prosense® F8 Series Barrel Photoelectric Sensors

M8 (8mm) barrel photoelectric sensors

- M8 small dimension housing
- LED status indicator for all models
- Complete protection against electrical damage
- IP67 protection
- Strong stainless steel housing
- Background suppression, diffuse, retroreflective and through- beam available
- Visible red light emission

NEED CABLES?

F8 Series 8mm Diameter Photoelectric Sensors Selection Chart										
Part Number	Price	Sensing Range	Switching Frequency	Light Type	Through-Beam Component	Logic	Output Function	Connection Type	Wiring	Drawing Link
Diffuse reflective with adjustable background suppression										
F8RS-LP-2F	$168.00	7-30mm [0.28 -1.18 in]	450Hz	Visible red	NA	PNP N.O.	Light-on	3-wire, 3-pin M8 quick-disconnect	Diagram 1	PDF
F8RS-LN-2F	$168.00	7-30mm [0.28 -1.18 in]	450Hz	Visible red	NA	NPN N.O.	Light-on	3-wire, 3-pin M8 quick-disconnect	Diagram 2	PDF
Diffuse reflective with fixed background suppression										
F8RS-LP-1F	$168.00	0-20mm [0-0.79 in]	450Hz	Visible red	NA	PNP N.O.	Light-on	3-wire, 3-pin M8 quick-disconnect	Diagram 1	PDF
F8RS-LN-1F	$168.00	0-20mm [0-0.79 in]	450Hz	Visible red	NA	NPN N.O.	Light-on	3-wire, 3-pin M8 quick-disconnect	Diagram 2	PDF
Diffuse reflective										
F8R6-LP-1F	$101.00	1-60mm [0.04 -2.36 in]	500Hz	Visible red	NA	PNP N.O.	Light-on	3-wire, 3-pin M8 quick-disconnect	Diagram 1	PDF
F8R6-LN-1F	$101.00	1-60mm [0.04-2.36 in]	500Hz	Visible red	NA	NPN N.O.	Light-on	3-wire, 3-pin M8 quick-disconnect	Diagram 2	PDF
Retroreflective sensor *										
F8RP-DP-1F	$101.00	0-1m [0-3.28 ft]	500Hz	Visible red	NA	PNP N.O.	Dark-on	3-wire, 3-pin M8 quick-disconnect	Diagram 1	PDF
F8RP-DN-1F	$101.00	0-1m [0-3.28 ft]	500Hz	Visible red	NA	NPN N.O.	Dark-on	3-wire, 3-pin M8 quick-disconnect	Diagram 2	PDF
Through-beam										
F8RE-00-1F	$90.00	0-2.2m [0-7.22 ft]	NA	Visible red	F8RR-DP-1F or F8RR-DN-1F	NA	NA	2-wire, 3-pin M8 quick-disconnect	Diagram 3	PDF
F8RR-DP-1F	$90.00	0-2.2m [0-7.22 ft]	500Hz	NA	F8RE-00-1F	PNP N.O.	Dark-on	3-wire, 3-pin M8 quick-disconnect	Diagram 1	PDF
F8RR-DN-1F	$90.00	0-2.2m [0-7.22 ft]	500Hz	NA	F8RE-00-1F	NPN N.O.	Dark-on	3-wire, 3-pin M8 quick-disconnect	Diagram 2	PDF

* Purchase reflector separately

Warning: These products are not safety sensors and are not suitable for use in personal safety applications.

prosense® F8 Series Barrel Photoelectric Sensors

F8 Series 8mm Diameter Photoelectric Specifications					
Sensor type	Diffuse reflective with adjustable background suppression	Diffuse reflective with fixed background suppression	Diffuse reflective	Retroreflective	Through-beam
Sensing Distance	7-30 mm [0.28-1.18 in]	0-20 mm [0-0.79 in]	1-60 mm [0.04-2.36 in]	0-1 m [0-3.28 ft]	0-2.2 m [0-7.22 ft]
Light Spot Diameter	See Product Insert				
Emission	Visible red				
Output Types	See Sensor Selection Chart				
Operating Voltage	10-30 VDC				
No Load Supply Current	≤ 15mA				
Operating (Load) Current	100mA				
Voltage Drop	≤ 0.7 V				
Switching Frequency	450Hz	450Hz	500Hz	500Hz	500Hz NA for F8RE-00-1F
Ripple	5%		10%		
Time Delay Before Availability (tv)	≤ 1.11 ms		≤ 1ms		
Short-circuit Protection	Yes				
Operating Temperature	-5 to 55°C [23 to 131°F]				
Protection Degree	IP64	IP67	IP67	IP67	IP67
LED Indicators - Switching Status	Yellow LED: light received; yellow LED flashing: limit range				
Housing Material	Stainless steel				
Lens Material	PMMA - Polymethyl methacrylate				
Shock/Vibration	IEC 60947-5-2				
Tightening Torque	6 N•m [4.42 lb•ft]				
Weight	5.5 g [0.19 oz]	5.1 g [0.17 oz]	5.2 g [0.18 oz]		
Connectors	3-pin M8 quick-disconnect				
Agency Approvals	cULus, CE, WEEE, IEC 60947-5-2				

To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.
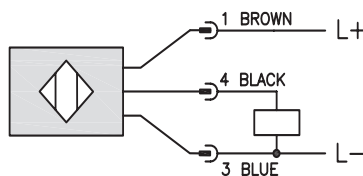
Wiring Diagrams

Diagram 1
PNP Output

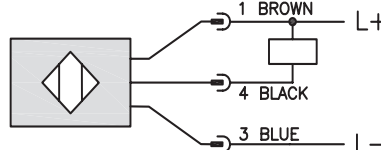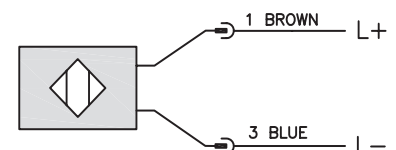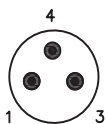**Diagram 2**
NPN Output

Diagram 3
Emitter

M8 Connector

Accessories for 8mm Sensors

Axial Mounting Bracket

Mounting bracket, axial, zinc-plated steel. For use with 8mm sensors.
Has two mounting holes (use 3 mm screws) and allows the rotation of
an optical axis for axial sensors. Hexagonal nuts not included.

Accessories for 8mm Sensors				
Part Number	Price	Description	Drawing Link	Weight [lb]
ST08A	$2.00	Micro Detectors mounting bracket, axial, zinc plated steel. For use with 8mm sensors.	PDF	0.04

ST08A

Right-angle Mounting Bracket

Mounting bracket, right-angle, zinc-plated steel. For use with 8mm sensors. Has
two mounting holes (use 3mm screws) and allows the rotation of an optical axis
for right-beam-angle-adapter sensors. Hexagonal nuts not included.

Accessories for 8mm Sensors				
Part Number	Price	Description	Drawing Link	Weight [lb]
ST08C	$2.00	Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 8mm sensors.	PDF	0.04

ST08C

Accessories for 8mm Sensors

Right-angle Mounting Bracket

Mounting bracket, right-angle, plastic. For use with 8mm sensors.

Accessories for 8mm Sensors				
Part Number	Price	Description	Drawing Link	Weight [lb]
OPT2101	$8.00	Wenglor mounting bracket, right-angle, plastic. For use with 8mm sensors.	PDF	0.02

OPT2101

Right-angle Swivel Mounting Systems

Mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment. For use with 8mm sensors. Available in all stainless steel or with an aluminum head and stainless steel mounting plate.

Accessories for 8mm Sensors						
Part Number	Price	Description	Mounting Head	Mounting Plate	Drawing Link	Weight [lb]
OPT2112	$11.50	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 8mm sensors.	Aluminum	304 Stainless Steel	PDF	0.14
OPT2113	$21.00	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 8mm sensors.	304 Stainless Steel	304 Stainless Steel	PDF	0.26

Note: 304 Stainless steel mounting rods sold separately: OPT2109 (200mm length), OPT2110 (300mm length), and OPT2111 (500mm length).

OPT2112 & OPT2113

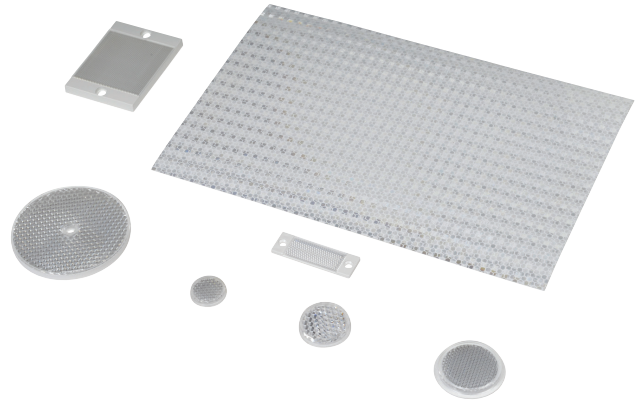For the latest prices, please check AutomationDirect.com.

Reflectors

RL Series Reflectors for Polarized Reflective Photoelectric Sensors (All Models)

• Suitable for use with polarized light photoelectric sensors
• Shapes and sizes for most applications
• Miniature types for close mounting in multiple sensor installations
• Single hole, dual hole and self-adhesive mounting types available
• Single and 10-packs available

Installation Notes

• Keep the reflector surface clean to ensure peak detection performance. This is especially true when the maximum sensing range is being used. Clean using a damp cloth.
• When selecting a reflector, it is important to consider the ambient conditions it will be exposed to. Dusty or high humidity conditions may reduce the sensing range as much as 90%.
• Reflectors should be positioned at a 90° angle to the optical axis with a tolerance of ±15°.

Reflector Specifications							
Part number	Price	Drawing Link	Quantity	Dimensions mm [in]	Degree of Protection	Mounting	Materials
RL102	$38.00	PDF	10	25 [0.98]	IEC IP67	Customer-supplied adhesive or other mounting method required	Reflective face: PMMA Polymethylmethacrylate (acrylic) Base material: ABS (Acrylonitrile-butadiene-styren)
RL102-1	$4.25		1				
RL103	$42.50	PDF	10	34.5 [1.36]			
RL103-1	$4.75		1				
RL104	$42.50	PDF	10	46 [1.81]			
RL104-1	$4.75		1				
RL105G	$38.00	PDF	10	95 x 38 [3.74 x 1.50]		Two 4.3 mm holes	
RL105G-1	$4.25		1				
RL106G	$42.50	PDF	10	182 x 42 [7.17 x 1.65]		Two 6mm holes	
RL106G-1	$4.75		1				
RL110	$19.00	PDF	10	84 [3.31]		One 5mm hole	
RL110-1	$2.00		1				
RL116	$19.00	PDF	10	41 x 60 [3.54 x 2.36]		Two 3mm holes	
RL116-1	$2.00		1				
RL100DA4	$38.50	NA	1	200 x 300 [7.87 x 11.81]		Self-adhesive	Paper (Acrylic tape with micro prism)
RL100DC4	$12.00	NA	1	50 x 300 [1.97 x 11.81]			
RL100DQ1	$8.75	NA	1	100 x 100 [3.94 x 3.94]			
RL111G	$60.00	PDF	10	22.5 x 47 [0.89 x 1.85]		Two 3mm slots	Reflective face: PMMA Polymethylmethacrylate (acrylic) Base material: ABS (Acrylonitrile-butadiene-styren)
RL111G-1	$7.25		1				
RL112G	$44.00	PDF	10	19 x 73 [0.75 x 2.87]			
RL112G-1	$4.75		1				
RL113G	$53.00	PDF	10	51.4 x 60.3 [2.02 x 2.37]		Two 4mm slots	
RL113G-1	$6.00		1				

Not recommended for applications involving moist air environments or water immersion.

Reflectors

RL Series Reflectors for Polarized Reflective Laser Photoelectric Sensors (FALN series)

• Suitable for use with polarized light laser photoelectric sensors
• Sizes for most applications
• Miniature types for close mounting in multiple sensor installations
• Single and 5-packs available

Specifications						
Part Number	**RL201**	**RL201-1**	**RL203**	**RL203-1**	**RL204**	**RL204-1**
Price	$38.00	$8.25	$35.50	$7.75	$30.00	$6.75
Quantity	5	1	5	1	5	1
Drawing Link	PDF		PDF		PDF	
Dimensions	60 x 82 mm 2.36 x 3.23 in		19 x 6mm 0.75 x 2.36 in		20mm x 32mm 0.80 in x 1.26 in	
Degree of Protection [1]	IEC IP67					
Mounting	Two 0.4 mm holes		Two 0.4 mm holes		Two 0.3 mm holes	
Materials	Acrylic/polycarbonate					

[1] **Not recommended for applications involving moist air environments or water immersion.**