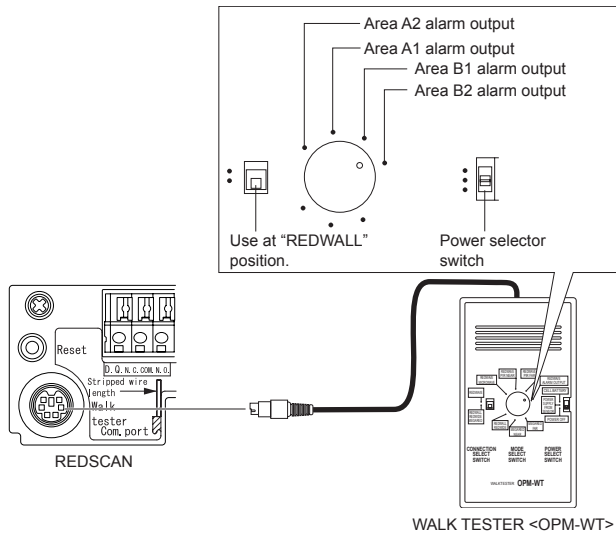
-Alarm output

Alarm N.C. COM. N.O.



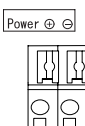
The alarm output is generated if an intruder is detected in one or more of the divided areas (Area A1, Area A2, Area B1 and Area B2).

4-4 CONNECTING WALK TESTER



- Turning on the power selector switch after plugging the cable into the Walk Tester Connector generates a continuous beep at a constant sound level.
- The beep sound becomes stronger and continues for a longer period if an object is detected.

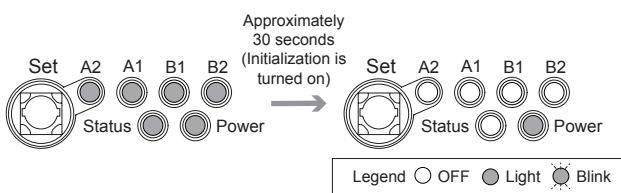
4-5 POWERING ON



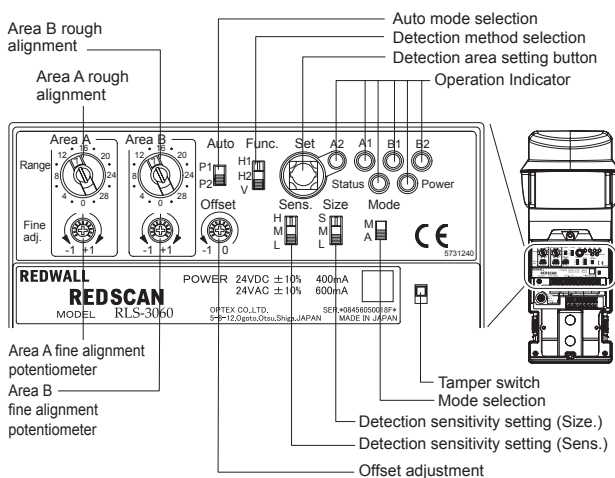
Connect 24 VAC/DC to the power input terminal to turn power on.

As power is turned on, the indicators (A1, A2, B1, B2, Status and Power) light for about 30 seconds and then go out.

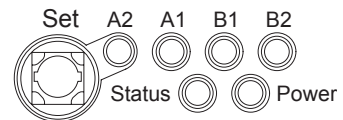
During this period, REDSCAN initializes itself. Indicator Power remains lit as long as power is turned on.



4-6 SWITCH LAYOUT



4-7 LED FUNCTIONS



-In the normal operation

Symbol	Color	DETECTOR STATUS
A2	Red	Area A2 alarm output
A1	Red	Area A1 alarm output
B1	Red	Area B1 alarm output
B2	Red	Area B2 alarm output
Status	Yellow	Lit during auto setup of the unit. (Turned off during normal operation.)
Power	Green	Lit when power is turned on

-When an abnormality occurs

Status	A2	A1	B1	B2	Status	Power
D.Q.	Light	Light	Light	Light	Light	Light
Anti-masking	Light	Light	Light	Light	Light	Light
Anti-rotation	Light	Light	Light	Light	Light	Light
Soiling of the window	Light	Light	Light	Light	Light	Light
Sensor error	Error 1	Light	Light	Light	Light	Light
	Error 2	Light	Light	Light	Light	Light
	Error 3	Light	Light	Light	Light	Light
	Error 4	Light	Light	Light	Light	Light
	Error 5	Light	Light	Light	Light	Light

Legend ○ OFF ● Light ● Blink

5 SETTING HORIZONTAL DETECTION AREAS 1 AND 2

5-1 SELECTOR SWITCH OPERATION

-Detection method selection

H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto

Select the desired method using the detection method selector switch.

Func.	SELECTOR POSITION	FUNCTION
H1	H1	It selects Horizontal Detection Area 1.
H2	H2	It selects Horizontal Detection Area 2.
V	V	—

-Selection of the area setting method

H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto

Select the desired method using the mode selector switch.

Mode	SELECTOR POSITION	FUNCTION
M	M	Selects the Manual setting.
A	A	Selects the Auto setting.

-Selecting the Auto mode

H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto

Select it using the Auto mode selector switch.

Auto	SELECTOR POSITION	FUNCTION
P1	P1	Turns on the Auto Learning.
P2	P2	Turns on the Auto Tracing.

-Selecting the detection sensitivity

H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto

Set the detection sensitivity using the Size selector switch and Sens. selector switch. You can set the detection sensitivity in the horizontal area with the size of the target object and its move distance within the detection area.

	SELECTOR POSITION	FUNCTION
Size S M L	S	Approx. 150 mm (0.5 ft.) or above
	M	Approx. 300 mm (1 ft.) or above
	L	Approx. 1000 mm (3.3 ft.) or above
Sens. H M L	H	Approx. 500 mm (1.6 ft.) or above
	M	Approx. 1000 mm (3.3 ft.) or above
	L	Approx. 2000 mm (6.6 ft.) or above

This switch specifies the width of the target object to be detected.

This switch specifies the move distance of an object in the detection area above which it is judged as an intruder.

5-2 MANUAL SETTING OF HORIZONTAL DETECTION AREA

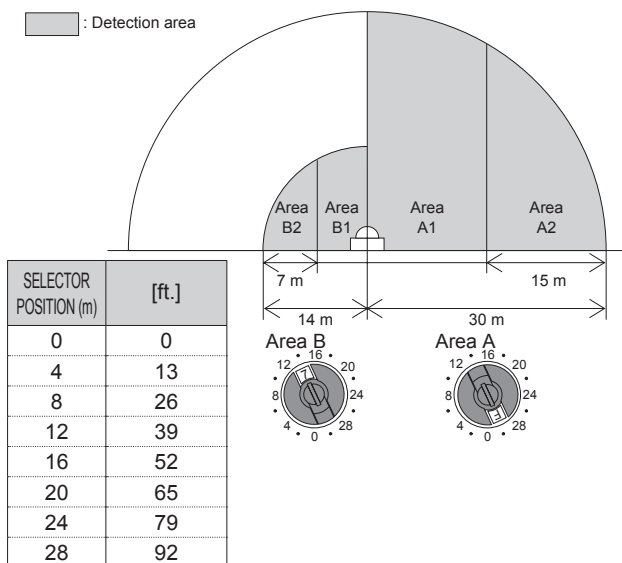
H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto

Set a fan-like detection area using the rough alignment rotary switch and fine alignment potentiometer.

-Rough alignment rotary switch

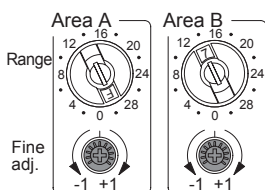
You can specify the radius in the range of 0 to 30 m in 2 m steps. Setting the rough alignment rotary switch to 0 m deletes the area.

Example: if you specify "Detection distance in Area A: 30 m" and "Detection distance in Area B: 14 m" in a location where the radius is 30 m or more without a reflector, the following detection areas will result.



-Fine alignment potentiometer

This potentiometer can fine tune the value set with the rough alignment rotary switch by +/- 1 m. within the range of 0 m minimum and 30 m maximum.



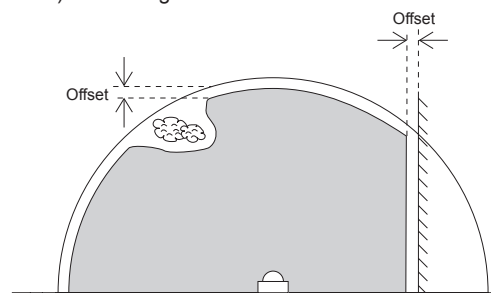
Setting done in rough alignment	Range available for fine alignment
When 0 m is set	0 to +1 m (From -1 to 0 m on the scale is not usable)
When 2 to 28 m is set	±1 m
When 30 m is set	-1 to 0 m (From 0 to +1 m on the scale is not usable)

-Offset adjustment

You can reduce a set detection area using the offset potentiometer. Use this adjusting function when windblown grass or tree branches interfere with the currently set detection area.

You can adjust the boundary of a given detection area inward (toward the sensor) in the range of 0 to -1 m.

Offset



5-3 STARTING SECURITY PROTECTION IN MANUAL MODE

H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto

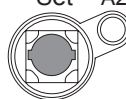
When "Manual" is chosen from the mode selector switch, turning the power on starts the security protection in manual mode.

5-4 AUTO SETTING OF HORIZONTAL DETECTION AREA

-Function of the detection area setting button

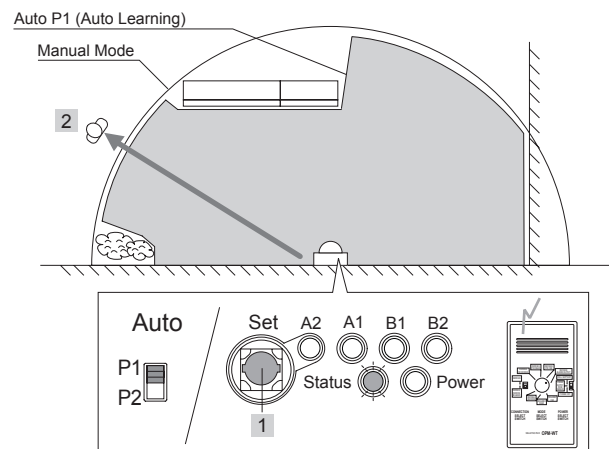
H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto

Set A2 This button starts the auto function of either P1 or P2 whichever has been selected.



-Setting P1 (Auto Learning)

H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto



Sequence of operation	Status indicator	Time	Action of REDSCAN/ Response of Walk Tester
1 Hold down the detection area setting button for 1 second.	Flashing starts	For 1 second	Pitch of Walk Tester sound changes for 2 seconds
2 Evacuation from the area	Flashing (*1)	For 15 seconds	—
—	Fast flashing (*2)	For 10 seconds	Scan of the detection area is executed
—	ON	For 15 seconds	Scan of the detection area is completed and the data are saved
—	Flashing	For 3 seconds	—
—	OFF	—	Security protection of the detection area is started

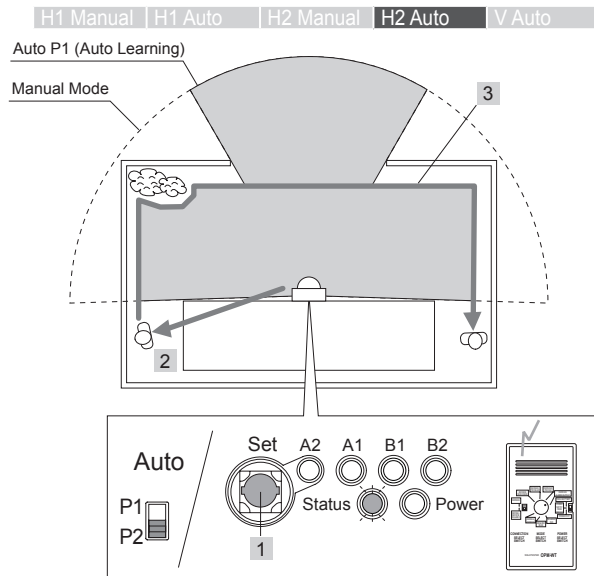
*1: Flashes once a second

*2: Flashes twice a second

Cautions >>

Do not enter the area while the area scan is being carried out.
An unwanted object in the area interferes with the correct scanning of the target area.

-Setting P2 (Auto Tracing)



Sequence of operation	Status indicator	Time	Action of REDSCAN/ Response of Walk Tester
1 Hold down the detection area setting button for 1 second.	Flashing starts	For 1 second	Pitch of Walk Tester sound changes for 2 seconds
2 Evacuation from the area	Flashing (*2)	For 15 seconds	—
—	Fast flashing (*3)	For 10 seconds	Scan of the detection area is executed
3 Walking along the boundary of the area (*1)	Flash (*4)	For 5 minutes	Tracing started Pitch of the Walk Tester sound changes in 3-second cycles
		(Last 30 seconds)	Pitch of the Walk Tester sound changes in 1-second cycles
—	ON	For 15 seconds	Tracing is completed and the data are saved
—	Flashing	For 3 seconds	—
—	OFF	—	Security protection of the detection area is started

*1: The tracing is automatically ended after 5 minutes. When movement of the target object along the area boundary has finished before this time, you can terminate the tracing without waiting for 5 minutes by holding down the detection area setting button for 3 seconds.

*2: Flashes once a second

*3: Flashes twice a second

*4: A flashing sequence of flashing twice a second and not flashing for a second is repeated

Cautions >>

Do not enter the area while the area scan is being carried out. An unwanted object in the area interferes with the correct scanning of the target area.

Note >>

Any area left untraced will revert to the Auto learning area settings.

6 SETTING VERTICAL DETECTION AREA

6-1 SELECTOR SWITCH OPERATION

-Detection method selection

H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto

Select the desired method using the detection method selector switch.

Func.



SELECTOR POSITION	FUNCTION
H1	—
H2	—
V	Selects the vertical detection area.

-Selection of the area setting method

H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto

Select the desired method using the mode selector switch.

Mode



SELECTOR POSITION	FUNCTION
M	NOT APPLICABLE
A	Selects the Auto setting.

-Selecting the Auto mode

H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto

Select it using the Auto mode selector switch.

Auto



SELECTOR POSITION	FUNCTION
P1	Fixes the detection area.
P2	Periodically refreshes the detection area.

-Setting the detection sensitivity

H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto

Set the detection sensitivity using the Size selector switch and Sens. selector switch. You can set the detection sensitivity in the vertical area with the size of the target object and the time it takes to traverse the detection area.

	SELECTOR POSITION	FUNCTION
Size S M L	S	Approx. 300 mm (1 ft.) or above This switch specifies the height from offset position of the target object to be detected.
	M	Approx. 500 mm (1.6 ft.) or above
	L	Approx. 1000 mm (3.3 ft.) or above
Sens. H M L	H	100 ms or longer. This setting is recommended when the target object can run through the detection area. This switch specifies the duration during which the target object stays in the detection area.
	M	150 ms or longer
	L	200 ms or longer. This setting is recommended when detecting large objects such as a car.

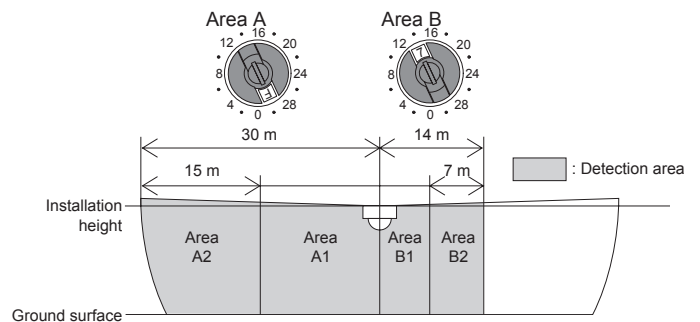
6-2 SETTING DETECTION AREA IN VERTICAL DETECTION AREA

H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto

Set a fan-like detection area using the rough alignment rotary switch and fine alignment potentiometer.

-Rough alignment rotary switch

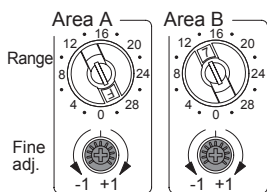
It can specify the radius in the range of 0 to 30 m in 2 m steps. Setting the rough alignment rotary switch to 0 m deletes the area.



SELECTOR POSITION (m)	[ft.]
0	0
4	13
8	26
12	39
16	52
20	65
24	79
28	92

-Fine alignment potentiometer

This potentiometer can fine tune the value set with the rough alignment rotary switch by +/- 1 m. within the range of 0 m minimum and 30 m maximum.

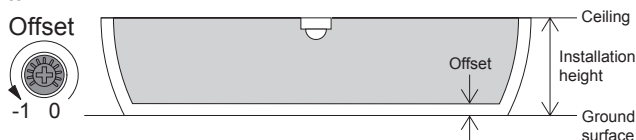


Setting carried out in rough alignment	Range available for fine alignment
When 0 m is set	0 to +1 m (From -1 to 0 m on the scale is not usable)
When 2 to 28 m is set	±1 m
When 30 m is set	-1 to 0 m (From 0 to +1 m on the scale is not usable)

-Offset adjustment

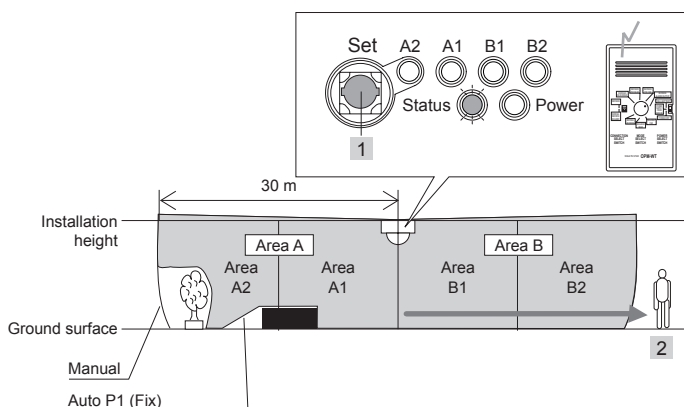
You can reduce a set detection area using the offset potentiometer. Use this adjusting function when windblown grasses or tree branches interfere with the currently set detection area.

You can adjust the dead zone from the ground in the range of 0 to -1 m.



6-3 AUTO SETTING OF VERTICAL DETECTION AREA

H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto



Sequence of operation	Status indicator	Time	Action of REDSCAN/ Response of Walk Tester
1 Hold down the detection area setting button for 1 second.	Flashing starts	For 1 second	Pitch of Walk Tester sound changes for 2 seconds
2 Evacuation from the area	Flashing (*1)	For 15 seconds	—
—	Fast flashing (*2)	For 10 seconds	Scan of the detection area is executed
—	ON	For 15 seconds	Scan of the detection area is completed and the data are saved
—	Flashing	For 3 seconds	—
—	OFF	—	Security protection of the detection area is started

*1: Flashes once a second

*2: Flashes twice a second

Cautions >>

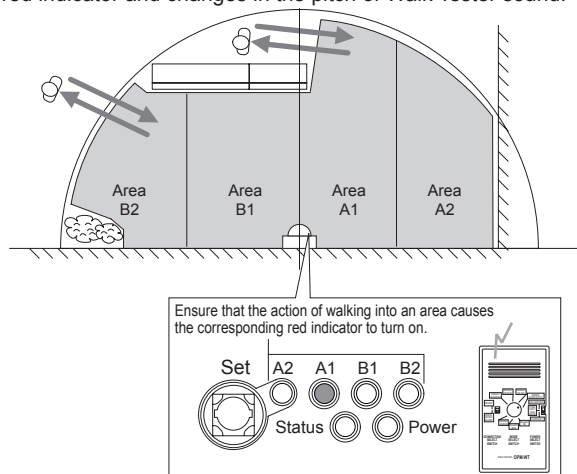
Do not enter the area while the area scan is being carried out. An unwanted object in the area interferes with the correct scanning of the target area.

7 AREA CHECKUPS

7-1 WALK TEST

H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto

Ensure that the detection area has been correctly set referencing the red indicator and changes in the pitch of Walk Tester sound.



-When a detection area has not been correctly set

- Before pressing the detection area setting button, ensure that the detection method switch and the detection mode switch are set to the correct position, respectively.
- Set the detection again with reference to "5-4" for the horizontal detection area and "6-3" for the vertical detection area.

7-2 CHANGING THE SETTINGS DURING SECURITY PROTECTION

H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto

You can change the following settings as required during the security protection.

It is not necessary to press the detection area setting button after conducting a change.

SELECTOR NAME	Manual (M)	Auto (A) <P1/P2>
Mode selector	<input type="radio"/>	<input type="radio"/>
Object size	<input type="radio"/>	<input type="radio"/>
Object movement	<input type="radio"/>	<input type="radio"/>
Rough alignment	<input type="radio"/>	<input type="radio"/>
Fine alignment	<input type="radio"/>	<input type="radio"/>
Offset	—	<input type="radio"/>

If you shift the mode selector switch from Manual (M) to Auto (A), the area that has been specified previously in Auto (A) is selected as the detection area. When the area is not set in Auto, set it with reference to the procedure described in "5-4" or "6-3."

Summary of detection area switch settings

Function	AUTO MODE (Press Detection area setting button to initiate)		MANUAL MODE
	P1	P2	
H1	Automatically learns the detection area within 1 m x area set by Rough alignment rotary switches and Fine adj. potentiometers	N/A	Detection area is 1 m x Area set by Rough alignment rotary switches and Fine adj. potentiometers
H2	Automatically learns the detection area within the area set by Rough alignment rotary switches and Fine adj. potentiometers	Automatically learns the detection area by tracing a person walking a boundary within the area set by Rough alignment rotary switches and Fine adj. potentiometers	Detection area is the Area set by Rough alignment rotary switches and Fine adj. potentiometers
V	Automatically learns the detection area within the area set by Rough alignment rotary switches and Fine adj. potentiometers	Automatically updates the detection area every hour within the area set by Rough alignment rotary switches and Fine adj. potentiometers	N/A

7-3 SYSTEM FUNCTION AFTER POWER FAILURE

H1 Manual | H1 Auto | H2 Manual | H2 Auto | V Auto

Even if the power is shut down during the security protection process (detection area is specified) due to reasons including power failure, the specified detection area is saved on this product. After power is restored, the product resumes intruder detection normally in the detection area that was specified prior to the power failure.

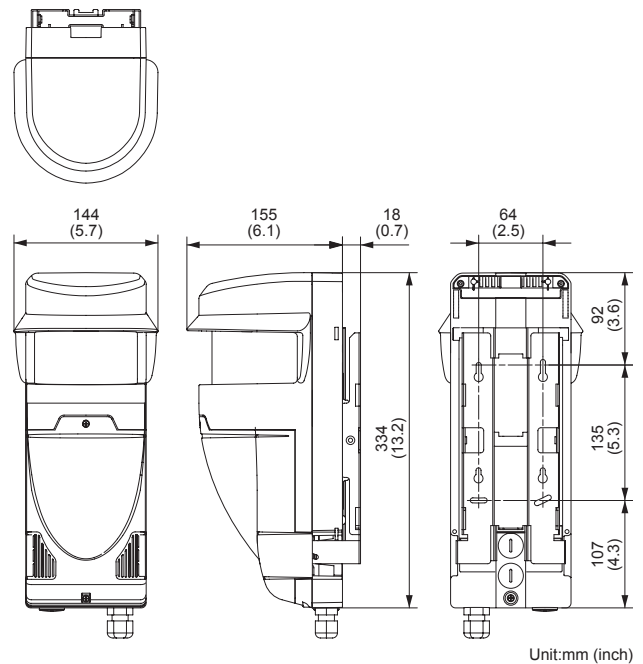
8 SPECIFICATIONS

8-1 SPECIFICATIONS OF THE MAIN UNIT

Model		RLS-3060
Detection method		Infrared Laser Scan
Laser protection class		Class 1
Wavelength of laser emission		905 nm (infrared laser)
Coverage for vertical mounting		Radius: 30 m (Approx. 100 ft.), Arc: 190°
Coverage for horizontal mounting		MAX. 60 m (Approx. 200 ft.)
Detection resolution		0.25°
Power input		24V AC/DC $\pm 10\%$
Power consumption		400 mA (24VDC) 600 mA (24VAC)
Vertical mounting height		15 m (Approx. 50 ft.) max
Horizontal mounting height		0.7 m (28 in.) (recommended)
Indicator	A2 alarm	Red LED
	A1 alarm	
	B1 alarm	
	B2 alarm	
	Status	Yellow LED
	Power	Green LED
Area alarm output		N.O. 28V DC, 0.2A \times 4outputs
Master alarm output		Form C, 28V DC, 0.2A max.
Trouble output		Form C, 28V DC, 0.2A max.
Tamper output		N.C. 28V DC, 0.1A max.
Environmental disqualification circuit		Form C, 28V DC, 0.2A max.
Alarm period		Approx. 2 sec. Off delay timer
Warm-up period		Approx. 30 sec.
Operating temperature		-20 – +60 °C (-4 – +140 °F)
IP rating		IP66
Dimensions (H \times W \times D)		334 \times 144 \times 155 mm (13.2 \times 5.7 \times 6.1 in.)
Weight		3 kg (106 oz.)
Accessories		Mounting screw, anchor bolt for board, paper template, waterproof plug and Installation Instructions

* Specifications and design are subject to change without prior notice.

8-2 DIMENSIONAL DRAWING



8-3 OPTIONS

OPM-WT : Audio Walk Tester
 RLS-PB : Pole mount bracket
 RLS-SB : Adjustable angle mounting bracket



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