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.

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1-2 PRECAUTIONS

Install the product only on a solid surface.

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

Installation height: 0.7 m to 1 m (2.3 ft. to 3.3 ft.)

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.

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.

The symbol "Í" 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 Width: 4 ns
Emission period: 36 μs
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 product is marked to indicate that it 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.

CE Statement

Warning: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures. (EN55022)

1-3 PARTS IDENTIFICATION

Mounting bracket
Main unit
Cover
Cover mounting screw
Angle adjustment screw
Main unit mounting screw

Accessories>>

4 screws (For fixing the mounting bracket)
4 anchors for the wall
1 mounting holes template (printed on inside of the carton box)
2 cable glands
2 screws (spare parts)

1-4 INSTALLATION WORK FLOWCHART

Choose the detection area mode and installation location. (Refer 2)

Mounting and angle adjustment. (Refer 3)

Wiring and Power On. (Refer 4)

Confirmation of location of the laser plane. (Refer 3-4)

Area adjustment (Refer 5, 6)

Walk-test and confirm the detection area. (Refer 8-1)

Completion
### 2-1 TYPES OF INSTALLATION METHOD

**Installing to a wall**

![Diagram of installing to a wall]

Bracket is optional item.

**Installing to a pole**

![Diagram of installing to a pole]

Bracket is optional item.

**Installing at an angle to a wall**

![Diagram of installing at an angle to a wall]

Bracket is optional item.

**Installing at an angle to a pole**

![Diagram of installing at an angle to a pole]

Bracket is optional item.

### 2-2 TYPES OF DETECTION METHOD

**Horizontal Detection Area 1**

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.) (*1).

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.) (*1) from the sensor installation line and that moves toward the front of the sensor. The Redscan will generate the alarm output 1 minute (*1) after the initial detection, so long as the detected object stays in the detection area.

**Horizontal Detection Area 2**

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 will detect an object that traverses the detection area. The maximum width of the detection beam is approx. 260mm (0.87 ft.) at 30m (100ft.) distance from the unit. *1 The Redscan Manager software can change this value or cancel the "non detection area" for specific applications.

**Vertical Detection Area**

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 180 degrees.

This mode creates a non detection area, 1.5 m (Approx. 5 ft.) (*1) immediately in front of the unit, in order to avoid possible false alarms caused by birds or obstructions close to the unit. Recommended installation height is from 4 m (Approx. 13 ft.) to 15 m (Approx. 50 ft.).

This mode will detect an object that traverses the detection area. The width of detection area depends on distance from the unit. The maximum width of the detection beam is approx. 260mm (0.87 ft.) at 30m (100 ft.) distance from the unit.

*1 The Redscan Manager software can change this value or cancel the "non detection area" for specific applications.

**Cautions**

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

*1: The Redscan Manager, optional setup software, can change these values.

*UL 5: The Horizontal Detection Area H1 is not to be used in the UL Listed application.
Remove the mounting bracket by moving it

Loosen 4 lock screws

Remove the mounting bracket from the main unit

Remove the cover from the main unit

Relationship between “detection distance” and mounting height and mounting angle. See diagram on page 3.

<table>
<thead>
<tr>
<th>Mounting angle</th>
<th>Position</th>
<th>Detection</th>
<th>Distance</th>
<th>Walking</th>
<th>Crawling</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°</td>
<td>(0)</td>
<td>59 (195)</td>
<td>59 (195)</td>
<td>59 (193)</td>
<td></td>
</tr>
<tr>
<td>30°</td>
<td>(2.3)</td>
<td>59 (195)</td>
<td>55 (180)</td>
<td>53 (174)</td>
<td></td>
</tr>
<tr>
<td>45°</td>
<td>(4.0)</td>
<td>59 (193)</td>
<td>55 (180)</td>
<td>53 (174)</td>
<td></td>
</tr>
</tbody>
</table>

Note >>
A running person may not be detected if the mounting angle is 0 degree.

*UL-6: Detection of a crawling or running person is not a feature of UL Listed applications.

2-3 AREA SETTING PROCEDURE

Manual

In this mode the fan like detection area is specified by the following rotary switches.
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 Fixed detection area
The detection area is fixed by the “SET” of the area and by the settings of the Size and Offset parameters. The Redscan will ignore “noise” at ground level caused by grass or small changes of the ground shape.

P2 Adaptive detection area
When an object, such as a stack of snow, is in the detection area, the Redscan will recreate the detection area around the object. Similarly, if a hole is created in the snow the Redscan will recreate the detection area to include the hole. This automatic adaptive area has a default value of +/- 1 m. (*1)

*1: The Redscan Manager, optional setup software, can change this value.

3 INSTALLATION AND ANGLE ADJUSTMENT

3-1 INSTALLING TO WALL OR CEILING PLANE

1 Remove the cover from the main unit.

2 Remove the mounting bracket from the main unit.

3 Remove the mounting bracket by moving it over the stopper while opening the bottom of the mounting bracket slightly outward.
3 Attach the mounting holes template (an accessory) onto the wall or the ceiling plane, and drill 4 mounting holes in it. Drill 2 wiring holes as required. Insert the anchor bolt (an accessory) into the mounting holes.

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 may vary the shape of the detection area of 30 m (Approx. 100 ft.) ahead by approximately 0.5 m (1.6 ft.).

4 Fix the mounting bracket on the wall or the ceiling plane. Tighten 4 fixing screws for the mounting bracket (accessories).

Rotate the bracket on screw A to the required position then tighten the fixing screws.

5 Install the cable gland.

Ensure that any unused wiring holes are covered securely with a wiring hole cap.

6 Install the main unit and fix it to the mounting bracket.

1 Install the main unit by moving it over the stopper while opening the bottom of the mounting bracket slightly outward.

2 Insert the top portion

3 Tighten 4 lock screws.

Adjust the angle of the detector before tightening screws a and b.

4 Tighten 2 cover mounting screws.

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

8 It is recommended that the optional Laser Area Checker (LAC-1) is used to adjust the mounting angle to achieve the required detection area. (Refer 3-4)

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

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

3-2 INSTALLING TO POLE
When installing the product to a pole, use the optional pole mounting bracket (RLS-PB).

Note >>
For detailed handling procedures, see the manual attached to the pole mounting bracket.
When installing the product at an angle to a wall, ceiling plane or pole, use the optional adjustable angle mounting bracket (RLS-SB).

### Points
- The mounting holes for the adjustable angle mounting bracket align with similar holes in the main unit mounting holes indicated on the mounting holes template.

### Notes
- For detailed instructions see the LAC-1 Instruction manual.

### Confirming the Location of the Laser Plane

**Horizontal Detection Area**
- Ensure that the laser beam is hitting the human target between the shoulder and hip line in all of the detection area taking into consideration the possibility that the ground level may not be flat.

**Vertical Detection Area**
- Adjust the mounting angle so that the laser beam is hitting the ground at the required location.

### Wiring

<table>
<thead>
<tr>
<th>Wire Size</th>
<th>Sensor</th>
<th>Heater</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWG20 (0.52 mm²)</td>
<td>120 (394)</td>
<td>120 (394)</td>
</tr>
<tr>
<td>AWG18 (0.83 mm²)</td>
<td>200 (656)</td>
<td>200 (656)</td>
</tr>
</tbody>
</table>

*UL-7: UL required the main unit and heater to be connected to a UL listed power supply Class 2 capable of providing a nominal input of 19.2VDC - 30VDC, 800mA and battery standby time of 4 hours. The equipment shall be installed in accordance with the National Electrical Code, NFPA 70.

*UL-8: D.Q. output shall be connected to a compatible UL Listed control unit trouble circuit.
Upon detecting an intruder, this product outputs the alarm specific to the general area (Area A1, Area A2, Area B1 or Area B2) where the intrusion happened. When combined with a CCTV camera monitoring system employing PTZ, this product works efficiently to provide early detection of intruders.

**Tamper output**

This output is enabled when the terminal cover is removed.

**Trouble output**

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anti-masking</td>
<td>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.</td>
</tr>
<tr>
<td>Anti-rotation</td>
<td>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.</td>
</tr>
<tr>
<td>Soiling of the window</td>
<td>It is activated when the front window is heavily soiled which may induce detection errors. Clean the front window using a wet cloth.</td>
</tr>
<tr>
<td>Sensor error</td>
<td>It is activated when the sensor has detected an internal self check error.</td>
</tr>
</tbody>
</table>

**Alarm output**

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).

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**4-4 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.

**4-5 HEATER POWER INPUT**

Connect 24 VAC/DC to the heater power input terminals to utilize the heater.

The heater is controlled by a thermostatic switch which turns on when the temperature drops to approx. 5 °C (41 °F), and turns off when the temperature rises to approx. 18 °C (64 °F).

**4-6 SWITCH LAYOUT**

**4-7 LED FUNCTIONS**

**In the normal operation**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Colour</th>
<th>DETECTOR STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2</td>
<td>Red</td>
<td>Area A2 alarm output</td>
</tr>
<tr>
<td>A1</td>
<td>Red</td>
<td>Area A1 alarm output</td>
</tr>
<tr>
<td>B1</td>
<td>Red</td>
<td>Area B1 alarm output</td>
</tr>
<tr>
<td>B2</td>
<td>Red</td>
<td>Area B2 alarm output</td>
</tr>
<tr>
<td>Status</td>
<td>Yellow</td>
<td>Lit during auto setup of the unit. (Turned off during normal operation.)</td>
</tr>
<tr>
<td>Power</td>
<td>Green</td>
<td>Lit when power is turned on</td>
</tr>
</tbody>
</table>

---

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

<table>
<thead>
<tr>
<th>Status</th>
<th>A2</th>
<th>A1</th>
<th>B1</th>
<th>B2</th>
<th>Status</th>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>D.Q.</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Anti-masking</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Anti-rotation</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Soiling of the window</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Sensor error</td>
<td>Error 1</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>Error 2</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>Error 3</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>Error 4</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>Error 5</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

Legend: O OFF @ Light @ Blink

4-8 INITIALIZATION TO FACTORY DEFAULT

You can restore the sensor to the factory default settings (IP ADDR 192.168.0.126) using the following procedure.

- Turn power on, and push and hold down “Set” button within 20 seconds.
- Keep holding the button down until the green power indicator is extinguished.
- Only the “Status” indicator is lit during the initialization.
- When ALL indicators are extinguished, power cycle (off/on) the Redscan.

5 SETTING HORIZONTAL DETECTION AREAS 1 AND 2

5-1 SELECTOR SWITCH OPERATION

-Detection method selection

<table>
<thead>
<tr>
<th>Func.</th>
<th>SELECTOR POSITION</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>It selects Horizontal Detection Area 1.</td>
<td></td>
</tr>
<tr>
<td>H2</td>
<td>It selects Horizontal Detection Area 2. (Factory default)</td>
<td></td>
</tr>
<tr>
<td>V</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>

-Selection of the area setting method

<table>
<thead>
<tr>
<th>Mode</th>
<th>SELECTOR POSITION</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Selects the Manual setting.</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Selects the Auto setting. (Factory default)</td>
<td></td>
</tr>
</tbody>
</table>

-Selecting the Auto mode

<table>
<thead>
<tr>
<th>Auto</th>
<th>SELECTOR POSITION</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Turns on the Auto Learning. (Factory default)</td>
<td></td>
</tr>
<tr>
<td>P2</td>
<td>Turns on the Auto Tracing.</td>
<td></td>
</tr>
</tbody>
</table>

4-8 INITIALIZATION TO FACTORY DEFAULT

-Selecting the detection sensitivity

<table>
<thead>
<tr>
<th>SELECTOR POSITION</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Approx. 150 mm (0.5 ft.) or above</td>
</tr>
<tr>
<td>M</td>
<td>Approx. 300 mm (1 ft.) or above (Factory default)</td>
</tr>
<tr>
<td>L</td>
<td>Approx. 1000 mm (3.3 ft.) or above</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>SELECTOR POSITION</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Approx. 500 mm (1.6 ft.) or above</td>
</tr>
<tr>
<td>M</td>
<td>Approx. 1000 mm (3.3 ft.) or above (Factory default)</td>
</tr>
<tr>
<td>L</td>
<td>Approx. 2000 mm (6.6 ft.) or above</td>
</tr>
</tbody>
</table>

This switch specifies the distance that the object has to move before it is considered to be an intruder.

5-2 MANUAL SETTING OF HORIZONTAL DETECTION AREA

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 detection 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 obstacles within the detection area, 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)
5-3 STARTING SECURITY PROTECTION IN MANUAL MODE

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

**Cautions >>**

In "Manual" mode, obstacles in the detection area may cause false alarms.

If there are obstacles in the detection area always use "Auto" mode.

5-4 AUTO SETTING OF HORIZONTAL DETECTION AREA

-Function of the detection area setting button

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

-Setting P1 (Auto Learning)

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: 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**

Select the desired method using the detection method selector switch.

<table>
<thead>
<tr>
<th>Func.</th>
<th>SELECTOR POSITION</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>H1</td>
<td>—</td>
</tr>
<tr>
<td>H2</td>
<td>H2</td>
<td>—</td>
</tr>
<tr>
<td>V</td>
<td>V</td>
<td>Selects the vertical detection area.</td>
</tr>
</tbody>
</table>
-Selection of the area setting method

Select the desired method using the mode selector switch.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (Manual)</td>
<td>NOT APPLICABLE</td>
</tr>
<tr>
<td>A (Auto)</td>
<td>Selects the Auto setting. (Factory default)</td>
</tr>
</tbody>
</table>

-Selecting the Auto mode

Select it using the Auto mode selector switch.

<table>
<thead>
<tr>
<th>Mode</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>Fixed detection area. (Factory default)</td>
</tr>
<tr>
<td>P2</td>
<td>Adaptive detection area.</td>
</tr>
</tbody>
</table>

-Setting the detection sensitivity

Set the detection sensitivity using the SIZE and SENS selector switches as per the following chart.

<table>
<thead>
<tr>
<th>SIZE</th>
<th>S (Approx. 250 mm (0.8 ft.) or above)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (Approx. 350 mm (1.2 ft.) or above)</td>
<td></td>
</tr>
<tr>
<td>L (Approx. 500 mm (1.6 ft.) or above)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SENS</th>
<th>H (100 ms or longer. This setting is recommended when the target object can run through the detection area)</th>
</tr>
</thead>
<tbody>
<tr>
<td>M (150 ms or longer (Factory default))</td>
<td></td>
</tr>
<tr>
<td>L (200 ms or longer)</td>
<td></td>
</tr>
</tbody>
</table>

-Setting the detection area in vertical detection area

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.

-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.

-Rotation 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. Recommended setting is 10 cm minimum.

-6-3 AUTO SETTING OF VERTICAL DETECTION AREA

Set A2

Power

Sequence of operation

<table>
<thead>
<tr>
<th>Status indicator</th>
<th>Time</th>
<th>Action of REDSCAN/Response of Walk Tester</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hold down the detection area setting button for 1 second.</td>
<td>Flashing starts</td>
<td>For 1 second</td>
</tr>
<tr>
<td>Evacuation from the area</td>
<td>Flashing (*1)</td>
<td>For 15 seconds</td>
</tr>
<tr>
<td></td>
<td>Fast flashing (*2)</td>
<td>For 10 seconds</td>
</tr>
<tr>
<td></td>
<td>ON</td>
<td>For 3 seconds</td>
</tr>
<tr>
<td></td>
<td>OFF</td>
<td>—</td>
</tr>
</tbody>
</table>

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.

*1: Flashes once a second
*2: Flashes twice a second
7-1 WALK TEST

Ensure that the detection area has been correctly set by observing the red LED indicators or by the changing pitch of the walk tester sounder.

-When a detection area has not been correctly set

1. 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.
2. Set the detection area again with reference to "5-4" for the horizontal detection area and "6-3" for the vertical detection area.

Caution>>
Conduct a walk test at least once a year.

7-2 CHANGING THE SETTINGS DURING SETUP

You can change the settings as required during the set up without the need to press the area setting button after each change.

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

<table>
<thead>
<tr>
<th>Function</th>
<th>AUTO MODE (Press Detection area setting button to initiate)</th>
<th>MANUAL MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>AUTO MODE</td>
<td>MANUAL MODE</td>
</tr>
<tr>
<td></td>
<td>P1</td>
<td>P2</td>
</tr>
<tr>
<td>H1</td>
<td>Automatically learns the detection area within 1 m (&quot;1&quot;) x area set by Rough alignment rotary switches and Fine adj. potentiometers</td>
<td>N/A</td>
</tr>
<tr>
<td>H2</td>
<td>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</td>
<td>Detection area is the Area set by Rough alignment rotary switches and Fine adj. potentiometers</td>
</tr>
<tr>
<td>V</td>
<td>Automatically adapts to the changing shape of the ground area below the REDSCAN</td>
<td>N/A</td>
</tr>
</tbody>
</table>

*1: The Redscan Manager, optional setup software, can change this value.

7-3 SYSTEM FUNCTION AFTER POWER FAILURE

The REDSCAN setup is not lost after a power interruption.

8 IP CONNECTION WITH REDSCAN

8-1 DEFAULT SETTINGS

- IP address: 192.168.0.126 (Can be changed)
- Subnet mask: 255.255.255.0 (Can be changed)

8-2 REDSCAN MANAGER (Ver.4.0.0.0 or later)

(Optional Setup Software, attached to RLS-AT)

REDSCAN Manager is a software program that allows you to configure various settings easily via a local network when installing the REDSCAN unit or performing maintenance work. REDSCAN Manager can register and manage the REDSCAN unit located within the local network and display the area information and the switch setting information obtained from the REDSCAN unit. Also, it enables you to change the obtained detection area and switch settings and set them back into the REDSCAN unit.

REDSCAN Manager also provides the following useful functions. Selectable application template

*Outdoor (Default)
*Indoor
*Indoor Ceiling / Wall Protection
*Vehicle Detection
*Fence/Wall top Protection
*Limiter Detection

Selectable detection area pattern
*4 zone / 8 zone
*Various zone template
*Advanced area setting (Area masking / Area Allocating)

Activating / Inactivating functions
*Environmental resistance function
*Alarm hold function
*Anti-masking function
*Anti-rotating function
*Soiling of the window function
*D.Q. function

Customize parameters
*Detection width adjustment in H1 mode
*Auto adjustment height in V mode
*Non detection area adjustment in V mode

Redwall Event Code setup
*Protocol
*Destination IP address

Note >>
For detailed features and operations, see the help attached to the REDSCAN Manager. These functions are supported by REDSCAN Manager Ver. 4.0.0.0 or later.

8-3 REDWALL EVENT CODE

REDSCAN generates event codes which can be used by a NVR or VMS software to control PTZ cameras and other devices. Redwall event code can be sent to the assigned port using UDP or TCP protocol. The default port number is "1234".

Code format

```
"RLS126 MO A2 Y1 Y2 Y3 Y10"
```

Address of the REDSCAN

<table>
<thead>
<tr>
<th>Status Code/Clear Code</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y1</td>
<td>MO/CL</td>
</tr>
<tr>
<td>Y3</td>
<td>AA-BB</td>
</tr>
<tr>
<td>Y4</td>
<td>CC</td>
</tr>
<tr>
<td>Y5</td>
<td>DQ/dq</td>
</tr>
<tr>
<td>Y6</td>
<td>AR/ar</td>
</tr>
<tr>
<td>Y7</td>
<td>AM/arm</td>
</tr>
<tr>
<td>Y8</td>
<td>TR/tr</td>
</tr>
<tr>
<td>Y9</td>
<td>SO/so</td>
</tr>
<tr>
<td>Y10</td>
<td>TA/ta</td>
</tr>
</tbody>
</table>
9 SPECIFICATIONS

9-1 SPECIFICATIONS OF THE MAIN UNIT

<table>
<thead>
<tr>
<th>Model</th>
<th>RLS-3060SH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detection method</td>
<td>Infrared Laser Scan</td>
</tr>
<tr>
<td>Laser protection class</td>
<td>Class I IEC / EN60825-1 Second edition 2007 Class I FDA 21 CFR 1040.10,1040.11 (Laser Notice No.50)</td>
</tr>
<tr>
<td>Wavelength of laser emission</td>
<td>905 nm (infrared laser)</td>
</tr>
<tr>
<td>Coverage for vertical mounting</td>
<td>Radius: 30 m (Approx. 100 ft.), Arc: 180°</td>
</tr>
<tr>
<td>Coverage for horizontal mounting</td>
<td>MAX. 60 m (Approx. 200 ft.)</td>
</tr>
<tr>
<td>Detection resolution</td>
<td>0.25°</td>
</tr>
<tr>
<td>Power input</td>
<td>19.2-30V DC / 24V AC ± 10% (*UL-9)</td>
</tr>
<tr>
<td>Current draw</td>
<td>400 mA(24V DC) 600mA(24VAC) (*UL-9)</td>
</tr>
<tr>
<td>Heater power input</td>
<td>19.2-30V DC / 24V AC ± 10% (*UL-9)</td>
</tr>
<tr>
<td>Heater current draw</td>
<td>400 mA(24V AC/DC) (*UL-9)</td>
</tr>
<tr>
<td>Vertical mounting height</td>
<td>From 4 m (Approx. 13 ft.) to 15 m (Approx. 50 ft.) (recommended)</td>
</tr>
<tr>
<td>Horizontal mounting height</td>
<td>0.7 m (28 in.) (recommended)</td>
</tr>
<tr>
<td>Communication port</td>
<td>Ethernet, RJ-45, 10BASE-T/100BASE-TX</td>
</tr>
<tr>
<td>Protocol</td>
<td>UDP, TCP/IP *Redwall event code</td>
</tr>
<tr>
<td>Walk tester com. port</td>
<td>Special terminal for optional walk tester, AWT-3</td>
</tr>
<tr>
<td>Area alarm output</td>
<td>N.O. 28V DC, 0.2A × 4 outputs</td>
</tr>
<tr>
<td>Master alarm output</td>
<td>Form C, 28V DC, 0.2A max.</td>
</tr>
<tr>
<td>Trouble output</td>
<td>Form C, 28V DC, 0.2A max.</td>
</tr>
<tr>
<td>Tamper output</td>
<td>N.C. 28V DC, 0.1A max</td>
</tr>
<tr>
<td>Environmental disqualification circuit</td>
<td>Form C, 28V DC, 0.2A max.</td>
</tr>
<tr>
<td>Alarm period</td>
<td>Approx. 2 sec. Off delay time r</td>
</tr>
<tr>
<td>Warm-up period</td>
<td>Approx. 30 sec.</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>-20 ~ +60 °C (-4 ~ +140 °F)</td>
</tr>
<tr>
<td>Operating temperature with heater</td>
<td>-40 ~ +60 °C (-40 ~ +140 °F)</td>
</tr>
<tr>
<td>IP rating</td>
<td>IP66 (*UL-10)</td>
</tr>
<tr>
<td>Dimensions (H × W × D)</td>
<td>334 × 144 × 155 mm (13.2 × 5.7 × 6.1 in.)</td>
</tr>
<tr>
<td>Weight</td>
<td>2.5 kg (88 oz)</td>
</tr>
<tr>
<td>Accessories</td>
<td>Mounting screw, anchor fixing for wall, mounting holes template, cable gland and installation instructions</td>
</tr>
</tbody>
</table>

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

*UL-9: AC power input shall not be used for UL Listed application.

9-2 DIMENSIONAL DRAWING

9-3 OPTIONS

AWT-3 : Audio Walk Tester
RLS-PB : Pole mount bracket
RLS-SB : Adjustable angle mounting bracket
LAC-1 : Laser area checker
RLS-AT : Redscan Adjusting Tools
(Laser area checker and Redscan Manager software)

Conversion Table (meter to feet)

<table>
<thead>
<tr>
<th>m</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
<th>12</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>ft.</td>
<td>0.0</td>
<td>3.3</td>
<td>6.6</td>
<td>13.1</td>
<td>19.7</td>
<td>26.2</td>
<td>32.8</td>
<td>39.4</td>
<td>45.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>m</th>
<th>16</th>
<th>18</th>
<th>20</th>
<th>22</th>
<th>24</th>
<th>26</th>
<th>28</th>
<th>30</th>
</tr>
</thead>
<tbody>
<tr>
<td>ft.</td>
<td>52.5</td>
<td>59.1</td>
<td>66.6</td>
<td>72.2</td>
<td>78.7</td>
<td>85.3</td>
<td>91.9</td>
<td>98.4</td>
</tr>
</tbody>
</table>

EMC Directive 2004/108/EC
EN55022:2006
EN50121-4:2006

OPTEX INCORPORATED (USA)
TEL: +1-909-993-5770
Tech: (800)966-7839
URL: http://www.optexamerica.com/

OPTEX CO., LTD. (JAPAN)
5-8-12 Ogoto Otsu Shiga 520-0101 JAPAN
TEL: +81-77-759-0570
URL: http://www.optex.co.jp/en/

OPTEX (EUROPE) LTD.(UK)
TEL: +44-1628-631000
URL: http://www.optex-europe.com/

OPTEX SECURITY SAS (FRANCE)
TEL: +33-437-55-50-50
URL: http://www.optex-security.com/

OPTEX SECURITY Sp.z o.o. (POLAND)
TEL: +48-22-598-68-55
URL: http://www.optex.com.pl/

OPTEX Pinnacle India Private Limited
TEL: +91-124-4035704
URL: http://www.optexnet.in/

OPTEX SECURITY KOREA CO., LTD. (KOREA)
TEL: +82-2-719-5971
URL: http://www.optexkorea.com/

OPTEX (DONGGUAN) CO., LTD.
SHANGHAI OFFICE (CHINA)
TEL: +86-21-34600673
URL: http://www.optexchina.com/
D.Q. OUTPUT (ENVIRONMENTAL DISQUALIFICATION)

The algorithm specific to REDSCAN allows detection of an intruder during fog. However, during severe conditions such as heavy rain, dense fog or snow storms the Redscan detection capability may be reduced. During such conditions, the Enviromental DisQualification (D.Q.) output will be activated. When this output is activated, other solutions are required to secure the area.

UL-11: D.Q.output shall be connected to a compatible UL Listed control unit trouble circuit.

A. Alarm Output + D.Q. Output <RECOMENDED SYSTEM>

B. Bypass Alarm when DQ is activated

C. Bypass Alarm when DQ is activated + D.Q. Output

Note: With this connection, when the D.Q. output is activated, the alarm circuit is held closed.

UL-12: This connection shall not be used for UL Listed installation application.

NOTES: Options B and C above, should only be used in cases where high numbers of false alarms are being encountered during adverse weather conditions.