FEATURES

- Battery operated detector
- D size lithium battery or CR123A lithium battery (OPTION CRH-5)
- Simplified optical adjustment
- IR signal transmission technology transfers the low battery signal to the receiver
- Sniper View Finder with ×2 magnification
- Possible to connect the power and alarm cables to both the receiver and the transmitter or either of them
- OPT-5
- Slim body design
- Easy to see vivid interior color for optical alignment
- Various options (Refer to page 4.)
- IP65 waterproof structure
- Tamper function
- Indicator LED for an easy alignment

INTRODUCTION

1-1 BEFORE YOUR OPERATION

- Read this instruction manual carefully prior to installation.
- After reading, store this manual carefully in an easily accessible place for reference.
- This manual uses the following warning indications for correct use of the product, harm to you or other people and damage to your assets, which are described below. Be sure to understand the description before reading the rest of this manual.

**Warning**
Indicates a potentially hazardous situation which, if not avoided, will result in minor to moderate injury, or may result in serious injury or death. Additionally there may be significant property damage.

**Caution**
Indicates a potentially hazardous situation which, if not avoided, may result in minor to moderate injury or in 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.

This symbol indicates recommendation.

1-2 PRECAUTIONS

- Do not install the unit on an unstable surface.
- Do not install the pole in a location where sufficient stability cannot be ensured.
- Do not install the unit in trees, leaves, or other objects that may swing in the wind and block the beam.
- Do not install the receiver in a location where it is exposed to direct sunlight.
- Do not allow the infrared beam from another detector to reach the receiver.
- Install the unit at a height where an object can be detected without fail.

1-3 PARTS IDENTIFICATION

Detector power source

<table>
<thead>
<tr>
<th>Battery type</th>
<th>D size</th>
<th>CR123A</th>
<th>For Wireless transmitter</th>
<th>CRH-5</th>
<th>BCU-5</th>
<th>PCU-5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wireless</td>
<td>4 pcs.</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>4 pcs.</td>
<td>–</td>
<td>Need</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Wired</td>
<td>–</td>
<td>16 pcs.</td>
<td>No</td>
<td>2 sets</td>
<td>1 set</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>–</td>
<td>16 pcs.</td>
<td>Need</td>
<td>2 sets</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>

1 M (3.3 ft.) away from the wall or fence that may be running parallel to the beam.

2 PREPARATIONS
3 INSTALLATION

3-1 SEPARATING

1. Remove the battery cover.
2. Remove the main unit mounting bracket.
3. Loosen the main unit cover lock screw.
4. Take the main unit out of the back box.
5. Remove the main unit from the back box.

Caution

- Do not place the main unit where it is exposed to direct sunlight. Doing so may cause damage to the product.

3-2 WALL MOUNTING

1. Using a screwdriver or similar tool, break the knockout position (+2) in the back box as shown.

Knockout position

- WALL
- POLE (1)
- POLE (2)

2. Mount the back box to the wall.

Distance from the side wall: at least 1m

3. Using Velcro tape, fix the wireless transmitters in the back box. For more information on wiring, see "3-5 WIRING" on page 3.

4. Mount the main unit.

Note:

- When using BCU-4 (option), refer to BCU-4 manual.

5. Attach the connectors.

6. Insert/replace batteries.
   - When using D size battery:
     1. Open the battery plate in the direction of the arrow.
     2. Insert the two batteries into their compartment. Ensure the positive terminals are facing toward the front.
     3. Close the battery plate.
   - When using CR123A battery:
     1. Open the battery plate in the direction of the arrow.
     2. Set CR123A in the CRH-5 and insert two CRH-5 into their compartment. Ensure the positive terminals are facing toward the front.
     3. Connect the CRH-5 male connectors to the female connectors of the battery plate.

Note:

- Avoid placing the cables in a position where they can be caught between the main unit and cover.

Warning

- Do not mix D size lithium batteries with CRH-5 batteries.
- Do not mix batteries that have different levels of power remaining (i.e., new and used batteries or batteries of different manufacturers). Not observing the above may result in an explosion, leakage of electrolyte, emission of toxic gases or other outcomes that may be harmful to people and property.

7. Close the main unit cover.

8. Referring to "4 SETTING" on page 3, perform the necessary settings.

9. Close the battery cover.

Caution

- Do not touch the optical unit when mounting the cover. Otherwise, the resulting shift of the optical axis may result in malfunction of the unit and require readjustment.

- When closing the cover, be careful that the cables are not caught by the cover.

3-3 POLE MOUNTING

1. Using the guide below, break the knockout positions (+2) in the back box with a screwdriver.

Knockout position

- WALL
- POLE (1)
- POLE (2)

Caution

- If you accidentally open an unnecessary knockout, be sure to fill the knockout. Not doing so may result in waterproof failure and malfunction of the product.

2. Fix the back box on the pole.

Instruction condition

Detector No. 1
Detector No. 2

One detector
POLE (1)

Two detectors in opposing directions
POLE (1)
POLE (2)

- Do not mix D size lithium batteries with CRH-5 batteries.
- Do not mix batteries that have different levels of power remaining (i.e., new and used batteries or batteries of different manufacturers). Not observing the above may result in an explosion, leakage of electrolyte, emission of toxic gases or other outcomes that may be harmful to people and property.

Disposal method for batteries

Dispose of used batteries in accordance with local government regulations/law and EU Battery Directive (2006/66/EU).

- Do not mix D size lithium batteries with CRH-5 batteries.
- Do not mix batteries that have different levels of power remaining (i.e., new and used batteries or batteries of different manufacturers). Not observing the above may result in an explosion, leakage of electrolyte, emission of toxic gases or other outcomes that may be harmful to people and property.

Warning

- Do not mix D size lithium batteries with CRH-5 batteries.
- Do not mix batteries that have different levels of power remaining (i.e., new and used batteries or batteries of different manufacturers). Not observing the above may result in an explosion, leakage of electrolyte, emission of toxic gases or other outcomes that may be harmful to people and property.
3-4 MOUNTING EXAMPLE AT PARTICULAR CASE

1 Avoid installing the transmitter and receiver facing each other through the corner of the cover.

2 In doing this installation, the maximum detection range shall be half of the original detection range. (This is to compensate the attenuation of beam by the corner of the cover.)

3-5 WIRING

Receiver

Main unit

Back box

Power

Main control

Alarm

Low battery

Tamper

Transmitter

Main unit

Back box

Power

Main control

Alarm

Low battery

Wireless Transmitter

4 SETTINGS

4-1 FUNCTIONS

DIP SWITCH (factory default)

Receiver

SELECTOR

POSITION

SL-TNR

1 2 3 4

Note>>

Do not press the tamper when you set the DIP switches. Otherwise the settings will not be actually changed.

1 BEAM INTERRUPTION ADJUSTMENT

Beam interruption adjustment switch 1

Beam interruption adjustment switch 2

Battery saving timer switch

Intermittent output function switch

Note>>

When using BCU-5 (option), be sure to change due to the battery saving timer setting. Whenever the beam is interrupted, the indicator will turn ON.

SL-TNR

1 2 3 4

Note>>

When making the adjustments by the monitor jack, be sure not to disturb the optical unit with your hand, the voltmeter pin cord, etc.

2 BATTERY SAVING TIMER

The battery saving timer enforces 2 min intervals between alarm outputs. If the site of security involves a lot of traffic or is intruded by people over a detection zone, wireless transmitters may wear out batteries quickly. The battery saving timer cancels alarms for two minutes after the initial output, preserving powers of wireless transmitters.

4-2 OPTICAL ALIGNMENT

Optical alignment is an important procedure to increase reliability. Be sure to take alignment step 1 through 2 described below to attain the maximum level of the output through the monitor jack.

1 Look into the viewfinder and perform fine alignment of the horizontal and vertical angles using the alignment dial.

Note>>

How to look into the viewfinder

From right side

Left eye

From left side

Right eye

Horizontal alignment

Vertical alignment

Note>>

When using BCU-5 (option), install a wireless transmitter in each of them. When the low battery levels are monitored for both the receiver and transmitter centrally, install a wireless transmitter in only the receiver.

2 INTERMITTENT OUTPUT FUNCTION

Intermittent output function enforces outputs to reset while beams continue to be interrupted. This function is effective if your wireless transmitters do not have supervised features to monitor relay status. Intermittent output function repeats alarms with intervals to let the system be aware of interrupted status.

3-6 WIRING

This unit used to enable wired operation. For more information on connecting, see PCU-5 manual.

Receiver

Main unit

Back box

Power

Low battery

Wireless Transmitter

Note>>

Route the cables through the center hole.

3-6 MOUNTING EXAMPLE AT PARTICULAR CASE

- 3 -
PROBLEM | POSSIBLE CAUSE | CORRECTIVE ACTION
--- | --- | ---
Power/Low battery indicator LEDs are not illuminated. | Transmitter/receiver | Reversed battery polarity. Check the battery polarity.
Alarm is not output. | | Reflection from the floor or wall. Align beams away from the floor or wall.
Beam has not been blocked. | | Block all two beams.
When the beam is blocked, the ‘ALARM’ indicator LED is illuminated but the alarm is not activated. | | Signal line short-circuited. Check the wiring.
Alarm is activated even if the light is not blocked. | | Intermittence time is too short. See “4-1 BEAM INTERRUPTION ADJUSTMENT” on page 3, set an appropriate interruption time.
Alarm is not output. | | Surface of Transmitter/Receiver cover soiled. Clean the cover (wipe the cover with a soft cloth dampened with water or diluted neutral detergent).
Optical alignment was not performed properly. | | Optical alignment not optimized. See “4-2 OPTICAL ALIGNMENT” on page 3 and make realignment.
Batteries are running out too quickly. | | Problem with tamper output. Set the cover properly.
Frost, snow or heavy rain causes false alarm. | | Optical alignment not optimized. See “4-2 OPTICAL ALIGNMENT” on page 3 and make realignment.
Improper output | | Problem with wiring. Install the correct wiring.
Even if new batteries are used, Low battery indicator LED is ON. | | Batteries are inactive condition. Open and close the battery cover 20 times with two seconds intervals. After this, open the battery plate and then close it.

5-2 OPERATION CHECK
After installation is complete, be sure to check the operation.
1. Make sure that the Alarm/Level indicator LED is OFF.
2. If it is illuminated even when the beams are not blocked, make optical alignment again.
3. Check that the Power/Low battery indicator LEDs on both transmitter and receiver are ON.
4. If the Power/Low battery indicator LED is blinking, the battery power is low.
5. Replace with new batteries.
6. Conduct a walk test to check that Alarm/Level indicator LED on the receiver turns ON as the walker interrupts the beams.

6 TROUBLESHOOTING

7 DIMENSIONS

8 SPECIFICATIONS

Model | SL-100TNR | SL-200TNR
--- | --- | ---
Maximum detection range | 30 m/100 ft. | 60 m/200 ft.
Maximum arrival distance | 265 m/800 ft. | 530 m/1740 ft.
Detection method | Twin infrared beam interruption detection | Twin infrared beam interruption detection
Intermittence time | Variable between 50/100/250/500 ms (4 steps) | Variable between 50/100/250/500 ms (4 steps)

Power source
3.9 VDC
- D size lithium batteries (SB-D202HP manufactured by VITZROCELL)
- CR123A lithium batteries

Current draw
3.9 VDC
- Total: Approx. 500 μA (Transmitter: Approx. 200 μA, Receiver: Approx. 300 μA)
- Total: Approx. 600 μA (Transmitter: Approx. 300 μA, Receiver: Approx. 300 μA)

3.0 VDC
- Total: Approx. 600 μA (Transmitter: Approx. 200 μA, Receiver: Approx. 400 μA)
- Total: Approx. 700 μA (Transmitter: Approx. 300 μA, Receiver: Approx. 400 μA)

Battery life (SB-D202HP by VITZROCELL) | Transmitter | Receiver
--- | --- | ---
Approx. 6 years | Approx. 5 years

Battery life (CR123A by Panasonic) | Transmitter | Receiver
--- | --- | ---
Approx. 1.5 years | Approx. 1 year

Output
- Alarm output: Form C-Solid State Switch: 3.9 VDC, 0.01 A
- Alarm period: 2 s (at)
- Low battery output: N.C. (Solid State Switch): 3.9 VDC, 0.01 A
- Cover tamper output (Receiver): N.C. (Solid State Switch): 3.9 VDC, 0.01 A
- Opens when the battery cover removed.

Indicator LED
- Alarm/ Level indicator (Receiver): ON: Beam not received (Transmitter: Power OFF)
- Blinking: Beam not received sufficiently
- OFF: Beam received
- Power/ Low battery indicator (Transmitter and Receiver): ON: Power ON
- Blinking: Voltage reduction
- OFF: Power OFF

Operating temperature | -20°C to +60°C (-4°F to 140°F)
Operating humidity | 95 % (max.)
Alignment angle | ±4° (horizontal), ±5° vertical
Dimension | H × W × D (mm): 295 (11.6) × 69 (2.7) × 117 (4.6)
Weight | 1200 g (Total weight of Transmitter + Receiver, excluding accessories)
International protection | IP65

Specifications and design are subject to change without prior notice.
* The value is based on the condition that it is used within the ambient temperature range of 20 to 25°C.
** Using batteries other than those recommended may shorten the battery life.