

TAKEX PHOTOELECTRIC BEAM SENSOR PR-10B

Instruction Manual

We appreciate your purchase of a TAKEX Product.

This sensor will provide long and dependable service when properly installed.

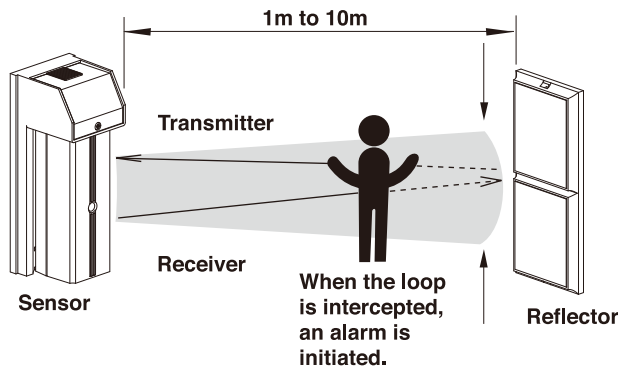
Please read this Instruction Manual carefully for correct and effective use.

Please Note : This sensor is designed to detect intrusion and to initiate an alarm ; it is not a burglary-preventing device.

TAKEX is not responsible for damage, injury or losses caused by accident, theft, Acts of God (including inductive surge by lightning), abuse, misuse, abnormal usage, faulty installation or improper maintenance.

1 PRODUCT DESCRIPTION

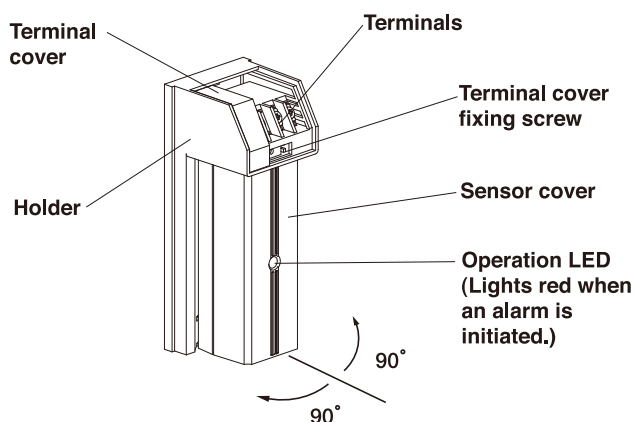
This sensor consists of transmitter and receiver. As illustrated below, an infrared pulsed beam, projected by the transmitter, is reflected back to the receiver. The protection loop is formed along the path transmitter → infrared beam → reflector → infrared beam → and receiver. If an intruder interrupts this protection loop, the receiver will detect it and initiate an alarm.



This sensor employs a special, high amplifier circuit to increase performance. If a high-reflective object is placed between the sensor and the reflector before power is turned ON, a protection loop is liable to be formed between the object and the sensor.


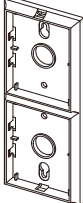

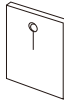

This situation is not recommended for normal operation. Please take notice of this fact. After power is turned ON, it detects any object normally, regardless of type of the object.

2 PARTS DESCRIPTION



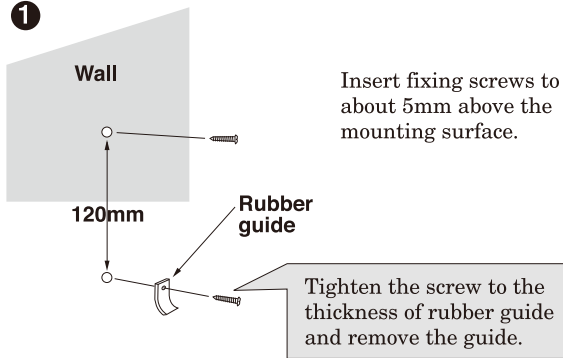
The sensor cover can be rotated 90° horizontally by loosening the terminal cover fixing screw. Turn the sensor cover toward a protection direction.

Accessory

	Reflector	2
	Reflector mounting plate	1
	Two-sided adhesive sheet	2
	Rubber guide	1
	Fixing screw	4

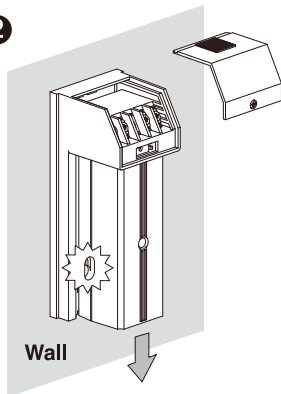
3 INSTALLATION

1



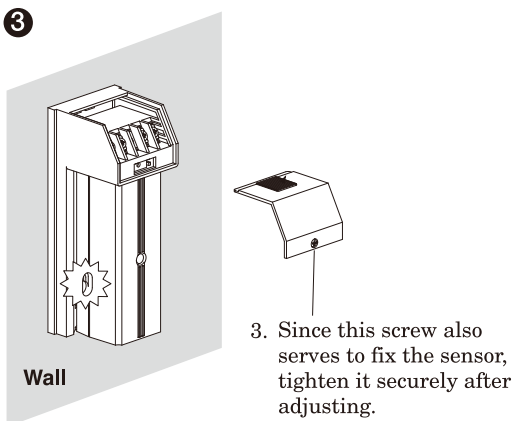
1. Loosen terminal cover fixing screws, and remove the terminal cover.
2. Fit the fixing screws to the sensor ; move the sensor downwards to fix it in place.

2



1. Tighten the upper fixing screw.
2. After wiring has been adjusted, attach the terminal cover.

3

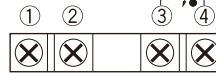


4 WIRING

Terminal Arrangement

Power source
10.5V to 15V DC
(Non-polarity)

When alarm
is initiated.



Dry contact relay output
1b N/C
Contact capacity :
30V AC/DC, 0.5A

Precautions in wiring

Be sure to use pressure-fit sleeves, or soldering.
Incorrect wiring may cause malfunctions.

Wiring distance between sensor and control panel

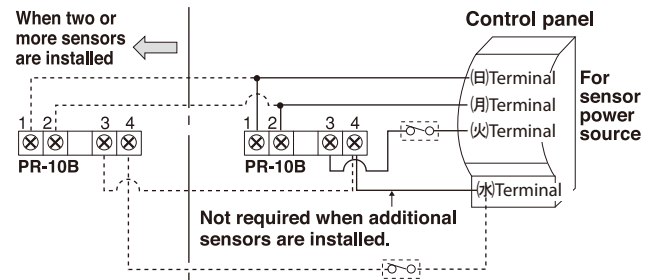
Wire size	Wiring distance
AWG 22 (Dia. 0.65mm)	Up to 750 ft. (250m)
AWG 20 (Dia. 0.8mm)	Up to 1,350 ft. (450m)
AWG 18 (Dia. 1.0mm)	Up to 2,100 ft. (700m)

- Note : 1. The maximum wire length, when two or more sets are connected, is the above value divided the number of sets.
2. The signal line can be wired to a distance of up to 3,000 ft. (1,000m) with AWG 22 (Dia. 0.65mm) telephone wire.

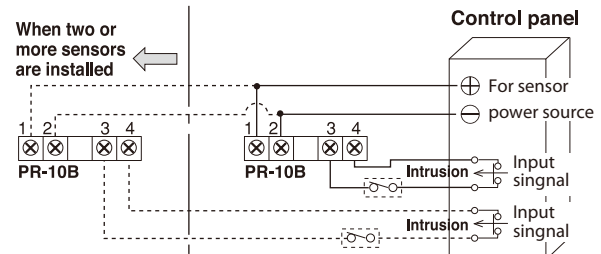
●Power source is 12V DC. (Connects with 12V DC terminals on control panel.) 10V AC is also allowable. (Connects with 10V AC terminals of bell transformer.)

●The allowable line voltage fluctuation is between 10.5V DC and 15V DC (8V AC and 11V AC).

Example connection 1



Example connection 2



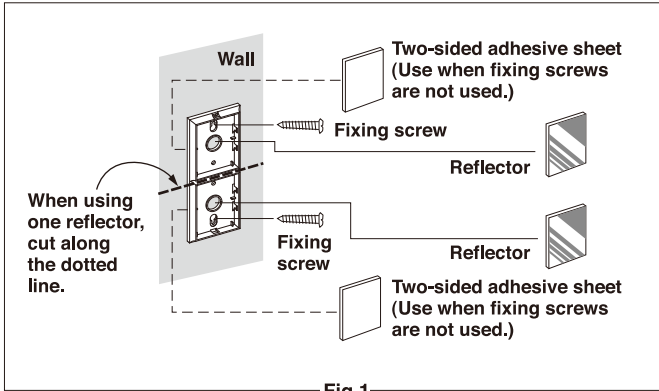
- Note : 1. When connecting a magnetic switch etc., locate it as the point designated .
For other details, refer to the Instruction Manual for each control panel.

2. The dotted lines show extension connections.

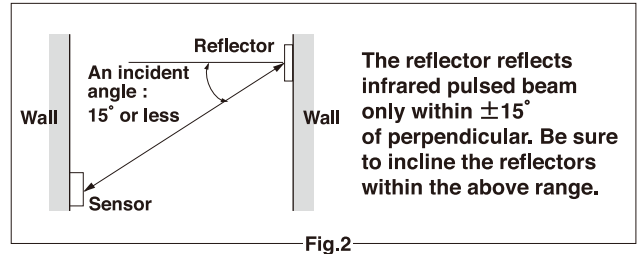
5 INSTALLATION OF REFLECTOR

Confirm that the sensor points in the direction in which protection is desired. Then supply power source. With power ON, the operation LED on the sensor will light up *1. Turn the reflectors toward the sensor *2. By moving the reflectors, determine the position for mounting the reflectors. When the position is determined, mount as shown in Fig. 1.

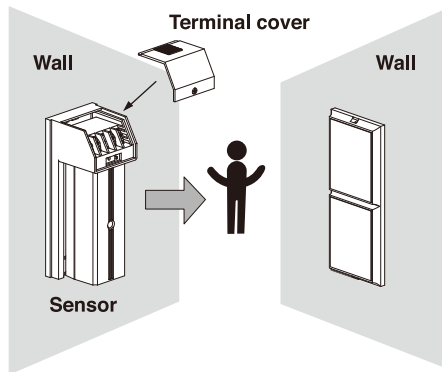
Note : Mount the reflectors at correct angle and location to secure normal operation. Refer to Fig. 2 for angle.



- * 1. Even if the reflectors are not directed toward the sensor, the operation LED may occasionally go out. This is not due to malfunction but to reflected light from the wall, etc. When turning the reflectors to the sensor side, the operation LED will start flickering. Mount reflectors at the point at which the operation LED goes out.
- * 2. If the protection distance is 5m or less, one reflector will suffice, however, if a more thorough protection is desired, both reflectors should be used.

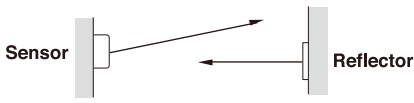




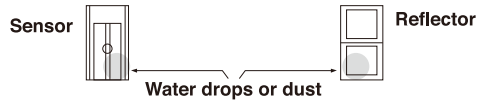
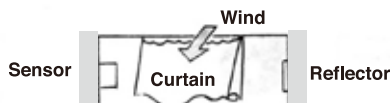
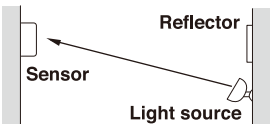
6 OPERATION



Supply power to the sensor. (Turn on the control panel.) When the reflectors face the sensor correctly, the operation LED will remain OFF. When an object (human body or anything which breaks beam) interrupts the infrared pulsed beam between the sensor and the reflectors, the control panel will give an alarm. If the operation is normal. After operation check, install the terminal cover. Unit should be tested on a regular basis.

7 TROUBLESHOOTING

Symptom	Possible Cause	Remedy
No alarm	Circuit breaker of the control panel turned OFF. (No power is reaching sensor power source terminal.)	Return it no normal condition. (Find the cause.)
Alarm does not stop.	Incorrect position of the sensor or reflectors. 	Correct the position of the sensor or the reflectors. Refer to Item 5. 
	Broken wire between the sensor and the control panel. 	Repair disconnections in the wiring.

Symptom	Possible Cause	Remedy
Frequent alarms with no intrusion	Water drops or dust, etc. adhering to the sensor cover or the reflectors. 	Clean the sensor cover and the reflectors with a clean cloth, etc
	Something moving (curtain, small animals, etc.) in the protection area. 	Remove the object from the protection area.
	The sensor is directly exposed to strong light (including sun light). 	Relocate the sensor to avoid strong sunlight.

Analyze possible problems according to the above table. If normal operation can not be restored by means, contact either the dealer from whom you bought the unit or TAKEEX.

8 SPECIFICATIONS

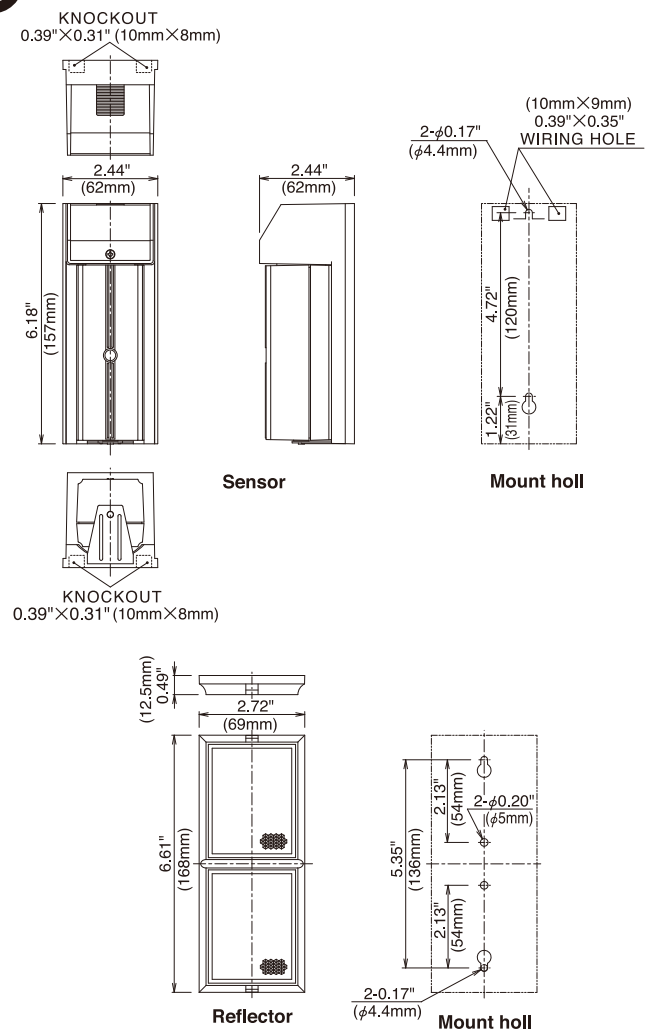
Model	PR-10B
Protection distance	3.3ft. (1m) to 33ft. (10m)
Light source	Infrared pulsed beam by LED (light-emitting diode)
Response time	50 msec to 100 msec.
Alarm signal	Dry contact relay output 1b, N/C Contact capacity : 30V (AC/DC), 0.5A
Power source	12V DC (10.5V DC to 15V DC)
Power consumption	30mA (at 12V DC)
Ambient temperature range	-4°F to +122°F (-20°C to +50°C)
Installation site	Indoors - wall or column, etc.
Weight	Sensor : 7.7 oz (220g) Reflector : 3.2 oz (90g)
Appearance	ABS resin (white)

Specifications may be subject to change for improvement without notice.

Limited Warranty :

TAKEEX products are warranted to be free from defects in material and workmanship for 12 months from original date of shipment. Our warranty does not cover damage or failure caused by Acts of God (including inductive surge by lightning), abuse, misuse, abnormal usage, faulty installation, improper maintenance or any repairs other than those provided by TAKEEX. All implied warranties with respect to TAKEEX, including implied warranties for merchantability and implied warranties for fitness, are limited in duration to 12 months from original date of shipment. During the Warranty Period, TAKEEX will repair or replace, at its sole option, free of charge, any defective parts returned prepaid. Please provide the model number of the products, original date of shipment and nature of difficulty being experienced. There will be charges rendered for product repairs made after our Warranty period has expired.

9 EXTERNAL DIMENSIONS



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