



EL-PB60S

## Features

### EL-PB60S Photoelectric Beam Detector ( 60M )

- Wide angle adjustment
- External light protection
- Protection against frost/dew, Guaranteed quality of front cover
- High convenience for installation and wiring
- Safety Approval: CE

## Specification

- Protection range: Outdoor : 60m Indoor : 120m
  - Detection method: Simultaneous breaking of 2 beams
  - Infrared beam: Double modulation pulsed beams by LED
  - Response time: 50 ~ 700mS
  - Supply voltage: DC 10.8 ~ 25VDC(Non-polarity)
  - Current: Max. 57mA
  - LED: Tx : Power(Green LED),  
Rx :Sensitivity good (Green LED),  
When an alarm is initiated (Red LED)
  - Alarm output: Dry contact relay output form C,  
Contact action : Interruption time +delay time(1~3 sec),  
Contact capacity : 30V(AC/DC) 1A or Less
  - Tamper output: Dry contact relay output form N.C(Rx only),  
Contact action : Activated when cover is detached,  
Contact capacity : 30V (AC/DC) 1A or Less
  - Temperature: -20°C ~ 60°C
  - Beam Adjustment: Horizontal : 180°(±90°), Vertical : 20°(±10°)
  - Mounting site: Indoor/Outdoor
  - Material: Cover : PC resin, Base : ABS resin
  - Dimension: 63 x 163 x 75mm (W x H x D)
  - Weight: Rx : 330g, Tx : 315g
  - Function: Monitor jack output, Frost proof cover
  - IP rating: IP 44
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## User Guide: Installation Instruction

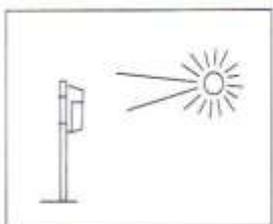
We appreciate your purchase of our photoelectric beam detector. This detector will provide long and dependable service when properly installed. Please read this Instruction Manual carefully for correct and effective use.

**Please Note:** This detector is designed to detect intrusion and to initiate an alarm; it is not a burglar-preventing device. Maker is not responsible for damage, injury or losses caused by accident, theft, Acts of God (Including inductive surge by lightening), abuse, misuse, abnormal usage, faulty installation or improper maintenance.

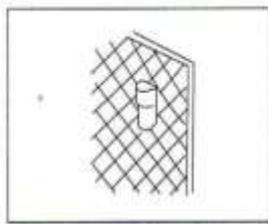
### Notice

- The photoelectric beam detector is damaged if it is connected to an AC power supply.
- The photoelectric beam detector may be damaged if the applied voltage exceeds the rated specification.
- Do not remodel the detector or replace any parts.
- Avoid wet or damp place.
- Install inside of visibility range or possible distance can see a brake light of motor vehicle when it is used in the place fog occur frequently.

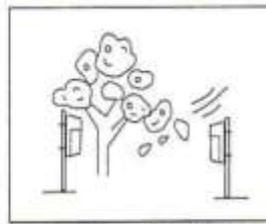
### 1. Cautions On installatio



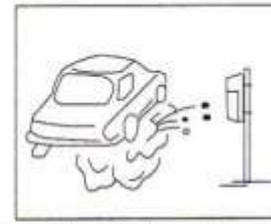
Avoid strong light from sun, automobile head-lights etc. shining on transmitter or receiver



Do not install the unit on unsteady surfaces.



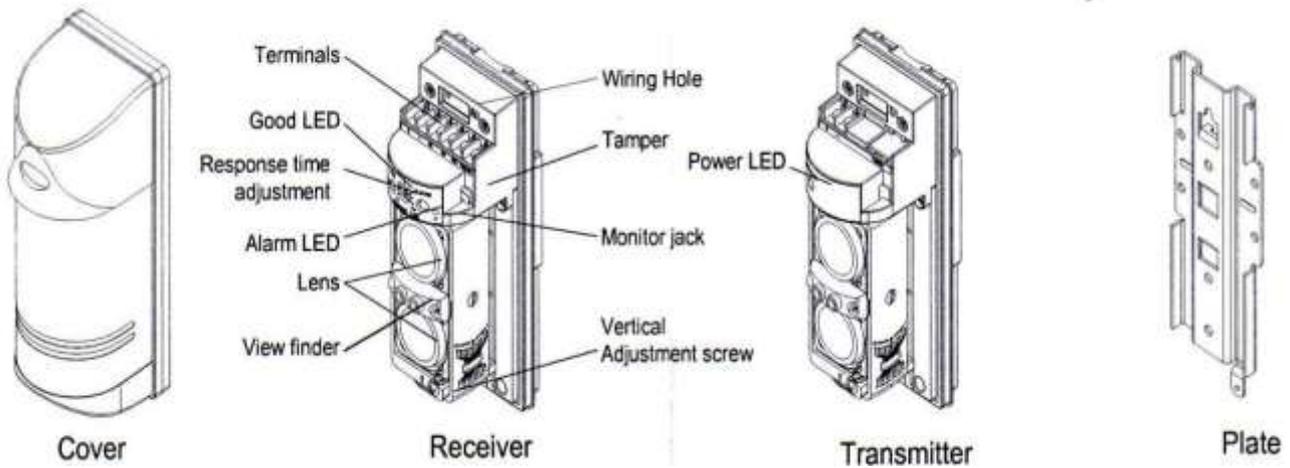
Do not install in a site where beam may be interrupted by trees or plants, consider seasonal changes.



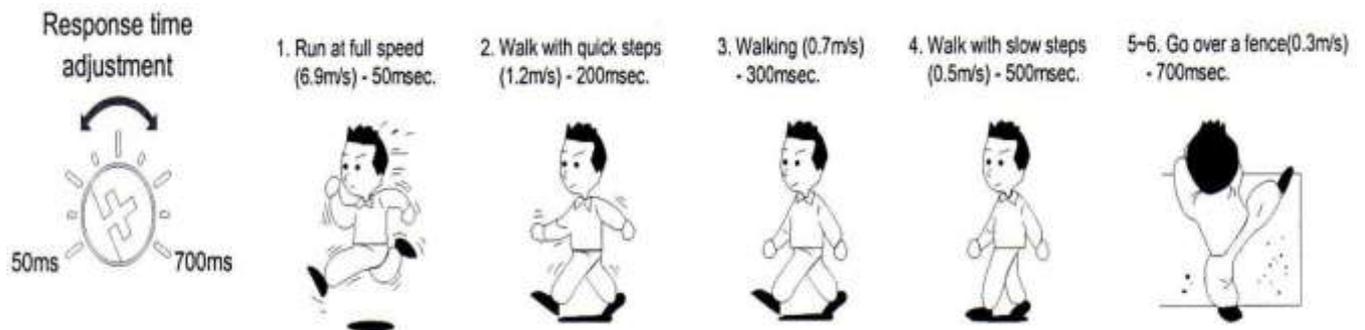
Do not install in places where units may be splashed continuously by dirty water or direct sea spray.

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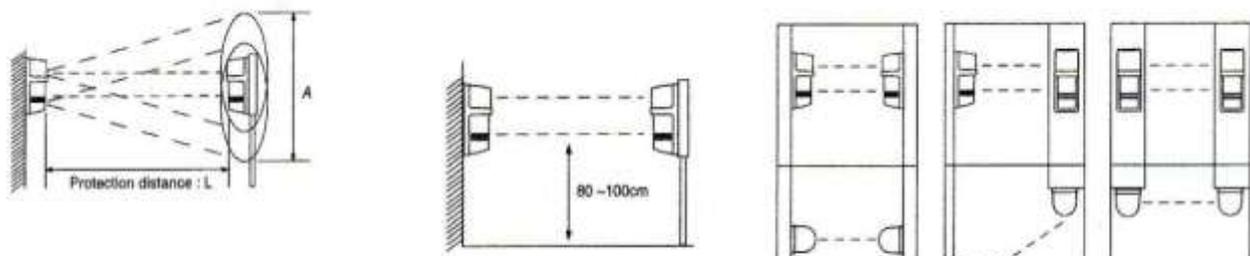
## 2. Part Description



## 3. Response Time



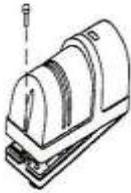
## 4. Expansion of Beam and Position of Installation



## 5. Installation

### - Wall mount

- Remove cover from unit and slide the mounting plate to detach it.



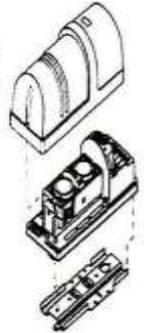
- Break grommet on mounting plate and pull wire through it. Secure the plate with 4mm screws.



- When exposed wired, break knockouts on the rear of unit, pull wire through as the figure and attach it to the mounting plate.

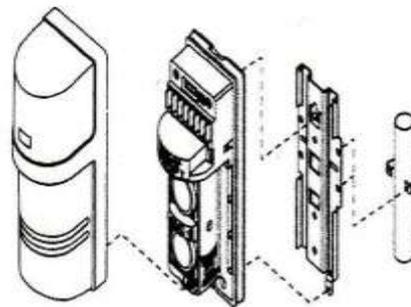


- After wiring is completed, adjust alignment, check operation and attach cover.



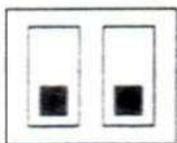
### - Pole mount (Pole size : $\phi 38 \sim \phi 44\text{mm}$ )

- Remove cover from unit and slide the mounting plate to detach it.
- Attach pole brackets to pole and secure to mounting plate with screws.
- Attach detector body.
- Pull through wire.
- Connect terminals.
- After wiring is completed, adjust alignment, check operation and attach cover.

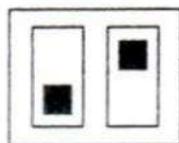


## 6. Channel Setting

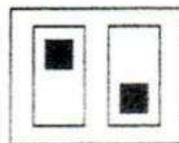
This function is used for purpose of preventing cross-talk or bypass of beams which may occur in line protection or 2-stacked protection. Set beam channel.



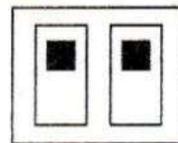
1ch



2ch



3ch

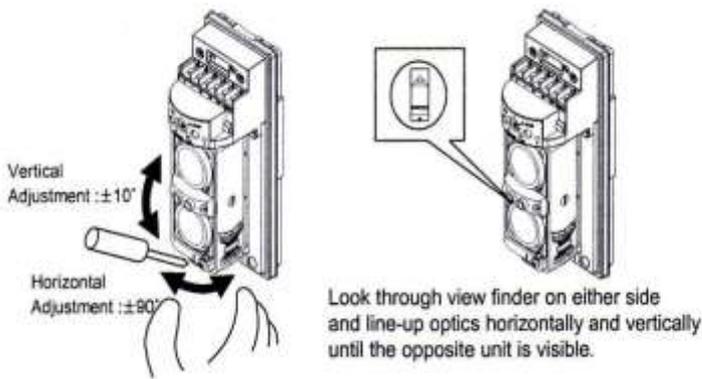


4ch

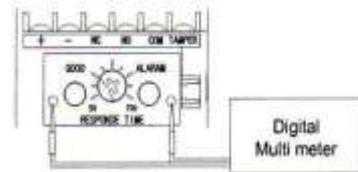
## 7. Optical Alignment

Read voltage from monitor jack with volt-meter (digital) to confirm optical alignment and to obtain the highest reliability.

- Supply power with cover detached.
- Set Transmitter lens to recover lens by the view finder.  
Look through view finder on both side and line-up optics horizontally and vertically until the opposite unit is visible. (Using the adjuster, the lens can move horizontally ( $\pm 90^\circ$ ) and vertically ( $\pm 10^\circ$ ) allowing the unit to work in all the directions). The opposite Transmitter or Receiver should appear on the view finder of inside middle mirror.
- Adjust the Transmitter's horizontally and vertically to get highest voltage reading. Adjust the Receiver's horizontally and vertically to get highest voltage reading.



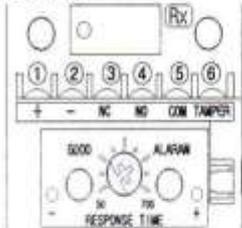
- Monitoring



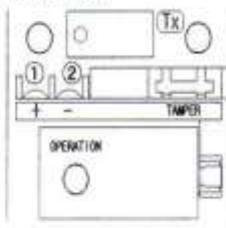
Monitoring	R:Green LED	Condition
Less than 3.0V	OFF	Alignment again
3.0 ~ 3.7V	ON	Alignment Good
3.7 ~ 4V	ON	Very Good

## 8. Terminal Arrangement

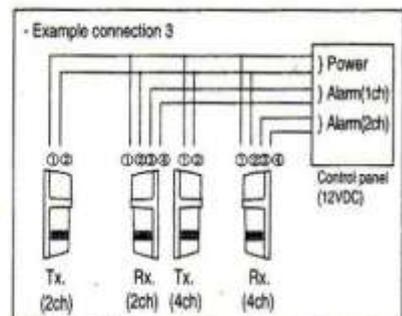
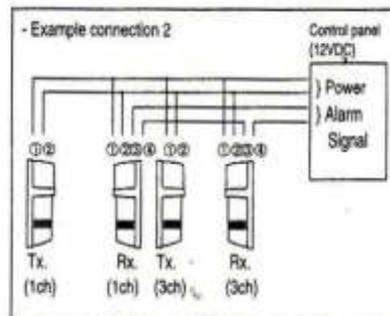
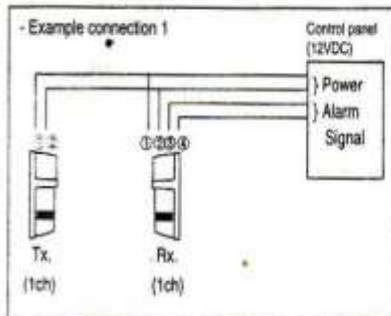
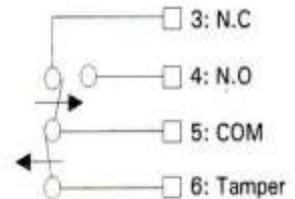
Receiver



Transmitter



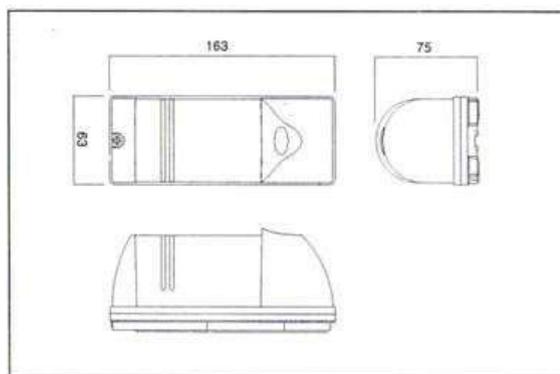
NO	Usage	NO	Usage
1	VCC:DC10.8~25V	4	Normal Open
2	GND	5	Common
3	Normal Close	6	Tamper



## 9. Troubleshooting

Symptom	Possible cause	Remedy
LED does not light	- No power supply	- Turn on the power
	- Bad wiring connection or broken wire, short	- Check wiring
Alarm LED does not light when the beam is broken	- No power supply	- Turn on the power
	- Bad wiring connection or broken wire, short	- Check wiring
	- Beam is reflected on another object and sent into the receiver	- Remove the reflecting object or change beam direction
	- Two beams are not broken simultaneously	- Break two beams simultaneously
Alarm LED continues to light	- Beam alignment is out	- Check and adjust again
	- Shading object between Tx. and Rx.	- Remove the shading object
	- Optics of unit are soiled	- Clean the optics with soft cloth
Intermittent alarms	- Bad wiring connection	- Check again
	- change of supply voltage	- Stabilize supply voltage
	- Shading object between Tx. and Rx.	- Remove the shading object
	- A large electric noise source, such as power machine, is located nearby Tx. and Rx.	- Change the place for installation
	- Unstable installation of Tx. and Rx.	- Stabilize
	- Soiled optics of Tx. and Rx.	- Clean the optics with a soft cloth
	- Improper alignment	- Check and adjust again
	- Small animals may pass through the 2 beams	- Set the response time longer

## 10. Dimensions



## Limited Warranty

Tomura Products are warranted to be free from defect 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, abuse, misuse, abnormal usage, faulty installation, improper maintenance or any repair other than those provided by Tomura. All implied warranties with respect to Tomura 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 **Tomura will repair or** replace, at its sole option, free of charge, any defective parts returned prepaid. Please provide the model number of product, original date of shipment and nature of difficulty being experienced. There will be no charge for product repairs made after our warranty period has expired.