

# 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		
<b>Diffuse</b>										
<b>FER8-ON-0A</b>	retired	up to 800mm (31.49in)	N.O./N.C. selectable	NPN	2m (6.5) axial cable	Diagram 1	Figure 1	Chart 1		
<b>FER8-OP-0A</b>	retired			PNP	2m (6.5) axial cable	Diagram 2	Figure 2	Chart 1		
<b>FER8-ON-0F</b>	retired			NPN	M8 (8mm) connector	Diagram 1	Figure 1	Chart 1		
<b>Polarized reflective*</b>										
<b>FERN-ON-0A</b>	\$83.00	up to 4m (13.12ft) with RL110	N.C./N.O. selectable	NPN	2m (6.5) axial cable	Diagram 1	Figure 1	Chart 2		
<b>FERN-OP-0A</b>	retired			PNP	2m (6.5) axial cable	Diagram 2	Figure 2	Chart 2		
<b>FERN-ON-0F</b>	retired	up to 1m (39.37in) with RL122	N.C./N.O. selectable	NPN	M8 (8mm) connector	Diagram 1	Figure 1	Chart 2		
<b>FERN-OP-0F</b>	retired			PNP	M8 (8mm) connector	Diagram 2	Figure 2	Chart 2		
<b>Through-beam</b>										
<b>FERHD-ON-0A</b>	\$98.00	up to 12m (39.37ft)	N.C./N.O. selectable	NPN	2m (6.5) axial cable	Diagram	Figure 1	Chart 3		
<b>FERHD-OP-0A</b>				retired	PNP	2m (6.5) axial cable	Diagram	Figure 2	Chart 3	
<b>FERHD-ON-0F</b>				retired	NPN	M8 (8mm) connector	Diagram	Figure 1	Chart 3	
<b>FERHD-OP-0F</b>				retired	PNP	M8 (8mm) connector	Diagram	Figure 2	Chart 3	

\*Note: Purchase reflectors separately.

## Wiring Diagrams

Diagram 1

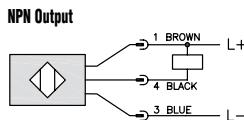


Diagram 2

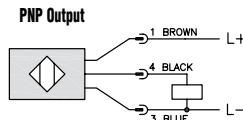
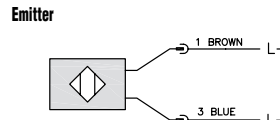
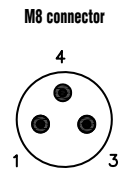


Diagram 3



Connector



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

## Dimensions

mm

Figure 1

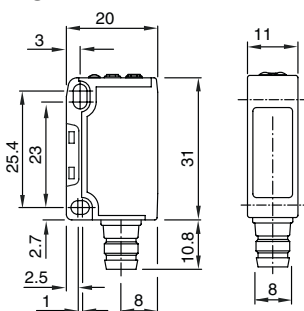
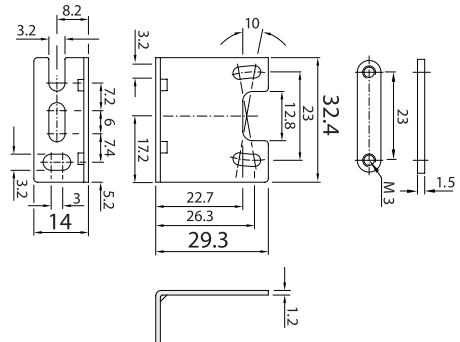
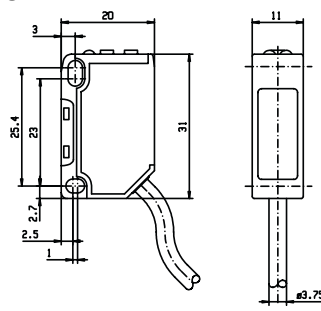


Figure 2



Horizontal mounting bracket supplied with each unit

# FE Series Photoelectric Sensors

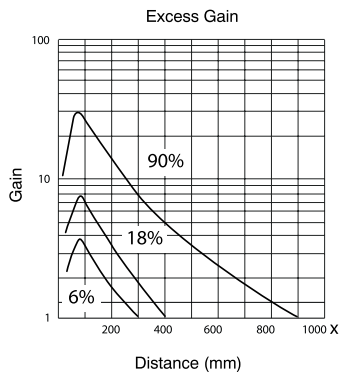
Specifications	Diffuse Models	Reflective Models	Through-Beam Models
<b>Type</b>	Diffuse reflection	Polarized reflection <sup>3</sup>	Through-beam <sup>4</sup>
<b>Sensing Distance</b>	800mm <sup>1</sup>	4m with RL110 1m with RL122 <sup>2</sup>	20m
<b>Light Spot Diameter</b>	25 mm @ 300 mm	150 mm @2.5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

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

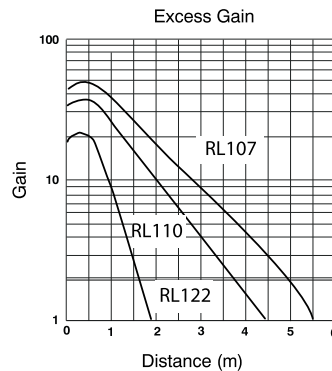
## Characteristic curves

**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)**

