TAKEX PHOTOELECTRIC BEAM SENSOR

PB-30SU

Instruction Manual

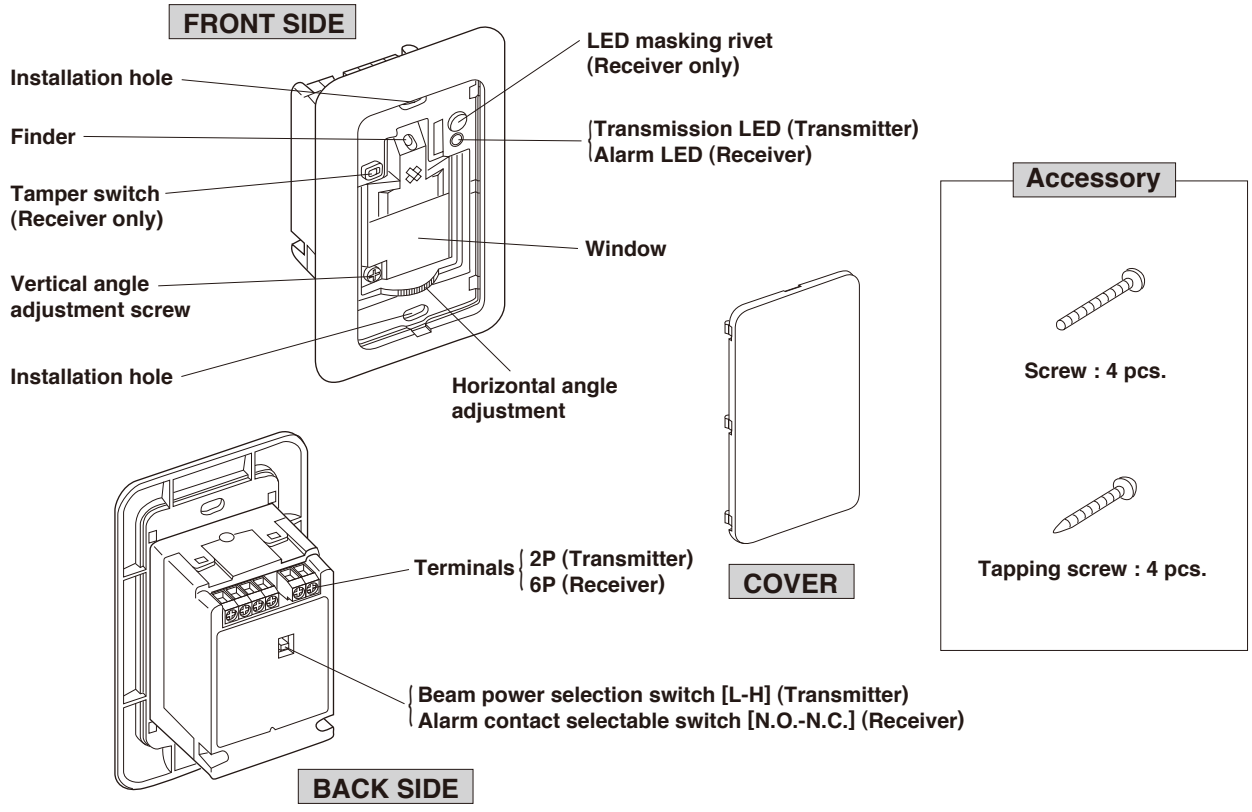
We appreciate your purchase of a TAKEX photoelectric beam sensor. This sensor will provide long and dependable service when properly installed. Please read this Instruction Manual carefully for correct and effective use.

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.

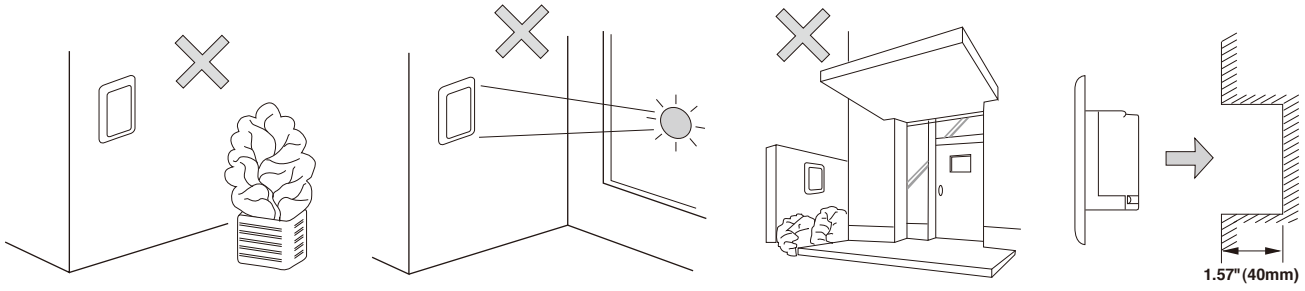
PRODUCT DESCRIPTION

This product is indoor flush mount photoelectric beam sensor.
PB-30SU is designed to fit with an outlet box (Japanese) without obtrusion.
It blends well in any residential, commercial or industrial applications.
In addition to flush mount, exposed installation by using exposed outlet box is available.

1 PARTS DESCRIPTION



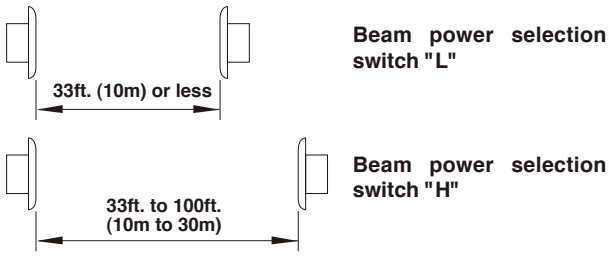
2 DO'S AND DON'T'S



- ●Remove obstacles that may interrupt the beam.
- ●Avoid strong light from the sun, automobile headlights etc. shinning on transmitter and receiver directly.
- ●This product is for indoor use only.
- ●This product needs 1.57" (40mm) depth from wall surface.

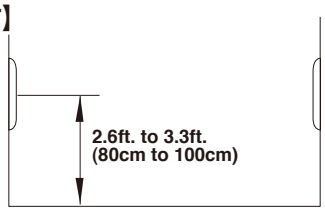
【PROTECTION DISTANCE】

●Select beam power to get suitable sensitivity according to protection distance.

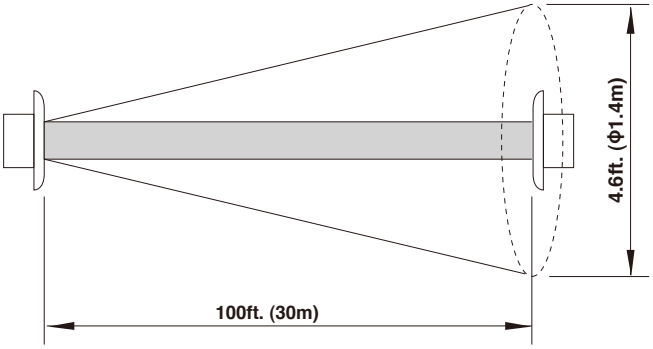


【INSTALLATION HEIGHT】

To detect human, install sensor at 2.6ft. to 3.3ft. (80cm to 100cm) height.



【BEAM SPREAD RANGE】

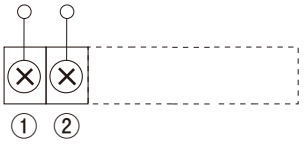


3 WIRING

TERMINAL ARRANGEMENT

〈TRANSMITTER〉

Power supply
10VDC～30VDC
(non-polarity)

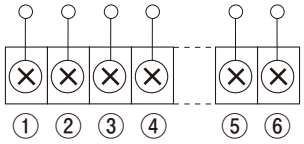


〈RECEIVER〉

Power supply
10VDC
～30VDC
(non-polarity)

Alarm output
24V (AC/DC)
0.25A or less
N.C., N.O.
selectable

Tamper output
N.C.
30V (DC) 0.1A
or less



●WIRING DISTANCE

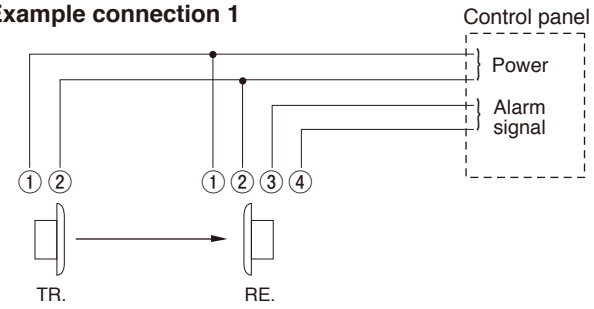
VOLTAGE / WIRE SIZE	DC12V	DC24V
AWG 22 (φ0.65mm)	1,500ft. (450m)	11,000ft. (3,400m)
AWG 20 (φ0.8mm)	2,500ft. (750m)	17,000ft. (5,200m)
AWG 18 (φ1.0mm)	3,600ft. (1,100m)	27,000ft. (8,200m)
AWG 17 (φ1.1mm)	4,600ft. (1,400m)	32,500ft. (9,900m)

Note 1) The maximum wire length, when two or more units are connected, is the above distance divided by the number of units.

2) The signal line can be wired to a distance of 3,280ft. (1,000m) with AWG 22 (0.65mm dia.) wire.

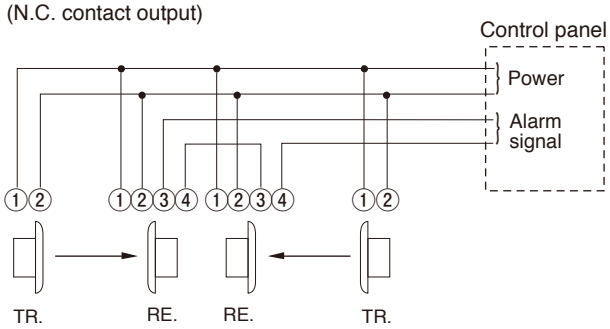
CONNECTION

●Example connection 1



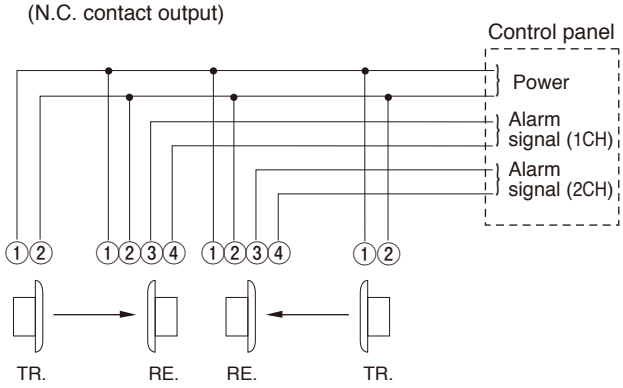
●Example connection 2

(N.C. contact output)



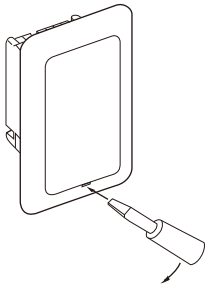
●Example connection 3

(N.C. contact output)



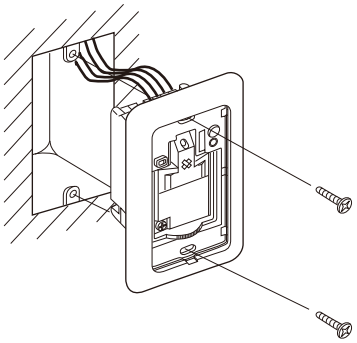
4 INSTALLATION

Remove the cover from the sensor unit by using a screw-driver etc.



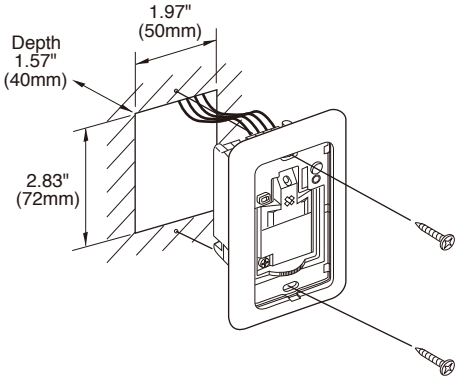
INSTALLATION WITH OUTLET BOX

Install the sensor with M4 × 30 screws.
As for exposed outlet box, 1.95" (50mm) depth is required.



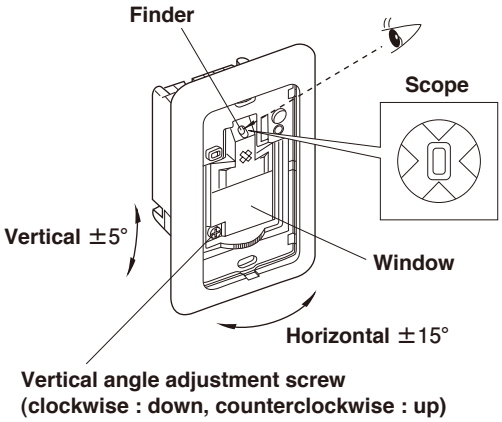
INSTALLATION WITHOUT OUTLET BOX

Make a hole 1.97" × 2.83" (50mm × 72mm) on wall and install the sensor with the attached screws, 1.57" (40mm) depth is required.



5 BEAM ALIGNMENT ADJUSTMENT AND OPERATION CHECK

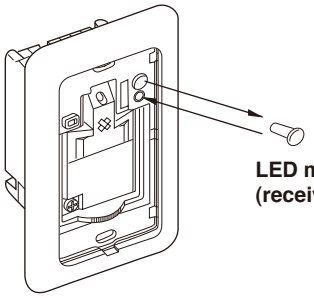
① Turn the power on with the cover detached.
When the receiver's cover is removed, the sensor goes into adjustment mode and its sensitivity will be automatically decreased.



② Adjust the windows of transmitter and receiver to face each other.
Look in finder and adjust the counterpart to be located at the center of the scope, by using vertical and horizontal adjustments.
Repeat this procedure for transmitter and receiver as well.

③ Adjust untill the receiver's alarm LED (RED) goes off.

④ After the above adjustment, interrupt beam and confirm that alarm LED lights on and an alarm output is issued.



∗ To Conceal the alarm LED, detach LED masking rivet and put it into the hollow of the alarm LED, as occasion requires.

⑤ After the above is compleated, attach the cover.
The sensitivity of the sensor will be automatically increased.

⑥ After attaching the cover, interrupt beam and confirm the sensor's operation at the both sides of sensor and control panel.

6 TROUBLESHOOTING

Symptom	Possible cause	Remedy
Transmitter's operation LED does not light on.	1) No power supply. 2) Bad wiring connection or broken wire, short.	1) Turn on the power. 2) Check wiring.
Receiver's Alarm LED does not light when the beam is interrupted.	1) No power supply. 2) Bad wiring connection or broken wire, short. 3) Beam is reflected on another object and sent into the receiver.	1) Turn on the power. 2) Check wiring. 3) Remove the reflecting object or change beam direction.
Receiver's Alarm LED continues to light.	1) Beam alignment is out. 2) Shading object between Transmitter and Receiver. 3) Optics of the unit are soiled.	1) Check and adjust again. 2) Remove the shading object. 3) Clean the optics with a soft cloth.
Intermittent alarms.	1) Bad wiring connection. 2) Change of supply voltage. 3) Shading object between Transmitter and Receiver. 4) A large electric noise source, such as power machine, is located nearby Transmitter and Receiver. 5) Unstable installation of Transmitter and Receiver. 6) Soiled optics of Transmitter and Receiver. 7) Improper alignment.	1) Check again. 2) Stabilize supply voltage. 3) Remove the shading object. 4) Change the place for installation. 5) Stabilize. 6) Clean the optics with soft cloth. 7) Check and adjust again.

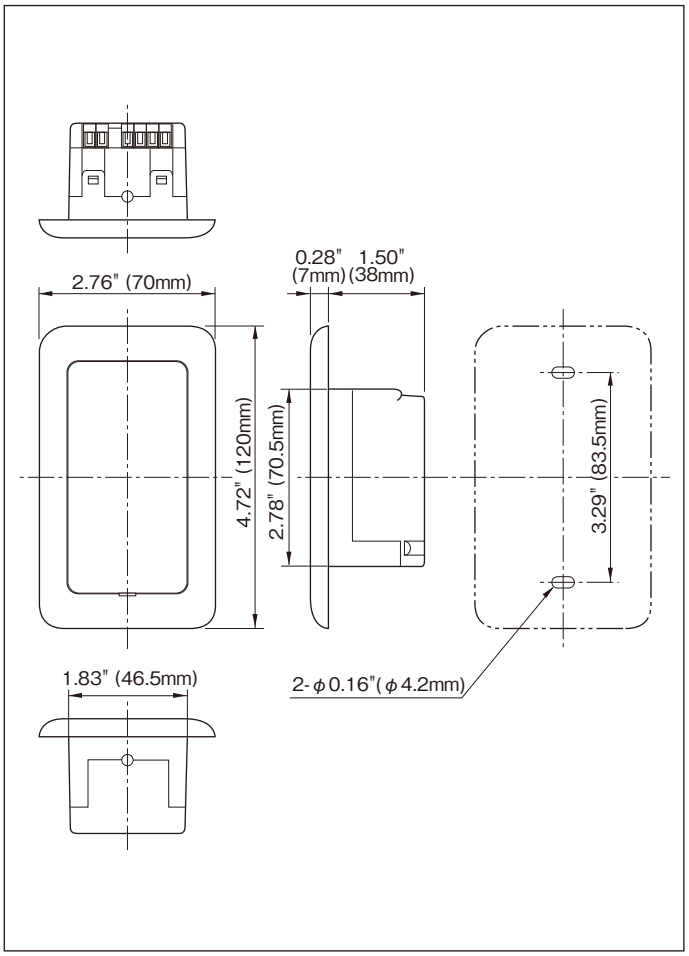
(Units should be tested on a regular weekly basis)

7 SPECIFICATIONS

Model No.	PB-30SU
Detection system	Breaking of infrared beam
Protection distance	100ft. (30m)
Max. beam range	490ft. (150m)
Response time	100 msec. or more
Supply voltage	10 to 30VDC (non-polarity)
Power consumption	Transmitter : 7mA or less at 12VDC 12mA or less at 30VDC
	Receiver : 25mA or less at N.C. contact mode 31mA or less at N.O. contact mode
Alarm output	Dry contact relay output N.C./N.O. selectable Contact action : Interruption time (Min. 2 sec.) Contact capacity : 24V (AC/DC) 0.25A or less
Tamper output	Dry contact relay output N.C. Contact action : Activated when cover is detached Contact capacity : 30V (DC) 0.1A or less
Alarm LED	Red LED (Receiver) Light ON : when an alarm is initiated
Beam adjustment	Horizontal ±15° , Vertical ±5°
Ambient temperature range	−4° F to + 122° F (−20° C to + 50° C)
Mounting position	Indoor
Wiring	Terminals
Weight	Transmitter 3.2oz (90g), Receiver 3.4oz (95g)
Appearance	Main Body : ABS resin (white) Cover : PMMA resin (wine red)

The specifications are subject to change without notice.

8 EXTERNAL DIMENSIONS



Limited Warranty :

TAKEX 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 natural disasters, abuse, misuse, abnormal usage, faulty installation, improper maintenance or any repairs other than those provided by TAKEX. All implied warranties with respect to TAKEX, 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, TAKEX 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.

TAKENAKA ENGINEERING CO., LTD.

In Japan
Takenaka Engineering Co., Ltd.
83-1, Gojo-sotokan, Higashino,
Yamashina-ku, Kyoto 607-8156, Japan
Tel : 81-75-501-6651
Fax : 81-75-593-3816
http : // www. takex-eng. co. jp /

In the U.S.
Takex America Inc.
230E, Caribbean Drive
Sunnyvale, CA 94086, U.S.A.
Tel : 408-747-0100
Fax : 408-734-1100
http : // www. takex. com

In Australia
Takex America Inc.
4/15 Howleys Road Notting Hill,
VIC 3168
Tel : 03-9546-0533
Fax : 03-9547-9450

In the U.K.
Takex Europe Ltd.
Takex House, Aviary Court, Wade Road,
Basingstoke, Hampshire. RG24 8PE, U.K.
Tel : (+44) 01256-475555
Fax : (+44) 01256-466268
http : // www. takexeurope. com

No.04-835 | 1304