



F16 Series Rectangular Photoelectric Sensors

Rectangular Photoelectric Sensors

- Ideal for profile rail mounting (8 and 10mm)
- IP67 protection
- 8x8mm square cross section
- Fast switching frequency 500Hz
- Background suppression, diffuse, retroreflective and through- beam



ProSense F16 Series Rectangular 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 with background suppression										
F16RS-LP-1F	\$04ncs:	5-30mm [0.20-1.18 in]	500 Hz	Visible red	NA	PNP N.O.	Light-on	3-wire, 3-pin M8 quick-disconnect	Diagram 1	PDF
F16RS-LN-1F	\$;04nct:	5-30mm [0.20-1.18 in]	500 Hz	Visible red	NA	NPN N.O.	Light-on	3-wire, 3-pin M8 quick-disconnect	Diagram 2	PDF
Diffuse										
F16R6-LP-1F	\$04ncu:	1-60mm [0.04-2.36 in]	500 Hz	Visible red	NA	PNP N.O.	Light-on	3-wire, 3-pin M8 quick-disconnect	Diagram 1	PDF
F16R6-LN-1F	\$04ncv:	1-60mm [0.04-2.36 in]	500 Hz	Visible red	NA	NPN N.O.	Light-on	3-wire, 3-pin M8 quick-disconnect	Diagram 2	PDF
Polarized retroreflective *										
F16RP-DP-1F	\$04ncx:	0-1m [0-3.28 ft]	500 Hz	Visible red	NA	PNP N.O.	Dark-on	3-wire, 3-pin M8 quick-disconnect	Diagram 1	PDF
F16RP-DN-1F	\$04ncy:	0-1m [0-3.28 ft]	500 Hz	Visible red	NA	NPN N.O.	Dark-on	3-wire, 3-pin M8 quick-disconnect	Diagram 2	PDF
Through-beam										
F16RE-00-1F	\$4ncc:	0-2.2m [0-7.22 ft]	N/A	Visible red	F16RR-DP-1F or F16RR-DN-1F	NA	NA	2-wire, 3-pin M8 quick-disconnect	Diagram 3	PDF
F16RR-DP-1F	\$4ncz:	0-2.2m [0-7.22 ft]	500Hz	NA	F16RE-00-1F	PNP N.O.	Dark-on	3-wire, 3-pin M8 quick-disconnect	Diagram 1	PDF
F16RR-DN-1F	\$;4nc]:	0-2.2m [0-7.22 ft]	500Hz	NA	F16RE-00-1F	NPN N.O.	Dark-on	3-wire, 3-pin M8 quick-disconnect	Diagram 2	PDF

* Purchase reflector separately

Accessories for ProSense F16 Series Rectangular Photoelectric Sensors

Part Number	Price	Description	Drawing Link
F16-BRKT-90	\$;-4l,o:	ProSense mounting bracket, right-angle, stainless steel. For use with F16 series photoelectric sensors.	PDF
F16-BRKT	\$;-4l,s:	ProSense mounting bracket, parallel, anodized aluminum. For use with F16 series photoelectric sensors.	PDF
F16-ADPTR-10	\$;-4l,p:	ProSense mounting bracket, zinc plated copper, 10mm profile rail mount. For use with F16 series photoelectric sensors.	PDF
F16-ADPTR-8	\$;-4l,q:	ProSense mounting bracket, zinc plated copper, 8mm profile rail mount. For use with F16 series photoelectric sensors.	PDF



[F16-BRKT-90](#)



[F16-BRKT](#)



[F16-ADPTR-10](#)



[F16-ADPTR-8](#)

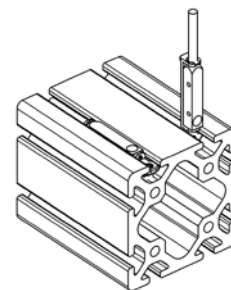


Illustration showing F16 adapter installed in profile rail.

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

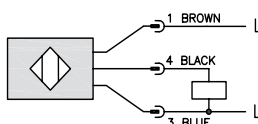
F16 Series Rectangular Photoelectric Specifications

ProSense F16 Series Rectangular Photoelectric Sensors Specifications				
Type	Diffuse with Background Suppression	Diffuse	Polarized Reflective	Through-beam
Sensing Distance	5-30 mm [0.20-1.18 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			
Wave Length	650 N•m	645 N•m		
Output Types	See Selection Chart			
Operating Voltage	10-30 VDC			
No Load Supply Current	≤ 15mA			
Operating (Load) Current	100mA			
Voltage Drop	≤ 0.8 V	≤ 0.7 V		
Switching Frequency	500 Hz			
Ripple	10% of Ue			
Time Delay Before Availability	≤ 1ms			
Short-circuit Protection	Yes			
Operating Temperature	-5 to 55°C [23 to 131°F]			
Protection Degree	IP67			
LED Indicators - Switching Status	Yellow LED: light received; yellow LED flashing: limit range			
Housing Material	Die-cast zinc			
Surface Protection	Nickel plated			
Jacket Material	PUR			
Lens Material	Polymethyl methacrylate (PMMA)			
Shock/Vibration	Shock EN 60068-2-27 / Vibration EN 60068-2-6			
Weight	15.2 g [0.53 oz]			
Connectors	3-pin M8 quick-disconnect			
Agency Approvals	CE, cULus, 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



M8 Connector

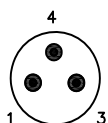


Diagram 2
NPN Output

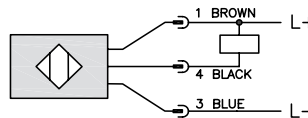
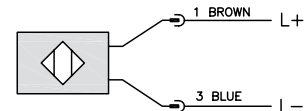


Diagram 3
Emitter



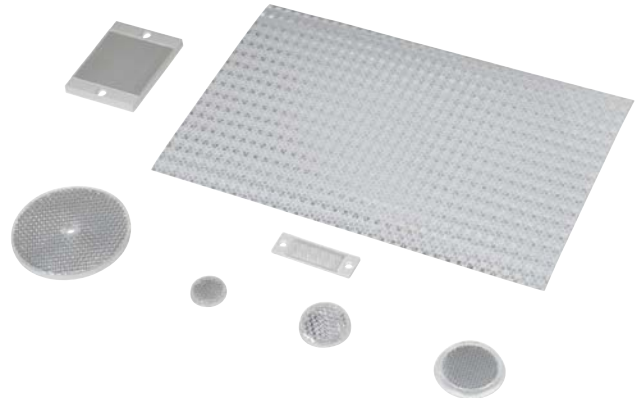
Reflectors

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 $\pm 15^\circ$.



Reflector Specifications							
Part number	Price	Drawing Link	Quantity	Dimensions mm [in]	Degree of Protection	Mounting	Materials
RL102	\$;09[h:	PDF	10	25	IEC IP67	Customer-supplied adhesive or other mounting method required	Reflective face: PMMA Polymethylmethacrylate (acrylic) Base material: ABS (Acrylonitrile-butadiene-styren)
RL102-1	\$?6y:		1	[0.98]			
RL103	\$;-09[j:	PDF	10	34.5			
RL103-1	\$?6z:		1	[1.36]			
RL104	\$;-09[j:	PDF	10	46			
RL104-1	\$;?6]:		1	[1.81]			
RL105G	\$-2e_j:	PDF	10	95 x 38		Two 4.3 mm holes	
RL105G-1	\$2e_k:		1	[3.74 x 1.50]			
RL106G	\$;-09[l:	PDF	10	182 x 42		Two 6mm holes	
RL106G-1	\$?6_:		1	[7.17 x 1.65]			
RL110	\$;09[n:	PDF	10	84		One 5mm hole	
RL110-1	\$?6#:		1	[3.31]			
RL116	\$05yv:	PDF	10	41 x 60		Two 3mm holes	
RL116-1	\$;?6!:		1	[3.54 x 2.36]			
RL100DA4	\$0?77:	NA	1	200 x 300		Self-adhesive	Paper (Acrylic tape with micro prism)
RL100DC4	\$0?78:	NA	1	50 x 300			
RL100DQ1	\$?79:	NA	1	100 x 100			
RL111G	\$;0?6,:	PDF	10	22.5 x 47		Two 3mm slots	Reflective face: PMMA Polymethylmethacrylate (acrylic) Base material: ABS (Acrylonitrile-butadiene-styren)
RL111G-1	\$?6?:		1	[0.89 x 1.85]			
RL112G	\$0?71:	PDF	10	19 x 73			
RL112G-1	\$?70:		1	[0.75 x 2.87]			
RL113G	\$0?73:	PDF	10	51.4 x 60.3		Two 4mm slots	
RL113G-1	\$?72:		1	[2.02 x 2.37]			

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	\$;09[o:	\$?74:	\$;09[p:	\$?75:	\$;09[q:	\$?76:
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.