



# M18 Plastic Photoelectric Sensors



## M18 (18mm) plastic – DC

- Diffuse with background suppression, retroreflective, through-beam styles
- Axial cable or M12 quick-disconnect models; purchase cable separately
- Complete overload protection
- IP67 rated
- 2-year warranty
- IO-Link V 1.0 on PNP models



M18 Plastic Photoelectric Sensors									
Part Number	Price	Sensing Range	Switching Frequency	Light Type	Logic	Output Function	Connection Type	Wiring	Drawing Link
<b>Diffuse reflective with adjustable background suppression</b>									
<a href="#">LHR-M18PA-PMS-603</a>	\$35.50	10-250mm [0.39-9.84 in]	700 Hz	Pinpoint LED; Red 640nm	PNP	Complementary Light-on / Dark-on	4-pin M12 quick-disconnect	2	<a href="#">PDF</a>
<a href="#">LHR-M18PA-TMS-603</a>	\$35.50	10-250mm [0.39-9.84 in]	700 Hz	Pinpoint LED; Red 640nm	PNP	Complementary Light-on / Dark-on	4-pin M12 quick-disconnect	2	<a href="#">PDF</a>
<a href="#">LHR-M18PA-PMK-603</a>	\$35.50	10-250mm [0.39-9.84 in]	700 Hz	Pinpoint LED; Red 640nm	PNP	Complementary Light-on / Dark-on	PVC, 2m, [6.5 ft] 4-wire	2	<a href="#">PDF</a>
<a href="#">LHR-M18PA-TMK-603</a>	\$35.50	10-250mm [0.39-9.84 in]	700 Hz	Pinpoint LED; Red 640nm	PNP	Complementary Light-on / Dark-on	PVC, 2m, [6.5 ft] 4-wire	2	<a href="#">PDF</a>
<a href="#">LHR-M18PA-PMS-101</a>	\$35.50	10-250mm [0.39-9.84 in]	700 Hz	Pinpoint LED; Red 640nm	NPN	Complementary Light-on / Dark-on	4-pin M12 quick-disconnect	1	<a href="#">PDF</a>
<a href="#">LHR-M18PA-TMS-101</a>	\$35.50	10-250mm [0.39-9.84 in]	700 Hz	Pinpoint LED; Red 640nm	NPN	Complementary Light-on / Dark-on	4-pin M12 quick-disconnect	1	<a href="#">PDF</a>
<a href="#">LHR-M18PA-PMK-101</a>	\$35.50	10-250mm [0.39-9.84 in]	700 Hz	Pinpoint LED; Red 640nm	NPN	Complementary Light-on / Dark-on	PVC, 2m, [6.5 ft] 4-wire	1	<a href="#">PDF</a>
<a href="#">LHR-M18PA-TMK-101</a>	\$35.50	10-250mm [0.39-9.84 in]	700 Hz	Pinpoint LED; Red 640nm	NPN	Complementary Light-on / Dark-on	PVC, 2m, [6.5 ft] 4-wire	1	<a href="#">PDF</a>
<b>Diffuse reflective</b>									
<a href="#">LTR-M18PA-PMS-603</a>	\$23.00	3-1200mm [0.11-47.24 in]	1.5 kHz	LED; Red 630nm	PNP	Complementary Light-on / Dark-on	4-pin M12 quick-disconnect	2	<a href="#">PDF</a>
<a href="#">LTR-M18PA-PMK-603</a>	\$23.00	3-1200mm [0.11-47.24 in]	1.5 kHz	LED; Red 630nm	PNP	Complementary Light-on / Dark-on	PVC, 2m, [6.5 ft] 4-wire	2	<a href="#">PDF</a>
<a href="#">LTR-M18PA-PMS-101</a>	\$23.00	3-1200mm [0.11-47.24 in]	1.5 kHz	LED; Red 630nm	NPN	Complementary Light-on / Dark-on	4-pin M12 quick-disconnect	1	<a href="#">PDF</a>
<a href="#">LTR-M18PA-PMK-101</a>	\$23.00	3-1200mm [0.11-47.24 in]	1.5 kHz	LED; Red 630nm	NPN	Complementary Light-on / Dark-on	PVC, 2m, [6.5 ft] 4-wire	1	<a href="#">PDF</a>
<b>*Retroreflective sensor</b>									
<a href="#">LRR-M18PA-NMS-603</a>	\$27.00	0.02-7m [0.06-22.96 ft]	1.5 kHz	LED; Red 630nm	PNP	Complementary Light-on / Dark-on	4-pin M12 quick-disconnect	2	<a href="#">PDF</a>
<a href="#">LRR-M18PA-NMK-603</a>	\$27.00	0.02-7m [0.06-22.96 ft]	1.5 kHz	LED; Red 630nm	PNP	Complementary Light-on / Dark-on	PVC, 2m, [6.5 ft] 4-wire	2	<a href="#">PDF</a>
<a href="#">LRR-M18PA-NMS-101</a>	\$27.00	0.02-7m [0.06-22.96 ft]	1.5 kHz	LED; Red 630nm	NPN	Complementary Light-on / Dark-on	4-pin M12 quick-disconnect	1	<a href="#">PDF</a>
<a href="#">LRR-M18PA-NMK-101</a>	\$27.00	0.02-7m [0.06-22.96 ft]	1.5 kHz	LED; Red 630nm	NPN	Complementary Light-on / Dark-on	PVC, 2m, [6.5 ft] 4-wire	1	<a href="#">PDF</a>
<b>*Purchase reflector separately</b>									
<b>Through-beam emitters</b>									
<a href="#">LLR-M18PA-NMS-400</a>	\$20.00	0-30m [0-98.43 ft]	N/A	LED; Red 630nm	N/A	N/A	4-pin M12 quick-disconnect	3	<a href="#">PDF</a>
<a href="#">LLR-M18PA-NMK-400</a>	\$20.00	0-30m [0-98.43 ft]	N/A	LED; Red 630nm	N/A	N/A	PVC, 2m, [6.5 ft] 3-wire	3	<a href="#">PDF</a>
<b>Through-beam receivers</b>									
<a href="#">LLR-M18PA-NMS-603</a>	\$23.00	0-30m [0-98.43 ft]	1000Hz	N/A	PNP	Complementary Light-on / Dark-on	4-pin M12 quick-disconnect	2	<a href="#">PDF</a>
<a href="#">LLR-M18PA-NMK-603</a>	\$23.00	0-30m [0-98.43 ft]	1000Hz	N/A	PNP	Complementary Light-on / Dark-on	PVC, 2m, [6.5 ft] 4-wire	2	<a href="#">PDF</a>
<a href="#">LLR-M18PA-NMS-101</a>	\$23.00	0-30m [0-98.43 ft]	1000Hz	N/A	NPN	Complementary Light-on / Dark-on	4-pin M12 quick-disconnect	1	<a href="#">PDF</a>
<a href="#">LLR-M18PA-NMK-101</a>	\$23.00	0-30m [0-98.43 ft]	1000Hz	N/A	NPN	Complementary Light-on / Dark-on	PVC, 2m, [6.5 ft] 4-wire	1	<a href="#">PDF</a>

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

# CONTRINEX M18 Plastic Photoelectric Sensors Specifications



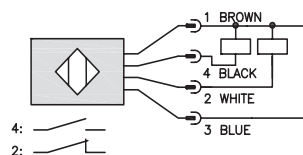
M18 Plastic Photoelectric Sensors Specifications				
Sensor type	Diffuse reflective with adjustable background suppression	Diffuse reflective	Retroreflective	Through-Beam
Sensing Distance <sup>1</sup>	10-250mm [0.39-9.84 in]	3-1200mm [0.11-47.24 in]	00.02-7m [0.06-22.96 ft]	0-30m [0-98.43 ft]
Light Spot Diameter (Distance)	6mm [100mm] 10mm [250mm]	11mm [500mm] 21mm [1000mm]	21mm [1000mm] 110mm [6000mm]	35mm [500mm] 250mm [6000mm] 1000mm [25,000mm]
Emission	Pinpoint Red	Red LED	Red LED	Red LED
Sensitivity	30-250 mm, 3/4 turn pot (TM) 30-250 mm, teach button (TM)	30-1200 mm, 3/4 turn pot	via IO-Link Only	
Output Types	NPN or PNP			
Operating Voltage	10-30 VDC			
No Load Supply Current	≤ 30mA	≤ 15mA		
Operating (Load) Current	≤ 200 mA			
Response Time	≤ 700us	≤ 300us	≤ 340us	≤ 500us
Switching Frequency	≤ 700Hz (normal) ≤ 450Hz / ≤ 1kHz	≤ 1.5 kHz (normal) ≤ 500Hz / ≤ 5kHz	≤ 1.5 kHz (normal) ≤ 500Hz / ≤ 4.5 kHz	≤ 1.5 kHz (normal) ≤ 500 Hz / ≤ 5kHzF
Ripple	10%Vpp			
Voltage Reversal Protection	Yes			
Short-circuit Protection	Yes			
Operating Temperature	-25 to +65°C [-13 to +149°F]			
Protection Degree	IP67			
LED Indicators - Switching Status	Green LED: excess gain; yellow LED sensing state			
Housing Material	ABS			
Lens Material	PMMA - Poly (methyl methacrylate)			
Shock/Vibration	IEC 60947-5-2			
Tightening Torque	1 N•m [0.73 lb•ft]			
Weight	6g [0.21 oz.] Connector version 71g [2.50 oz.] Cable version			
IO-Link	IO-Link version 1.0, PNP units only			
Connectors	PVC, 2m [6.5 ft] 3-wire or 4-wire; M12 4-pin connector			
Agency Approvals	cULus, CE			

<sup>1</sup> Object with 90% reflectance (standard white paper)

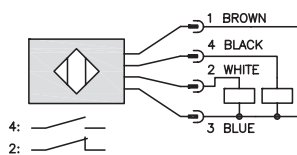
To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

## Wiring Diagrams

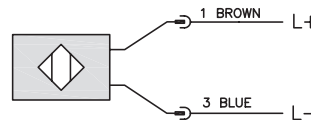
**Diagram 1**  
4-Wire NPN Output



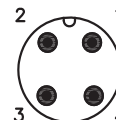
**Diagram 2**  
4-Wire PNP Output



**Diagram 3**  
Emitter



M12 connector



# CONTRINEX M18 Plastic Accessories



**LLW-M18PA-000**

<b>M18 Plastic Right-Angle Adapters</b>				
<i>Part Number</i>	<i>Price</i>	<i>Description</i>	<i>Weight</i>	<i>Drawing Link</i>
<b><u>LHW-M18PA-000</u></b>	\$7.25	Contrinex right-angle beam adapter, ABS plastic, 18mm. For use with Contrinex LHR 18mm photoelectrics. Mirror allows 90 degree light detection.	2g	<a href="#">PDF</a>
<b><u>LTW-M18PA-000</u></b>	\$7.25	Contrinex right-angle beam adapter, ABS plastic, 18mm. For use with Contrinex LTR/LRR 18mm photoelectrics. Mirror allows 90 degree light detection.	2g	<a href="#">PDF</a>
<b><u>LLW-M18PA-000</u></b>	\$7.25	Contrinex right-angle beam adapter, ABS plastic, 18mm. For use with Contrinex LLR 18mm photoelectrics. Mirror allows 90 degree light detection.	2g	<a href="#">PDF</a>

# Accessories for 18mm Sensors

## Axial Mounting Bracket

Axial mounting bracket available in zinc plated steel or 316L stainless steel. Has two mounting holes (use 4mm screws) and allows for rotation of an optical axis for right-beam-angle-adaptor sensors. Hexagonal nuts not included. For use with 18mm sensors.

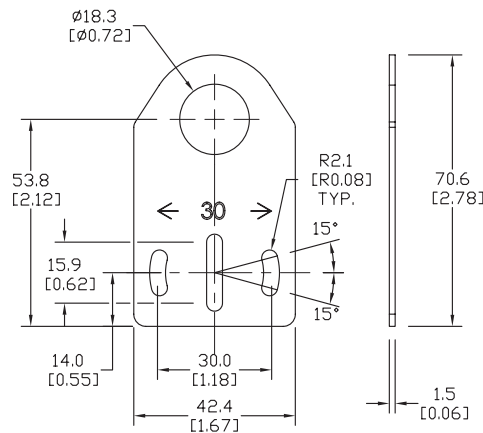


**ST18A**

Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb [g]
<b>ST18A</b>	\$2.00	Micro Detectors mounting bracket, axial, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
<b>ST18A7W</b>	\$7.25	Micro Detectors mounting bracket, axial, 316L stainless steel. For use with 18mm sensors.	0.06 [27.2]

## Dimensions

mm [inches]



## Right-angle Mounting Bracket

Right-angle mounting bracket for use with 18mm sensors. Has two mounting holes (use 4mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.

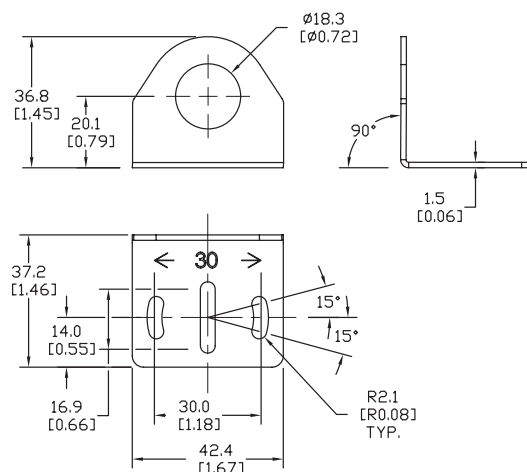


**ST18C**

Accessories for 18mm Sensors			
Part Number	Price	Description	Weight lb [g]
<b>ST18C</b>	\$2.00	Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 18mm sensors.	0.06 [27.2]
<b>ST18C7W</b>	\$7.25	Micro Detectors mounting bracket, right-angle, 316L stainless steel. For use with 18mm sensors.	0.06 [27.2]

## Dimensions

mm [inches]



# Accessories for 18mm Sensors

## Right-angle Mounting Brackets

Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors. Available with or without fixed insertion stop.

Accessories for 18mm Sensors				
Part Number	Price	Description	Drawing Link	Weight lb [g]
<a href="#">OPT2104</a>	\$10.50	Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	<a href="#">PDF</a>	0.06 [27.2]
<a href="#">OPT2105</a>	\$10.50	Wenglor mounting bracket, right-angle, plastic. For use with 18mm sensors.	<a href="#">PDF</a>	0.06 [27.2]



[OPT2104](#), [OPT2105](#)

## Right-angle Swivel Mounting Systems

Mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 12mm rod mount. For use with 18mm sensors. Available in all 304 stainless steel or with an aluminum head and a stainless steel mounting plate.

Accessories for 18mm Sensors						
Part Number	Price	Description	Mounting Head	Mounting Plate	Drawing Link	Weight lb [g]
<a href="#">OPT2116</a>	\$11.50	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 18mm sensors.	Aluminum	304 Stainless steel	<a href="#">PDF</a>	0.15 [68.0]
<a href="#">OPT2117</a>	\$21.00	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 18mm sensors.	304 Stainless steel	304 Stainless steel	<a href="#">PDF</a>	0.28 [127.0]



[OPT2116](#), [OPT2117](#)

Note: 304 Stainless steel mounting rods sold separately: [OPT2109](#) (200mm [7.87 in] length), [OPT2110](#) (300mm [11.81 in] length), and [OPT2111](#) (500mm [19.69 in] length).

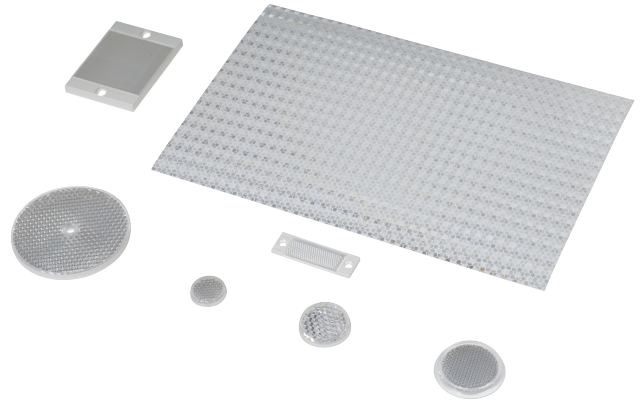
# Reflectors

## 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	
<a href="#">RL102</a>	\$38.00	<a href="#">PDF</a>	10	25	IEC IP67	Customer-supplied adhesive or other mounting method required	Reflective face: PMMA Polymethylmethacrylate (acrylic)  Base material: ABS (Acrylonitrile-butadiene-styren)	
<a href="#">RL102-1</a>	\$4.25		1	[0.98]				
<a href="#">RL103</a>	\$42.50	<a href="#">PDF</a>	10	34.5				
<a href="#">RL103-1</a>	\$4.75		1	[1.36]				
<a href="#">RL104</a>	\$42.50	<a href="#">PDF</a>	10	46				Two 4.3 mm holes
<a href="#">RL104-1</a>	\$4.75		1	[1.81]				
<a href="#">RL105G</a>	\$38.00	<a href="#">PDF</a>	10	95 x 38		Two 6mm holes		
<a href="#">RL105G-1</a>	\$4.25		1	[3.74 x 1.50]				
<a href="#">RL106G</a>	\$42.50	<a href="#">PDF</a>	10	182 x 42		One 5mm hole		
<a href="#">RL106G-1</a>	\$4.75		1	[7.17 x 1.65]				
<a href="#">RL110</a>	\$19.00	<a href="#">PDF</a>	10	84		Two 3mm holes		
<a href="#">RL110-1</a>	\$2.00		1	[3.31]				
<a href="#">RL116</a>	\$19.00	<a href="#">PDF</a>	10	41 x 60		Self-adhesive		Paper (Acrylic tape with micro prism)
<a href="#">RL116-1</a>	\$2.00		1	[3.54 x 2.36]				
<a href="#">RL100DA4</a>	\$38.50	NA	1	200 x 300				
<a href="#">RL100DC4</a>	\$12.00	NA	1	50 x 300				
<a href="#">RL100DQ1</a>	\$8.75	NA	1	100 x 100				
<a href="#">RL111G</a>	\$60.00	<a href="#">PDF</a>	10	22.5 x 47	Two 3mm slots			
<a href="#">RL111G-1</a>	\$7.25		1	[0.89 x 1.85]				
<a href="#">RL112G</a>	\$44.00	<a href="#">PDF</a>	10	19 x 73			Two 4mm slots	
<a href="#">RL112G-1</a>	\$4.75		1	[0.75 x 2.87]				
<a href="#">RL113G</a>	\$53.00	<a href="#">PDF</a>	10	51.4 x 60.3				
<a href="#">RL113G-1</a>	\$6.00		1	[2.02 x 2.37]				

Not recommended for applications involving moist air environments or water immersion.