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.

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.

- 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 “×” 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.

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
Bracket is optional item.

Installing to a pole
Bracket is optional item.

Installing at an angle to a wall
Bracket is optional item.

Installing at an angle to a pole
Bracket is optional item.

Installing to a ceiling plane
Bracket is optional item.

Installing at an angle to a ceiling plane
Bracket is optional item.

2-2 TYPES OF DETECTION METHOD

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

- 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 80 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 (*) after the initial detection, so long as the detected object stays in the detection area.

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.

- 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 detects intrusion into the detection area from any direction.

The Redscan will generate the alarm output 1 minute (*) after the initial detection, so long as the detected object stays in the detection area.

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

- 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 80 degrees.

This mode creates a non-detection area, 5 m (Approx. 5 ft.) (*) 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.

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

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

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.
### 2-3 AREA SETTING PROCEDURE

The Manual and Auto modes are available for setting the area. The Auto setting procedure comprises two options; 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 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 A, A2, B 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.

### 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 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.

Set the lower end of the paper template at a position at least 0.7 m (28 in.) above 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.).

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.

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

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

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 11, 12 and 17, 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).

Stainless belt (Included with the pole mounting bracket)

Note >>
For detailed handling procedures, see the manual attached to the pole mounting bracket.
3-3 INSTALLING AT AN ANGLE TO WALL, CEILING PLANE OR POLE

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.

**Wall**

**Ceiling plane**

The angle varies according to the bolt insertion position.

**30°**

**45°**

**40°**

**30°**

**20°**

**0°**

**Pole**

**Stainless belt**

(included with adjustable angle mounting bracket)

**Adjustable angle mounting bracket**

Note >>
For detailed instructions see the LAC-1 Instruction manual.

3-4 CONFIRMATION OF LOCATION OF THE LASER PLANE

It is recommended that the optional Laser Area Checker (LAC-1) is used to confirm 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.

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

4 PARTS LAYOUT INSIDE THE COVER AND THEIR FUNCTIONS

4-1 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>60  (197)</td>
</tr>
<tr>
<td>AWG18 (0.83 mm²)</td>
<td>200  (656)</td>
<td>100  (328)</td>
</tr>
</tbody>
</table>

Power wires should not exceed the following lengths.

Cautions >>
Power for the heater is separately from the power to the Redscan.
If the power for the Redscan and the Heater is supplied from the same power supply, ensure that sufficient power is provided for both. See 9- specifications for power requirements.

4-2 SIGNAL OUTPUT

**-D.Q. output**
The algorithm specific to REDSCAN allows for detection during foggy conditions. However, during severe conditions such as heavy rain, dense fog or snow storms the Environmental DisQualification (EDQ) output is activated.

Refer to the end of this manual for the connection example.
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.

**-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).

**-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>

**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></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-masking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anti-rotation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soiling of the window</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sensor error</td>
<td>Error 1</td>
<td></td>
<td></td>
<td></td>
<td>Error 2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Error 3</td>
<td></td>
<td></td>
<td></td>
<td>Error 4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Error 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Legend: 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>

- 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>

Size

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

Sens.

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: 4 m” in a location where the radius is 30 m or more without obstacles within the detection area, the following detection areas will result.

Area A: Detection area

Factory default: 30 m (Approx. 100 ft.)

- 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. Recommended setting is 10 cm minimum.

Offset
Factory default: Approx. -0.5 m

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)

- Setting P2 (Auto Tracing)

*3: Flashes three 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.

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.
**-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</td>
<td>NOT APPLICABLE</td>
</tr>
<tr>
<td>A</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>SELECTOR</th>
<th>POSITION</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>A</td>
<td>A</td>
<td>Fixed detection area. (Factory default)</td>
</tr>
<tr>
<td>P2</td>
<td>A</td>
<td>A</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>SELECTOR</th>
<th>POSITION</th>
<th>FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td></td>
<td>Approx. 250 mm (0.8 ft.) or above</td>
</tr>
<tr>
<td>M</td>
<td></td>
<td>Approx. 350 mm (1.2 ft.) or above (Factory default)</td>
</tr>
<tr>
<td>L</td>
<td></td>
<td>Approx. 500 mm (1.6 ft.) or above</td>
</tr>
</tbody>
</table>

**-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. Recommended setting is 10cm minimum.

**-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.

**-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.

**-6-2 SETTING 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.

**-6-3 AUTO SETTING OF VERTICAL DETECTION AREA**

Set it using the Auto mode selector switch.

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

**Sequence of operation**

- Hold down the detection area setting button for 1 second.
- Evacuation from the area
- Fast flashing (1)
- ON
- OFF

**Action of REDSCAN Response of Walk Tester**

- Pitch of Walk Tester sound changes for 2 seconds
- Scan of the detection area is executed
- Security protection of the detection area is started

**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

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 "B2" for the horizontal detection area and "B3" for the vertical detection area.

7-2 CHANGING THE SETTINGS DURING SETUP

You can change the settings as required during the setup 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</th>
<th>MANUAL MODE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Press Detection area setting button to initiate)</td>
<td></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 (*1) x area set by Rough alignment rotary switches and Fine adj. potentiometers</td>
<td></td>
</tr>
<tr>
<td>H2</td>
<td>Automatically learns the detection area within the area set by Rough alignment rotary switches and Fine adj. potentiometers</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>
</tr>
<tr>
<td>V</td>
<td>Automatically learns the detection area within the area set by Rough alignment rotary switches and Fine adj. potentiometers</td>
<td>Automatically adapts to the changing shape of the ground area below the REDSCAN</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

(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

- Selectable detection area pattern
  - 4 zone / 8 zone
  - Various zone template

- Activate / Inactivate functions
  - Environmental resistance function
  - Alarm hold function
  - Anti-masking function
  - Anti-rotating function
  - Sooting 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.

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</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y1</td>
<td>MO       Master alarm</td>
</tr>
<tr>
<td>Y2</td>
<td>A1-B2    Latest alarm</td>
</tr>
<tr>
<td>Y3</td>
<td>AA-AB    Multiple alarms</td>
</tr>
<tr>
<td>Y4</td>
<td>CC       Multiple alarms</td>
</tr>
<tr>
<td>Y5</td>
<td>DQ       Environmental disqualification</td>
</tr>
<tr>
<td>Y6</td>
<td>AR       Anti-rotation</td>
</tr>
<tr>
<td>Y7</td>
<td>AM       Anti-masking</td>
</tr>
<tr>
<td>Y8</td>
<td>TR       Trouble</td>
</tr>
<tr>
<td>Y9</td>
<td>SO       Soiling of the window</td>
</tr>
<tr>
<td>Y10</td>
<td>TA       Tamper</td>
</tr>
</tbody>
</table>
### 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 1 IEC / EN60825-1 Second edition 2007 Class I FDA 21CFR 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>24V AC/DC ±10%</td>
</tr>
<tr>
<td>Current draw</td>
<td>400 mA (24VDC) 600 mA (24VAC)</td>
</tr>
<tr>
<td>Heater power input</td>
<td>24V AC/DC ±10%</td>
</tr>
<tr>
<td>Heater current draw</td>
<td>400 mA (24V AC/DC)</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 max.</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 timer</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</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.

---

### 9-2 DIMENSIONAL DRAWING

![Dimensional Drawing](image_url)

### 9-3 OPTIONS

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AWT-3</td>
<td>Audio Walk Tester</td>
</tr>
<tr>
<td>RLS-PB</td>
<td>Pole mount bracket</td>
</tr>
<tr>
<td>RLS-SB</td>
<td>Adjustable angle mounting bracket</td>
</tr>
<tr>
<td>LAC-1</td>
<td>Laser area checker</td>
</tr>
<tr>
<td>RLS-AT</td>
<td>Redscan Adjusting Tools</td>
</tr>
</tbody>
</table>

(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>65.6</td>
<td>72.2</td>
<td>78.7</td>
<td>85.3</td>
<td>91.9</td>
<td>98.4</td>
</tr>
</tbody>
</table>

---

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**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 Environmental DisQualification (D.Q.) output will be activated. When this output is activated, other solutions are required to secure the area.

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.

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