



# C23 Rectangular Photoelectric Transparent Object Sensors



**TRR-C23PA-PMS-603**



**TRU-C23PA-TMS-603**

## Overview

Whatever the application, C23 series sensors meet its highest demands. Their miniature size (20 x 30 x 10 mm), first-class sensing ranges and practical accessories are ideal for limited spaces. Housings have an IP67 enclosure rating and are Ecolab-approved for use in hygienic areas. Versions with patented UV technology set new benchmarks for transparent object detection. Versatile mounting brackets ensure ease of installation. All PNP types include IO-Link communication.

## 20 x 30mm Plastic – DC

- Retroreflective
- Axial cable or M8 quick-disconnect models; purchase cable separately
- Complete overload protection
- IP67 rated
- 2-year warranty
- IO-Link v1.0 on PNP models



## C23 Photoelectric Transparent Object Sensors

Part Number	Price	Sensing Range	Switching Frequency	Light Emission	Logic	Output Function	Connection Type	Wiring	Drawing Link
Transparent Reflex - Potentiometer									
<a href="#">TRR-C23PA-PMK-603</a>	\$54.00	20-4200mm [0.78-165.35 in]	1.5 kHz	Visible red LED 630nm	PNP	Complementary Light-on / Dark-on	4-wire, 2m [6.5 ft] cable	Diagram 2	<a href="#">PDF</a>
<a href="#">TRR-C23PA-PMK-101</a>	\$54.00				NPN		4-wire, 2m [6.5 ft] cable	Diagram 1	<a href="#">PDF</a>
<a href="#">TRR-C23PA-PMS-603</a>	\$54.00				PNP		4-wire, 4-pin M8 quick-disconnect	Diagram 2	<a href="#">PDF</a>
<a href="#">TRR-C23PA-PMS-101</a>	\$54.00				NPN		4-wire, 4-pin M8 quick-disconnect	Diagram 1	<a href="#">PDF</a>
Transparent Reflex - Teach-in button									
<a href="#">TRR-C23PA-TMK-603</a>	\$54.00	20-4200mm [0.78-165.35 in]	1.5 kHz	Visible red LED 630nm	PNP	Complementary Light-on / Dark-on	4-wire, 2m [6.5 ft] cable	Diagram 2	<a href="#">PDF</a>
<a href="#">TRR-C23PA-TMK-101</a>	\$54.00				NPN		4-wire, 2m [6.5 ft] cable	Diagram 1	<a href="#">PDF</a>
<a href="#">TRR-C23PA-TMS-101</a>	\$54.00				NPN		4-wire, 4-pin M8 quick-disconnect	Diagram 1	<a href="#">PDF</a>
Transparent UV Reflex - Teach-in button									
<a href="#">TRU-C23PA-TMK-603</a>	\$120.00	0 to 1200 mm [0 to 47.24 in]	1 kHz	Ultra violet 275nm	PNP	Complementary Light-on / Dark-on	4-wire, 2m [6.5 ft] cable	Diagram 2	<a href="#">PDF</a>
<a href="#">TRU-C23PA-TMK-101</a>	\$120.00				NPN		4-wire, 2m [6.5 ft] cable	Diagram 1	<a href="#">PDF</a>
<a href="#">TRU-C23PA-TMS-603</a>	\$120.00				PNP		4-wire, 4-pin M8 quick-disconnect	Diagram 2	<a href="#">PDF</a>
<a href="#">TRU-C23PA-TMS-101</a>	\$120.00				NPN		4-wire, 4-pin M8 quick-disconnect	Diagram 1	<a href="#">PDF</a>

Note: Purchase reflector separately.

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

# C23 Rectangular Photoelectric Transparent Object Sensors



C23 Photoelectric Transparent Object Sensors		
Sensor type	Transparent Reflex	Transparent UV Reflex
Sensing Distance <sup>1</sup>	10 to 250mm [0.39 to 9.84 in]	3 to 1200mm [0.11 to 47.24 in]
Light Spot Diameter [Distance]	40mm [1m]	11mm [500mm] 21mm [1000mm]
Emission	LED, Red 630nm	UV 275nm
Sensitivity	30 to 5000 mm, teach-in button or IO-Link (TRR-C23PA-TMx-603) 30 to 5000 mm, 3/4 turn pot (TRR-C23PA-PMx-101)	40 to 1200 mm, teach-in button or IO-Link for (TRU-C23PA-TMx-603)
Output Types	NPN or PNP	
Operating Voltage	10-30 VDC	
No Load Supply Current	≤ 15mA	≤ 15mA
Operating (Load) Current	≤ 100 mA	
Response Time	≤ 340 μs (normal) ≤ 1 ms/≤ 100 μs	≤ 500 μs (normal) ≤ 1 ms/≤ 200 μs
Switching Frequency	≤ 1.5 kHz (normal) ≤ 500 Hz / ≤ 5 kHz	≤ 1 kHz (normal) ≤ 500Hz / ≤ 2.5kHz
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 Acrylonitrile Butadiene Styrene	
Lens Material	PMMA - Poly (methyl methacrylate)	
Shock/Vibration	IEC 60947-5-2	
Tightening Torque	0.2 N•m [0.14 lb•ft]	
Weight	6g [0.21 oz] Connector version 42g [1.48 oz.] Cable version	5g [0.17 oz] Connector version 41g [1.44 oz] Cable version
IO-Link	IO-Link version 1.0, PNP units only	
Connectors	PVC, 2m [6.5 ft] 4-wire; M8 4-pin connector	
Agency Approvals	cULus, CE, Ecolab	

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

## Wiring Diagrams

Diagram 1  
4-Wire NPN Output

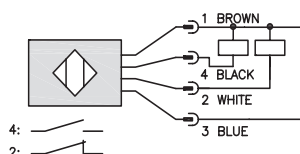
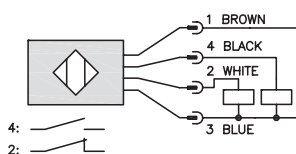
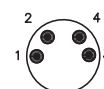


Diagram 2  
4-Wire PNP Output



M8 connector





# C23 Mounting Brackets

## C23 Mounting Brackets



**LXW-C23PA-000**



**LXW-C23PA-001**



**LXW-C23PA-002**



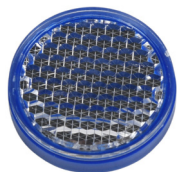
**LXW-C23PA-003**

C23 Mounting Brackets				
Part Number	Price	Description	Weight	Drawing Link
<b><u>LXW-C23PA-000</u></b>	\$5.50	Contrinex mounting bracket, right-angle horizontal, 304 stainless steel. For use with Contrinex C23 photoelectric sensors.	13g	<a href="#">PDF</a>
<b><u>LXW-C23PA-001</u></b>	\$5.50	Contrinex mounting bracket, right-angle vertical, 304 stainless steel. For use with Contrinex C23 photoelectric sensors.	20g	<a href="#">PDF</a>
<b><u>LXW-C23PA-002</u></b>	\$6.50	Contrinex mounting bracket, protective, 304 stainless steel. For use with Contrinex C23 photoelectric sensors.	16g	<a href="#">PDF</a>
<b><u>LXW-C23PA-003</u></b>	\$14.00	Contrinex mounting bracket, protective dual-axis, 304 stainless steel. For use with Contrinex C23 photoelectric sensors.	49g	<a href="#">PDF</a>

# CONTRINEX Reflectors

## C23 TRU Series Reflectors

- Protection: IP67
- Temperature: -40 to +70 °C [-40 to 158 °F]
- Material: Plastic



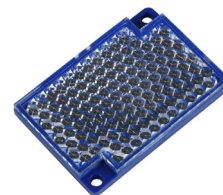
**LXU-0000-025**



**LXU-0000-084**



**LXU-0001-032**



**LXU-0001-064**

C23 TRU Series Reflectors					
Part Number	Price	Description	Self-adhesive	Weight	Drawing Link
<b><u>LXU-0000-025</u></b>	\$15.50	Contrinex reflector, round, 26.4mm. Package of 1. For use with Contrinex C23 TRU series photoelectric sensors.	Yes	4g	<a href="#">PDF</a>
<b><u>LXU-0000-084</u></b>	\$15.50	Contrinex reflector, round, 82mm. Package of 1. For use with Contrinex C23 TRU series photoelectric sensors.	No	27g	<a href="#">PDF</a>
<b><u>LXU-0001-032</u></b>	\$15.50	Contrinex reflector, rectangular, 20 x 32mm. Package of 1. For use with Contrinex C23 TRU series photoelectric sensors.	No	4g	<a href="#">PDF</a>
<b><u>LXU-0001-064</u></b>	\$15.50	Contrinex reflector, rectangular, 41 x 60mm. Package of 1. For use with Contrinex C23 TRU series photoelectric sensors.	No	14g	<a href="#">PDF</a>

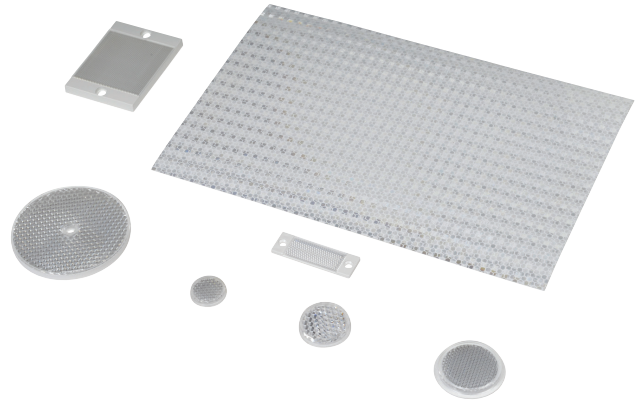
# Reflectors

## 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  $\pm 15^\circ$ .



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			
<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 4.3 mm 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		Two 6mm holes	
<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		One 5mm hole	
<a href="#">RL110-1</a>	\$2.00		1	[3.31]			
<a href="#">RL116</a>	\$19.00	<a href="#">PDF</a>	10	41 x 60		Two 3mm holes	
<a href="#">RL116-1</a>	\$2.00		1	[3.54 x 2.36]			
<a href="#">RL100DA4</a>	\$38.50	NA	1	200 x 300		Self-adhesive	Paper (Acrylic tape with micro prism)
<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	Reflective face: PMMA Polymethylmethacrylate (acrylic)  Base material: ABS (Acrylonitrile-butadiene-styren)
<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			
<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		Two 4mm slots	
<a href="#">RL113G-1</a>	\$6.00		1	[2.02 x 2.37]			

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