



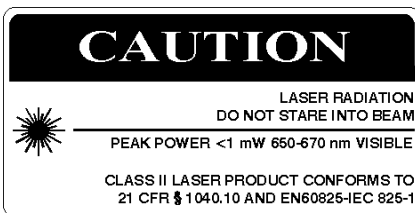
Description

LaserSight combines the robust housing design of the Series 9000 photoelectric sensor with a Class II visible red laser diode light source. This enables detection of objects at greater ranges and with greater precision than sensors fitted with a conventional infrared light source.

The LaserSight photoelectric sensor is available in both a polarized retroreflective and transmitted beam sensing modes. The polarized retroreflective mode provides a 40m (130ft) sensing range to a standard 3in reflector. The collimated beam provides a small 2x5mm spot size close in, and no greater than 3/4in at maximum range.

Any standard reflector may be used with this version provided it is suitable for use with polarized photoelectric sensors. Rockwell Automation/Allen-Bradley suggests the use of our new microcube reflectors due to their high reflectivity levels.

For applications requiring greater sensing distances, an AC/DC 300m (1000ft) range transmitted beam source version is available. Select from matching receivers with either DC or AC operation and either NPN/PNP or SPDT relay outputs.



General Specifications

| | |
|------------------------------|---|
| Laser Classification | <1mW peak, Class II per US21 CFR1040.10 (EN 60 825) |
| Unit Protection | Overload, short circuit (DC only), reverse polarity, false pulse |
| Supply Voltage | See Selection Guide |
| Current Consumption | See Selection Guide |
| Output Type | NPN and PNP (DC), SPDT relay (AC) |
| Output Mode | Light/dark operate selectable |
| Output Rating | See Selection Guide |
| Response Time | 500µs to 23ms by output type |
| Housing Material | Valox® |
| Lens Material | Acrylic |
| LED Indicators | See User Interface on page 1-93 |
| Connection Types | 4-pin DC micro and mini QD, 2m 300V 22AWG cable (DC) 5-pin mini QD, 2m 300V 22AWG cable (AC) |
| Supplied Accessories | #129-130 mounting kit |
| Optional Accessories | Cordsets, mounting brackets—see Section 5 |
| Operating Environment | NEMA 3, 4X, 6P, 12, 13; IP67 (IEC 529) 1200psi washdown |
| Vibration | 10-55Hz, 1mm amplitude, Meets or exceeds IEC 947-5-2 |
| Shock | 30g with 1ms pulse duration, Meets or exceeds IEC 947-5-2 |
| Operating Temperature | -10°C to +40°C (-14°F to +104°F) DC versions -10°C to +35°C (-14°F to +95°F) AC versions |
| Relative Humidity | 5...95% |
| Approvals | UL listed, CSA certified, and CE marked for all applicable directives |

Features

- Class II laser light source
- Long range polarized retroreflective and transmitted beam sensing modes
- Visible red beam for easy alignment
- Robust 30mm housing
- Both NPN and PNP outputs (DC)
- SPDT relay output (AC)
- Selectable light/dark operate
- Micro, mini QD, 2m cable connections

General Information

Wiring Diagrams page 1-93
Dimensions page 1-94

Sensing Modes

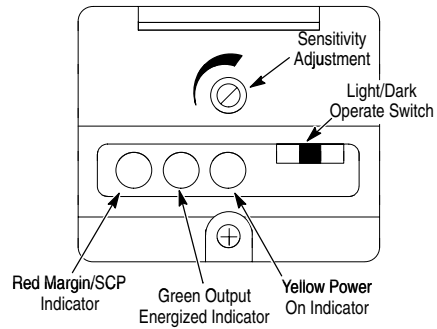
Polarized Retroreflective . . . page 1-95
Transmitted Beam page 1-96

Accessories

Quick-Disconnect Cables . . . page 5-1
Swivel/Tilt Bracket page 1-316
Apertures page 1-321
Reflectors, Reflective Tape page 1-327

User Interface Panel

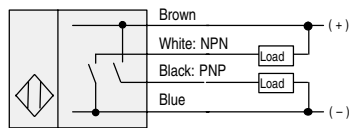
| Label | Color | State | Status |
|------------|--------|----------|----------------------|
| Margin/SCP | Red | OFF | Margin < 2.5 |
| | | ON | Margin > 2.5 |
| | | Flashing | Output SCP active |
| Output | Green | OFF | Output not activated |
| | | ON | Output activated |
| Power | Yellow | OFF | Sensor not powered |
| | | ON | Sensor powered |



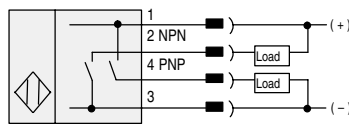
Wiring Diagrams

DC Models

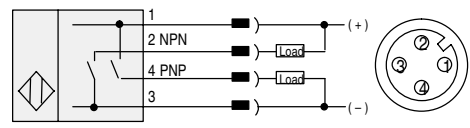
Cable Model: 42GR_9_L0



4-pin DC Micro QD Model: 42GR_9_L0-QD

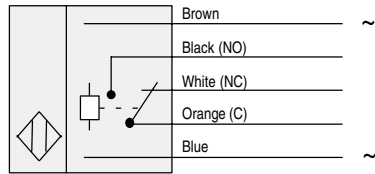


4-pin DC Mini QD Model: 42GR_9_L0-QD1

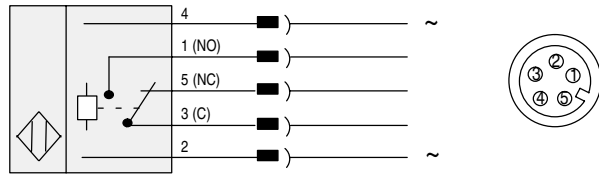


AC Transmitted Beam Receivers

Cable Model: 42GRR-90L2

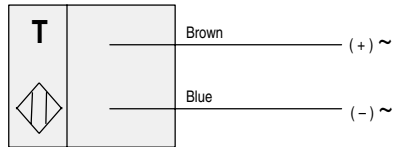


5-pin AC Mini QD Model: 42GRR-90L2-QD

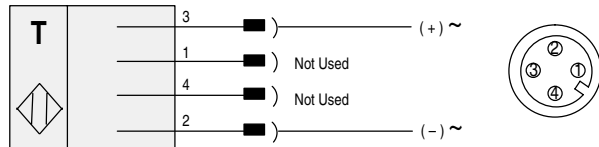


Transmitted Beam Source

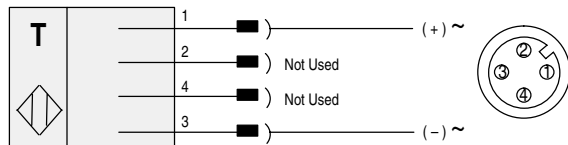
Cable Model: 42GRL-90L0



AC/DC Mini QD Model: 42GRL-90L2-QD

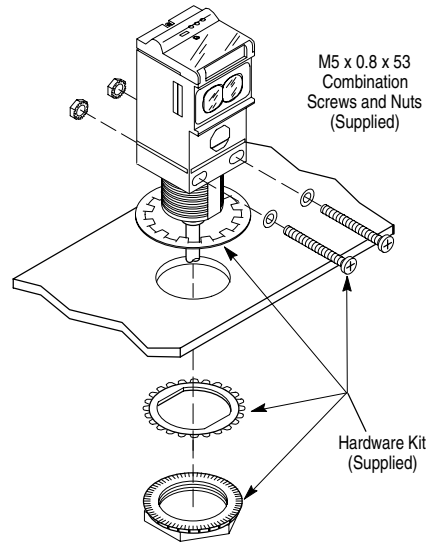
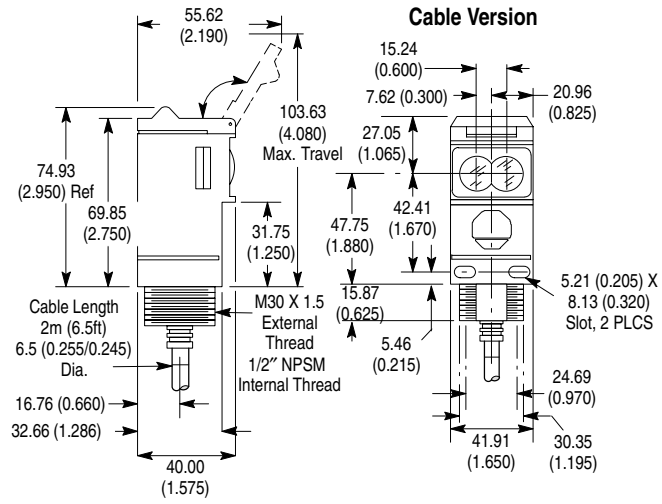


DC Micro QD Model: 42GRL-90L0-QD



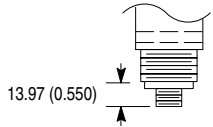
Dimensions—mm (inches)

All Versions

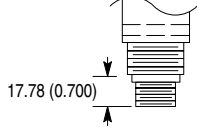


Connector Version

Micro Style

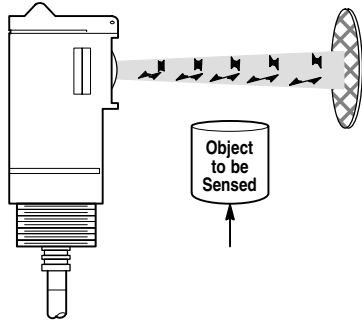


Mini Style



Thread Size

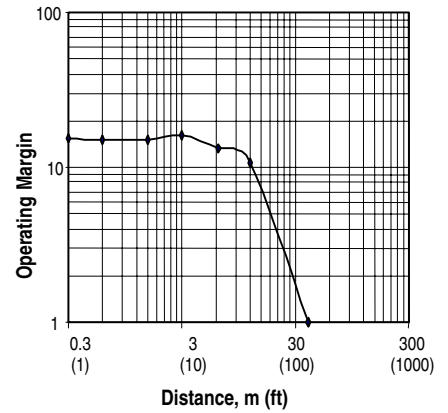
| | |
|-------------|-----------------------|
| Micro Style | M12 x 1 1 Keyway |
| Mini Style | 7/8-16 UN 1 Keyway |



QD Cordsets and Accessories

| Description | Catalog Number |
|--------------------------------------|----------------|
| 1.8m (6ft) 4-pin mini QD cordset | 889N-F4AF-6F |
| 2m (6.5ft) 4-pin DC micro QD cordset | 889D-F4AC-2 |
| Tilt/Swivel Bracket | 60-2439 |
| Reflector, 3in dia. | 92-39 |

Typical Response Curve



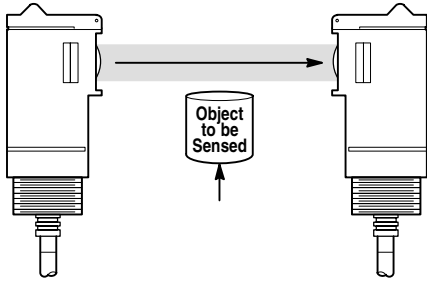
Specifications

| | |
|--------------------|----------------------------|
| Spot Size | 19mm (3/4in) @ 40m (130ft) |
| Emitter LED | Visible Laser, 650nm |

Selection Guide

| Operating Voltage Supply Current | Sensing Distance | Output Energized | Output Type/Capacity Response Time | Maximum Leakage Current | Connection Type | Catalog Number |
|-------------------------------------|------------------------------|----------------------------------|---------------------------------------|-------------------------|-------------------|----------------|
| 10-30V DC 45mA | 30cm (1ft) to 40m (130ft) | Selectable Light/Dark Operate | PNP/250mA NPN/250mA 500µs | 10µA | 2m 300V cable | 42GRU-92L0 |
| | | | | | 4-pin DC micro QD | 42GRU-92L0-QD |
| | | | | | 4-pin DC mini QD | 42GRU-92L0-QD1 |

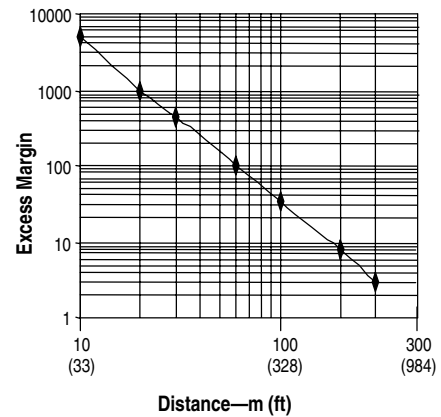
LaserSight Transmitted Beam



QD Cordsets and Accessories

| Description | Catalog Number |
|--------------------------------------|----------------|
| 1.8m (6ft) 4-pin mini QD cordset | 889N-F4AF-6F |
| 1.8m (6ft) 5-pin mini QD cordset | 889N-F5AF-6F |
| 2m (6.5ft) 4-pin DC micro QD cordset | 889D-F4AC-2 |
| Tilt/Swivel Bracket | 60-2439 |

Typical Response Curve



Specifications

| | |
|-------------|----------------------|
| Emitter LED | Visible Laser, 650nm |
|-------------|----------------------|

Selection Guide for Light Source

| Operating Voltage Supply Current | Maximum Sensing Distance | Connection Type | Catalog Number |
|-------------------------------------|--------------------------|-----------------|----------------|
| | | 2m 300V cable | 42GRL-90L0 |
| 10-264V AC/DC 10mA | 300m (1000ft) | 4-pin micro QD | 42GRL-90L0-QD |
| | | 4-pin mini QD | 42GRL-90L2-QD |

Selection Guide for Receiver

| Operating Voltage Supply Current | Sensing Distance | Output Energized | Output Type/Capacity Response Time | Maximum Leakage Current | Connection Type | Catalog Number |
|-------------------------------------|-------------------------------|----------------------------------|---|-------------------------------|-----------------|----------------|
| 10-40V DC 25mA | 5m (16ft) to 300m (1000ft) | Selectable Light/Dark Operate | PNP/250mA NPN/250mA 5ms max. | 10uA | 2m 300V cable | 42GRR-90L0 |
| | | | | | 4-pin micro QD | 42GRR-90L0-QD |
| | | | | | 4-pin mini QD | 42GRR-90L0-QD1 |
| 70-264V AC/DC 10mA | 5m (16ft) to 300m (1000ft) | Selectable Light/Dark Operate | SPDT EM Relay 2A/132V AC 1A/264V AC 1A/150V DC 23ms | — | 2m 300V cable | 42GRR-90L2 |
| | | | | | 5-pin mini QD | 42GRR-90L2-QD |

Allen-Bradley Drives