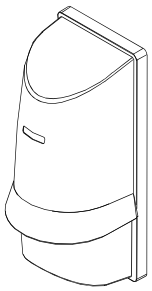
SASO DETECTOR

Installation Instructions

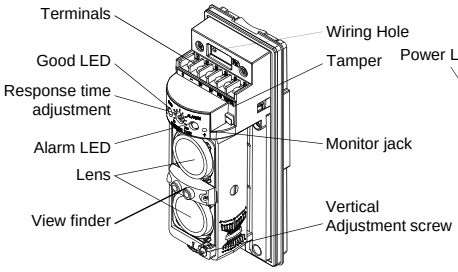
Photoelectric Beam Detector
SASO-PB30SA / PB80SA / PB80SA / PB100SA

We appreciate tour 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 sensor 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, natural disasters, abuse, misuse, abnormal usage, faulty installation or improper maintenance.

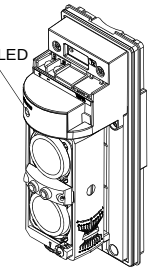
1. Description



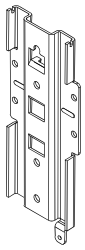
Cover



Receiver

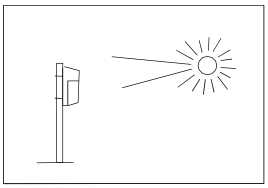


Transmitter

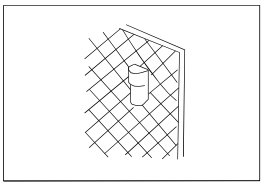


Plate

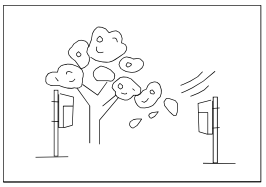
2. Cautions on Installation



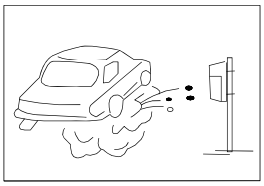
Avoid strong light from sun, auto-mobile head-lights etc. shining on transmitter or receiver



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.

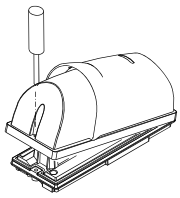


Do not install in places where units may be splashed continuously by dirty water or direct sea spray.

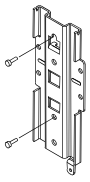
3. Installation Hints

3-1. Wall mount

① Remove cover from unit and slide the mounting plate to detach it.

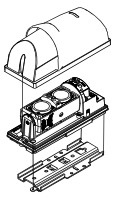


② Break grommet on mounting plate and pull wire through it. Secure the plate with 4mm screws.



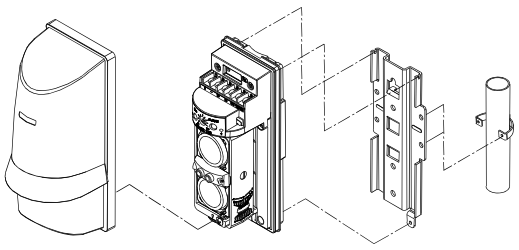
③ When exposed wired, break knock-outs on the rear of unit, pull wire through as the figure and attach it to the mounting plate.

④ After wiring is completed, adjust alignment, check operation and attach cover.



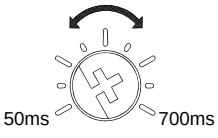
3-2. Pole mount (Pole size : Φ38 ~ Φ44mm)

① Remove cover from unit and slide the mounting plate to detach it.
② Attach pole brackets to pole and secure to mounting plate with screws.
③ Attach sensor body.
④ Pull through wire.
⑤ Connect terminals.
⑥ After wiring is completed, adjust alignment, check operation and attach cover.



4. Response time

Response time adjustment



1. Run at full speed (6.9m/s) - 50msec.

2. Walk with quick steps (1.2m/s) - 200msec.

3. Walking (0.7m/s) - 300msec.

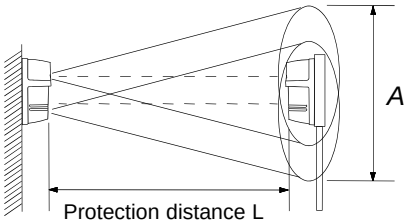
4. Walk with slow steps (0.5m/s) - 500msec.

5~6. Go over a fence(0.3m/s) - 700msec.

5. Expansion of beam

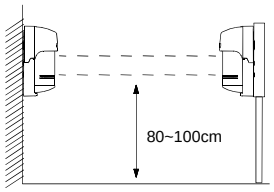
- Protection distance and Expansion of Beam

MODEL	*L*	*A*
SASO-PB30SA	30m	0.9m
SASO-PB60SA	30m	0.9m
SASO-PB80SA	80m	2.4m
SASO-PB100SA	100m	3.0m



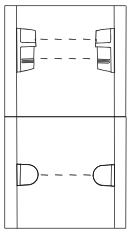
6. Position of Installation

- Heights of installation
  Install the detector at a height of 80~100cm to catch human pattern.(Pole mount)

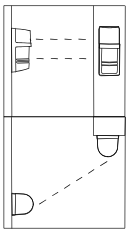


- Position of installation

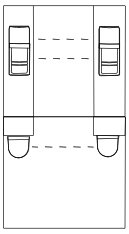
Example 1



Example 2



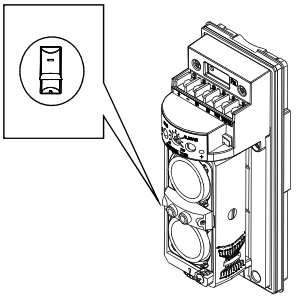
Example 3

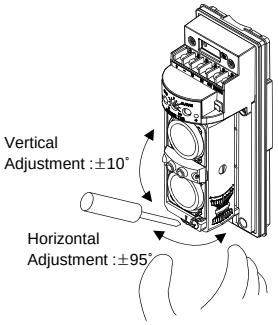


7. Optical Alignment

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

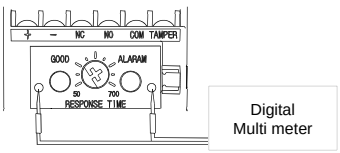
1. Supply power with cover detached.
2. Set Transmitter lens to Receiver lens by the view finder
   Look through view finder on either side and line-up optics horizontally and vertically until the opposite unit is visible. (Using the adjustment, the lens can move horizontally(±95˚) and vertically(±10˚) allowing the unit to work in all directions)
   The opposite Transmitter or Receiver should appear on the view finder of inside middle mirror.
3. Adjust the Transmitter's horizontally and vertically to get highest voltage reading.
   Adjust the Receiver's horizontally and vertically to get highest voltage reading.





- Reference table.

Monitoring	R:Green LED	Condition
Less than 3.0V	OFF	Alignment again
3.1 ~ 3.3V	ON	Good
3.3 ~ 4V	ON	Very Good

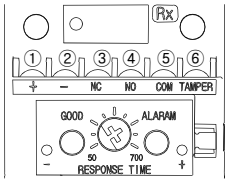


Digital Multi meter

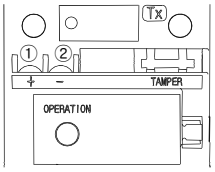
4. Confirm the beam level by inserting a tester in monitor jack of receiver.

8. Terminal Arrangement

Receiver



Transmitter



NO	Usage	NO	Usage
1	VCC	4	Normal Open
2	GND	5	Common
3	Normal Close	6	Tamper

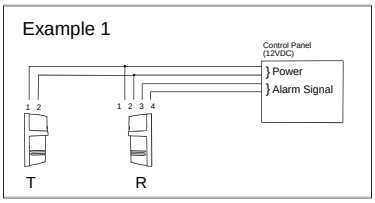
- Wiring distance

Wiring size \ Voltage	DC 12V	DC 24V
AWG 22/Ø 0.65mm/0.65mm^2	140m	1,320m
AWG 20/Ø 0.8mm/0.8mm^2	220m	2,000m
AWG 18/Ø 1.0mm/1.0mm^2	345m	3,150m
AWG 17/Ø 1.1mm/1.2mm^2	495m	4,500m

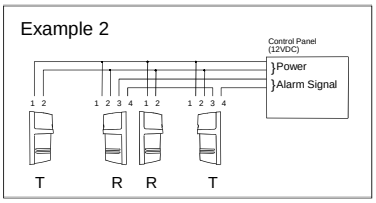
Note
1) Maximum wiring distance when two or more sets are connected is the value above divided by the number of sets.
2) The signal line can be wired to distance of up to 1,000m with AWG22 telephone line.

- Connection

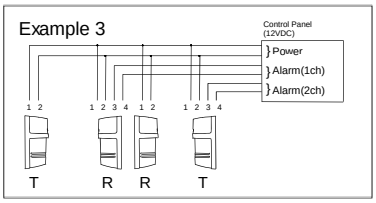
Example 1



Example 2



Example 3



9. Troubleshooting

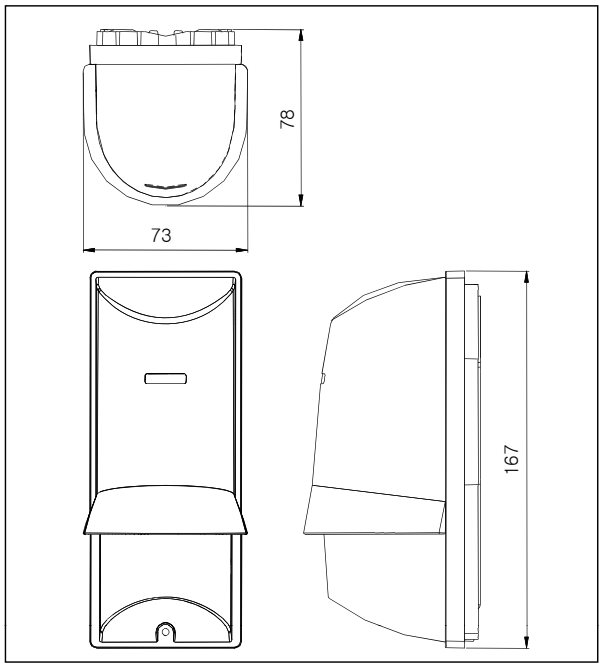
Problem	Possible Cause	Possible Solution
Operation LED does not light	1. No power supply.	1. Turn on the power.
	2. Bad wiring connection or broken wire, short	2. Check wiring.
Alarm LED does not light when the beam is broken.	1. No power supply.	1. Turn on the power.
	2. Bad wiring connection or broken wire, short.	2. Check wiring.
	3. Beam is reflected on another object and sent into the receiver.	3. Remove the reflecting object or change beam direction.
	4. Two beams aren't broken simultaneously	4. Break 2 beams simultaneously.
Alarm LED continues to light	1. Beam alignment is out.	1. Check and adjust again.
	2. Shading object between Tx. and Rx.	2. Remove the shading object.
	3. Optics of units are soiled.	3. Clean the optics with a soft cloth.
	4. Improper channel.	4. Check channel.
Intermittent alarms.	1. Bad wiring connection.	1. Check again.
	2. Change of supply voltage.	2. Stabilize supply voltage.
	3. Shading object between Tr. and Re.	3. Remove the shading object.
	4. A large electric noise source, such as power machine, is located nearby Tx. and Rx.	4. Change the place for installation.
	5. Unstable installation of Tx. and Rx.	5. Stabilize.
	6. Soiled optics of Tx. and Rx.	6. Clean the optics with a soft cloth
	7. Improper alignment.	7. Check and adjust again.
	8. Small animals may pass through the 2 beams	8.Set the response time longer.

10. Specification

Model		SASO-PB10SA	SASO-PB30SA	SASO-PB60SA	SASO-B100SA
Detection system		Simultaneous breaking of 2 beams			
Infrared beam		Double modulation pulsed beams by LED			
Protection range		Outdoor 10m Indoor 20m	Outdoor 30m Indoor 60m	Outdoor 60m Indoor 120m	Outdoor 100m Indoor 200m
Max. beam range		Outdoor/Indoor 100m	Outdoor/Indoor 300m	Outdoor/Indoor 600m	Outdoor/Indoor 1,000m
Current		Less 46mA	Less 61mA	Less 80mA	Less 88mA
Supply voltage		10.8V ~ 25V DC(Non-polarity)			
Response time		50msec to 700msec			
LED	Transmitter	Green LED ON : Power ON			
	Receiver	Green LED(Sensitivity Good) / Red ON : When an alarm is initiated			
Alarm output		Dry contact relay output form C Contact action : Interruption time + delay time(2±0.5sec) Contact capacity : 30V(AC/DC) 1A or less			
Tamper output		Dry contact relay output form N/C(Receiver only) Contact action : Activated when cover is detached Contact capacity : 30V(AC/DC) 1A or less			
Temperature		-25℃ ~ 70℃			
Beam adjustment		Horizontal : 190˚ (±95˚), Vertical : 20˚ (±10˚)			
Mounting position		Out door / In door			
Material		PC resin			
IP rating		IP 55			
External dimensions		73 x 167 x 78mm(WxHxD)			
Weight		Rx : 338g, Tx : 324g			
Function		Monitor jack output, Anti-frost cover			
Option		Pole attachment(2pcs./set, pole size : ø38~44mm) / Transmitter tamper switch			

* Caution : Please consult the instruction manual to ensure safe and proper operation of the product.
Specification and design are subject to change without prior notice for improvement.

11. External Dimension



Limited Warranty

SASO products are warranted to be free from defects in material and workmanship 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 repairs other than those provided by SASO. All implied warranties with respect to SASO, 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, SASO will repair or replace, at its sole option, free of charge, any defective parts returned prepaid. Please provide the model number of 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.

Delton

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