

Beam Sensor 100 Mtr Manual

Wired Type & Convertible to Wireless Type
Model: BS- Series – Outdoor Use



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Features

Infrared Beam Adjustment Indicators

The exact matching of the Infrared beam between the Transmitter and Receiver unit can be achieved with the help of 2 indicators on Receiver unit.

Beam Adjustment mechanism

The infrared beams can be adjusted in Receiver unit as well as Transmitter unit. Provision is there to adjust it vertically as well as horizontally.

Option to convert it into a Wireless Beam Sensor

It can be connected to an Optional BS-PS-WL (Beam Sensor Power Supply cum Wireless Unit) whereby it communicates with Burglar Alarm System without wires.

In this case however it has to be connected to 220V Supply from the nearest AC socket.

Power Supply with Battery Back up (Li batteries rechargeable) – Optional

This unit needs 12V to 24V DC supply. However the company supplies an optional power supply with built-in Li rechargeable batteries (called BS-PS) for operation of the Beam sensors for at least 10 hours during power failure.

Protection from Rain, fog, and snow

Its water resistant design protects it from rain, fog & snow.

Avoids false alarm due to birds, insects & falling leaves

Ignores flying birds, insects and falling leaves through its beam.

Description

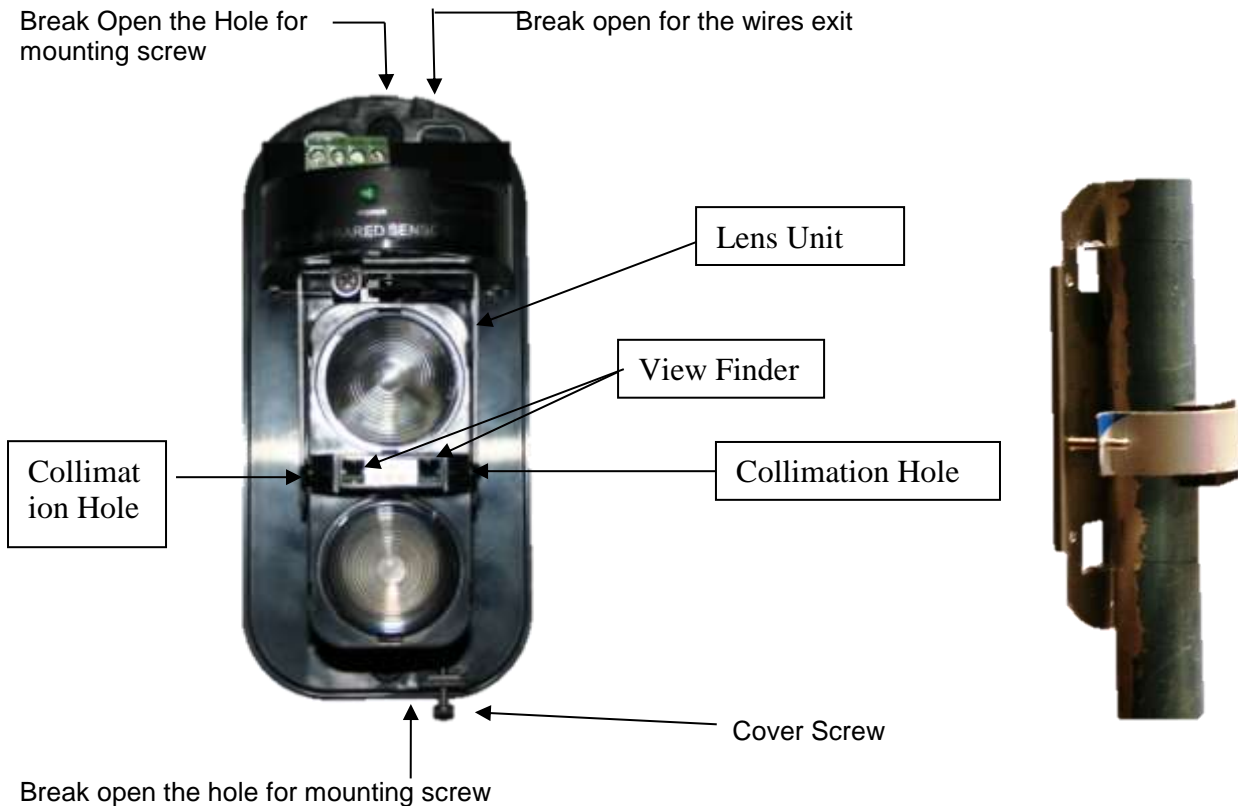
- . Beam Sensors consists of a Transmitter unit transmitting Infrared Beams and a Receiver Unit that receives the beams. Two beams are transmitted and are received by sensors in the Receiver unit. If the path of both the beams is cut simultaneously then it sends a signal to the Burglar Alarm.
- . Supply to the Beam Sensors can be given in either of the following ways:

1. Through BS-PS (Beam Sensor Power Supply having Li rechargeable Batteries. (OPTIONAL)
 2. 12V DC Adapter (OPTIONAL) In this case the user must connect the Adaptor to Inverter out put or UPS out put so that the Beam Sensor keeps working during power failure.
- . The connection to the Burglar Alarm System can be made wireless by connecting Optional BS-PS-WL (Beam Sensor Power Supply cum Wireless Unit)

Installation

It can be installed in 2 ways as explained below:

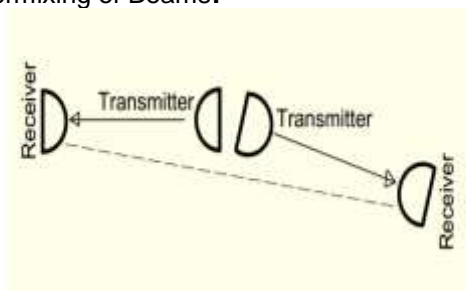
1. Transmitter and Receiver units installed on the same wall.
In this case there should be a wall in front of them or a reflecting object so that the beam from Transmitter is reflected back to the Receiver on the same wall. In this case the detecting range would be half the range i.e., 50mtr.
2. Transmitter and Receiver units installed opposite to each other. In this case the detecting range would be 100mtr.



- Loosen the screw at the lower end of the Transmitter/Receiver and open the Covers.
 - To fit the unit on wall, install the plastic base directly with 2 screws. To make way for the mounting screw, break open the holes in the cabinet.
 - To fit the unit on a Pole, fix the metal plate to the pole with arch shaped clamps as shown above.
 - Install it at a height greater than 1 feet from the ground.
 - Align the Receiver and the Transmitter Units by viewing the other unit through "Collimation holes". The Alignment can be adjusted by Vertical as well as Horizontal movement of the "Lense Unit".
- When the alignment is perfect, LED marked "GOOD" will light. If the alignment is not perfect but still workable then LED marked "LEVEL" will show the level of alignment. Brighter means more aligned.
- Best alignment can also be done by check Voltage across "LEVEL + -" marked holes. Insert RED lead of DMM in + marked hole and BLACK in - marked hole. The DMM in DC Volt mode should read = 1.1V to 3.3V DC.

- Installing multiple Beam Sensors together.

Multiple Beam Sensors can be installed to cover longer area. In such cases, install 2 Receivers together as shown below, in order to avoid intermixing of Beams:



Precautions:

- . It is recommended to not to install the Beam sensors in following conditions:

Facing direct sunshine.

Facing heat source

- . To prevent triggering of the system due to the movement of small animals, Install at greater than 4ft from the ground.
- . Wireless module and the power supply should be placed such that rain or water doesn't fall on it.

Wire to be used depends on the distance between the Transmitter and Receiver Unit and also from the main Unit. Refer the following chart for selection of wire.

Wire Size (in Sq mm)	For Distance
0.5	300 mtr
0.75	400 mtr
1.25	700 mtr
2	1000 mtr

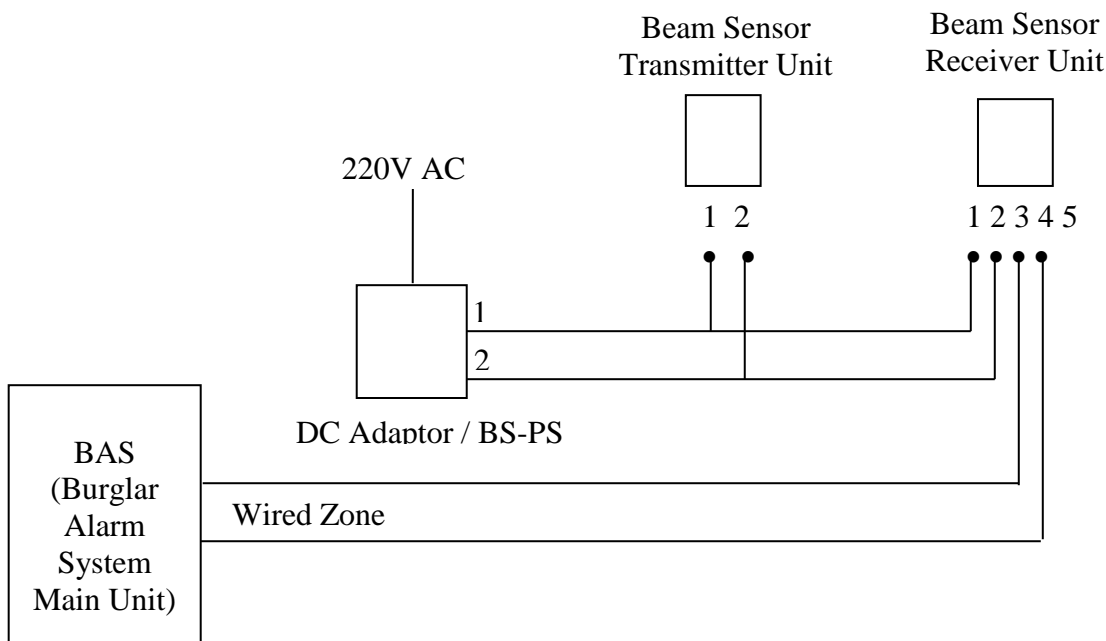
Connections

Following are 2 drawings showing connections in 3 cases i.e., when Beam Sensor is installed with:

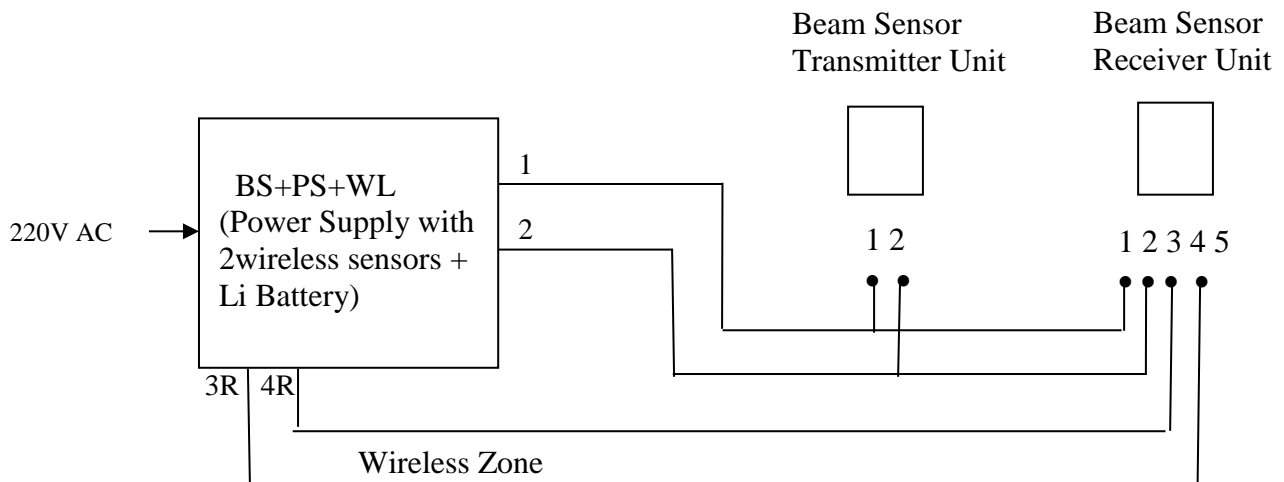
An Adaptor or Power Supply having Li rechargeable Batteries (BS-PS)

A Power Supply having Li rechargeable Batteries + Wireless Modules (BS-PS-WL)

Connection diagram when Beam Sensor is installed with An Adaptor (12V to 24V DC – 500mA) or BS-PS



Connection diagram when the Beam Sensor is installed with a Power Supply having Li rechargeable Batteries + Wireless Modules (BS-PS-WL)



Conversion to a Wireless Unit

To convert these Beam Sensor units to a wireless model, connect BS-PS-WL Module of "Copper Connections" as shown under the heading "Connections".

Registering the Wireless Modules with Burglar Alarm System

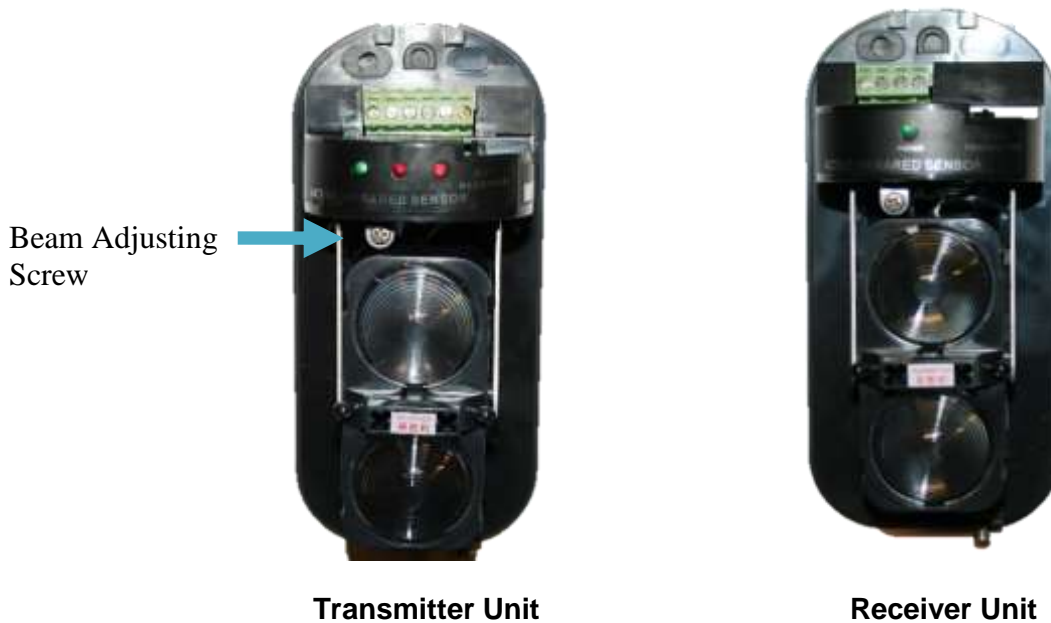
In case Wireless Modules are connected then they are to be registered in Burglar Alarm system. To register, move between the detecting area of the Beam Sensor when it is required to be triggered as per the Manual of the "Burglar Alarm System".

Beam Adjustment & Operation Confirmation

Adjust and focus the beams from transmitter unit to the Receiver Unit for best results by adjusting the Screw (Shown in the Diagram below) + rotate the plastic unit on which 2 Lenses are mounted. Use view finder to align.

When they are aligned, LED indications of "GOOD" and "LEVEL" get ON.

Now do the fine alignment by connecting a Multimeter in DC range to 2 holes marked as "LEVEL + / -" and get the maximum DV Voltage.



Operation confirmation

After installation, confirm the correct operation by a walk test.

The indications are as given below:

Unit	Condition	Indication
Transmitter	ON / Transmitting	"Power" LED gets ON
Receiver	Receiving beams at good levels	"Good" LED & "Level" LED gets ON
	Receiving Beam at low level	"Level" LED gets ON but not "Good" LED
	Intrusion	"Alarm" LED gets ON

Precautions

- Receiver units should not be facing direct sun light or any heating source.
- If more than one pair of Beam Sensors are installed in series then place Transmitter Units back to back on the same pole.
- Align every Receiver and Transmitter for maximum strength by connecting a Multimeter in DC range to 2 holes marked as "LEVEL + / -" and get the maximum DV Voltage.

Technical Specifications

Beam Characteristics	Pulse Infrared Dual Beams
Detection method	Detects intrusion when both the Beams are interrupted simultaneously.

Interruption period Time	50 to 700 m Secs (Selectable)
Maximum distance between Transmitter and Receiver Unit	100mtr in ideal condition.
Alarm Period	2 Secs +/- 1 (Nominal)
Alarm Out put	Relay contact rating= 30V AC/DC – 500mA
Power Supply	12V to 24V DC
Standby current	47 mA
Intrusion current	27 mA
Working Temperature	-25°C to +55°C
Humidity	95% Maximum RH
Material Used	PC Resin

Note:

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All information herein is subject to change at any time without notice. No part of this publication shall be deemed to be part of any contract or commitment whatsoever.
- Product specifications and features are subject to changes without prior notice due to our constant endeavor to improve the product.

Terms of Warranty

Copper Connections Ltd. warrants that this product is manufactured under stringent quality standards, making it free from defects in material and workmanship, as per the following terms and conditions:

1. The limited warranty for the system is valid for a period of twelve months from the date of purchase or fifteen months from the date of manufacture whichever ever is earlier.
2. The limited warranty extends only to the original consumer/ purchaser of the product and is not assignable or transferable to any subsequent purchaser/end user.
3. During the limited warranty period, Copper Connections Pvt. Ltd. or its authorised service network will repair or replace, at Copper Connections Pvt. Ltd. option, any defective product or parts thereof with a new or factory rebuild replacement items and return the product to the consumer in working conditions. No charge will be made to the consumer for either parts or labour in repairing or replacing the product. All replaced parts shall become the property of Copper Connections Pvt. Ltd..
4. Repaired product will be warranted for a balance of original warranty period.
5. Upon request from Copper Connections Pvt. Ltd. or its authorised service center, the consumer must provide purchase receipt or other information to prove the date and place of purchase.
6. The consumer shall have no benefit or coverage if any of the following conditions are applicable:
 - a) The product has been subjected to abnormal use, abnormal condition, improper storage, exposure to moisture or dampness, exposure to excessive temperature or fire etc., unauthorised modifications, unauthorised connections, unauthorised repairs including but not limited to use of unauthorised spare parts in repairs, misuse, neglect, abuse, accident, alteration, improper installation.
 - b) Copper Connections Pvt. Ltd. was not notified by consumer of the alleged defect or malfunction of the product during the limited warranty period.
 - c) The product was used with or connected to equipment not fit for use with Copper Connections Pvt. Ltd. system or used in other than its intended use.
 - d) THE SYSTEM IS NOT CONNECTED TO A PROPER EARTH OR INCASE HIGH VOLTAGES APPEAR ON EARTH.**
 - e) THE DAMAGE IS CAUSED BY LIGHTENING ON EXTENSIONS/ JUNCTION LINES/ OR SPIKES/ SURGES/ HIGH VOLTAGES FROM AC MAIN SUPPLY.**
7. The consumer may contact the authorised dealer to call the service personnel for carrying out repairs or maintenance and the same would be attended within a reasonable response time assigned to the dealer.
8. The consumer will be billed for parts or labour charges not covered by this limited warranty.
9. If the product is brought to Copper Connections Pvt. Ltd. for repairs, after the warranty period Copper Connections Pvt. Ltd. normal service policy shall apply and customer shall be charged accordingly.
10. In no event shall Copper Connections Pvt. Ltd. or their authorised dealer be liable for special or consequential damages or any delay in the performance of this warranty due to causes beyond their control. Copper Connections Pvt. Ltd. shall not be liable for incidental or consequential damage or a loss of anticipated benefits or profits, loss or impairment of privacy of conversation, work stoppage or loss or impairment of data arising out of the use or inability to use the product.
11. Copper Connections Pvt. Ltd. neither assumes nor authorises any authorised service center or any person or entity to assume for it any other obligation or liability beyond what is expressly provided by this limited warranty. All warranty information, product features and specifications are subject to change without prior notice.
12. Any dispute arising out of this warranty shall be subjected to jurisdiction of the arbitrator within the city of Delhi.
13. The decision of Copper Connections Pvt. Ltd., on defects, damages etc shall be final and binding on the parties and no dispute regarding this, could be agitated before any civil court.

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ISO 9001:2008 Certified company

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