CONTRINEX

C23 Rectangular Photoelectric Sensors

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 background suppression and pinpoint LED ensure high reliability and extended detection ranges. Versatile mounting brackets ensure ease of installation. All PNP types include IO-Link communication.

LHR-C23PA-PMS-603

20 x 30mm plastic – DC

- Diffuse with background suppression, diffuse reflective, retroreflective, through-beam styles
- Axial cable or M8 quick-disconnect models; purchase cable separately
- Complete overload protection
- IP67 rated
- 2-year warranty
- IO-Link v1.0 [PNP and emitters units only]

NEED CABLES?

MADE IN USA

C23 Rectangular Plastic Photoelectric Sensors								
Part Number	Price	Operating Range [1]	Switching Frequency	Light Type	Logic	Output Function	Connection Type	Wiring	Drawing Link
Diffuse with adjustable background suppression - Potentiometer									
LHR-C23PA-PMK-603	$39.50	15 to 250 mm [0.59 to 9.84 in]	1000 Hz	Pinpoint LED Red 640nm	PNP	Complementary Light-on / Dark-on	4-wire, 2m [6.5 ft] cable	2	PDF
LHR-C23PA-PMK-101	$39.50				NPN		4-wire, 2m [6.5 ft] cable	1	PDF
LHR-C23PA-PMS-603	$39.50				PNP		4 wire, 4-pin M8 quick-disconnect	2	PDF
LHR-C23PA-PMS-101	$39.50				NPN		4-wire, 4-pin M8 quick-disconnect	1	PDF
Diffuse with adjustable background suppression - Teach-in button									
LHR-C23PA-TMK-603	$39.50	15 to 250 mm [0.59 to 9.84 in]	1000 Hz	Pinpoint LED Red 640nm	PNP	Complementary Light-on / Dark-on	4-wire, 2m [6.5 ft] cable	2	PDF
LHR-C23PA-TMK-101	$39.50				NPN		4-wire, 2m [6.5 ft] cable	1	PDF
LHR-C23PA-TMS-603	$39.50				PNP		4-wire, 4-pin M8 quick-disconnect	2	PDF
LHR-C23PA-TMS-101	$39.50				NPN		4-wire, 4-pin M8 quick-disconnect	1	PDF
Diffuse Reflective									
LTR-C23PA-PMK-603	$32.00	5 to 1200 mm [0.19 to 47.24 in]	1.5 kHz	LED, Red 630nm	PNP	Complementary Light-on / Dark-on	4-wire, 2m [6.5 ft] cable	2	PDF
LTR-C23PA-PMK-101	$32.00				NPN		4-wire, 2m [6.5 ft] cable	1	PDF
LTR-C23PA-PMS-603	$32.00				PNP		4-wire, 4-pin M8 quick-disconnect	2	PDF
LTR-C23PA-PMS-101	$32.00				NPN		4-wire, 4-pin M8 quick-disconnect	1	PDF
***Retroreflective**									
LRR-C23PA-NMK-603	$35.00	30 to 6000 mm [1.18 to 236.22 in]	1.5 kHz	LED, Red 630nm	PNP	Complementary Light-on / Dark-on	4-wire, 2m [6.5 ft] cable	2	PDF
LRR-C23PA-NMK-101	$35.00				NPN		4-wire, 2m [6.5 ft] cable	1	PDF
LRR-C23PA-NMS-603	$35.00				PNP		4-wire, 4-pin M8 quick-disconnect	2	PDF
LRR-C23PA-NMS-101	$35.00				NPN		4-wire, 4-pin M8 quick-disconnect	1	PDF
*Purchase reflector separately									
Through-beam Emitters									
LLR-C23PA-NMK-400	$21.00	25m [82.02 ft]	1 kHz	LED, Red 630nm	N/A	N/A	3-wire, 2m [6.5 ft] cable	3	PDF
LLR-C23PA-NMS-400	$21.00				N/A	N/A	3-wire, 3-pin M8 quick-disconnect	3	PDF
Through-beam Receivers									
LLR-C23PA-NMK-603	$28.00	25m [82.02 ft]	1 kHz	LED, Red 630nm	PNP	Complementary Light-on / Dark-on	4-wire, 2m [6.5 ft] cable	2	PDF
LLR-C23PA-NMK-101	$28.00				NPN		4-wire ,2m [6.5 ft] cable	1	PDF
LLR-C23PA-NMS-603	$28.00				PNP		4-wire,4-pin M8 quick-disconnect	2	PDF
LLR-C23PA-NMS-101	$28.00				NPN		4-wire, 4-pin M8 quick-disconnect	1	PDF

[1] Object with 90% reflectance (standard white paper)

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

C23 Rectangular Photoelectric Sensors

CE cULus ECOLAB® IO-Link
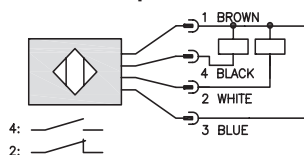
C23 20 x 30mm Plastic Photoelectric Sensors Specifications

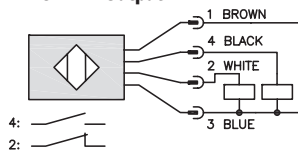| Sensor type	Diffuse reflective with adjustable background suppression	Diffuse Reflective	Retroreflective	Through-beam
Sensing Distance [1]	10 to 250mm [0.39 to 9.84 in]	3 to 1200mm [0.11 to 47.24 in]	20 to 8000 mm [0.78 to 314.96 in]	0 to 30m [0 to 98.43 ft]
Light Spot Diameter (Distance)	6mm [100mm] 10mm [250mm]	15mm [500mm] 26mm [1m]	30mm [1m] 140mm [6m]	15mm [300mm] 120mm [4m] 300mm [10m]
Emission	Pinpoint LED, red 640nm	LED, Red 630nm		
Sensitivity	Potentiometer models: 30 to 300 mm, 3/4 turn pot (PM) Teach-in button models: 30 to 300 mm, teach button (TM)	30 to 1500 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	≤ 7 mA (emitter) ≤ 9 mA (receiver)	
Operating (Load) Current	≤ 100 mA			
Response Time [2]	≤ 500 µs (normal) ≤ 1ms / ≤ 340 µs	≤ 340 µs (normal) ≤ 1 ms / ≤ 100 µs	≤ 500 µs (normal) ≤ 1 ms / ≤ 250 µs	
Switching Frequency [2]	≤ 1 kHz (normal) ≤ 500 Hz / ≤ 1.5 kHz	≤ 1.5 kHz (normal) ≤ 500Hz / ≤ 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			
IO-Link	IO-Link v1.0, PNP and Emitter units only			
Connectors	PVC, 2m [6.5 ft] 3-wire or 4-wire; M8 3-pin or 4-pin connector			
Agency Approvals	cULus, CE, Ecolab			

[1] Object with 90% reflectance (standard white paper)
[2] By default, "Normal" mode. "Fine" and "Fast" modes selectable via IO-Link.

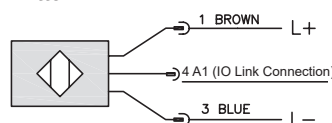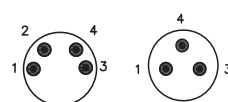## Wiring Diagrams

Diagram 1
4-Wire NPN Output

1 BROWN
4 BLACK
2 WHITE
3 BLUE
4:
2:

Diagram 2
4-Wire PNP Output

1 BROWN
4 BLACK
2 WHITE
3 BLUE
4:
2:

Note: Pin 4 also used for IO link

Diagram 3
Emitter

1 BROWN L+
4 A1 (IO Link Connection)
3 BLUE L−

M8 connectors

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C23 Mounting Brackets

C23 Mounting Brackets

LXW-C23PA-000   **LXW-C23PA-001**   **LXW-C23PA-002**   **LXW-C23PA-003**

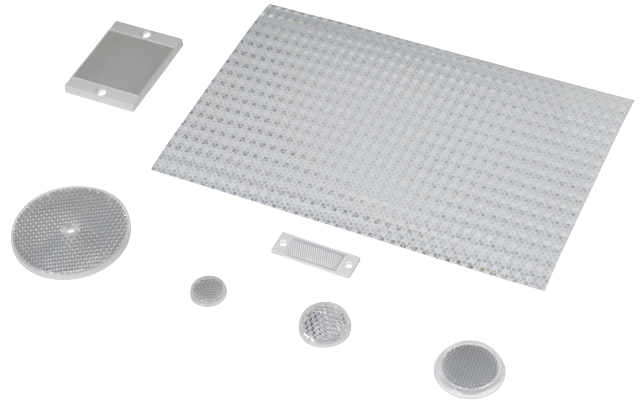| C23 Mounting Brackets				
Part Number	*Price*	*Description*	*Weight*	*Drawing Link*
LXW-C23PA-000	$5.50	Contrinex mounting bracket, right-angle horizontal, 304 stainless steel. For use with Contrinex C23 photoelectric sensors.	13g	PDF
LXW-C23PA-001	$5.50	Contrinex mounting bracket, right-angle vertical, 304 stainless steel. For use with Contrinex C23 photoelectric sensors.	20g	PDF
LXW-C23PA-002	$6.50	Contrinex mounting bracket, protective, 304 stainless steel. For use with Contrinex C23 photoelectric sensors.	16g	PDF
LXW-C23PA-003	$14.00	Contrinex mounting bracket, protective dual-axis, 304 stainless steel. For use with Contrinex C23 photoelectric sensors.	49g	PDF

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
RL102	$38.00	PDF	10	25 [0.98]	IEC IP67	Customer-supplied adhesive or other mounting method required	Reflective face: PMMA Polymethylmethacrylate (acrylic) Base material: ABS (Acrylonitrile-butadiene-styren)
RL102-1	$4.25		1				
RL103	$42.50	PDF	10	34.5 [1.36]			
RL103-1	$4.75		1				
RL104	$42.50	PDF	10	46 [1.81]			
RL104-1	$4.75		1				
RL105G	$38.00	PDF	10	95 x 38 [3.74 x 1.50]		Two 4.3 mm holes	
RL105G-1	$4.25		1				
RL106G	$42.50	PDF	10	182 x 42 [7.17 x 1.65]		Two 6mm holes	
RL106G-1	$4.75		1				
RL110	$19.00	PDF	10	84 [3.31]		One 5mm hole	
RL110-1	$2.00		1				
RL116	$19.00	PDF	10	41 x 60 [3.54 x 2.36]		Two 3mm holes	
RL116-1	$2.00		1				
RL100DA4	$38.50	NA	1	200 x 300 [7.87 x 11.81]		Self-adhesive	Paper (Acrylic tape with micro prism)
RL100DC4	$12.00	NA	1	50 x 300 [1.97 x 11.81]			
RL100DQ1	$8.75	NA	1	100 x 100 [3.94 x 3.94]			
RL111G	$60.00	PDF	10	22.5 x 47 [0.89 x 1.85]		Two 3mm slots	Reflective face: PMMA Polymethylmethacrylate (acrylic) Base material: ABS (Acrylonitrile-butadiene-styren)
RL111G-1	$7.25		1				
RL112G	$44.00	PDF	10	19 x 73 [0.75 x 2.87]			
RL112G-1	$4.75		1				
RL113G	$53.00	PDF	10	51.4 x 60.3 [2.02 x 2.37]		Two 4mm slots	
RL113G-1	$6.00		1				

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