



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)

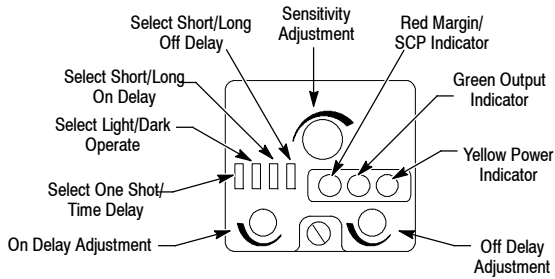
Specifications

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

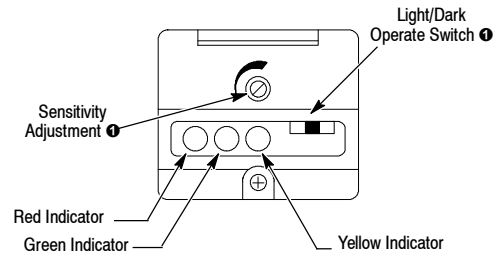
User Interface—Standard Models (Refer to installation instructions for 42GLP and 42GSP versions)

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

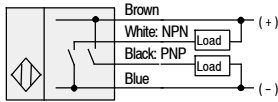


① Push button on 42GSP models.

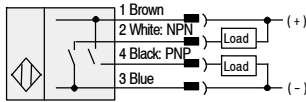
Wiring Diagrams ①②

All Models Except Transmitted Beam Source

Cable Model: 9__0



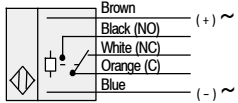
4-pin DC Micro QD Model: 9__0-QD



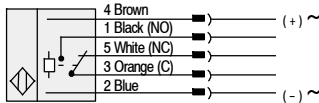
4-pin DC Mini QD Model: 9__0-QD1



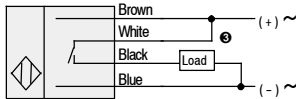
Cable Model: 9__1, 9__2



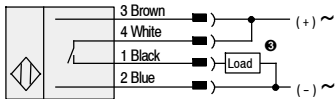
5-pin AC/DC Mini QD Model: 9__1-QD, 9__2-QD



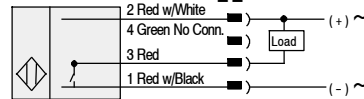
Cable Model: 9__3



AC/DC Mini QD Model: 9__3-QD

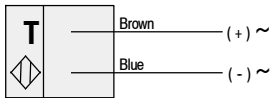


AC/DC Micro QD Model: 9__3-QD1

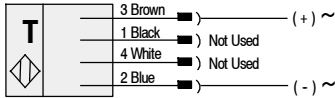


Transmitted Beam Source

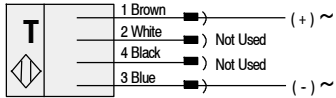
Cable Model: 42GRL-90__



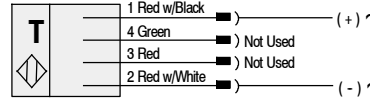
AC/DC Mini QD Model: 42GRL-90__-QD



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



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



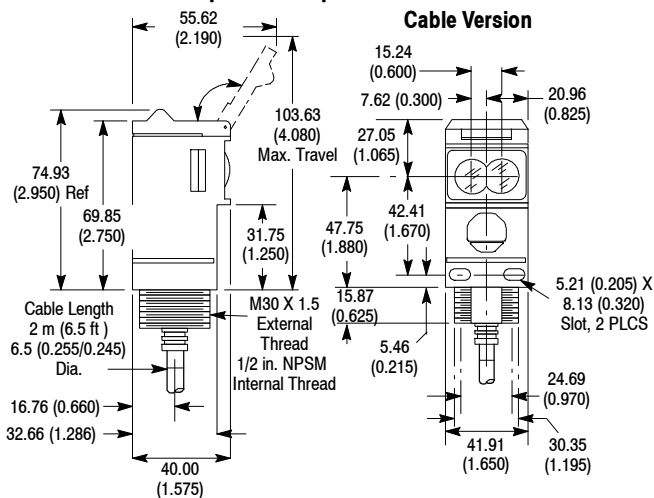
① For Allen-Bradley programmable controller compatible interface, refer to publication 42-2.0.

② Quick-disconnect wiring codes shown are valid for Allen-Bradley cables only.

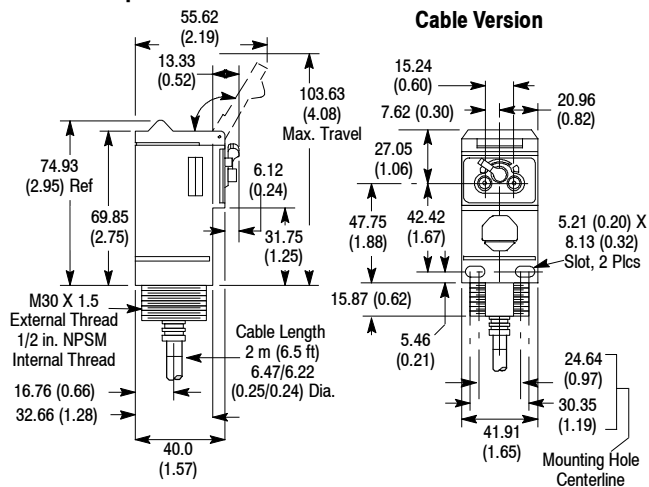
③ Load can be placed on either black or white wire to create sourcing or sinking respectively.

Approximate Dimensions [mm (in.)]

All Versions Except Fiber Optic

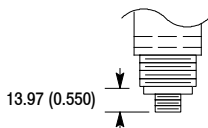


Fiber Optic

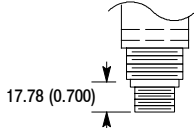


Connector Version

Micro Style



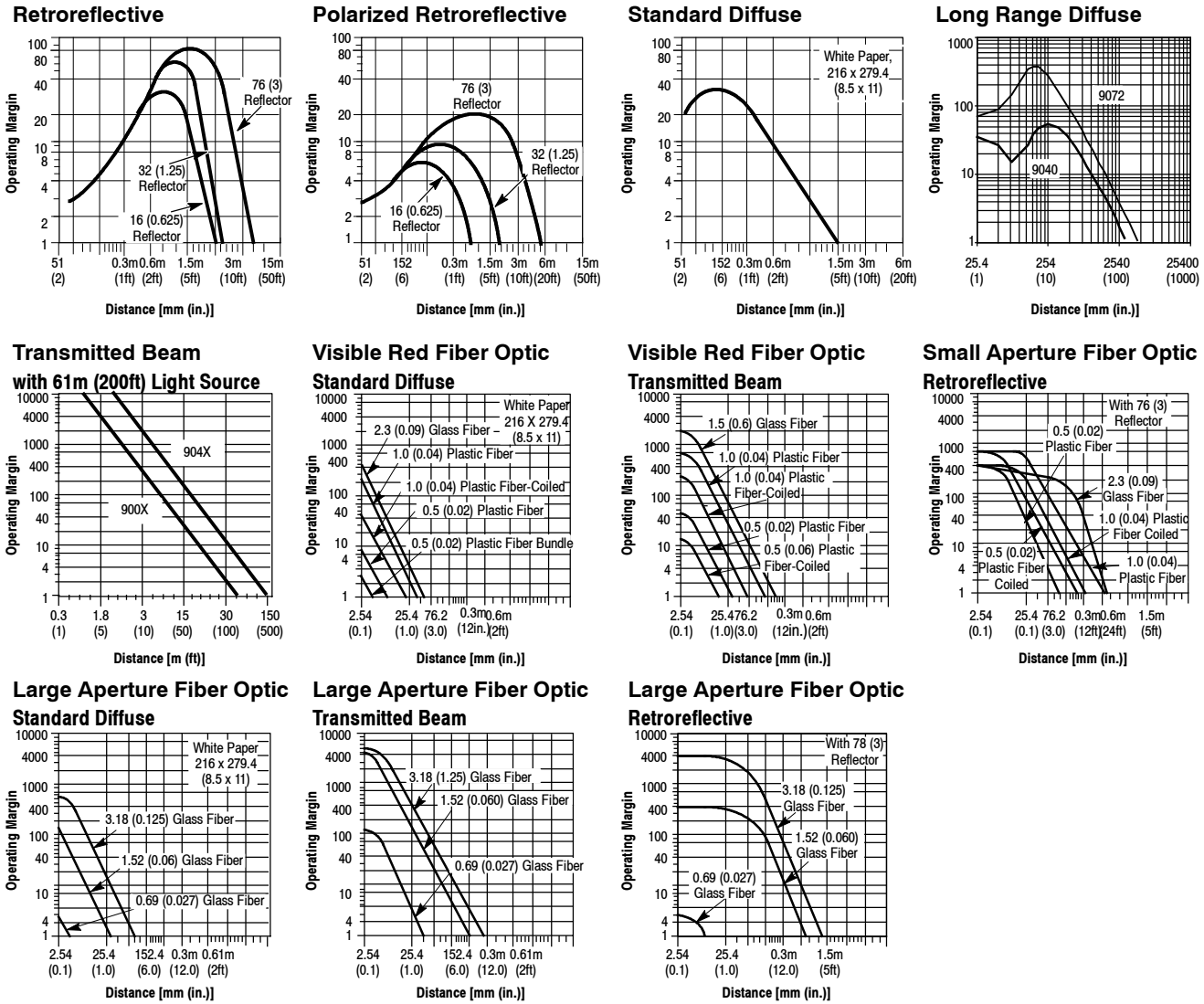
Mini Style



Thread Size

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

Typical Response Curve

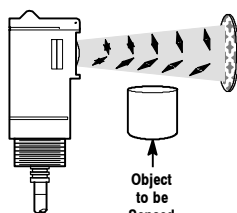
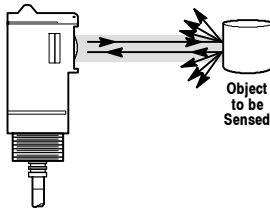
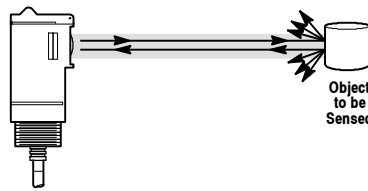


Product Selection for On/Off and Timing Sensors

Sensing Mode	Operating Voltage Supply Current	Sensing Distance	Output Energized	Output Type Capacity Response Time	Connection Type	Cat. No.
<p>Retroreflective</p> <p>Field of View: 1.5° Emitter LED: Visible red 660 nm</p>	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	2 m 300V cable		42GⓈU-9002		
		SPDT EM Relay 2 A/132V AC 1 A/264V AC 1 A/150V DC 15 ms		5-pin mini	42GⓈU-9002-QD	
				2 m 300V cable	42GⓈU-9003	
		Solid State Isolated N.O. 300 mA 2 ms		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 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.	
 <p><i>Polared Retroreflective</i></p> <p>Field of View: 1.5° Emitter LED: Visible red 660 nm</p>	10...30V DC 30 mA	50.8 mm... 4.87 m (2 in... 16 ft) with 76 mm (3 in.) Reflector	Light/Dark Selectable	NPN/PNP 250 mA 2 ms	2 m 300V cable	42G⊗U-9200	
	70...264V DC/ 60...264V AC 50/60 Hz 15 mA				4-pin DC micro	42G⊗U-9200-QD	
					4-pin mini	42G⊗U-9200-QD1	
	70...264V DC/ 40...264V AC 50/60 Hz 15 mA			2 m 300V cable	SPDT EM Relay 2 A/132V AC 1 A/264V AC 1 A/150V DC 15 ms	42G⊗U-9202	
					5-pin mini	42G⊗U-9202-QD	
				2 m 300V cable	Solid State Isolated N.O. 300 mA 2 ms	2 m 600V cable	42G⊗U-9203
	4-pin mini						42G⊗U-9203H
	4-pin AC micro						42G⊗U-9203-QD1
	 <p><i>Standard Diffuse</i></p> <p>Field of View: 3.5° Emitter LED: Infrared 880 nm</p>			10...30V DC 30 mA	50.8 mm... 1.52 m (2 in...5 ft) to White Paper	Light/Dark Selectable	NPN/PNP 100 mA 2 ms
70...264V DC/ 60...264V AC 50/60 Hz 15 mA		4-pin DC micro	42GLP-9000-QD				
		4-pin mini	42GSP-9000				
70...264V DC/ 40...264V AC 50/60 Hz 15 mA		2 m 300V cable	Teach function Light/Dark Selectable	42GSP-9000-QD			
			4-pin DC micro	42G⊗P-9000			
		2 m 300V cable	NPN/PNP 250 mA 2 ms	Light/Dark Selectable			42G⊗P-9000
4-pin DC micro							42G⊗P-9000-QD
4-pin mini							42G⊗P-9000-QD1
70...264V DC/ 60...264V AC 50/60 Hz 15 mA		2 m 300V cable	SPDT EM Relay 2 A/132V AC 1 A/264V AC 1 A/150V DC 15 ms	42G⊗P-9002			
	5-pin mini		42G⊗P-9002-QD				
	2 m 300V cable	Solid State Isolated N.O. 300 mA 2 ms	2 m 600V cable	42G⊗P-9003			
4-pin mini				42G⊗P-9003H			
4-pin AC micro				42G⊗P-9003-QD1			
 <p><i>Long Range Diffuse</i></p> <p>Field of View: 6.5° Emitter LED: Infrared 880 nm</p>	10...30V DC 30 mA	50.8 mm... 3.04 m (2 in...10 ft)	Light/Dark Selectable	NPN/PNP 250 mA 2 ms	2 m 300V cable	42GRP-9040	
	70...264V AC/DC 50/60 Hz 15 mA				4-pin DC micro	42GRP-9040-QD	
					4-pin mini	42GRP-9040-QD1	
	70...264V DC/ 40...264V AC 50/60 Hz 15 mA			2 m 300V cable	SPDT EM Relay 2 A/132V AC 1 A/264V AC 1 A/150V DC 15 ms	42GRP-9042	
					5-pin mini	42GRP-9042-QD	
				2 m 300V cable	Solid State Isolated N.O. 300 mA 2 ms	2 m 600V cable	42GRP-9043
	4-pin mini						42GRP-9043H
	4-pin AC micro						42GRP-9043-QD1
	10...40V DC 30 mA			2 m 300V cable	NPN/PNP 250 mA 2 ms	42GRP-9070	
4-pin DC micro		42GRP-9070-QD					
70...264V AC/DC 50/60 Hz 15 mA		2 m 300V cable	SPDT EM Relay 2 A/132V AC 1 A/264V AC 1 A/150V DC 15 ms	42GRP-9072			
	3 m 300V cable			42GRP-9072-3			
5-pin mini	42GRP-9072-QD	42GRP-9072-QD	42GRP-9072-QD				

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

Refer to page 1-71 for cordsets and accessories.