FE Series Photoelectric Sensors



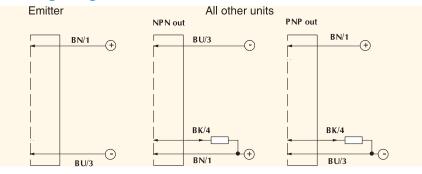
Mini-rectangular plastic - DC . 12 models available

- 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 Num	ber	Price	Sensing Range	Output State	Logic	Connection	Dimensions	Characteristic Curves		
Diffuse	Diffuse									
FER8-ON-OA		<>			NPN	2m (6.5) axial cable	Figure 2	Chart 1		
FER8-0P-0A		<>	up to 800mm (31.49in)	Light-on/Dark-on Selectable	PNP	2m (6.5) axial cable	Figure 2	Chart 1		
FER8-ON-OF		<>	Tup to 60011111 (31.4911)	Selectable	NPN	M8 (8mm) connector	Figure 1	Chart 1		
FER8-0P-0F		<>			PNP	M8 (8mm) connector	Figure 1	Chart 1		
Polarized reflect	tive*									
FERN-ON-OA		<>	up to 4m (13.12ft)	Light-on/Dark-on Selectable	NPN	2m (6.5) axial cable	Figure 2	Chart 2		
FERN-OP-OA		<>	with RL110		PNP	2m (6.5) axial cable	Figure 2	Chart 2		
FERN-ON-OF		<>	up to 1m (39.37in)	Selectable	NPN	M8 (8mm) connector	Figure 1	Chart 2		
FERN-OP-OF		<>	with RL122		PNP	M8 (8mm) connector	Figure 1	Chart 2		
Through-beam										
FERHD-ON-OA	Each part	<>			NPN	2m (6.5) axial cable	Figure 2	Chart 3		
FERHD-OP-OA	number consists of	<>	up to 12m (39.37ft)	Light-on/Dark-on Selectable	PNP	2m (6.5) axial cable	Figure 2	Chart 3		
FERHD-ON-OF	an emitter and receiver	<>	up to 12111 (39.371t)	Selectable	NPN	M8 (8mm) connector	Figure 1	Chart 3		
FERHD-OP-OF	pair	<>			PNP	M8 (8mm) connector	Figure 1	Chart 3		

^{*}Note: Polarized reflective sensors include one round reflector (84mm dia.) and one rectangular reflector (12mm x 54mm). Purchase additional reflectors separately.

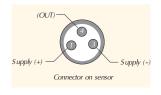
Wiring diagrams



Cables and Accessories

Cables and accessories start on page 19-65

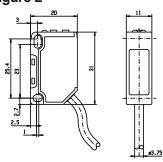
M8 connector



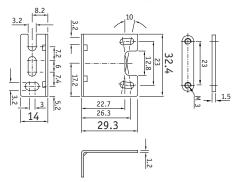
Dimensions

Figure 1 33

Figure 2



Horizontal mounting bracket supplied with each unit

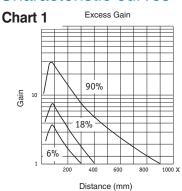


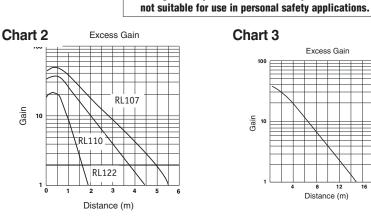
FE Series Photoelectric Sensors

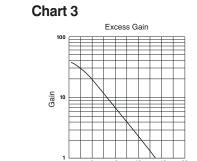
Specifications	Diffuse Models	Reflective Models	Through-Beam Models				
Туре	Diffuse reflection	Polarized reflection ³	Through-beam ⁴				
Sensing Distance	800mm ¹	4m with RL110, 1m with RL122	20m				
Emission		Red LED (visable)					
Blind Zone	-	10mm	-				
Sensitivity		Adjustable					
Differential Travel	≤20%		-				
Response Time		≤5ms					
Operating Voltage		10-30VDC					
Ripple		≤10%					
No-load Supply Current	≤3	0mA	Emitter: ≤15mA; Receiver: ≤20mA				
Load Current		≤100mA					
Leakage Current							
Voltage Drop	1.8V max at 100mA						
Output Type	NPN or PNP - Light-on/Dark-on Rotary Switch						
Switching Frequency	1kHz						
(tv) Time Delay Before Availability		100ms					
Input Voltage Transients Protection	Yes, a	as long as the transient peak does not reach	30VDC				
Input Power Polarity Reversal Protection		Yes					
Output Power Short-Circuit Protection		Yes, switch autoresets after load is remove	ed				
Temperature Range		-25/+55°C (-13° to 131° F)					
Temperature Drift		15% Sr					
Interference to External Light	30	00 lux (incandescent lamp), 10000 lux (sur	light)				
Protection Degree (DIN 40050)		IP67					
Agency Approvals	UL file E328811						
LED Indicators		Yellow (output energized)					
Housing Material		PBT					
Lens Material	PC						
Tightening Torque		40 N-m (29 lb-ft)					
Weight (cable/connector)		53g (1.87oz) / 9g (0.32oz)					

¹With 100x100mm white matte paper

Characteristic curves







Warning: These products are not safety sensors and are

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Part #

Distance (m)

 $^{^2}$ With Ø84mm RL110 reflector or 12 x 54mm RL122 reflector.

 $^{^3}$ Each sensor includes one 84mm round reflector (RL110) and one 12 x 54mm rectangular reflector. Purchase additional reflectors separately.

 $^{^{4}}$ Each through-beam part number consists of an emitter and receiver pair.

Cables with quick-disconnect plugs

- · Industry standard axial and right-angle M8/M12 screw-lock connectors with open leads. The cables listed can be used with patch cables
- 2m, 5m, 7m and 10m cable lengths
- PVC (polyvinyl chloride) jacket for typical industrial applications
- PUR (polyurethane) jacket for oily and direct sunlight applications
- IP67 rated



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Programmable Controllers

CD08-0A-050-A1 and -C1 shown



CD12L-0B-020-A0 and -C0 shown



CD12M-0B-050-C1 and -A1 shown

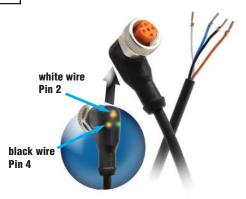
M8 Quick-Disconnect Cables (Pico, Nano)										
Part Number	Price	Length	Poles	Connector	LED	Jacket	Dimensions			
M8 Quick-Disconnects										
CD08-0A-020-A1	<>	2m (6.5ft.)	3	Axial	No	PVC	Figure 1			
CD08-0A-020-C1	<>	2m (6.5ft.)	3	Right-angle	No	PVC	Figure 2			
CD08-0A-050-A1	<>	5m (16.4ft.)	3	Axial	No	PVC	Figure 4			
CD08-0C-050-A1	<>	5m (16.4ft.)	3	Axial	No	PUR	Figure 3			
CD08-0A-050-C1	<>	5m (16.4ft.)	3	Right-angle	No	PVC	Figure 5			
CD08-0C-050-C1	<>	5m (16.4ft.)	3	Right-angle	No	PUR	Figure 5			
CD08-0A-070-A1	<>	7m (23ft.)	3	Axial	No	PVC	Figure 1			
CD08-0A-070-C1	<>	7m (23ft.)	3	Right-angle	No	PVC	Figure 2			

M12 Quick-Disconnect Cables (Euro, Micro DC-Single Key)									
Part Number	Price	Length	Poles	Connector	LED	Jacket	Dimensions		
M12 Quick-Disconnects									
CD12L-0B-020-A0	<>	2m (6.5ft)	4	Axial	No	PVC	Figure 6		
CD12L-0B-020-C0	<>	2m (6.5ft)	4	Right-angle	No	PVC	Figure 7		
CD12M-0B-050-A1*	<>	5m (16.4ft)	3	Axial	No	PVC	Figure 8		
CD12M-0D-050-A1*	<>	5m (16.4ft)	3	Axial	No	PUR	Figure 9		
CD12M-0B-050-C1*	<>	5m (16.4ft)	3	Right-angle	No	PVC	Figure 10		
CD12M-0D-050-C1*	<>	5m (16.4ft)	3	Right-angle	No	PUR	Figure 11		
CD12M-0B-070-A1	<>	7m (23ft)	4	Axial	No	PVC	Figure 6		
CD12M-0B-070-C1	<>	7m (23ft)	4	Right-angle	No	PVC	Figure 7		

Note: Do not use with: DM, FA, QX, SS, SSF, SU, TU, VM, VK, MV, MS or MSF series sensors. These sensors require 4-pole cables.

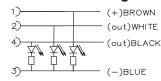
Cables with LED and quick-disconnect plugs

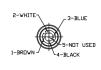
- Industry standard M12 right angle female plug with open leads
- · These cables can be used with patch cables
- 2m, 5m and 10m cable lengths
- PUR (polyurethane) jacket for oily and direct sunlight applications
- IP67 /IP68 / IP69K, II rated
- LED indication for 10 -36 VDC PNP sensors only



M12 Quick-Disconnect Cables with LED Indicator (Euro, Micro DC-Single Key)									
Part Number	Price	Length	Poles	Connector	LED	Jacket	Dimensions		
M12 Quick-Dis	sconne	cts							
EVC178*	<>	2m (6.5ft)	4	Right-angle	Yes	PUR	Figure 12		
EVC179*	<>	5m (16.4ft)	4	Right-angle	Yes	PUR	Figure 12		
EVC180*	<>	10m (32.8ft)	4	Right-angle	Yes	PUR	Figure 12		
*Note: LED for 10 to 36 VDC PNP only. Do not use when white wire (Pin 2) is used for selection of a sensor function.									

LED Models' Wiring





PNP-NORMALLY OPEN

Cable Specifications									
	Specification		M8		W12	M12 with LED			
Length		2m (6.5ft) / 7m (23ft)	5m (16.4ft)	2m (6.5ft) / 7m (23ft) 5m (16.4ft)		2m (6.5 ft) / 5m (16.4ft) / 10m (32.8ft)			
Nominal V	oltage	50VAC/75VDC	60VAC/DC	300VAC	250VAC/DC	10 to 36VDC			
Max Curre	nt		4A		4A	4A			
LED Curre	nt Loading	N/A	N/A	N/A	N/A	10V input Brown wire LED: 1.7mA White and/or Black LED: 0.9mA 36V input Brown wire LED: 7.3mA White and/or Black LED: 4.7mA			
Protection	Degree	IP67	IP65 / IP68 / IP69K	IP67	PVC: IP68 PUR: IP68 / IP69K	IP67 / IP68 / IP69K			
Material N	lut	brass; r	nickel plated	brass; r	nickel plated	brass; nickel plated			
Jacket Ma	terial	PVC	PVC:CD08-0A-xxx. PUR:CD08-0C-xxx	PVC	PVC:CD12M-0B-xxx. PUR:CD12M-0D-xxx	PUR			
Housing M	laterial		PUR PUR		PUR	PUR			
Contacts IV	Naterial Naterial	Copper-Tin Alloy	(CuSn) -gold plated	Copper-Tin Alloy	(CuSn) -gold plated	Gold plated brass			
Tightening	Torque	0.5 Nm	≤ 0.4 Nm	0.5 Nm	≤ 0.4 Nm	0.6 to 1.5 Nm			
Conductors	s Cross Section (AWG)	0.25mm ² (24 AWG)	0.25mm ² (24 AWG)	0.25mm ² (24 AWG)	0.34mm ² (22 AWG)	4 x 0.34mm ² (4 x 22 AWG)			
Ø Outer Ca	able	5mm	PVC: 4 mm PUR: 4 mm	5mm	PVC: 4.2 mm PUR: 4.3 mm	5mm			
Temperatu	re Range	-25° to +80°C (-13° to 176°F)	-25° to 90°C (-13° to 194°F)	-25° to +80°C (-13° to 176°F)	PVC: -30° to 70°C (-22° to 158°F) PUR: -50° to 90°C (-58° to 194°F)	-25° to +90°C (-13° to 194°F)			
Environme	ental	N/A	Halogen free, Silicone free	N/A	Halogen free, Silicone free	Halogen free, Silicone free			
Function D	Display Power LED	N/A	N/A	N/A	N/A	Green			
	Status LED	N/A	N/A	N/A	N/A	2 x Yellow			
n le lity	Bending Radius			min. 10 x cal	ole diameter				
Cab tabi	Bending Cycles	N/A	N/A	N/A	N/A	>5 million			
Drag Chain (Roller Cable Tray) Suitability	Travel Speed	N/A	N/A	N/A	N/A	Max. 3.3 m/s for a horizontal travel length of 5 meters and max. acceleration of 5 m/s ²			
L Traj	Torsional Strain	N/A	N/A	N/A	N/A	±180°/m			
Agency Ap	provals		Ro	HS		UL File E191684, RoHS			

	UL Reference							
Part Number	Mini-Series Female Cord Connectors Series M12, UL Catalog Number							
EVC178	AD0AH043MSS0002H04							
EVC179	AD0AH043MSS0005H04							
EVC180	AD0AH043MSS0010H04							
	vn in UL file under Mini-series Female Connectors using catalog number							

Dimensions (in/mm)

Figure 1

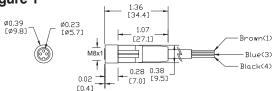


Figure 2

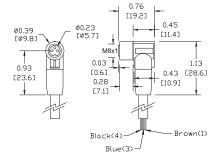


Figure 3

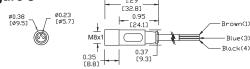


Figure 4

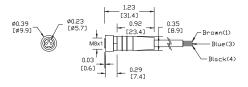


Figure 5

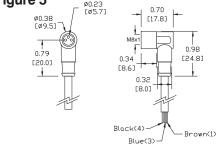


Figure 6

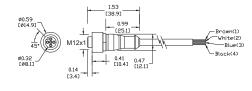


Figure 7

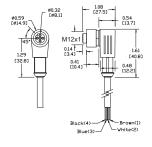


Figure 8

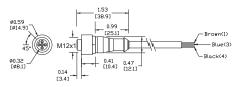


Figure 9

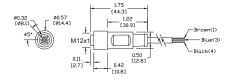


Figure 10

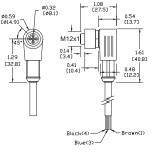


Figure 11

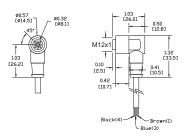
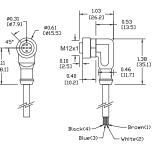


Figure 12



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Appendix

Product Index Part #

e19-67

Patch cables with quickdisconnect plugs on each end

Available patch cables include:

- Industry standard M8 and M12 screw-lock connectors
- One male and one female connector
- Axial and right-angle connector models
- 1m and 3m cable lengths
- PVC (polyvinyl chloride)jacket for typical industrial applications
- IP67 rated



M8 Patch Cables with Quick-Disconnect on Each End (Pico, Nano)									
Part Number	Price	Length	Poles	Connectors	Jacket	Dimensions			
M8 Quick-Disconnect Patch Cables									
CDP08-0A-010-AA	<>	1m (3.28ft)	3	2 Axial. One male and one female connector	PVC	Figure 1			
CDP08-0A-010-BB	<>	1m (3.28ft)	3	2 Right-angle. One male and one female connector	PVC	Figure 3			
CDP08-0A-030-AA	<>	3m (9.84ft)	3	2 Axial. One male and one female connector	PVC	Figure 2			
CDP08-0A-030-BB	<>	3m (9.84ft)	3	2 Right-angle. One male and one female connector	PVC	Figure 3			

M12 Patch Cables with Quick-Disconnect on Each End (Euro, Micro DC-Single Key)										
Part Number	Price	Length	Poles	Connectors	Jacket	Dimensions				
M12 Quick-disconnect	M12 Quick-disconnect Patch Cables									
CDP12-0B-010-AA	<>	1m (3.28ft.)		2 Axial. One male and one female connector	PVC	Figure 4				
CDP12-0B-010-BB	<>	1m (3.28ft.)	4	2 Right-angle. One male and one female connector	PVC	Figure 5				
CDP12-0B-030-AA	<>	3m (9.84ft.)	4	2 Axial. One male and one female connector	PVC	Figure 4				
CDP12-0B-030-BB	<>	3m (9.84ft.)	4	2 Right-angle. One male and one female connector	PVC	Figure 5				

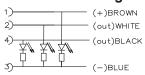
Patch Cables with LED

Available patch cables with LED include:

- Right-angle M12 female plug with LED indication on one end and axial male plug on
- 0.3m, 0.6m, 1m, 2m, 5m, and 10m cable lengths
- PUR (polyurethane) jacket for oily and direct sunlight applications
- IP67 / IP68 / IP69K, II rated
- LED indication for 10 -36 VDC PNP sensors only



LED Models' Wiring





M12 P	M12 Patch Cables with LED Indicator (Euro, Micro DC-Single Key)									
Part Number	Price	Length	Poles	Connectors	LED	Jacket	Dimensions			
M12 Patch Cab	M12 Patch Cables									
EVC322*	<>	0.3m (0.98ft)	4	Right-angle female, axial male	Yes	PUR	Figure 6			
EVC323*	<>	0.6m (1.97ft)	4	Right-angle female, axial male	Yes	PUR	Figure 6			
EVC324*	<>	1m (3.28ft)	4	Right-angle female, axial male	Yes	PUR	Figure 6			
EVC325*	<>	2m (6.5ft)	4	Right-angle female, axial male	Yes	PUR	Figure 6			
EVC326*	<>	5m (16.4ft)	4	Right-angle female, axial male	Yes	PUR	Figure 6			
EVC327*	<>	10m (32.8ft)	4	Right-angle female, axial male	Yes	PUR	Figure 6			
Note: LED for 10 to	36 VDC	PNP only.								

Do not use when white wire (Pin 2) is used for selection of a sensor function.

PNP-NORMALLY OPEN

	Cable Specifications								
Specification	M8 / M12	M12 with LED							
Length	1m (3.28ft.) / 3m (9.84ft.)	0.3m (0.98tt) / 0.6m (1.97tt) / 1m (3.28tt) 2m (6.5tt) / 5m (16.4tt) / 10m (32.8tt)							
Nominal Voltage	50VAC/75VDC	10 to 36VDC							
Max Current	4A	4A							
	N/A	10V input Brown wire LED: 1.7mA White and/or Black LED: 0.9mA 36V input Brown wire LED: 7.3mA White and/or Black LED: 4.7mA							
Protection Degree	IEC IP67	IEC IP67/IP68/IP69K							
Material Nut	Brass: nickel plated	Brass: nickel plated							
Jacket Material	PVC	PUR							
Housing Material	PUR	Connector: Orange PUR, Socket: Black PUR							
Contacts Material	Copper-tin(CuSn)=Brass	Brass; gold plated							
Conductors Cross Section (AWG)	0.34mm ²	0.34mm ² (22 AWG)							
Tightening Torque	0.5 Nm	Plug: 0.6 to 1.5 Nm (take into account the maximum value of the counterpart) Socket: 0.6 to 1.5 Nm							
Ø Outer Cable	5mm	5mm							
Temperature Range	-25° to +70°C (-13° to 158°F)	-25° to +90°C (-13° to 194°F)							
Environmental		Halogen-free, Silicone-free							
Function Display LED	N/A	Green							
Switching Status LED	N/A	2 x Yellow							
e 발 Bending Radius		min. 10 x cable diameter							
Bending Cycles		>5 million							
Bending Radius US (Honging Cycles Travel Speed Travel Speed Torsional Strain	N/A	Max. 3.3 m/s for a horizontal travel length of 5 m and max. acceleration of 5 m/s ²							
Torsional Strain	N/A	±180°/m							
Agency Approvals	RoHS	UL File E191684, RoHS							

	UL Reference							
Part Number	Cable Assemblies Series M12, UL Catalog Number							
EVC322	VD0AH043MSS00.3H04STGH040MSS							
EVC323	VD0AH043MSS00.6H04STGH040MSS							
EVC324	VD0AH043MSS0001H04STGH040MSS							
EVC325	VD0AH043MSS0002H04STGH040MSS							
EVC326	VD0AH043MSS0005H04STGH040MSS							
EVC327	VD0AH043MSS0010H04STGH040MSS							
	n in UL file under Cable Assemblies catalog number							

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Product Index

Part # Index

Dimensions (in/mm)

Figure 1

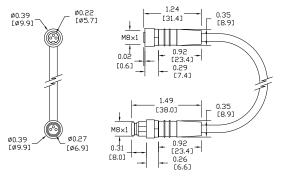


Figure 2

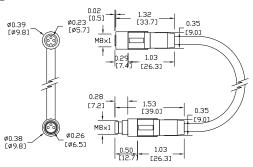


Figure 3

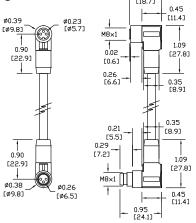


Figure 4

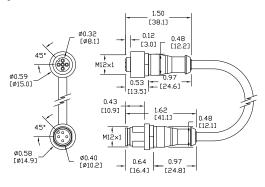


Figure 5

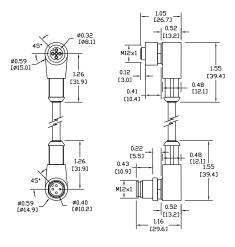
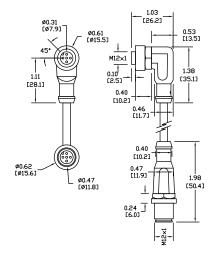


Figure 6



Photoelectric Sensors Accessories: Cables

Cables with quick-disconnect plugs for DFT/DFP Models

Do not use extension cables with the cable listed below. The physical pin configurations do not match.

Available cables include:

- Industry standard M8 screw-lock connectors
- · Axial and right-angle connector models
- 2m, 5m and 10m cable lengths
- PVC (polyvinyl chloride) jacket for typical industrial applications
- IP68 rated

M8 Cables with Quick-Disconnect								
Part Number	Price	Length	Poles	Connectors Jacket		Dimensions		
M8 Quick-Disconnects								
CD08-0G-020-A1	<>	2m (6.56ft.)	4	Axial	PVC	Figure 1		
CD08-0W-020-C1	<>	2m (6.56ft.)	4	Right-angle	PVC	Figure 2		
CD08-0G-050-A1	<>	5m (16.4ft.)	4	Axial	PVC	Figure 1		
CD08-0W-050-C1	<>	5m (16.4ft.)	4	Right-angle	PVC	Figure 2		
CD08-0G-100-A1	<>	10m (32.8ft.)	4	Axial	PVC	Figure 1		
CD08-0W-100-C1	<>	10m (32.8ft.)	4	Right-angle	PVC	Figure 2		

Use these cables if the sensor pin configuration looks like the connector pin-out below.

M8 Connector

Cable Specifications M8 2m (6.56ft.) 5m (16.4ft.) 10m (32.8ft.) Length Nominal Voltage 30VAC/30VDC Nominal Current 4A **Protection Degree** IEC IP67 **Contact Body Material** ABS Housing Material PUR **Contacts Material** CuSn **Conductors Section** 0.25mm² Ø Outer Cable 4.5mm Temperature Range -5° to +70°C (23° to 158°F)

Dimensions (mm)

Figure 1

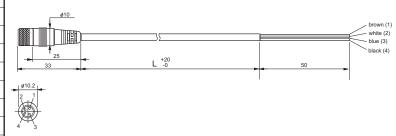
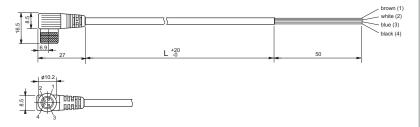


Figure 2





Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/

Servos

Controls

Proximity

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature

Pushbuttons/ Lights

Process

Relays/ Timers Comm.

Terminal Blocks &

Wiring Power

Circuit

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Part # Index

Accessories: Reflectors and Shutters

RL series reflectors for polarized reflective photoelectric sensors (all models)

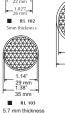
- Suitable for use with polarized light photoelectric sensors
- Shapes and sizes for most applications
- Miniature types for close mounting in multiple sensor installations
- Single hole, dual hole and stud mounting types available
- 10 reflectors per package

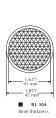
Installation notes

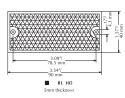
- Keep the reflector surface clean to ensure peak detection performance.
 This is especially true when the maximum sensing range is being used. Clean using a damp cloth
- When selecting a reflector, it is important to consider the ambient conditions it will be exposed to. Dusty or high humidity conditions 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°



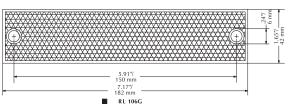


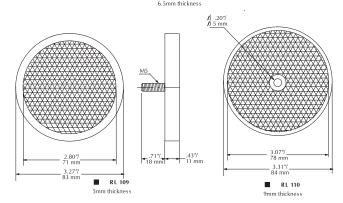












Specifications Specification Speci							
Model	RL102	RL103	RL104	RL105	RL106G	RL109	RL110 ³
Price (10 per pack)	<>	<>	<>	<>	<>	<>	<>
% Sensing Range Using SSP ¹	50%	40%	50%	50%	50%	50%	100%
% Sensing Range Using QXP ¹		35%	60%	50%	45%	30%	100%
Dimensions	Ø26mm	Ø36mm	Ø47mm	90x40mm	182x42mm	Ø83mm	Ø84mm
Degree of Protection ²	IEC IP67						
Mounting	Customer-supplied adhesive or other mounting method required			two Ø4.3mm holes	two Ø6mm holes	one M5 stud	one Ø5mm hole
Materials	Reflective face: PMMA Polymethylmethacrylate (acrylic); base material: ABS (Acrylonitrile-butadiene-styren)						

- 1 Refer to individual catalog pages for detailed explanations of these photoelectric sensors.
- 2 Not recommended for applications involving moist air environments or water immersion.
- 3 All reflective sensors are shipped with an RL110 reflector.

ST0S1 through ST0S8 shutters for M18 (18 mm) through-beam sensors (SSE / SSR)



 Reduces the emitted beam, allowing the detection of small targets

Sensing Distance (when used with SSE / SSR Model Photoelectric switches)							
Model	STOS1	STOS2	STOS3	STOS4	STOS6	STOS8	
Pieces Per Pack	1	1	1	1	1	1	
Price	<>	<>	Discontinued	<>	<>	<>	
Ø x shutter (mm)	1	2	3	4	6	8	
Distance (m) object (mm)	N/A N/A	N/A N/A	1 1.5	1.5 2	3.5 3	6.5 4	

Shutter consists of a threaded ring-nut, a protective lens, an O-ring and an aperture, which can screw onto
the optical head of either the emitter or receiver. The table above shows the sensing distance and
minimal detectable object.

Accessories: Reflectors, Adapters & **Mounting Brackets**

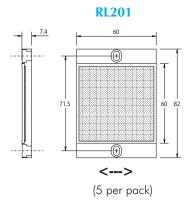
RL series reflectors for polarized reflective Laser photoelectric sensors (FALN series)

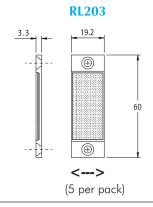
- Suitable for use with polarized light Laser photoelectric sensors
- Sizes for most applications
- Miniature types for close mounting in multiple sensor installations
- 5 reflectors per package

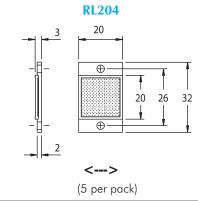
Specifications Specific Specif						
Model	RL201	RL203	RL204			
Sensing Range Using FALN ¹	30m	7m	7m			
Dimensions	60mm x 82mm	19mm x 60mm	20mm x 32mm			
Mounting	two Ø4mm holes	two Ø6mm holes	two Ø3mm holes			
Degree of Protection ²	IEC IP67					
Materials	Acrylic/polycarbonate					

1 Refer to individual catalog pages for detailed explanations of these photoelectric sensors. 2 Not recommended for applications involving moist air environments or water immersion.

Note: All reflective sensors are shipped with an RL110 reflector. Purchase additional reflectors separately.





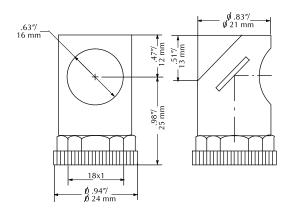


ST03 right-angle M18 (18 mm) beam adapter

For use with M18 retroreflective and through-beam photoelectric switches (not for use with diffuse reflection sensors). Allows 90° light detection using an internal mirror set at 45° to the optical axis. Sensitivity loss is about 20-30%.



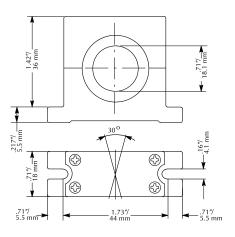




ST02 plastic swivel bracket M18 (18 mm)

Plastic mounting bracket for use with M18 photoelectric switches. Has a ball-joint and set screws to adjust sensor orientation. Allows orientation in all directions for retroreflective and through-beam sensors. (Will not work with C18 series).





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Accessories: Mounting Brackets

.06"/ 1.5 mm

ST12A metal axial bracket

For mounting M12 (12 mm) sensors. Has two mounting holes (use 3 mm screws) and allows the rotation of an optical axis for right-beam angle adapter sensors.





s lot for M3 screw fixing

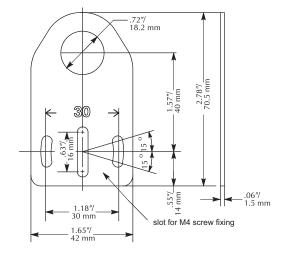
ST18A metal axial bracket

Metal mounting bracket for M18 (18mm) sensors. Has two mounting holes (use 4 mm screws) and allows the rotation of an optical axis for right-beam-angle-adapter sensors.



(1 per pack)





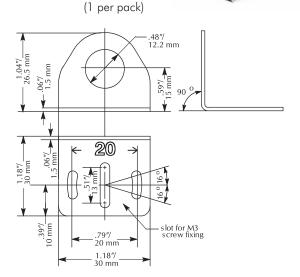
ST12C metal right-angle bracket

20 mm

1.18"/

Metal angular mounting bracket for use with M12 (12 mm) sensors. Has two mounting holes (use 3 mm screws) and allows the rotation of an optical axis for axial sensors.





ST18C metal right-angle bracket

Metal angular mounting bracket for M18 (18 mm) sensors. Has two mounting holes (use 4 mm screws) and allows the rotation of an optical axis for axial sensors.



(1 per pack)



