

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>		\$106.00	0-12 mm [0- 0.47 in]	Light-on	–	NPN	PUR, 2m [6.5 ft], 3 wire	Diagram 1	Figure 1	
<u>LTR-M05MA-NSS-301</u>		\$106.00			–	NPN	M8, 3-pin	Diagram 3	Figure 2	
<u>LTR-M05MA-NSK-403*</u>		\$106.00			–	PNP	PUR, 2m [6.5 ft], 3 wire	Diagram 2	Figure 1	
<u>LTR-M05MA-NSS-403*</u>		\$106.00			–	PNP	M8, 3-pin	Diagram 4	Figure 2	
<u>LTR-M05MA-NMK-301</u>		\$106.00	0-24 mm [0-0.94 in]		–	NPN	PUR, 2m [6.5 ft], 3 wire	Diagram 1	Figure 1	
<u>LTR-M05MA-NMS-301</u>		\$106.00			–	NPN	M8, 3-pin	Diagram 3	Figure 2	
<u>LTR-M05MA-NMK-403*</u>		\$106.00			–	PNP	PUR, 2m [6.5 ft], 3 wire	Diagram 2	Figure 1	
<u>LTR-M05MA-NMS-403*</u>		\$106.00			–	PNP	M8, 3-pin	Diagram 4	Figure 2	
<u>LTR-M05MA-NLK-301</u>		\$75.00	0-60 mm [0-2.36 in]		–	NPN	PUR, 2m [6.5 ft], 3 wire	Diagram 1	Figure 1	
<u>LTR-M05MA-NLS-301</u>		\$75.00			–	NPN	M8, 3-pin	Diagram 3	Figure 2	
<u>LTR-M05MA-NLK-403*</u>		\$75.00			–	PNP	PUR, 2m [6.5 ft], 3 wire	Diagram 2	Figure 1	
<u>LTR-M05MA-NLS-403*</u>		\$75.00			–	PNP	M8, 3-pin	Diagram 4	Figure 2	
<u>LTR-M05MA-WXK-301</u>		\$92.00	0-120 mm [0-4.72 in]		Teach wire	NPN	PUR, 2m [6.5 ft], 4 wire	Diagram 7	Figure 1	
<u>LTR-M05MA-WXK-403*</u>		\$92.00			Teach wire	PNP	PUR, 2m [6.5 ft], 4 wire	Diagram 8	Figure 2	
Through-beam ²										
<u>LLR-M05MA-NMK-302</u>		Receiver	\$59.00	0-600 mm [0-23.62 in]	Dark-on	–	NPN	PUR, 2m [6.5 ft], 3 wire	Diagram 1	Figure 1
<u>LLR-M05MA-NMS-302</u>		Receiver	\$59.00			–	NPN	M8, 3-pin	Diagram 3	Figure 2
<u>LLR-M05MA-NMK-404*</u>		Receiver	\$59.00			–	PNP	PUR, 2m [6.5 ft], 3 wire	Diagram 2	Figure 1
<u>LLR-M05MA-NMS-404*</u>		Receiver	\$59.00			–	PNP	M8, 3-pin	Diagram 4	Figure 2
<u>LLR-M05MA-NMK-400</u>		Emitter	\$45.50	Receiver dependent	–	Receiver dependent	PUR, 2m [6.5 ft], 3 wire	Diagram 5	Figure 1	
<u>LLR-M05MA-NMS-400</u>		Emitter	\$45.50		–		M8, 3-pin	Diagram 6	Figure 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

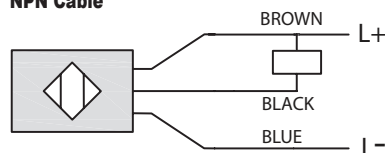
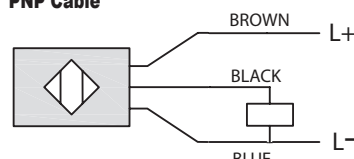


Diagram 2

PNP Cable



Connector

M8 Connector

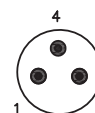


Diagram 3

NPN Connector

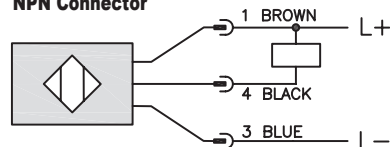


Diagram 4

PNP Connector

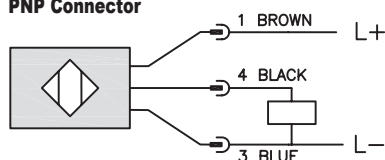


Diagram 5

Emitter

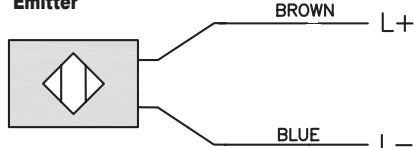


Diagram 6

Emitter

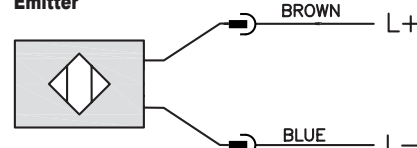


Diagram 7

NPN Output

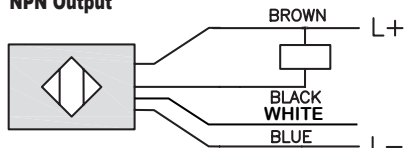
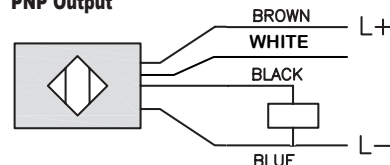


Diagram 8

PNP Output



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

Switching Element Function

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

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

M5 Series Stainless Steel Photoelectric Sensors

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 auto-resets 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				

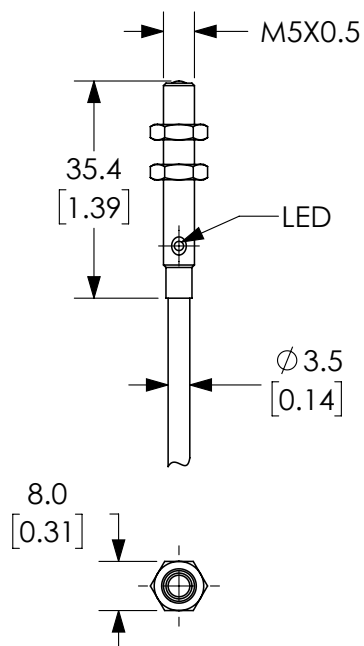
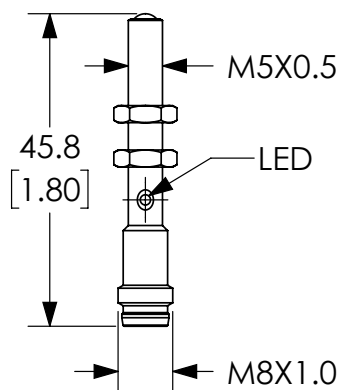
* LTR-xxMA-Wxx-xxx range can be adjusted via the Teach wire.

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

M5 Series Stainless Steel Photoelectric Sensors

Dimensions

mm [inches]

Figure 1**Figure 2**

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