



PHOTOELECTRIC BEAM SENSOR

- PB-50F: Outdoor 165ft. (50m)
- PB-100F: Outdoor 330ft. (100m)
- PB-200F: Outdoor 660ft. (200m)

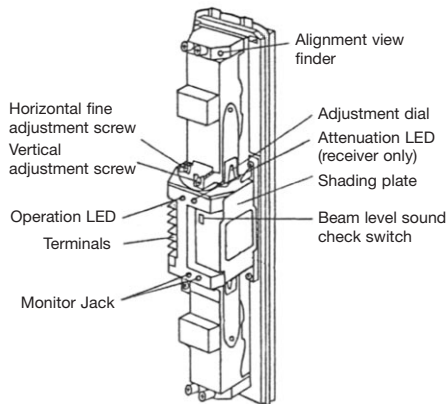
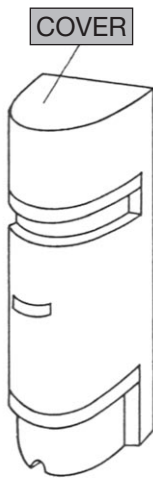
INSTRUCTION MANUAL

Thank you for purchasing our quad photoelectric beam. This unit will provide long term dependable service when properly installed. Please read the Instruction Manual carefully for correct and effective use.

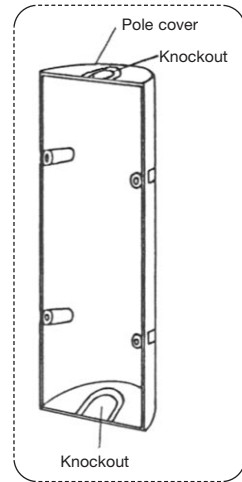
Please note: This sensor is designed to detect intrusion and initiate an alarm; it is not a burglary-preventing device. TAKEX is not responsible for damage, injury or losses caused by accident, theft, Acts of God (including inductive surge by lightning), abuse, misuse, abnormal usage, faulty installation or improper maintenance.

1 PARTS DESCRIPTION

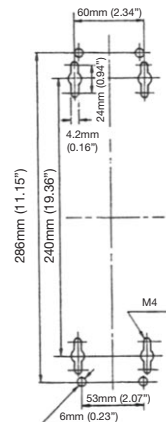
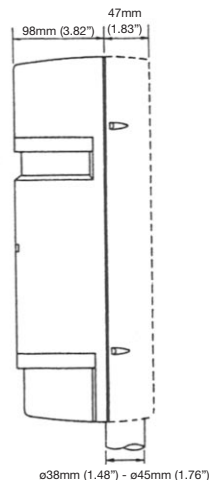
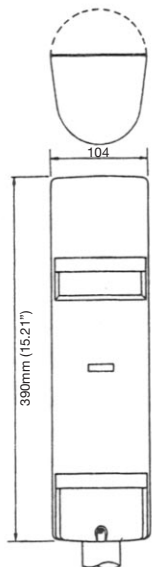
The package contains the following items. Please check them upon opening to ensure all are included (Pole covers sold separately, Part Number: BP200F)



[SOLD SEPARATELY]



2 EXTERNAL DIMENSIONS



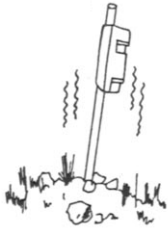
3 CAUTION ON INSTALLATION

Position the sensor after consideration of installation site, installation height and protection distance for effective use.

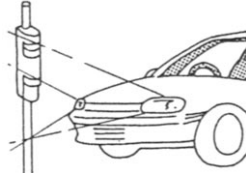
DO'S AND DONT'S



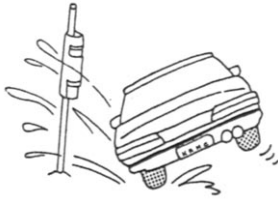
- Remove all obstructions (trees, clothes lines, etc.) between Transmitter and Receiver.



- Do not install the unit on unsteady surfaces.



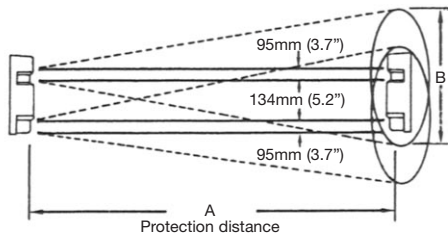
- Avoid strong light from the sun, automobile headlights etc. directly shining on Transmitter / Receiver. Avoid light within ± 2 degrees of optical axis.



- Do not install the unit on places where it may be splashed by dirty water or direct sea spray.

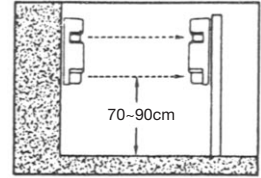
Consider the protection distance

	A	B
PB-50F	50m (165ft) or less	1.2m (3.6ft)
PB-100F	100m (330ft) or less	2.4m (7.2ft)
PB-200F	200m (660ft) or less	5m (15ft)



Height of installation

- Install the sensor at a height of 70cm to 90cm (27" to 35") to catch human pattern.

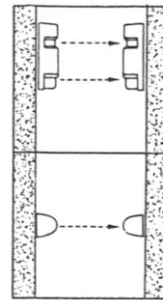


Position of installation by rotary mirror

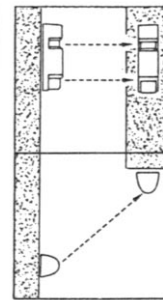
- Using the adjustment dial and adjustment screws, the mirrors can move horizontally (± 90 degrees) and vertically (± 10 degrees) allowing the sensor to protect in all directions.



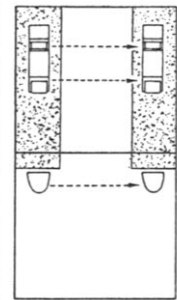
Ex. 1



Ex. 2

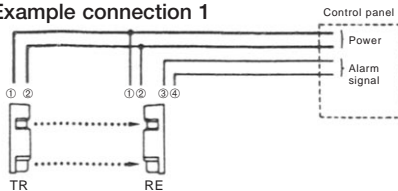


Ex. 3

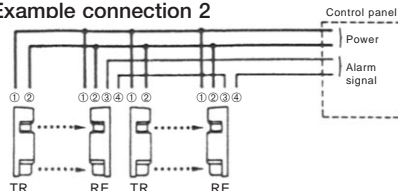


4 WIRING

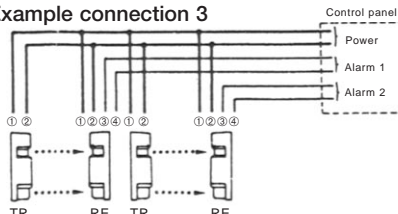
Example connection 1



Example connection 2



Example connection 3



Wiring distance

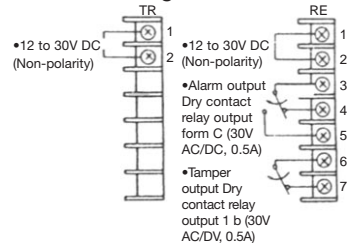
Size of wire used	Power voltage	
	12V DC	24V DC
AWG 22 (Dia 0.65mm)	Up to 150m (450ft)	Up to 1,200m (3,600ft)
AWG 20 (Dia 0.8mm)	Up to 250m (750ft)	Up to 2,000m (6,000ft)
AWG 18 (Dia 1mm)	Up to 375m (1,125ft)	Up to 3,000m (9,000ft)
- (Dia 1.1mm)	Up to 450m (1,350ft)	Up to 3,600m (10,800ft)
- (Dia 1.25mm)	Up to 600m (1,800ft)	Up to 4,800m (14,400ft)
- (Dia 1.4mm)	Up to 800m (2,400ft)	Up to 6,400m (19,200ft)

- Note: 1) Max wiring distance when two or more sets are connected is the above value divided by 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.

CAUTIONS ON WIRING:

- Signal output on receiver can not be used separately on the upper/lower set
- Avoid overhead wiring
- When installing indoors, wiring procedures similar to those for telephones or interphones are acceptable
- Outdoor wires should be placed inside pipes, or underground cable should be used

Terminal arrangement



Standby battery

Each pair draws 75mA (Max.) at 12V DC to 30V DC. (Terminal 1 - 2). Be sure the control panel is equipped with adequate standby battery and charging circuit. Use 12V (at least) Niced or lead acid battery with minimum capacity of 0.5AH.

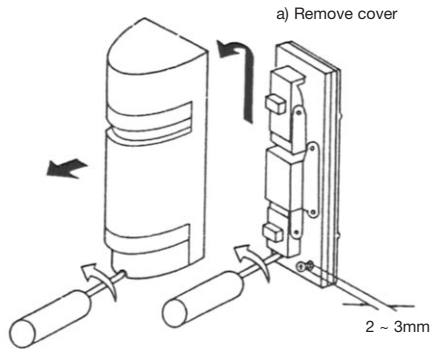
Estimated battery life

No. of pair	MdAA 0.5AH	Gel cell 1.0AH	Gel cell 5.0AH
1	6hrs	13hrs	66hrs
2	-	6hrs	33hrs
4	-	-	16hrs
8	-	-	8hrs

5 INSTALLATION

Wall mount

1) Detach the mounting plate from sensor body

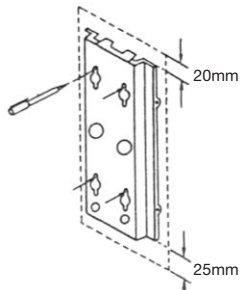


b) Loosen 2 screws that fix the sensor body on the mounting plate

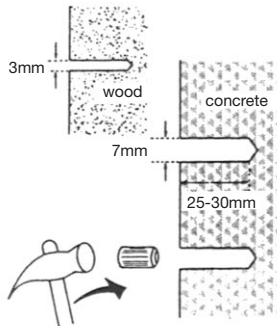
c) Slide the sensor body upward to detach it.

2) Make holes in wall

a) Put the mounting plate on wall and mark the screw holes. (Keep a space 20mm at the top end and 25mm from the lower end.) This will allow easy detachment of the cover after installation.



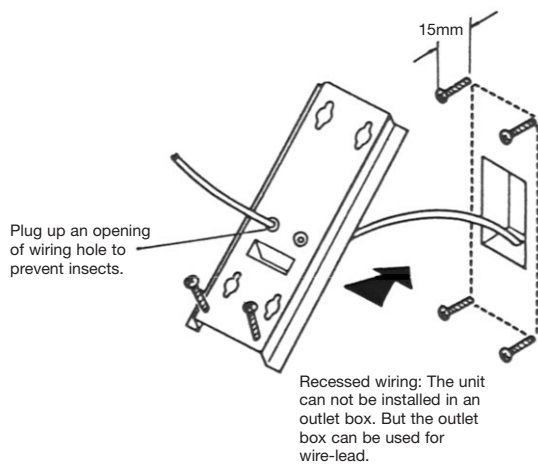
b) Pre-drill on wall. Concrete wall: Dia 7 mm, Wood wall: Dia 3mm



c) Thrust in the mounting screw to 15mm under the screw head

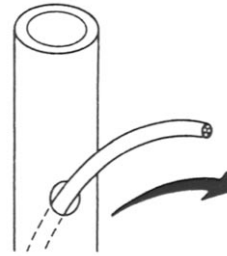
3) Install the sensor on wall

- Install the mounting plate on wall
- Attach the sensor body
- Connect terminals
- Attach the cover



Pole mount

1) Make wiring hole on pole and pull out the wire



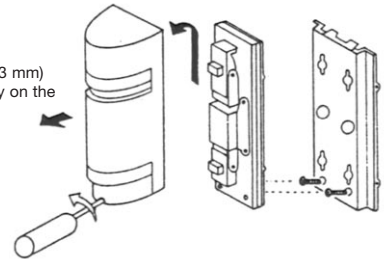
Note: Pole Dimensions
1.75" outer dia
1.25" inner dia
Recommend rigid conduit or water pipe. Pole should be sunk 2' - 3' in ground and secured by cement.

2) Detach the mounting plate from sensor body

1) Remove cover

2) Loosen 2 screws (2 to 3 mm) that fix the sensor body on the mounting plate

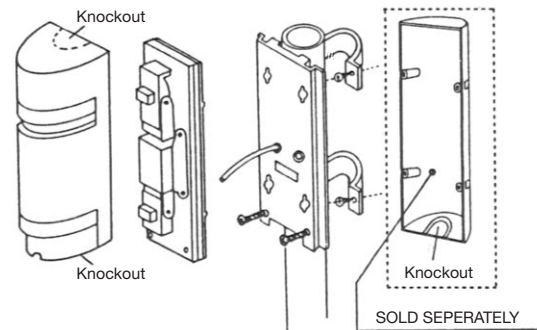
3) Slide the sensor body upward to detach it



3) Attach the mounting plate on pole

1) Attach the pole brackets (U shape) to pole and fix them with screws.

- When pole is short, it can be fixed with the lower bracket only.
- The mounting plate must be attached on 7mm under the pole top. Do not allow the pole to protrude above the top cover.

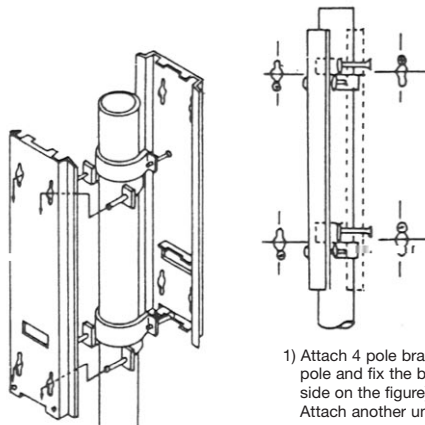


2) Attach sensor body

3) Connect terminals

4) Attach covers. Break knockout on cover and pole cover to adapt to pole diameter

• Pole mounting back to back



1) Attach 4 pole brackets (U shape) to pole and fix the brackets down (left side on the figure) to up in order. Attach another unit to the pole.

- Two knockouts (ø38 or ø43) are available.

7 SPECIFICATIONS

8 TROUBLESHOOTING

Symptom	Possible Cause	Remedy
Transmitter LED	1. No power supply.	1. Turn on the power.