

FE Series Photoelectric Sensors



Mini-rectangular plastic - DC

- 11 models available
- Diffuse, polarized reflective, and through-beam models
- Adjustable sensitivity
- Axial cable or M8 quick-disconnect models
- NPN or PNP, Light-on/Dark-on selectable output
- IP67 rated



FE Series Photoelectric Sensors Selection Chart								
Part Number	Price	Sensing Range	Output State	Logic	Connection	Wiring	Dimensions	Characteristic Curves
Diffuse								
FER8-ON-OA	\$71.00	up to 800mm (31.49in)	N.O./N.C. selectable	NPN	2m (6.5) axial cable	Diagram 1	Figure 1	Chart 1
FER8-OP-OA	No Match!			PNP	2m (6.5) axial cable	Diagram 2	Figure 2	Chart 1
FER8-ON-OF	No Match!			NPN	M8 (8mm) connector	Diagram 1	Figure 1	Chart 1
Polarized reflective*								
FERN-ON-OA	\$82.00	up to 4m (13.12ft) with RL110 up to 1m (39.37in) with RL122	N.C./N.O. selectable	NPN	2m (6.5) axial cable	Diagram 1	Figure 1	Chart 2
FERN-OP-OA	\$82.00			PNP	2m (6.5) axial cable	Diagram 2	Figure 2	Chart 2
FERN-ON-OF	\$82.00			NPN	M8 (8mm) connector	Diagram 1	Figure 1	Chart 2
FERN-OP-OF	No Match!			PNP	M8 (8mm) connector	Diagram 2	Figure 2	Chart 2
Through-beam								
FERHD-ON-OA	\$97.00 No Match! No Match! No Match!	up to 12m (39.37ft)	N.C./N.O. selectable	NPN	2m (6.5) axial cable	Diagram	Figure 1	Chart 3
FERHD-OP-OA				PNP	2m (6.5) axial cable	Diagram	Figure 2	Chart 3
FERHD-ON-OF				NPN	M8 (8mm) connector	Diagram	Figure 1	Chart 3
FERHD-OP-OF				PNP	M8 (8mm) connector	Diagram	Figure 2	Chart 3

*Note: Purchase reflectors separately.

Wiring Diagrams

Diagram 1

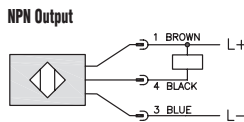


Diagram 2

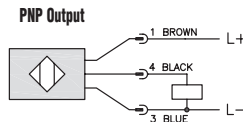
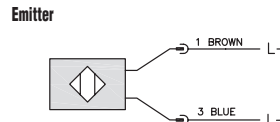
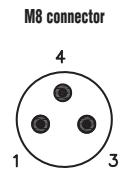


Diagram 3



Connector



	Switching Element Function	
	Thru-beam and Reflective Models	Diffuse Reflective Models
Light on	N.C.	N.O.
Dark on	N.O.	N.C.

Dimensions

mm

Figure 1

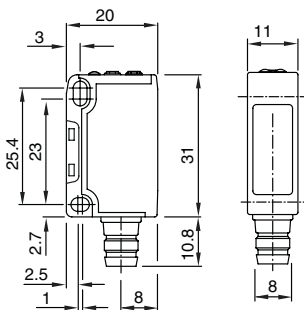
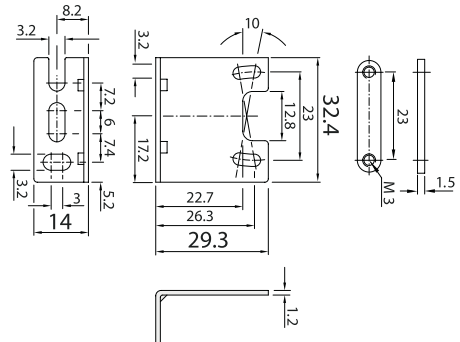
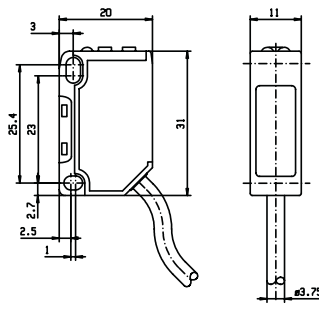


Figure 2



Horizontal mounting bracket supplied with each unit

FE Series Photoelectric Sensors

Specifications	Diffuse Models	Reflective Models	Through-Beam Models
Type	Diffuse reflection	Polarized reflection ³	Through-beam ⁴
Sensing Distance	800mm ¹	4m with RL110 1m with RL122 ²	20m
Light Spot Diameter	25 mm @ 300 mm	150 mm @2.5 mm	650 mm @ 12 m
Emission	Red LED (visible)		
Sensitivity	Adjustable		
Output Type	NPN or PNP - Light-on/Dark-on Rotary Switch		
Operating Voltage	10-30VDC		
No-load Supply Current	≤30mA	Emitter: ≤15mA; Receiver: ≤20mA	
Operating (Load) Current	≤100mA		
Off-state (Leakage) Current	N/A		
Voltage Drop	1.8V max at 100mA		
Switching Frequency	1kHz		
Ripple	≤10%		
Time Delay Before Availability (tv)	100ms		
Short-Circuit Protection	Yes, switch autoresets after load is removed		
Operating Temperature	-25 to 55°C (-13° to 131° F)		
Protection Degree (DIN 40050)	IEC IP67		
LED Indicators -Switching Status	Yellow (output energized)		
Housing Material	Polybutylene Terephthalate (PBT)		
Lens Material	Polycarbonate (PC)		
Shock/Vibration	See terminology section		
Tightening Torque	40 Nm (29 lb-ft)		
Weight (cable/connector)	53 g (1.87 oz) / 9 g (0.32 oz)		
Connectors	2m (6.5') axial cable; M8 (8 mm) connector		
Agency Approvals	UL Recognized E224302, CE		

¹With 100x100mm white matte paper
²With Ø84mm RL110 reflector or 12 x 54mm RL122 reflector.
³Purchase reflectors separately.
⁴Each through-beam part number consists of an emitter and receiver pair.

Characteristic curves

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

Chart 1 (Diffuse)

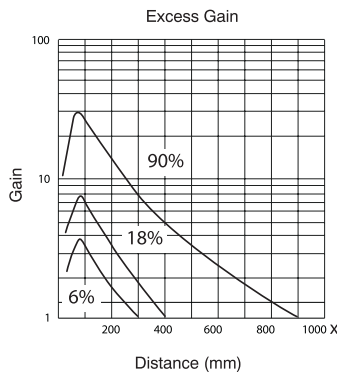


Chart 2 (Polarized Reflective)

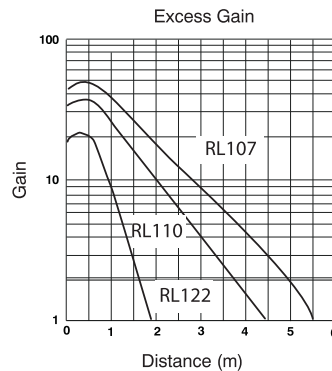


Chart 3 (Through-Beam)

