

M5 Series Stainless Steel Photoelectric Sensors



M5 (5mm) stainless steel – DC

- Diffuse and through-beam styles
- Long operating distances
- Compact stainless steel housing
- Axial cable or M8 quick-disconnect models
- Complete overload protection
- IP67 rated



M5 Series 5mm Photoelectric Sensors Selection Chart

Part Number	Price	Sensing Range ¹	Output 1	Output 2	Logic	Connection	Wiring	Dimensions
Diffuse								
<u>LTR-M05MA-NSK-301</u>	\$95.00	0-12 mm (0-0.47 in)	Light-on	–	NPN	PUR, 2m (6.56 ft), 3 wire	1	1
<u>LTR-M05MA-NSS-301</u>	\$95.00			–	NPN	M8, 3-pin	3	2
<u>LTR-M05MA-NSK-403*</u>	\$95.00			–	PNP	PUR, 2m (6.56 ft), 3 wire	2	1
<u>LTR-M05MA-NSS-403*</u>	\$95.00			–	PNP	M8, 3-pin	4	2
<u>LTR-M05MA-NMK-301</u>	\$95.00	0-24 mm (0-0.94 in)		–	NPN	PUR, 2m (6.56 ft), 3 wire	1	1
<u>LTR-M05MA-NMS-301</u>	\$95.00			–	NPN	M8, 3-pin	3	2
<u>LTR-M05MA-NMK-403*</u>	\$95.00			–	PNP	PUR, 2m (6.56 ft), 3 wire	2	1
<u>LTR-M05MA-NMS-403*</u>	\$95.00			–	PNP	M8, 3-pin	4	2
<u>LTR-M05MA-NLK-301</u>	\$67.00	0-60 mm (0-2.36 in)		–	NPN	PUR, 2m (6.56 ft), 3 wire	1	1
<u>LTR-M05MA-NLS-301</u>	\$67.00			–	NPN	M8, 3-pin	3	2
<u>LTR-M05MA-NLK-403*</u>	\$67.00			–	PNP	PUR, 2m (6.56 ft), 3 wire	2	1
<u>LTR-M05MA-NLS-403*</u>	\$67.00			–	PNP	M8, 3-pin	4	2
<u>LTR-M05MA-WXK-301</u>	\$83.00	0-120 mm (0-4.72 in)	Teach wire	NPN	PUR, 2m (6.56 ft), 4 wire	7	1	
<u>LTR-M05MA-WXK-403*</u>	\$83.00		Teach wire	PNP	PUR, 2m (6.56 ft), 4 wire	8	2	
Through-beam²								
<u>LLR-M05MA-NMK-302</u>	Receiver	\$53.00	Dark-on	–	NPN	PUR, 2m (6.56 ft), 3 wire	1	1
<u>LLR-M05MA-NMS-302</u>	Receiver	\$53.00		–	NPN	M8, 3-pin	3	2
<u>LLR-M05MA-NMK-404*</u>	Receiver	\$53.00		–	PNP	PUR, 2m (6.56 ft), 3 wire	2	1
<u>LLR-M05MA-NMS-404*</u>	Receiver	\$53.00		–	PNP	M8, 3-pin	4	2
<u>LLR-M05MA-NMK-400</u>	Emitter	\$41.00	Receiver dependent	–	Receiver dependent	PUR, 2m (6.56 ft), 3 wire	5	1
<u>LLR-M05MA-NMS-400</u>	Emitter	\$41.00		–		M8, 3-pin	6	1

¹ Based on 100x100 mm white matte paper

² Purchase one receiver and one emitter for a complete set.

* IO-Link Model

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Wiring diagrams

Diagram 1

NPN Cable

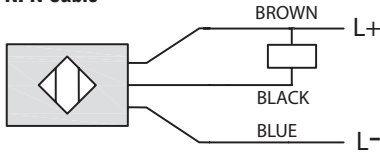
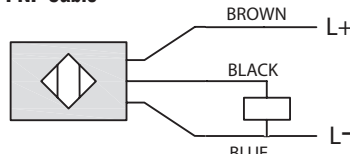


Diagram 2

PNP Cable



Connector

M8 Connector

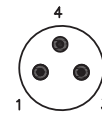


Diagram 3

NPN Connector

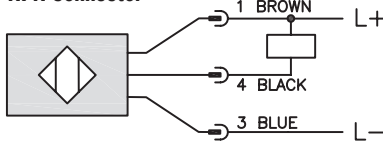


Diagram 4

PNP Connector

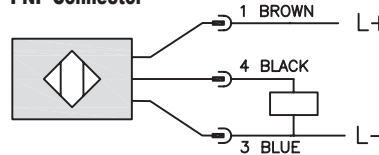


Diagram 5

Emitter

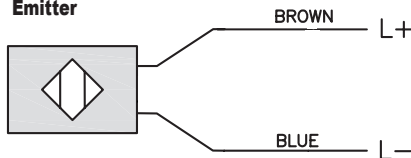


Diagram 6

Emitter

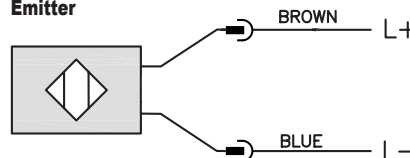


Diagram 7

NPN Output

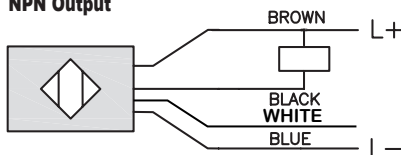
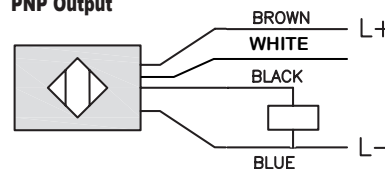


Diagram 8

PNP Output



NOTE: White wire is Teach wire. See insert for function.

WARNING: THESE PRODUCTS ARE NOT SAFETY SENSORS AND ARE NOT SUITABLE FOR USE IN PERSONAL SAFETY APPLICATIONS.

Switching Element Function		
	Through-beam and Reflective Models	Diffuse Reflective Models
Light on	N.C.	N.O.
Dark on	N.O.	N.C.

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Diffuse and Through-beam Models Specifications					
Type	Diffuse				Through-beam
Sensing Distance*	12mm (0.47 in)	24mm (0.94 in)	60mm (2.36 in)	120mm (4.72 in)	600mm (23.62 in)
Light Spot Diameter	Ø 5mm (0.20 in) at 10mm (0.39 in)	Ø 5mm (0.20 in) at 10mm (0.39 in) Ø 8.0 mm (0.31 in) at 20mm (0.79 in)	Ø 5mm (0.20 in) at 10mm (0.39 in) Ø 20 mm (0.79 in) at 50mm (1.97 in)	Ø 20mm (0.79 in) at 50mm (1.97 in) Ø 35 mm (1.38 in) at 100mm (3.94 in)	Ø 50mm (1.97 in) at 200mm (7.87 in)
Emission	Red LED (630nm)				
Sensitivity	Fixed				
Output Type	NPN or PNP; N.O. only				
Operating Voltage	10-30 VDC				
No-load Supply Current	≤ 12mA		≤ 15mA		≤ 10mA receiver ≤ 8mA emitter
Operating (Load) Current	≤ 100mA				
Off-state (Leakage) Current	< 10uA for all types				
Voltage Drop	≤ 2.0V				
Switching Frequency	1kHz				
Ripple	≤ 10%				
Time Delay Before Availability (tv)	< 110ms for all types				
Short Circuit Protection	Yes (switch autoresets after overload is removed)				
Operating Temperature	-25 to +65°C (-13 to +149°F)				
Protection Degree (DIN 40050)	IEC IP67				
LED Indicators Switching Status	Yellow (output energized), green (excess light indication)				
Housing Material	Stainless steel V2A				
Lens Material	Polybutylene terephthalate / Polymethyl methacrylate				
Shock/Vibration	IEC 60947-5-2				
Tightening Torque	1.5 N•m (13.3 lb•in)				
Weight (cable/connector)	30g [1.06 oz] / 4g [0.14 oz]				
IO-Link	IO-Link version 1.0, PNP units only				
Connectors	PUR, 2m (6.5 ft) axial cable; M8 3-pin connector				
Agency Approvals	UL file E239373, CE				

* LTR-xxMA-Wxx-xxx range can be adjusted via the Teach wire

M5 Series Stainless Steel Photoelectric Sensors

Dimensions

mm [inches]

Figure 1

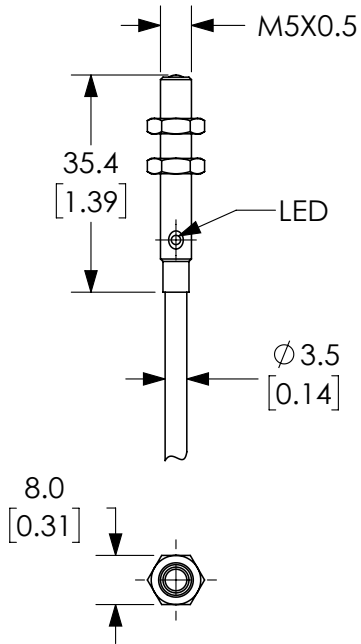
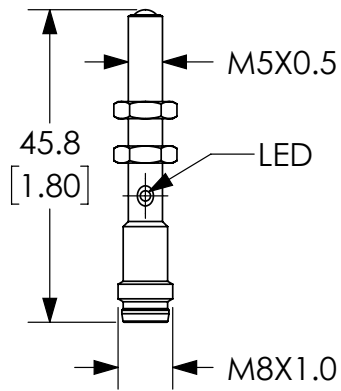


Figure 2



See our website www.AutomationDirect.com for complete engineering drawings.