

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	1	1
<u>LTR-M05MA-NSS-301</u>		\$106.00			–	NPN	M8, 3-pin	3	2
<u>LTR-M05MA-NSK-403*</u>		\$106.00			–	PNP	PUR, 2m [6.5 ft], 3 wire	2	1
<u>LTR-M05MA-NSS-403*</u>		\$106.00			–	PNP	M8, 3-pin	4	2
<u>LTR-M05MA-NMK-301</u>		\$106.00	0-24 mm [0-0.94 in]		–	NPN	PUR, 2m [6.5 ft], 3 wire	1	1
<u>LTR-M05MA-NMS-301</u>		\$106.00			–	NPN	M8, 3-pin	3	2
<u>LTR-M05MA-NMK-403*</u>		\$106.00			–	PNP	PUR, 2m [6.5 ft], 3 wire	2	1
<u>LTR-M05MA-NMS-403*</u>		\$106.00			–	PNP	M8, 3-pin	4	2
<u>LTR-M05MA-NLK-301</u>		\$75.00	0-60 mm [0-2.36 in]		–	NPN	PUR, 2m [6.5 ft], 3 wire	1	1
<u>LTR-M05MA-NLS-301</u>		\$75.00			–	NPN	M8, 3-pin	3	2
<u>LTR-M05MA-NLK-403*</u>		\$75.00			–	PNP	PUR, 2m [6.5 ft], 3 wire	2	1
<u>LTR-M05MA-NLS-403*</u>		\$75.00			–	PNP	M8, 3-pin	4	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	7	1	
<u>LTR-M05MA-WXK-403*</u>		\$92.00		Teach wire	PNP	PUR, 2m [6.5 ft], 4 wire	8	2	
Through-beam²									
<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	1	1
<u>LLR-M05MA-NMS-302</u>	Receiver	\$59.00			–	NPN	M8, 3-pin	3	2
<u>LLR-M05MA-NMK-404*</u>	Receiver	\$59.00			–	PNP	PUR, 2m [6.5 ft], 3 wire	2	1
<u>LLR-M05MA-NMS-404*</u>	Receiver	\$59.00			–	PNP	M8, 3-pin	4	2
<u>LLR-M05MA-NMK-400</u>	Emitter	\$45.50		Receiver dependent	–	Receiver dependent	PUR, 2m [6.5 ft], 3 wire	5	1
<u>LLR-M05MA-NMS-400</u>	Emitter	\$45.50			–		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

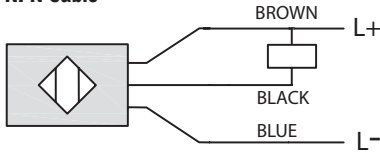
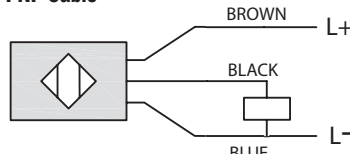


Diagram 2

PNP Cable



Connector

M8 Connector

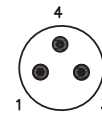


Diagram 3

NPN Connector

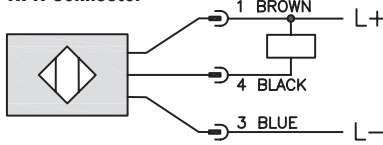


Diagram 4

PNP Connector

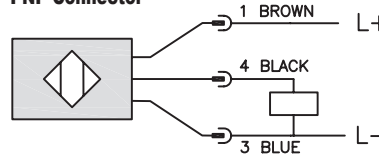


Diagram 5

Emitter

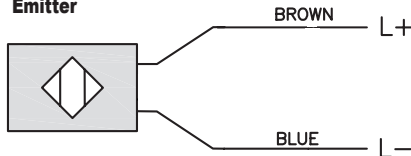


Diagram 6

Emitter

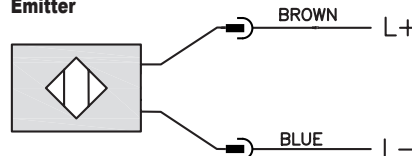


Diagram 7

NPN Output

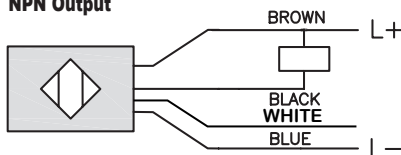
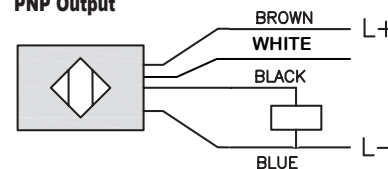


Diagram 8

PNP Output



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

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 Approval Checklist section on the specific part number's web page.

M5 Series Stainless Steel Photoelectric Sensors

Dimensions

mm [inches]

Figure 1

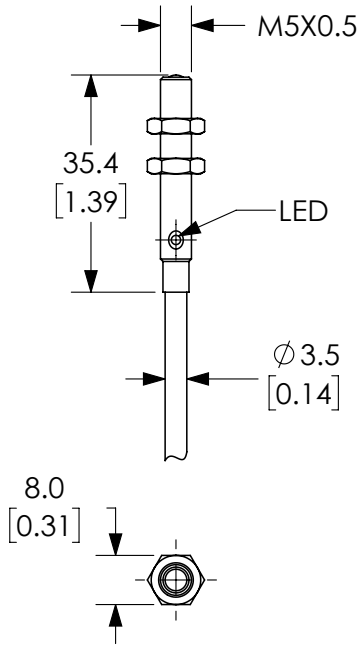
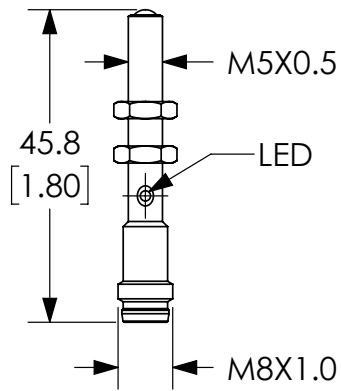


Figure 2



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