

# PrecisionLine™ RCR-PET

## Dual Technology Motion Sensor

### Installation Instructions

#### Description

PrecisionLine™ dual technology motion sensors combine range-controlled radar (RCR) technology with a passive infrared (PIR) system to increase false alarm immunity by allowing them to sense human-sized objects within a specified range. Both the RCR and PIR systems must be triggered to set off an alarm.

The sensor is designed to use a 12VDC power supply provided by an alarm control panel.

#### Features

The sensor provides the following features:

- **Pet Immune up to 80 lbs.**
- **Selectable range up to 35 feet (10.7m)** - Internal jumper allows radar range selection to optimize coverage.
- **LED indicator** - A multi-color LED provides detector status.
- **Opaque Fresnel lens** - Blocks visible light.

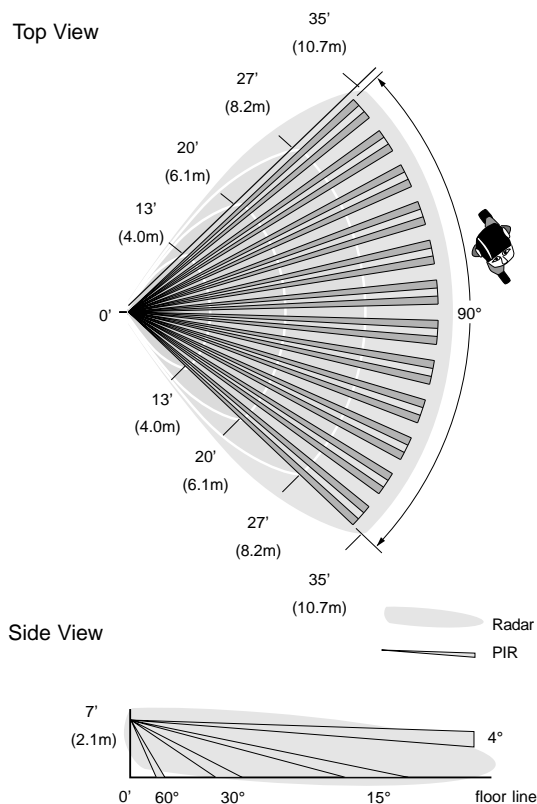


Figure 2 - RCR and PIR Coverage Patterns

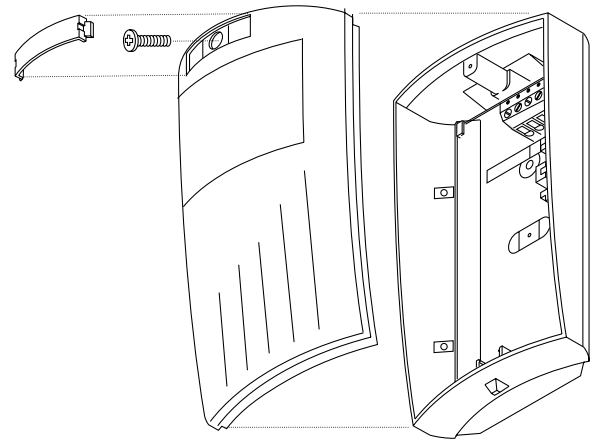


Figure 1. Sensor (exploded)

#### Parts

The following parts are included with the sensor:

- RCR-PET sensor
- 1 screw to join the case halves
- 2 factory-installed jumpers

#### Selecting a Location for the Sensor

The sensor can be mounted in a corner or on a flat wall. Use the following guidelines to determine the best location to install the sensor:

- Mount the sensor so the expected movement of an intruder is within a 90-degree radius in front of the sensor. See Figure 2.
- Mount the sensor on a stable surface 7 to 8 feet (2.1 to 2.4m) high.
- DO NOT mount the sensor within 2 feet (0.6m) of metallic objects.
- DO NOT place objects in front of the sensor that may prevent a clear line of sight.
- Avoid locations that expose the sensor to possible false alarm sources such as:
  - Moving or vibrating objects (fans, pulleys, conveyor belts)
  - Electronic fields (electric motors, high voltage equipment)
  - Water spray or corrosive environments
  - Heat sources (heaters, radiators) in the field of view
  - Windows in the field of view
  - Strong air drafts on the sensor (fans, air conditioners)

- When installing multiple sensors:
  - DO NOT mount sensors facing each other.
  - Mount them at least 40 feet (12.2m) apart.
  - Mounting sensors back to back is not recommended, but if an application requires such mounting, use the 13-foot (4.0m) range, mount at least 1 foot (0.3m) apart, and walk test the installation to ensure proper operation.

## Installing the Sensor

All wiring must conform to the National Electric Code (NEC) and/or local codes having jurisdiction.

**Important: DO NOT use this device for safety interlock applications.**

Use the following steps to install the sensor:

1. Run the security system wiring to the sensor location.
2. Lift off the front cover/electronic module. Remove the nameplate and loosen the screw if necessary. See Figure 1.



### CAUTION

**You must be free of all static electricity before handling sensor circuit boards. Touch a grounded, bare metal surface before touching circuit boards or wear a grounding strap.**

3. If necessary, set the jumpers on the circuit board. See *Setting the Jumpers*.
4. Remove the appropriate wiring and mounting knockouts from the back cover. The sensor can be mounted on a flat wall or in a corner. See Figure 3.
5. Pull the wires through the knockout holes and use the two screws provided to attach the base to the wall. Use screw anchors if necessary.
6. Strip 1/4 inch (6.4 mm) of insulation from each wire.
7. Run each wire through the strain relief and under the appropriate screw terminals on the base and tighten the screws. See Figure 3.
8. Line up the tabs on the bottom of the cover/electronic module with the corresponding tabs on bottom of the base and snap the cover/electronic module firmly down onto the base.
9. Tighten the screw and replace the nameplate. See Figure 1.
10. Apply power. The LED should light green for approximately 25 seconds and then go out.
11. Walk test the coverage pattern as follows:
  - Walk throughout the intended coverage area.
  - Verify the sensor alarms. See *Understanding the LED*.

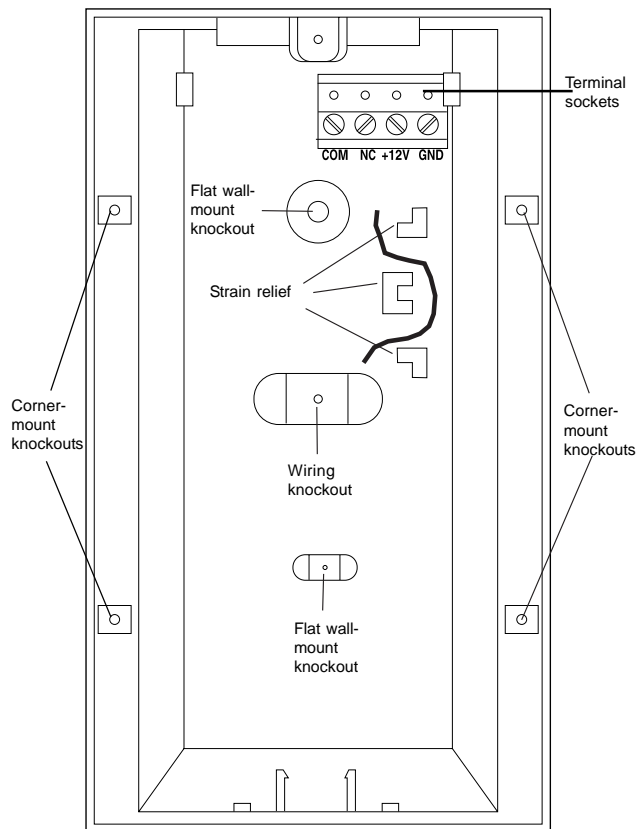


Figure 3. Sensor Base

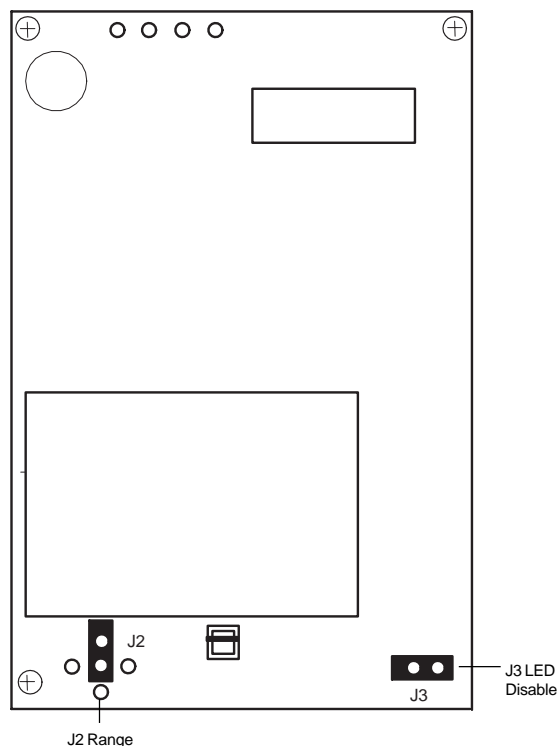


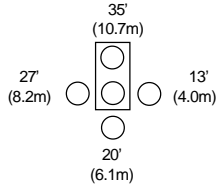
Figure 4. Main Circuit Board

## Setting the Jumpers

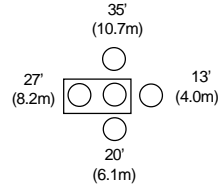
The sensor provides jumpers to select the detection range and LED operation. See Figure 4.

**J2 Range** - Use the jumper to cover the center pin and the pin indicating the desired range. No jumper = 27 feet (8.2m) and under.

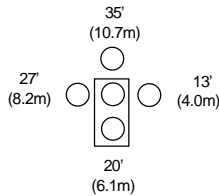
35 feet (10.7m) and under  
**(Factory default)**



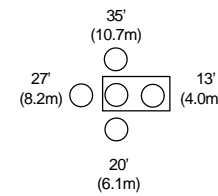
27 feet (8.2m) and under



20 feet (6.1m) and under

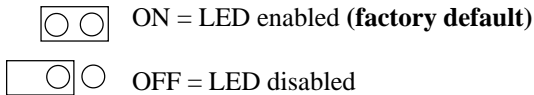


13 feet (4.0m) and under



**Important:** You need to set J2 as close to the intended coverage range as possible. Overshooting the coverage area may cause false alarms.

**J3 LED** -



## Pet Immunity

When mounted properly, the RCR-PET sensor provides false alarm immunity to dogs and similar animals. The size and temperature of the animal, which is affected by the length of the animal's coat, affects the immunity to false alarms. Dogs vary in body temperature by breed, a very warm-blooded dog with short hair will not be as immune to false alarms as a similar sized dog with long hair. Therefore, the acceptable short hair dog is limited to a smaller (lighter) weight dog. See the examples listed in the following table:

Long hair (2" long) up to 80 lbs.	Medium hair (1.5" long) up to 50 lbs.	Short hair (1" long) up to 30 lbs.	Not recommended Use pet alley application
Chinook	Collie	Basenji	Doberman
Husky	English Setter	Border Terrier	Great Dane
Poodle	Pointer	Cocker Spaniel	Greyhound
Retriever	Pug	French Bulldog	Mastiff
Sheepdog	Toy Poodle	Mini Bull Terrier	Pit Bull
Shepherd	Weimeraner	Welsh Corgi	St. Bernard
		Cats	

## SB01 Swivel Mount Bracket

For ceiling-mount applications that require 90 degree coverage, an optional ceiling-mount swivel bracket (SB01) is available. See Figure 5.

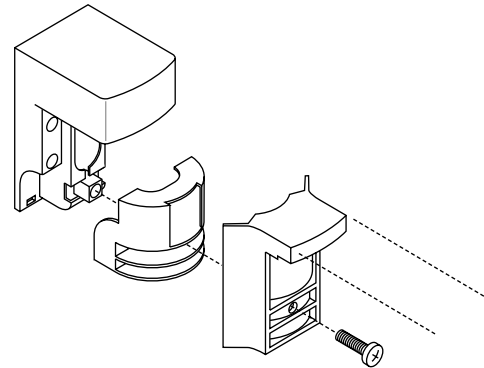


Figure 5. SB01 Swivel-Mount Bracket

## Maintaining the Sensor

When installed and used properly, the sensor provides years of service with minimal maintenance. You should walk test the sensor annually to ensure proper operation.

## Understanding the LED

The multi-color LED located on the bottom of the sensor indicates the status of the unit as described in the following table.

LED	Status
Red	PIR and RCR detection. The sensor is in alarm and the relay has switched.
Green	PIR detection only (no alarm).
Yellow	RCR detection only (no alarm).

After 30 minutes the LED will only indicate an alarm condition. Drop power to reset the walktest timer.

## FCC Compliance

This device complies with Part 15 of the FCC rules.  
Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

**FCC ID:** CGGAA2

## Specifications

Input voltage	8.5 to 18VDC
Typical current	20mA
Maximum current	27mA
Electrical configuration	Form A
Relay rating	40VDC, 300mA max., 6W Load max.
Detection range	35' (10.7m) x 90°
Target velocity	0.5 ft/sec to 5 ft/sec
Alarm duration	5 sec. ± 10%
Mounting height	7' to 8' (2.1m to 2.4m)
Operating temperature	32°F to 122°F (0°C to 50°C)
Relative humidity	5 to 93% non-condensing
Dimensions	Width 2.8" (71mm) Height 5.1" (130mm) Depth 2.3" (58mm)
Weight	6 oz (170g)
Color	White
Field wiring size	12-24AWG

## Product Ordering

Model Number	Description
RCR-PET	PrecisionLine Dual Technology Motion Sensor with Pet Immunity up to 80 lbs., Form A
Accessories	
SB01	Swivel-Mount Bracket

