



Features

- Wide selection of sensing modes
- Wide selection of operating modes
- Both DC and AC/DC operation
- Models with teach function
- Standard ON/OFF and timing versions
- Fast response time
- Variety of connection types
- Laser models available (see page 1-112)

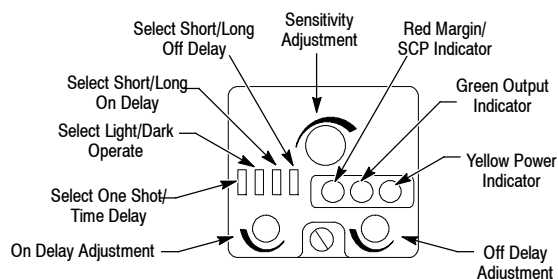
Specifications

Environmental	
Certifications	UL Listed, CSA Approved, CE Marked for all applicable directives
Operating Environment	NEMA 3, 4X, 6P, 12, 13, IP67 (IEC529) 1200 psi (8270 kPa) washdown, IP69K, ECOLAB certification on cable models
Operating Temperature [C (F)]	-34...+70° (-29...+158°)
Vibration	10...55 Hz, 1 mm amplitude, meets or exceeds IEC 60947-5-2
Shock	30 g with 1 ms pulse duration, meets or exceeds IEC 60947-5-2
Relative Humidity	5...95%
Ambient Light Immunity	Incandescent light 5000 lux
Optical	
Sensing Modes	Retroreflective, polarized retroreflective, diffuse, long range diffuse, fiber optic, extended range fiber optic, transmitted beam
Sensing Range	See Product Selection table on page 1-69
Field of View	See Product Selection table on page 1-69
Light Source	Visible red (660 nm), Infrared (880 nm)
LED Indicators	See User Interface table below
Adjustments	Single-turn potentiometer for sensitivity
Electrical	
Voltage	10...30V DC, 40...264V AC/DC models (see Product Selection table on page 1-69)
Current Consumption	30 mA max (DC models), 15 mA max (AC/DC models)
Sensor Protection	Overload, short circuit, reverse polarity, false pulse
Outputs	
Response Time	2 ms (DC models), 15 ms (AC/DC models), 2 ms (MOSFET models)
Output Type	PNP and NPN (DC models), SPDT relay (AC/DC models), MOSFET (AC/DC models)
Output Mode	Light operate or dark operate selectable
Output Current	250 mA @ 30V DC (all models except 42GLP and 42GSP); 2 A @ 132 V AC (SPDT relay models), 1 A @ 264V AC (SPDT relay); 300 mA @ 264V AC (MOSFET models)
Output Leakage Current	10 µA max (DC), 1 mA (AC)
Mechanical	
Housing Material	Valox®
Lens Material	Acrylic
Cover Material	Neoprene
Connection Types	2 m (6.5 ft) cable, 4-pin DC micro QD, 4-pin DC mini QD, 5-pin DC micro QD
Supplied Accessories	129-130 mounting kit
Optional Accessories	See mounting brackets, reflectors, and cordsets on page 1-71

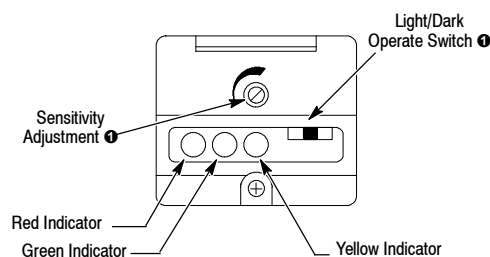
User Interface—Standard Models (Refer to installation instructions for 42GLP and 42GSP versions)

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

42GTx Versions—Top View Detail



42GRx Versions—Top View Detail

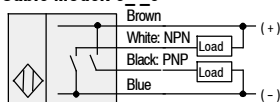


❶ Push button on 42GSP models.

Wiring Diagrams❶❷

All Models Except Transmitted Beam Source

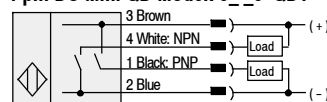
Cable Model: 9_0



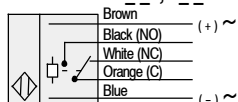
4-pin DC Micro QD Model: 9_0-QD



4-pin DC Mini QD Model: 9_0-QD1



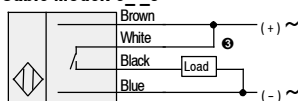
Cable Model: 9_1, 9_2



5-pin AC/DC Mini QD Model: 9_1-QD, 9_2-QD



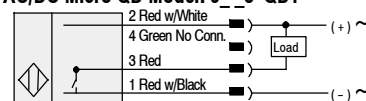
Cable Model: 9_3



AC/DC Mini QD Model: 9_3-QD

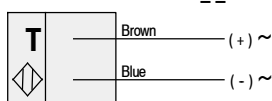


AC/DC Micro QD Model: 9_3-QD1

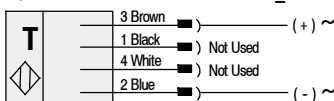


Transmitted Beam Source

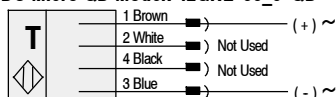
Cable Model: 42GRL-90_



AC/DC Mini QD Model: 42GRL-90_2-QD



DC Micro QD Model: 42GRL-90_0-QD



4-pin DC Micro QD Model: 42GRL-90_3-QD1



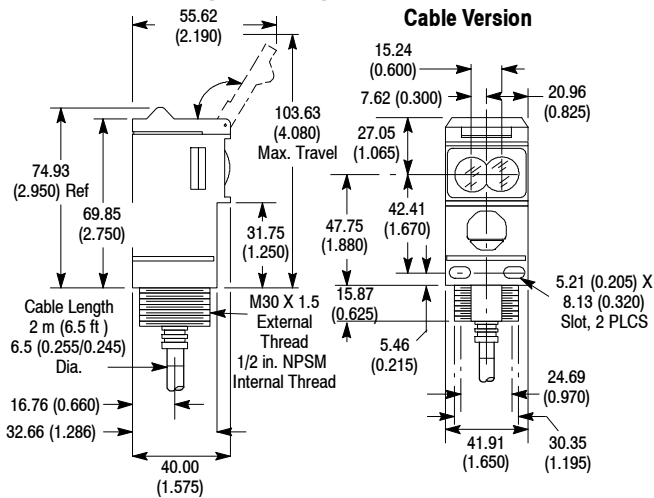
❶ For Allen-Bradley programmable controller compatible interface, refer to publication 42-2.0.

❷ Quick-disconnect wiring codes shown are valid for Allen-Bradley cables only.

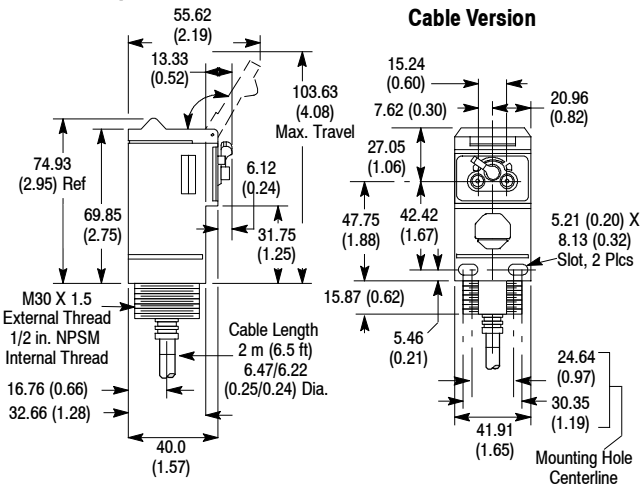
❸ Load can be placed on either black or white wire to create sourcing or sinking respectively.

Approximate Dimensions [mm (in.)]

All Versions Except Fiber Optic

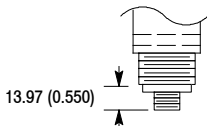


Fiber Optic

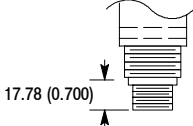


Connector Version

Micro Style



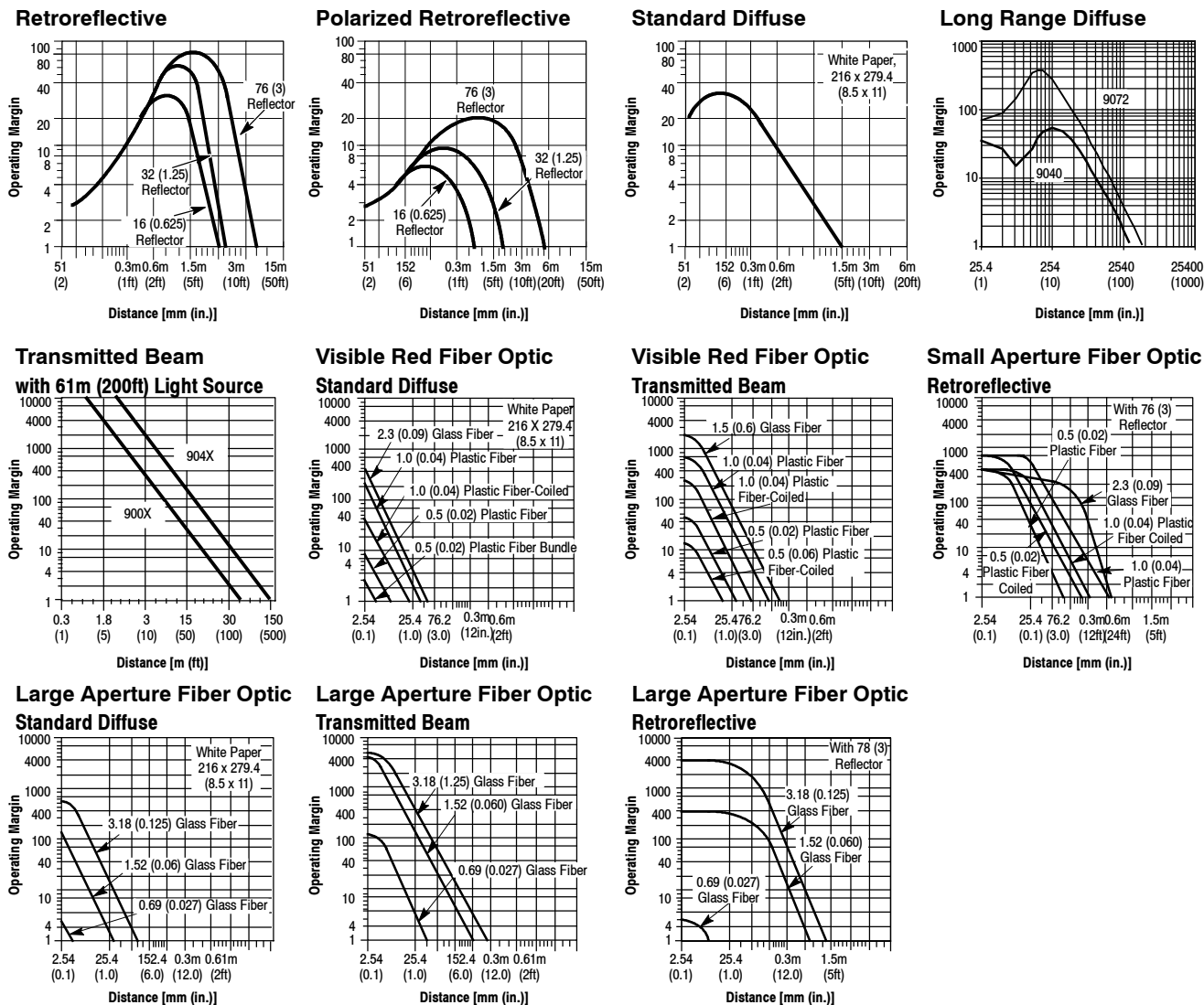
Mini Style



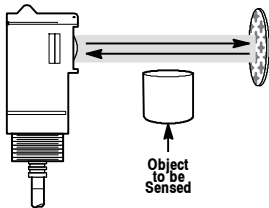
Thread Size

Thread Size	AC	DC
	1/2-20 UNF 2 Keyways	M12 x 1 1 Keyway
Mini Style	7/8-16 UN 1 Keyway	

Typical Response Curve

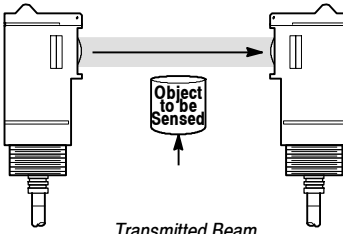
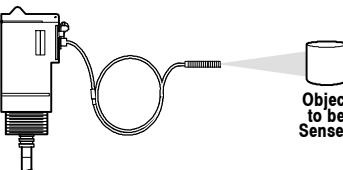
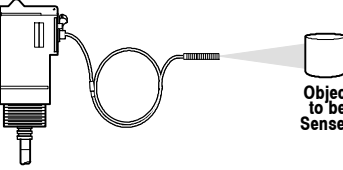


Product Selection for On/Off and Timing Sensors

Sensing Mode	Operating Voltage Supply Current	Sensing Distance	Output Energized	Output Type Capacity Response Time	Connection Type	Cat. No.
 <i>Retroreflective</i> Field of View: 1.5° Emitter LED: Visible red 660 nm	10...30V DC 30 mA	50.8 mm... 9.14 m (2 in...30 ft) with 76 mm (3 in.) Reflector	Light/Dark Selectable	NPN/PNP 250 mA 2 ms	2 m 300V cable	42GⓈU-9000
	70...264V AC/DC 50/60 Hz 15 mA			4-pin DC micro	42GⓈU-9000-QD	
				4-pin mini	42GⓈU-9000-QD1	
	70...264V DC/ 40...264V AC 50/60 Hz 15 mA			SPDT EM Relay 2 A/132V AC 1 A/264V AC 1 A/150V DC 15 ms	2 m 300V cable	42GⓈU-9002
				5-pin mini	42GⓈU-9002-QD	
				Solid State Isolated N.O. 300 mA 2 ms	2 m 300V cable	42GⓈU-9003
					2 m 600V cable	42GⓈU-9003H
					4-pin mini	42GⓈU-9003-QD
					4-pin AC micro	42GⓈU-9003-QD1

Ⓢ R for standard (i.e. 42GRU-9000); T for timing (i.e. 42GTU-9000)

Product Selection (continued)

Sensing Mode	Operating Voltage Supply Current	Sensing Distance	Output Energized	Output Type Capacity Response Time	Connection Type	Cat. No.	
 Transmitted Beam Field of View: 1.5° Emitter LED: Infrared 880 nm	10...264V AC/DC 50/60 Hz 15 mA	25.4 mm...61 m (1 in...200 ft)	NA Light Source		2 m 300V cable	42GRL-9000	
		25.4 mm... 152 m (1 in...500 ft)			2 m 600V cable	42GRL-9000H	
					4-pin DC micro	42GRL-9000-QD	
					4-pin mini	42GRL-9002-QD	
					2 m 300V cable	42GRL-9040	
					4-pin DC micro	42GRL-9040-QD	
	4-pin mini		42GRL-9042-QD				
	4-pin AC micro	42GRL-9043-QD1					
	10...30V DC 25 mA	Depends on Light Source	Receiver Light or Dark Output Selectable	NPN and PNP 250 mA 5 ms	2 m -300V cable	42G⊗R-9000	
	4-pin DC micro				42G⊗R-9000-QD		
	70...264V AC/DC, 50/60 Hz 10 mA			4-pin mini	42G⊗R-9000-QD1		
				SPDT EM Relay 2 A/132V AC, 1 A/264V AC 1 A/150V DC 23 ms	2 m 300V cable	42G⊗R-9002	
70...264V DC, 40...264V AC 50/60 Hz 10 mA	Solid State Isolated N.O. 300 mA 15 ms				5-pin mini	42G⊗R-9002-QD	
				2 m 300V cable	42GRR-9003		
2 m 600V cable	42GRR-9003H						
4-pin mini	42GRR-9003-QD						
4-pin AC micro	42GRR-9003-QD1						
 Small Aperture Red Fiber Optic Emitter LED: Visible red 660 nm	10...30V DC 30 mA	Depends on Fiber Optic cable	Light/Dark Selectable	NPN/PNP 250 mA 2 ms	2 m 300V cable	42G⊗F-9100	
	70...264V AC/DC 50/60 Hz 15 mA				4-pin DC micro	42G⊗F-9100-QD	
				SPDT EM Relay 2 A/132V AC, 1 A/264V AC 1 A/150V DC 15 ms	2 m 300V cable	42G⊗F-9102	
	70...264V DC/ 40...264V AC 50/60 Hz 15 mA				Solid State Isolated N.O. 300 mA 2 ms	5-pin mini	42G⊗F-9102-QD
				2 m 300V cable		42G⊗F-9103	
	4-pin mini			42G⊗F-9103-QD			
	4-pin AC micro	42G⊗F-9103-QD1					
	 Large Aperture Fiber Optic Emitter LED: Infrared 880 nm	10...30V DC 30 mA	Depends on Fiber Optic cable	Light/Dark Selectable	NPN/PNP 250 mA 2 ms	2 m 300V cable	42G⊗F-9000
		70...264V AC/DC, 50/60 Hz 15 mA				4-pin DC micro	42G⊗F-9000-QD
SPDT EM Relay 2 A/132V AC, 1 A/264V AC 1 A/150V DC 15 ms					2 m 300V cable	42G⊗F-9002	
		70...264V DC/ 40...264V AC 50/60 Hz 15 mA			Solid State Isolated N.O. 300 mA 2 ms	5-pin mini	42G⊗F-9002-QD
2 m 300V cable						42G⊗F-9003	
2 m 600V cable		42G⊗F-9003H					
4-pin mini		42G⊗F-9003-QD					
4-pin AC micro		42G⊗F-9003-QD1					

⊗ R for standard (i.e. 42GRU-9000); T for timing (i.e. 42GTU-9000)