Seco-Larm E-960-D90GQ

Seco-Larm E-960-D90GQ Twin Photobeam Detector

INSTRUCTION MANUAL

Model: E-960-D90GQ | Brand: Seco-Larm

1. Introduction

The Seco-Larm E-960-D90GQ is a high-performance twin photobeam detector designed for reliable perimeter security in both indoor and outdoor environments. It features advanced lensed optics and a built-in laser beam alignment system for quick and precise installation, minimizing false alarms caused by environmental factors.

2. Key Features

- **Twin Beams:** Designed to minimize false alarms from small objects like falling leaves or birds.
- **Lensed Optics:** Reinforces beam strength and provides excellent immunity to false alarms due to rain, snow, or mist.
- **Weatherproof Design:** Features a sunlight-filtering case suitable for outdoor use.
- **Non-polarized Power Inputs:** Simplifies wiring during installation.
- **Anti-frost System:** Ensures reliable operation in cold conditions.
- **Automatic Input Power Filtering:** Includes special noise rejection circuitry for stable performance.
- **NO/NC Trigger Output:** Provides flexible alarm output options.
- **N.C. Tamper Circuit:** Enhances security by detecting unauthorized tampering.
- **Built-in Laser Beam Alignment:** Facilitates quick and accurate installation.
- **Monitored Output:** N.C. or 10kΩ resistor on N.O. output for system monitoring.

3. Setup and Installation

The E-960-D90GQ is designed for straightforward installation. Ensure proper alignment for optimal performance.

3.1 Mounting

Use the included U-brackets for pole mounting. Ensure the units are mounted securely and are stable to

prevent misalignment.

3.2 Wiring

Connect the power supply (12~30 VDC/VAC 60Hz, 200mA) to the non-polarized power inputs. Connect the alarm output (SPDT NO/NC/COM relay, 1A@30VDC/VAC) and tamper output (N.C. switch, 1A@30VDC/VAC) to your security system as required.

3.3 Laser Beam Alignment

The built-in laser beam alignment system significantly simplifies the setup process. Both the transmitter and receiver units have lasers to assist in aligning them with each other.

Image: Seco-Larm E-960-D90GQ Twin Photobeam Detector. This image shows two black, rectangular photobeam units facing each other, with two horizontal red lines between them, representing the twin laser beams used for alignment and detection. The units are labeled 'ENFORCER'.

Activate the laser alignment feature on both units. Adjust the horizontal (±90°) and vertical (±5°) alignment angles until the laser beams from each unit are precisely aimed at the corresponding receiver on the opposite unit. This ensures the most effective detection and minimizes false alarms.

4. Operation

Once installed and powered, the photobeam detector operates by maintaining an invisible infrared beam

between the transmitter and receiver. Interruption of this beam triggers an alarm output.

4.1 LED Indicators

- **Red LED:** Illuminates when the transmitter and receiver are not aligned, or when the beam is broken (alarm condition).
- **Yellow LED:** Indicates a weak receiver signal or a partially obstructed beam. Proper alignment is crucial to keep this LED off.
- **Green LED:** Illuminates when the unit is connected to power, indicating normal power supply.

5. Maintenance

The E-960-D90GQ is designed for low maintenance. Periodically inspect the units for any physical damage or obstructions. Keep the lenses clean from dirt, dust, or spiderwebs to ensure optimal beam transmission and reception. The anti-frost system helps prevent ice buildup in cold environments.

6. Troubleshooting

- **No Power (Green LED Off):** Check power connections and ensure the operating voltage (12~30 VDC/VAC) is supplied correctly.
- **Constant Red LED:** Indicates a persistent beam interruption or misalignment. Re-align the units using the laser alignment system. Check for any physical obstructions between the units.
- **Constant Yellow LED:** Suggests a weak signal. This could be due to slight misalignment, dirty lenses, or environmental factors like heavy fog. Clean lenses and re-align if necessary.
- **False Alarms:** While twin beams minimize false alarms, ensure the units are securely mounted and not subject to vibration. Verify proper alignment and clean lenses.

7. Specifications

Current Draw	50mA max (laser align only), 150mA max (active operation excluding laser alignment)
Sensing Range	Outdoor: 90' (30m), Indoor: 190' (60m)
Operating Voltage	12~30 VDC/VAC 60Hz, 200mA
Interrupt Speed	10ms
Alarm Output	SPDT NO/NC/COM relay, 1A@30VDC/VAC
Tamper Output	N.C. switch, 1A@30VDC/VAC
Case Material	PC Resin
Laser Wavelength	650nm
Operating Temperature	-13°~+131°F (-25°~+55°C)
Laser Output Power	<5mW
Alignment Angle	Horizontal: (±)90°, Vertical: (±)5°

Weight	2.5-lb (1.1kg)

8. Safety Information

Always follow local electrical codes and safety regulations during installation. Do not attempt to disassemble or modify the unit, as this may void the warranty and pose a safety risk. The laser used for alignment is low power, but direct eye exposure should be avoided. Disconnect power before performing any maintenance or wiring.

9. Warranty and Support

For warranty information and technical support, please refer to the documentation provided with your purchase or contact Seco-Larm customer service directly. Keep your proof of purchase for warranty claims.