

Series 9000 PHOTOSWITCH Intrinsically Safe Photoelectric Sensors

Catalog Numbers 42GRL-9540, 42GRL-9540-QD, 42GRL-9540-QD1, 42GRR-9500, 42GRR-9500-QD, 42GRR-9500-QD1

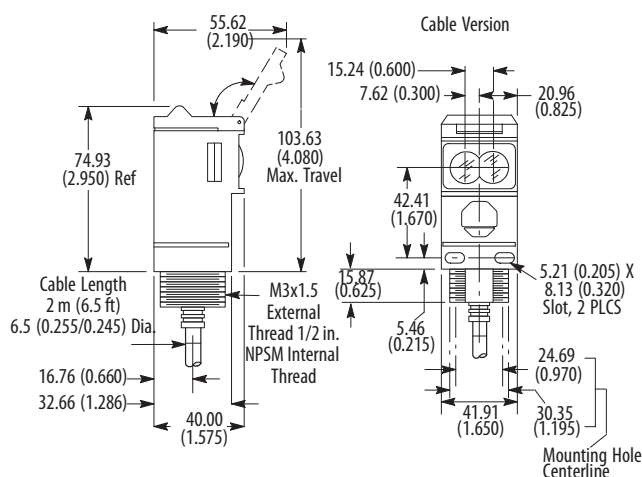
Description

The 42GRx-95xx is approved as an intrinsically safe apparatus under the entity concept by CSA for installation into a Class I; Division 1; Groups A, B, C, D hazardous location when wired as shown in the attached control drawing (75002-200). The sensor must be connected to an approved safety barrier for installation into Division 1 locations.

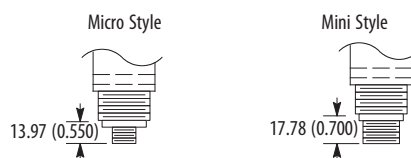
Wiring between the sensor and the safety barriers must comply with all relevant national standards and/or those standards set by the authority having jurisdiction at the installation site. These can include Article 504 of the National Electrical Code, ANSI/ISA RP-12.6 (United States), or CSA-C22.2 (Canada). Follow these minimum requirements for installation.

1. Intrinsically safe wiring must be separated from non-intrinsically safe wiring by at least 50 mm (2 in.). The use of tie-downs, grounded metal partitions, or approved insulating partitions are acceptable.
2. Intrinsically safe wiring shall be identified as such with labels placed no more than 7.62 m (25 ft) apart. The light blue color is internationally recognized as identifying intrinsically safe wiring. We recommend that cables, terminal blocks, raceways, cable ducts, and junction boxes be light blue.
3. The use of a gas-tight seal is required at the point where the wiring transitions the hazardous and nonhazardous location.
4. Intrinsically safe associated apparatus, cable shields, enclosures, and raceways (metal) shall be grounded in accordance with the requirements of Section 250 of the NEC (United States).
5. Nonhazardous location equipment must not contain a source voltage of greater than 250V.
6. As all wiring contains stored energy, all conductors must be considered when determining the length of intrinsically safe circuits. When available the actual values should be used. If not available, values of 60 pF/foot for capacitance per wire pair and 0.2 uH/foot for inductance may be used.

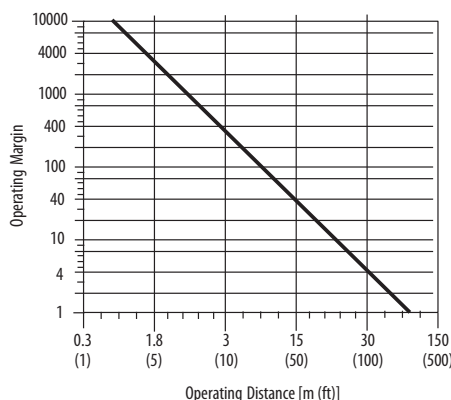
Dimensions [mm (in.)]

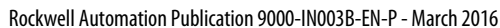


Connector Version



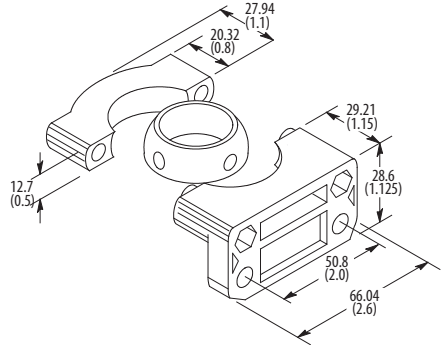
Typical Response Curve



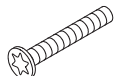


Accessories [mm (in.)]

Swivel/Tilt Mounting Assembly 60-2439

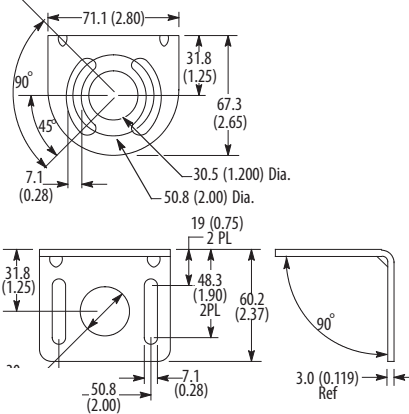


Torx Replacement Screw Kit 129-135 and Torx Screwdriver 57-144

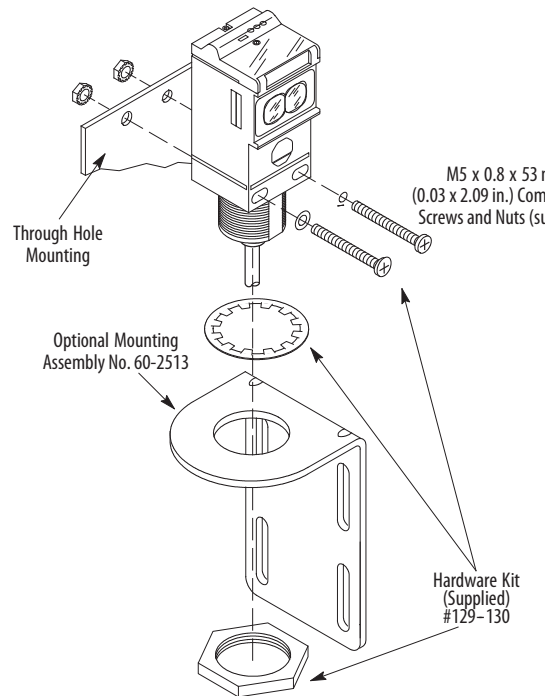
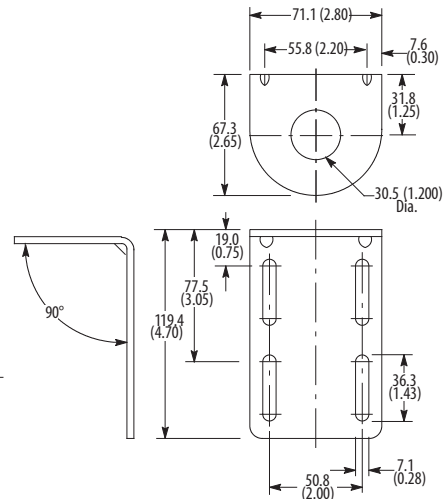


Screwdriver with torx head to be used with torx replacement screw kit 129-135.

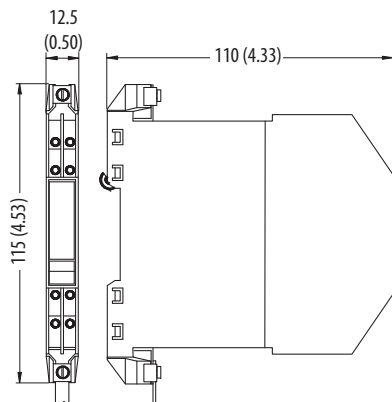
Universal Mounting Assembly 60-2421



360° Rotation Mounting Assembly 60-2513



Allen-Bradley Series 937ZH
Zener Diode Barrier



64-136
0.3 m (1 ft)
DIN Rail Mounting Kit

Specifications

Sensors		Transmitted Beam	
		Source	Receiver
1	Catalog Number		
	2 m Cable	42GRL-9540	42GRR-9500
	4-pin DC Micro QD	42GRL-9540-QD	42GRR-9500-QD
	4-pin DC Mini QD	42GRL-9540-QD1	42GRR-9500-QD1
2	Sensing Distance	106 m (350 ft)	
3	Field of View	1.5°	
4	Sensitivity Adjustment	Yes	
5	Transmitting LED	Infrared 880nm	—
6	Indicators	Yellow: Power	Yellow: Power, Green: Output, and Red: Margin
7	Supply Voltage	14...30V DC	13...30V DC
8	Max Current Consumption	16 mA	25 mA
9	Output	—	NPN and PNP
10	Max Load Current	—	15 mA (NPN) 8.5 mA (PNP)
11	Max Leakage Current	—	10?A
12	Response Time	10ms (ON) 5ms (OFF)	
13	Voltage Drop	4.5V (NPN) 6.0V (PNP) @ Max Load Current	
14	Operating Temperature	-34_°C to +70_°C (-29_°F to +158_°F)	
15	Relative Humidity	5% to 95%	
16	Housing/Lens Material	Acrylic	
17	Environmental Protection	NEMA 3, 4, 4X, 6P, 13, IP67 (IEC 529); 1200psi (8270kPa) Washdown	
18	Vibration	10...55 Hz, 1 mm amplitude, Meets or exceeds IEC 60947-5-2	
19	Shock	30G with 1 ms pulse duration, Meets or exceeds IEC 60947-5-2	
20	Electrical Protection	False Pulse, Reverse Polarity, Overload, Short Circuit	
21	Approvals (Ordinary Locations)	UL Listed, CSA Certified, CE Marked for all applicable directives	
22	Approvals (Hazardous Location)		
	Agency	Standard	
	FM	3610, 3611	Intrinsically Safe for Class I; Division 1; Groups A, B, C, and D Hazardous (Classified) Locations. Vmax=31.5V, Imax=150mA, Pmax=0.95W, Ci=0uF, Li=0mH, T4, Type 4X
	FM	3810, 3600	Non-incendive for Class I; Division 2; Groups A, B, C, D; T4, Type 4X
	CSA	CSA-C22.2 No. 157	
	CSA	CSA-C22.2 No. 213	Ex ia Intrinsically Safe for Class I; Division 1; Groups A, B, C, and D; Class III, Division 1, Vmax=31.5V, Imax=150mA, Ci=0?F and Li=0mH, T3A, Type 4X. Nonincendive for Class I; Division 2; Groups A, B, C, D; T3A, Type 4X
	CSA	CSA-C22.2 No. 142	

Rockwell Automation maintains current product environmental information on its website at <http://www.rockwellautomation.com/rockwellautomation/about-us/sustainability-ethics/product-environmental-compliance.page>.

Allen-Bradley, Rockwell Automation, Rockwell Software, and PHOTOSWITCH are trademarks of Rockwell Automation, Inc.
Trademarks not belonging to Rockwell Automation are property of their respective companies.

Rockwell Otomasyon Ticaret A.Ş., Kar Plaza İş Merkezi E Blok Kat:6 34752 İçerenköy, İstanbul, Tel: +90 (216) 5698400

www.rockwellautomation.com

Power, Control and Information Solutions Headquarters

Americas: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444
Europe/Middle East/Africa: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640
Asia Pacific: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Publication 9000-IN003B-EN-P - March 2016

Supersedes Publication 9000-IN003A-EN-P - November 2012

PA-9802 (Ver 05)

Copyright © 2016 Rockwell Automation, Inc. All rights reserved. Printed in the U.S.A.