



Parking Alert Signs

Engineered safety systems for you parking facilities

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BeamGuard30 Manual

Reflector Beam Detector

PS-BD30R | Installation and operation



How it works

The sensor contains both the transmitter and receiver. A passive reflector returns the beam to the sensor. An object interrupting the return changes the relay output.

Only the sensor needs power and signal wiring. The reflector requires no electrical connection. The detector monitors one beam path, not an entire area.

Basic information

Item	Specification
Part number	PS-BD30R
Supply	12–24 VDC or 9–24 VAC (45–60 Hz)
Current at 12 VDC	<38 mA relay on; <20 mA relay off
Detection span	Up to 30 ft (about 9.1 m)
Sensitivity / response	Fixed / approximately 30 ms
Output	Isolated relay: COM, NO, NC
Contact rating	3 A at 30 VDC or 125 VAC
Temperature	–4°F to 158°F (–20°C to +70°C)
Sensor dimensions	4.5 × 2.1 × 2.0 in. (115 × 54 × 50 mm)

Typical applications

- Vehicle or pedestrian warning signs at entrances, exits, and crossings.
- Activation or beam inputs for compatible gate, barrier, and door controllers.
- Crossing detection in parking garages, ramps, and warehouse passages.

Quick installation

1. Mount the sensor and supplied reflector on stable surfaces facing each other, within a 30 ft span. Select a beam height that intersects every intended target.
2. With the path clear, power the sensor. Aim the swivel toward the reflector and adjust the height screw until the returned signal is stable.
3. Check for a steady power indication and valid return. A flashing green light indicates weak signal; clean and realign rather than accepting a marginal setting.
4. Tighten the mounts, fit the protective cover, and repeat the clear/blocked test. Confirm the controller responds only as intended.

For door and gate installations, confirm compatibility with the operator's required safety interface. Retain required safety devices; a general relay connection does not establish a monitored safety system.

In this manual

- 1 Product and quick installation • 2 Placement and alignment
3 Terminals and PSC-5 connection • 4 Testing and troubleshooting



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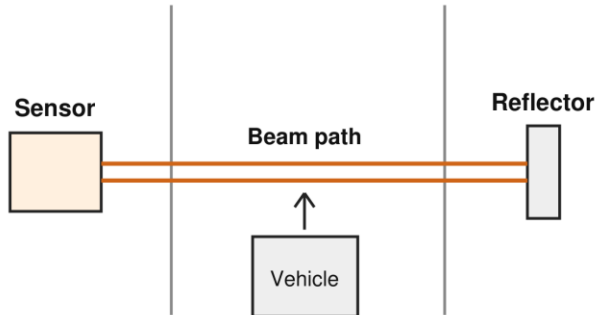
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Placement and Alignment

Reflector Beam Detector

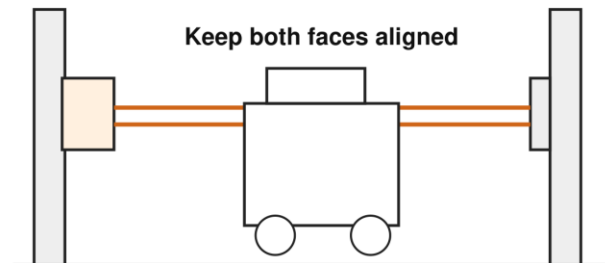
Beam path and reflector positioning

TOP VIEW — ACROSS THE PATH



Up to 30 ft between sensor and reflector

SIDE VIEW — MATCH THE HEIGHT



Select height to intersect intended targets

A single beam does not cover the whole lane

Illustrative views; not to scale. Outgoing and return rays are drawn apart for clarity.

Choose the beam height and location

- Place the sensor and reflector at matching heights with unobstructed sight between them. Use the supplied reflector; do not substitute a plain mirror.
- Choose a height that reliably intersects the intended vehicles or pedestrians. Test vehicle body gaps, underbody clearance, and small targets.
- A single beam can be passed above or below. It does not identify travel direction, distinguish people from vehicles, or prove that the surrounding area is clear.
- Keep the beam away from moving doors, vegetation, stored objects, and other activity that should not trigger the system.

Aim and secure the sensor

The swivel permits aiming up to 90° left or right. Use the height adjustment screw for vertical alignment. This is a mechanical aiming range, not a 180° detection field: the detector still monitors one beam to one reflector.

Aim at the center of the reflector and find a stable valid-return indication. Make small horizontal and vertical adjustments, then tighten the mounting hardware and check the signal again. Repeat with the protective cover fitted.

LED reference

Indicator	Meaning / action
Green on	Power present
Green flashing	Weak returned signal; clean and realign
Red on	Valid returned signal / beam clear
Red off	No valid return; beam blocked or alignment lost

Outdoor installation and upkeep

Fit the protective cover and route cable entries to keep water out. Avoid direct sunlight into the optics where possible. Keep the lens and reflector clean; fog, dirt, rain, or a shifted mounting surface can weaken the returned signal. Recheck alignment after service or impact.



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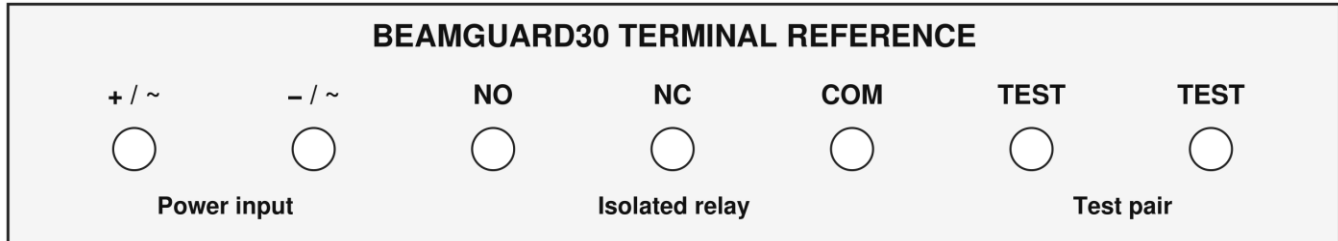
Wiring

Reflector Beam Detector

Terminal reference and PSC-5 example

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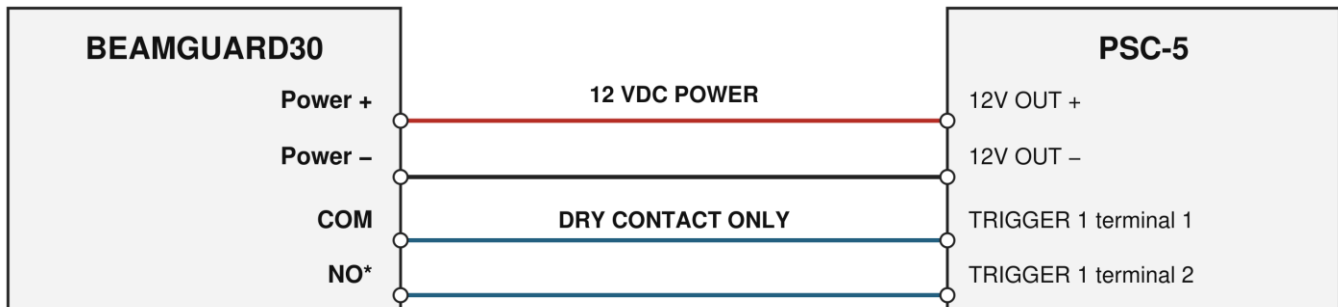
Disconnect power before making connections. For DC, observe + and – polarity. For AC, use the two power input terminals marked ~. Never connect the supply to relay or TEST terminals.



Order follows the PASS sheet. Always verify the terminal markings on the supplied sensor.

Terminals	Use
Power + / – or ~ / ~	12–24 VDC or 9–24 VAC supply, as marked on the unit.
COM with NO or NC	Isolated relay contact to a compatible controller input. Verify actual clear/blocked behavior.
TEST pair	Reserved for the test function. Leave open in normal service; do not apply external voltage.

Connecting to the PSC-5



*NO shown as in the PASS sheet. Confirm opening or closing on beam interruption before setting the input.

Power the detector from PSC-5 12V OUT. Connect COM and NO across TRIGGER 1 as shown; for Trigger 2, use that trigger pair. Keep all PSC-5 auxiliary loads within 1 A combined. Do not join trigger wiring to either supply terminal.

Match the trigger setting to the contact test

With the relay wires disconnected from the controller, use a continuity meter across COM and the chosen contact while the sensor is powered. Record the state with the beam clear and then blocked. Measure only the isolated relay contacts.

Beam clear	Beam blocked	PSC-5 P009 or P010
Open	Closed	CLOS
Closed	Open	OPEn

Mode 1 starting settings: P005 = 1; P006 = 10 seconds; P007 = 0; P008 = OFF. Set P009 for Trigger 1 or P010 for Trigger 2 using the table. Press ENTER to save, then RESET to exit. Test the complete warning system.



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Testing and Service

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Commissioning and troubleshooting

Commissioning checklist

- Confirm stable operation with the beam clear and both covers fitted.
- Block the beam near the sensor, at mid-span, and near the reflector. Verify the signal and controller response each time.
- Test actual vehicles and pedestrians in each required direction. Check for gaps that could pass through without breaking the beam.
- Keep an object in the beam and verify the required system behavior. Remove it and confirm normal operation returns.
- Test loss and restoration of sensor power and record the controller's response. Do not assume a particular failure response from NO/NC labels alone.
- For PSC-5 installations, test warning duration and audio. P008 = On can restart and extend activation while the input remains active.

Test terminals

The PASS wiring sheet identifies the two TEST terminals as a pair to short for testing. If using this function, temporarily bridge only that pair, observe the response, then remove the bridge. Never bridge power or relay terminals. A physical beam-block test is still required to confirm optical alignment and detection.

Troubleshooting

Symptom	Check or action
No power indication	Check supply at the sensor, DC polarity, and connections.
Flashing green / weak signal	Clean both faces, remove obstructions, and realign. Check spacing and loose mounts.
Red stays off with path clear	Verify the reflector faces the sensor. Check aim, dirt, cover seating, and anything blocking the return.
Unwanted activations	Check moving objects, vibration, direct sunlight, moisture, and weak alignment. Test under actual site conditions.
LED changes; controller does not	Check COM and the selected relay terminal. Verify the controller setting against the measured clear/blocked contact states.
Controller active while beam clear	Check for reversed input logic. Select CLOS for a contact that closes on interruption, OPEN for one that opens.

Installation record

Location: _____ Date: _____ Installer: _____
Span: _____ Beam height: _____ Supply: _____
Contact pair: _____ Clear state: _____ Blocked state: _____
Controller / input setting: _____ Test result: _____

Support

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