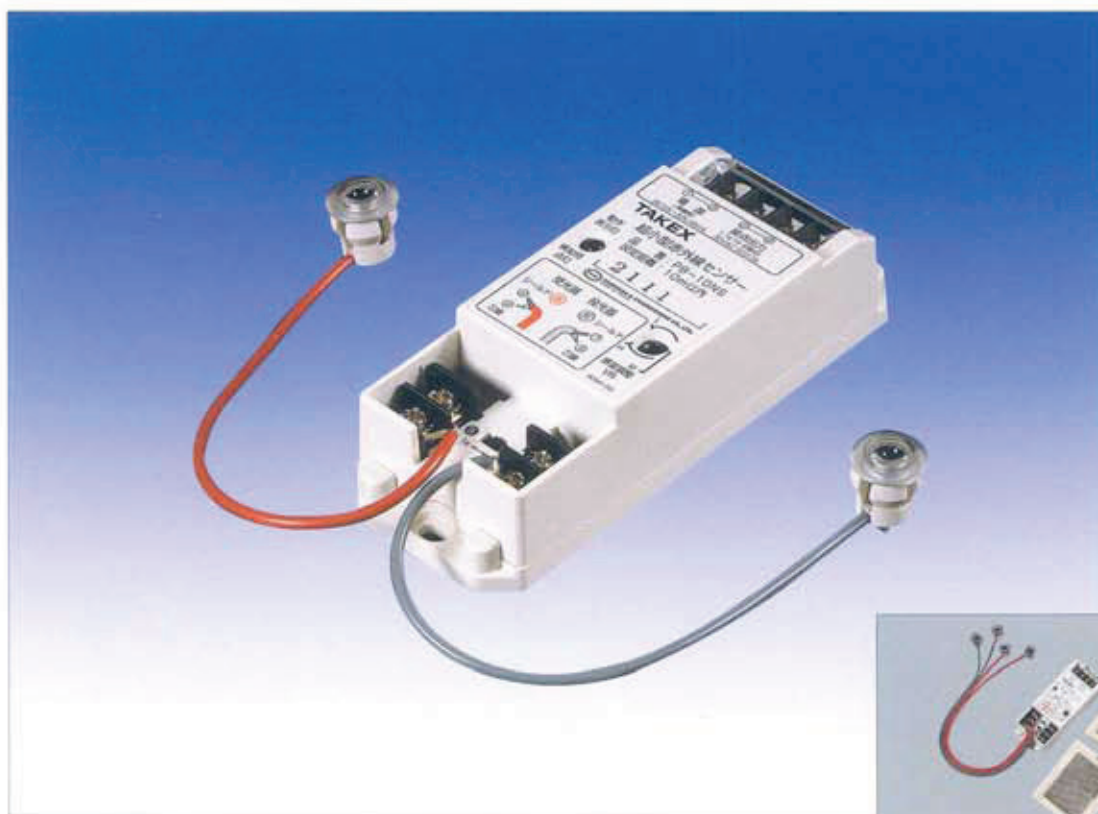


PHOTOELECTRIC BEAM SENSOR

PB-10NS(E)	:SINGLE BEAM 33ft. (10m)	(N.C./N.O. Selectable)
PB-4RNS(E)	:SINGLE BEAM REFLECTIVE 13ft. (4m)	(N.C./N.O. Selectable)
PB-10TNS(E)	:TWIN BEAM 33ft. (10m)	(N.C./N.O. Selectable)
PB-4RTNS(E)	:TWIN BEAM REFLECTIVE 13ft. (4m)	(N.C./N.O. Selectable)



PB-10NS(E)



PB-4RTNS(E)

MINIATURIZED PHOTOELECTRIC BEAM SENSOR DOESN'T USE MUCH SPACE FOR INSTALLATION!

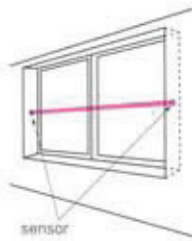
DESCRIPTION

MINIATURIZED PHOTOELECTRIC BEAM SENSOR is suitable for use inconspicuously in a wide range of applications.
(for CD/ATM machine, motor-driven shutter, window or alley.)

For CD/ATM machine



For window



EASY INSTALLATION

For sensor head, make a preliminary hole and push it only to be installed.

BUILT-IN SENSITIVITY CONTROL

Adjustable to the optimal sensitivity as the installation site demands.

SENSOR CORD CAN BE CUT TO LENGTH

Both of transmitter cord and receiver cord can be cut as the installation site requires.

No need to bundle the extra cord.

4 MODELS AVAILABLE

- PB-10NS(E) Single beam TR/RE type 33ft. (10m)
- PB-4RNS(E) Single beam reflective type 13ft. (4m)
- PB-10TNS(E) Twin beam TR/RE type 33ft. (10m)
- PB-4RTNS(E) Twin beam reflective type 13ft. (4m)

MINIATURIZED CONTROL BOX

Miniaturized control box [W:1.77" (45mm) × H:4.72" (120mm) × D:1.14" (29mm)] does not use much space for installation.

PHOTOELECTRIC BEAM SENSOR

■ COVERAGE

● PB-10NS(E)/PB-10TNS(E)

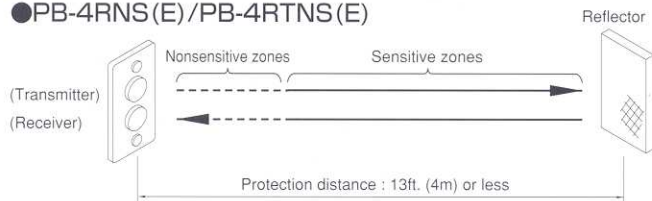


● Sensitivity adjustment

(Adjust the sensitivity adjustment control depending on the protection distance.)

Protection distance	Sensitivity adjustment
Less than 9.9' (3m)	M
More than 9.9' (3m)	H

● PB-4RNS(E)/PB-4RTNS(E)

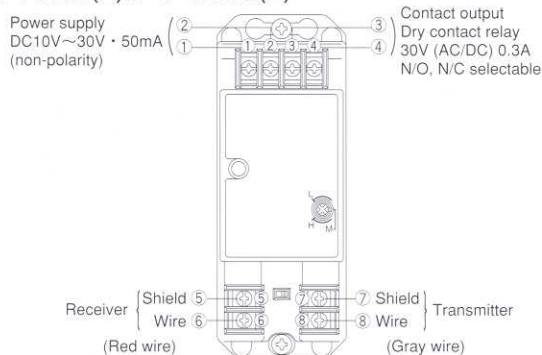


(Note) Nonsensitive zones depend upon the sensitivity volume.

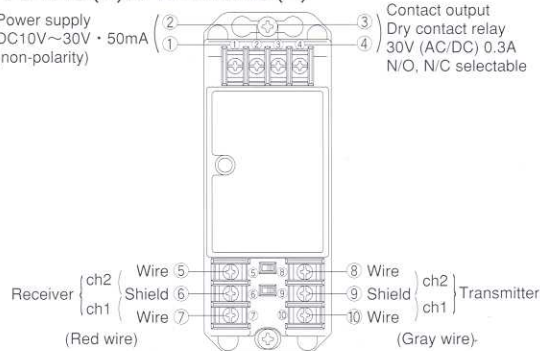
Sensitivity volume	Nonsensitivity zone
L	Within 5.9" (15cm)
M	Within 11.8" (30cm)

■ TERMINAL ARRANGEMENT

● PB-10NS(E)/PB-4RNS(E)

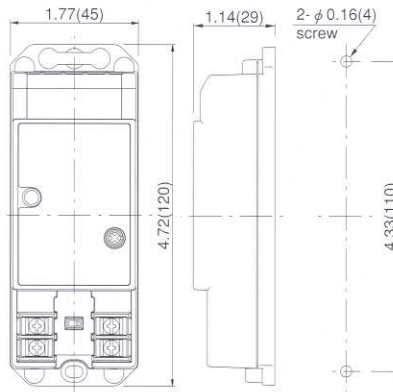


● PB-10TNS(E)/PB-4RTNS(E)

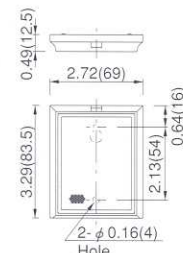


■ EXTERNAL DIMENSIONS unit:inch(mm)

● Control box <All models common>

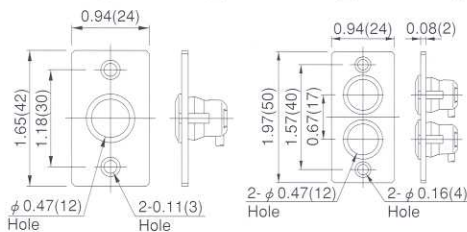


● Reflector <PB-4RNS(E)/PB-4RTNS(E)>

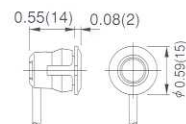


● Flush mounting plate

<PB-10NS(E)/PB-10TNS(E)> <PB-4RNS(E)/PB-4RTNS(E)>



● Sensor (Transmitter and Receiver)



■ SPECIFICATIONS

Model	PB-10NS(E)	PB-4RNS(E)	PB-10TNS(E)	PB-4RTNS(E)
Detection system	Near infrared TR/RE type	Near infrared reflective type	Near infrared TR/RE type	Near infrared reflective type
Protection distance	33ft. (10m) or less	13ft. (4m) or less	33ft. (10m) or less	13ft. (4m) or less
Supply voltage	DC10V to DC30V (Non-polarity)			
Current consumption	45mA or less		55mA or less	
Alarm output	Dry contact relay : 30V (AC/DC) 0.3A N/O, N/C selectable Contact action : Interruption time+Delay time (approx. 1 sec.)			
Response time	Detect 100msec. or more of beam interruption			
Operation LED	Lights Red during detection (beam is interrupted)			
Ambient temperature range	-13°F to +131°F (-25°C to +55°C) (without condensation or frozen)			
Appearance	Sensor : PC resin (clear) Control box : ABS resin (white)			
Weight	Sensor : 4.2oz (120g)	Sensor : 2.1oz (60g)	Sensor : 4.2oz (120g)	Sensor : 2.1oz (60g)
	Control box : 3.3oz (95g)			

The specifications are subject to change without notice.

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

LEAF03-03R25-1

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Fax: 01256-466268

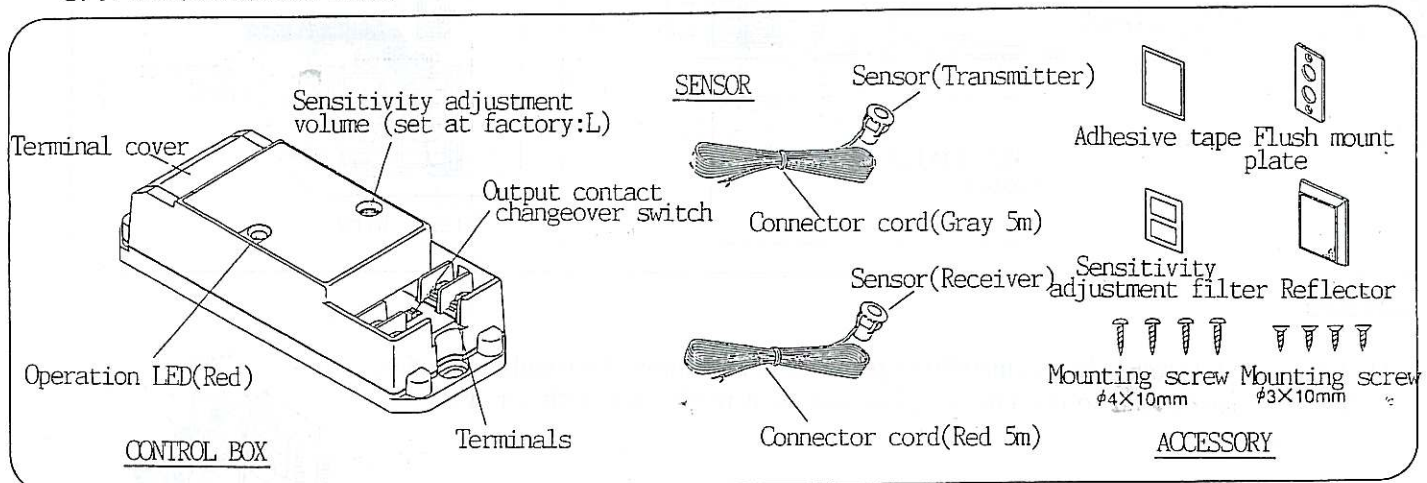
<http://www.pulnix.co.uk/>

INSTRUCTION MANUAL

Thank you for purchasing this TAKEX product. This sensor will provide long and dependable service when properly installed. Please read this Instruction Manual carefully for correct and effective use.

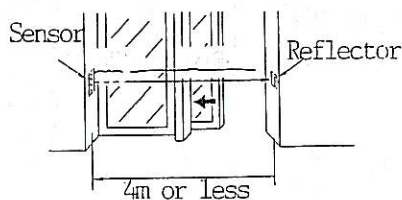
Please note : This sensor is designed to detect intrusion and to initiate alarm ; it is not a burglary-preventing device. TAKEX is not responsible for damage or losses caused by accident, theft, Acts of God (including inductive surge by lightning), abuse, misuse, abnormal usage, faulty installation or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

1. PARTS DESCRIPTION



2. INSTALLATION

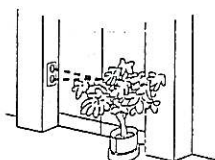
- Attach transmitter and receiver to flush mount plate.
Set detection distance between sensor and reflector within 4m or less.
Near the sensor heads is no detection area.
Set the sensors so that detective objects can pass the area except no detection area.



Note : The width of no detection area depends on sensitivity setting.

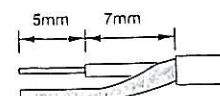
Sensitivity volume	No detection area (object : white cloth etc.)
L	15cm or less
H	30cm or less

- Remove the obstacles that may interrupt the beam.

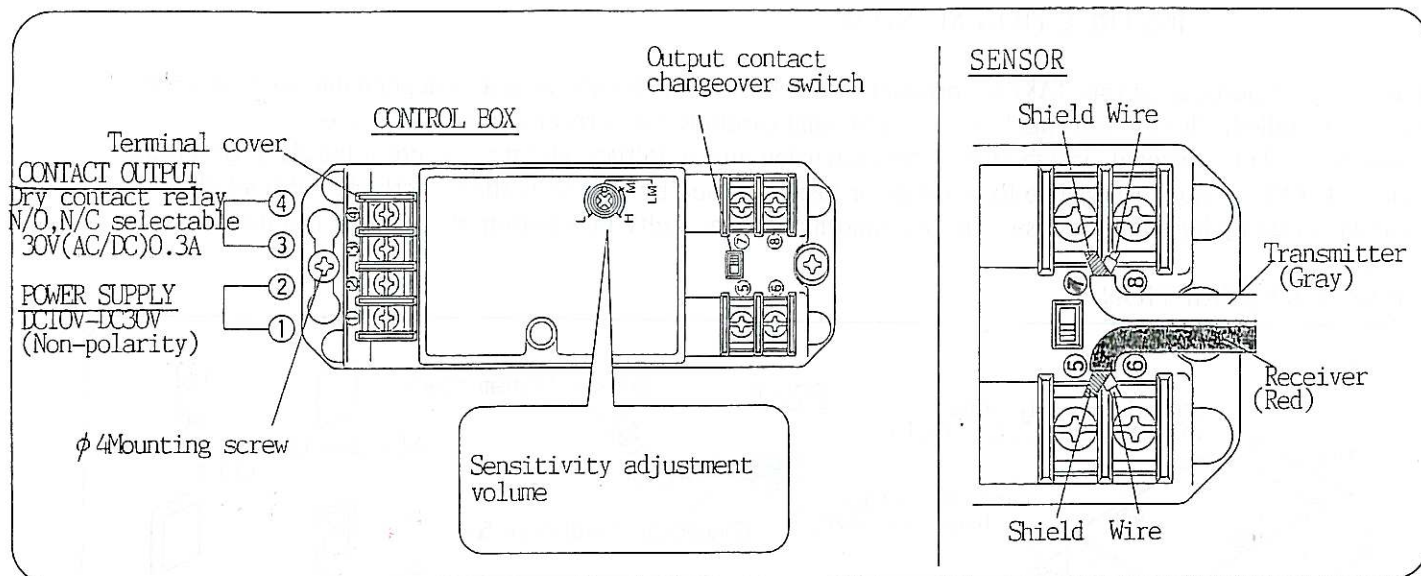


- Do not extend connector cord.
Extension of connector cord will cause deterioration of sensitivity.

- When you cut connection cord, cut as the following figure.

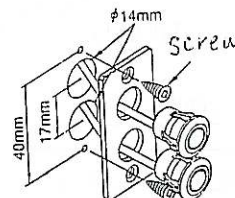


3. INSTALLATION AND WIRING



SENSOR

- (1) Make two φ14mm holes on installation place and clean away the rough hole edge.
- (2) Attach sensor heads to flush mount plate and fix it to the hole with screws.



REFLECTOR

- (1) Set "Sensitivity adjustment volume" on the control box at "M".
- (2) Position where LED goes out while moving reflector.
Attach reflector to that position with screws or adhesive tape.
- (3) Attach sensitivity adjustment filter on reflector.
Set sensitivity adjustment volume at position that LED changes OFF to ON.
(When LED does not light, set it at "L".)
- (4) Remove sensitivity adjustment filter from reflector.

4. OPERATION CHECK

- (1) Make installation and wiring of control box and sensors.
[REF, 3 Installation and wiring]
- (2) Supply the power, and make sure that operation LED on the control box goes off.
Operation LED lights up when beam is interrupted and goes out when beam is not interrupted.
- (3) Interrupt beam, and make sure that operation LED lights up and the connected devices work correctly.

(NOTE) In case operation LED goes off even though beam is interrupted, sensitivity may be too high.
Reduce sensitivity by turning sensitivity adjustment volume.

5. TROUBLE SHOOTING

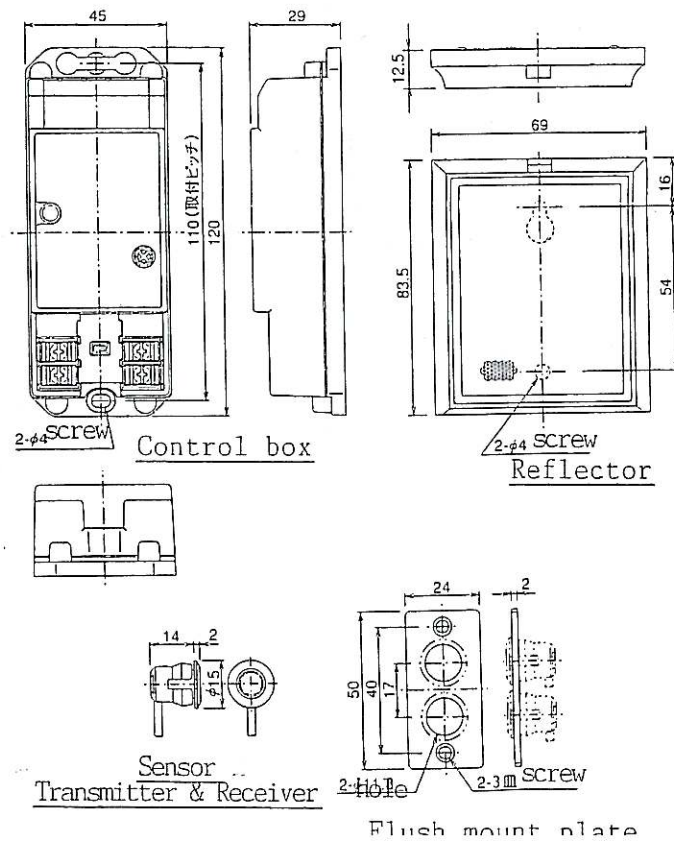
Symptom	Possible cause	Remedy
Inactive	Broken / improper wiring.	Check / correct wiring.
Malfunction	Detection distance does not match with sensitivity adjustment.	Adjust sensitivity.
	Some obstacles are interrupting the beam.	Remove interrupting obstacles.
	Protection distance is over 10m.	Set the distance within 10m.
	Lens surface is soiled or frozen.	Clear the lens surface.

6. SPECIFICATIONS

PHOTOELECTRIC BEAM SENSOR	
Model	PB-4RNS
Detection system	Near infrared beam
Detection distance	4m
Supply voltage	DC10V to DC30V (Non-polarity)
Current consumption	45mA or less
Contact output	Dry contact relay : 30V (AC/DC) 0.3A Contact action : Interruption time + Delay time (approx. 1sec.) N/O, N/C selectable
Response time	Detect 100msec. or more-of beam interruption
Operation LED	Lights Red when detection (beam is interrupted)
Ambient temperature range	-25°C~+55°C (without condensation or frozen)
Appearance	Sensor : PC resin (clear) Control box : ABS resin (white)
Weight	Sensor : 60g X 2 Control box : 95g
Accessory	φ 4 mounting screw X 4 φ 3 mounting screw X 4 Flush mounting plate X 1 Adhesive tape X 1 Reflector X 1 Sensitivity adjustment filter X 1

7. EXTERNAL DIMENSIONS

(Unit : mm)

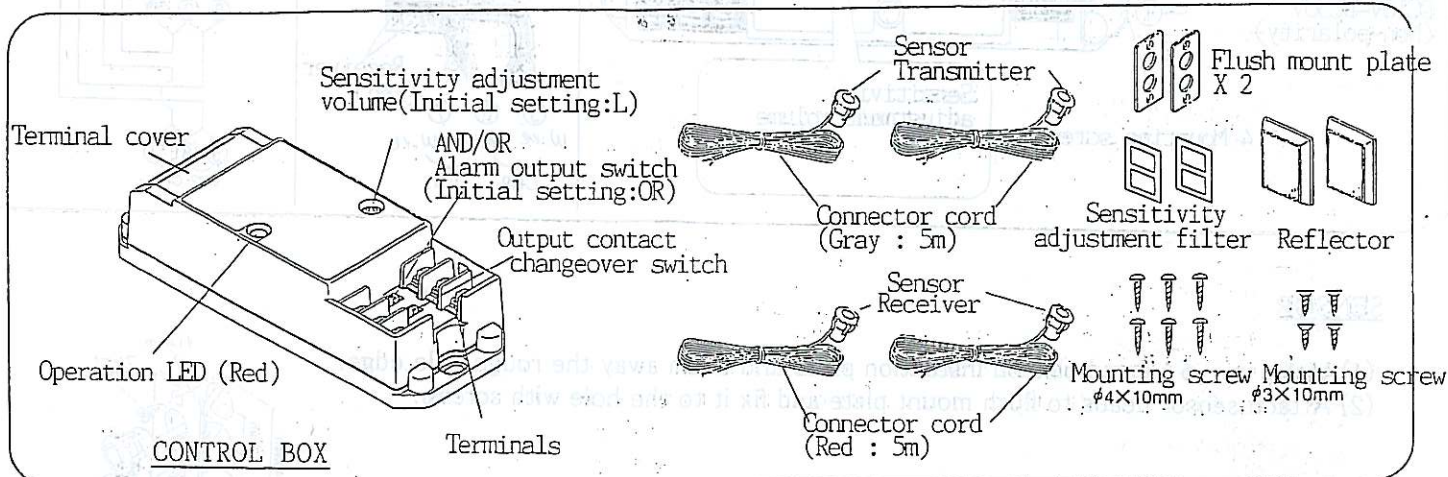


INSTRUCTION MANUAL

Thank you for purchasing this 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 alarm ; it is not a burglary-preventing device. TAKEX is not responsible for damage 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



2. INSTALLATION

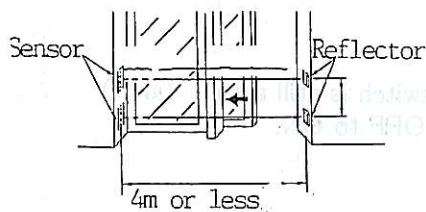
(1) Attach transmitter and receiver to flush mount plate.

Set detection distance between sensor and reflector within 4m or less.

Near the sensor heads is no detection area.

Set the sensors so that detective objects can pass the area except no detection area.

When AND output switch is selected, set the distance between two beams so that objects are surely detected.



Note : The width of no detection area depends on sensitivity setting.

Sensitivity volume	No detection area (object : white cloth etc.)
L	15cm or less
M	30cm or less

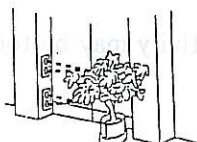
(2) Use both two beams under the same distances.



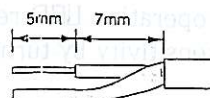
(3) Do not extend connector cord.

Extension of connector cord will cause deterioration of sensitivity.

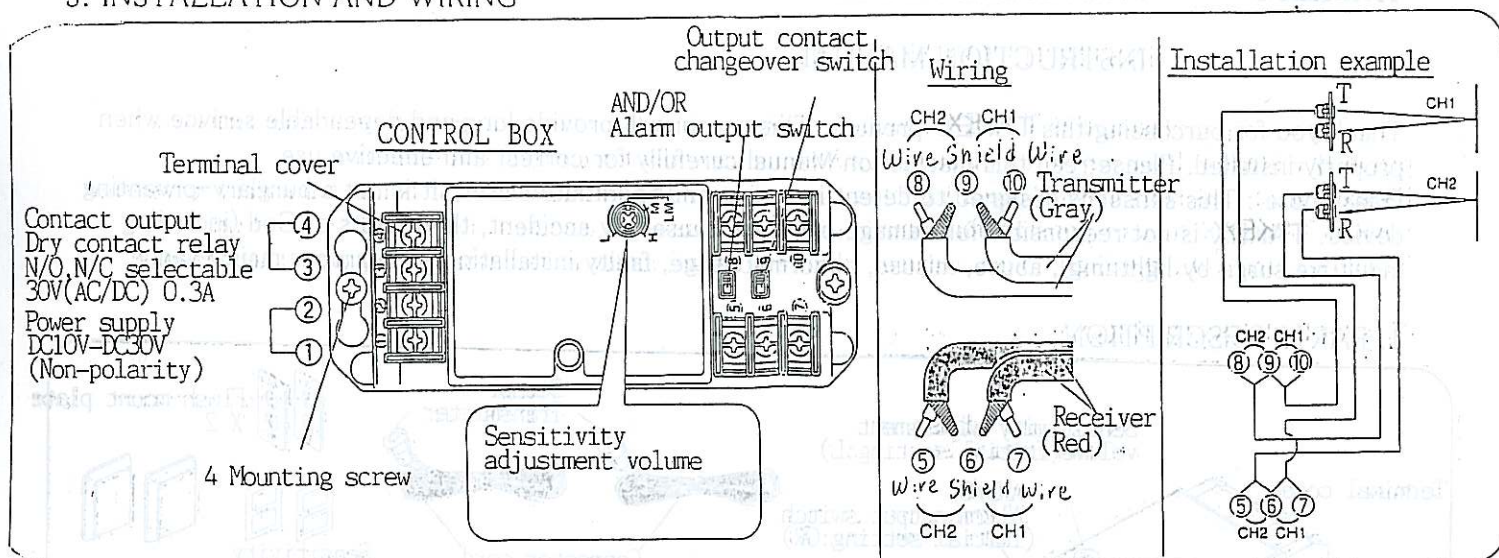
(3) Remove the obstacles that may interrupt the beam.



(4) When you cut connection cord, cut as the following figure.

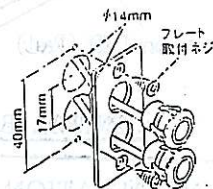


3. INSTALLATION AND WIRING



SENSOR

- (1) Make two $\phi 14\text{mm}$ holes on installation place and clean away the rough hole edge.
- (2) Attach sensor heads to flush mount plate and fix it to the hole with screws.



REFLECTOR

- (1) Set "Sensitivity adjustment volume" on the control box at "M" and "AND/OR alarm output switch" at "AND".
- (2) Position where LED goes out while moving reflector.
Attach reflector to that position with screws or adhesive tape.
- (3) Set alarm output switch at OR. (Operation LED will turn ON.)
Position where LED goes out while moving reflector.
Attach reflector to that position.
- (4) Attach sensitivity adjustment filter on reflector. (Alarm output switch is still set at "OR".)
Set sensitivity adjustment volume at position that LED changes OFF to ON.
(When LED does not light, set it at "L".)
- (4) Remove sensitivity adjustment filter from reflector.
Set AND/OR alarm output switch according to installation condition.

4. OPERATION CHECK

- (1) Make installation and wiring of control box and sensors.
[REF, 3 Installation and wiring]
- (2) Supply the power, and make sure that operation LED on the control box goes off.
Operation LED lights up when beam is interrupted and goes out when beam is not interrupted.
- (3) Turn alarm output switch to "OR".
Make sure that when one of the two beams is interrupted, operation LED lights up and connected appliances work properly.
Turn alarm output switch to "AND".
First, make sure that operation LED remains off and connected devices doesn't work when one of the two beams is interrupted.
Then, make sure that LED lights up and connected appliances work properly when both of the beams are interrupted.

(NOTE) In case operation LED remains off even though beam is interrupted, sensitivity may be too high.
Reduce sensitivity by turning sensitivity adjustment volume.

5. TROUBLE SHOOTING

Symptom	Possible cause	Remedy
Inactive	Broken / improper wiring.	Check / correct wiring.
Malfunction	Detection distance does not match with sensitivity adjustment.	Adjust sensitivity.
	Some obstacles are interrupting the beam.	Remove interrupting obstacles.
	Protection distance is over 10m.	Set the distance within 10m.
	Lens surface is soiled or frozen.	Clear the lens surface.

6. SPECIFICATIONS

	PHOTOELECTRIC BEAM SENSOR
Model	PB-4RTNS
Detection system	Near infrared beam
Detection distance	4m
Supply voltage	DC10V to DC30V (Non-polarity)
Current consumption	55mA or less
Contact output	Dry contact relay : 30V (AC/DC) 0.3A Contact action : Interruption time + Delay time (approx. 1sec.) N/O, N/C selectable
Response time	Detect 100msec. or more of beam interruption
Operation LED	Lights Red when detection (beam is interrupted)
Operation switch	Output contact changeover switch AND/OR alarm output switch
Ambient temperature range	-25°C~+55°C (without condensation or frozen)
Appearance	Sensor : PC resin (clear) Control box : ABS resin (white)
Weight	Sensor : 60g X 2 Control box : 95g
Accessory	φ 4 mounting screw X 6 φ 3 mounting screw X 4 Flush mounting plate X 2 Adhesive tape X 2 Reflector X 2 Sensitivity adjustment filter X 2

7. EXTERNAL DIMENSIONS (Unit : mm)

