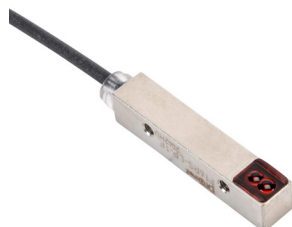# prosense®

F16 Series Rectangular Photoelectric Sensors

Rectangular photoelectric sensors

Features
- 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		5-30 mm [0.20-1.18 in]	500Hz	Visible red	NA	PNP N.O.	Light-on	3-wire, 3-pin M8 quick-disconnect	Diagram 1	PDF
F16RS-LN-1F		5-30 mm [0.20-1.18 in]	500Hz	Visible red	NA	NPN N.O.	Light-on	3-wire, 3-pin M8 quick-disconnect	Diagram 2	PDF
Diffuse										
F16R6-LP-1F		1-60 mm [0.04-2.36 in]	500Hz	Visible red	NA	PNP N.O.	Light-on	3-wire, 3-pin M8 quick-disconnect	Diagram 1	PDF
F16R6-LN-1F		1-60 mm [0.04-2.36 in]	500Hz	Visible red	NA	NPN N.O.	Light-on	3-wire, 3-pin M8 quick-disconnect	Diagram 2	PDF
Polarized retroreflective *										
F16RP-DP-1F		0-1 m [0-3.28 ft]	500Hz	Visible red	NA	PNP N.O.	Dark-on	3-wire, 3-pin M8 quick-disconnect	Diagram 1	PDF
F16RP-DN-1F		0-1 m [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										
F16RE-00-1F		0-2.2 m [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		0-2.2 m [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		0-2.2 m [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		ProSense mounting bracket, right-angle, stainless steel. For use with F16 series photoelectric sensors.	PDF
F16-BRKT		ProSense mounting bracket, parallel, anodized aluminum. For use with F16 series photoelectric sensors.	PDF
F16-ADPTR-10		ProSense mounting bracket, zinc plated copper, 10mm profile rail mount. For use with F16 series photoelectric sensors.	PDF
F16-ADPTR-8		ProSense mounting bracket, zinc plated copper, 8mm profile rail mount. For use with F16 series photoelectric sensors.	PDF

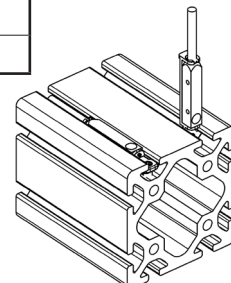F16-BRKT-90   F16-BRKT   F16-ADPTR-10   F16-ADPTR-8

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.
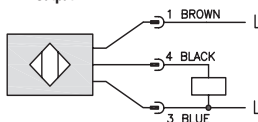
prosense® F16 Series Rectangular Photoelectric Specifications

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			

Wiring diagrams

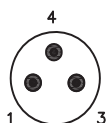**Diagram 1**

PNP Output

M8 Connector

Diagram 2
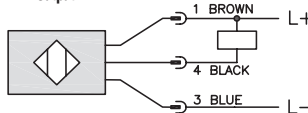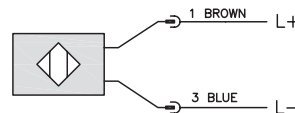
NPN Output

Diagram 3

Emitter

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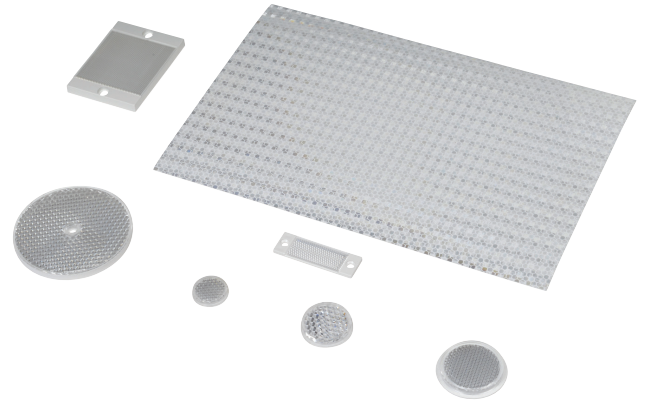
Reflectors

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		PDF	10	25 [0.98]		Customer-supplied adhesive or other mounting method required	Reflective face: PMMA Polymethylmethacrylate (acrylic) Base material: ABS (Acrylonitrile-butadiene-styren)
RL102-1			1				
RL103		PDF	10	34.5 [1.36]			
RL103-1			1				
RL104		PDF	10	46 [1.81]			
RL104-1			1				
RL105G		PDF	10	95 x 38 [3.74 x 1.50]		Two 4.3 mm holes	
RL105G-1			1				
RL106G		PDF	10	182 x 42 [7.17 x 1.65]		Two 6mm holes	
RL106G-1			1		IEC IP67		
RL110		PDF	10	84 [3.31]		One 5mm hole	
RL110-1			1				
RL116		PDF	10	41 x 60 [3.54 x 2.36]		Two 3mm holes	
RL116-1			1				
RL100DA4		NA	1	200 x 300 [7.87 x 11.81]		Self-adhesive	Paper (Acrylic tape with micro prism)
RL100DC4		NA	1	50 x 300 [1.97 x 11.81]			
RL100DQ1		NA	1	100 x 100 [3.94 x 3.94]			
RL111G		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			1				
RL112G		PDF	10	19 x 73 [0.75 x 2.87]			
RL112G-1			1				
RL113G		PDF	10	51.4 x 60.3 [2.02 x 2.37]		Two 4mm slots	
RL113G-1			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						
Drawing Link	PDF		PDF		PDF	
Quantity	5	1	5	1	5	1
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.**