

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

<sup>1</sup> Based on 100x100 mm white matte paper

<sup>2</sup> Purchase one receiver and one emitter for a complete set.

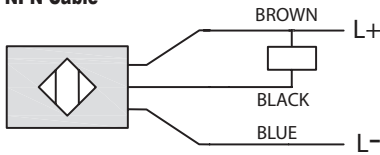
\* IO-Link Model

# M5 Series Stainless Steel Photoelectric Sensors

## Wiring Diagrams

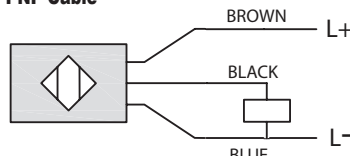
**Diagram 1**

**NPN Cable**



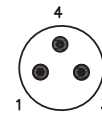
**Diagram 2**

**PNP Cable**



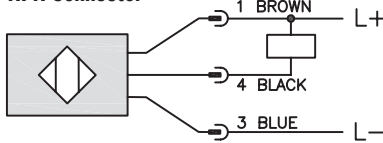
**Connector**

**M8 Connector**



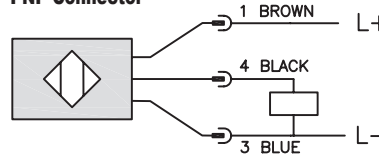
**Diagram 3**

**NPN Connector**



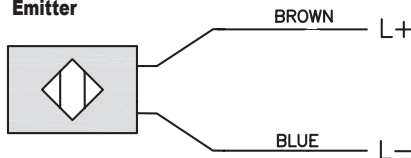
**Diagram 4**

**PNP Connector**



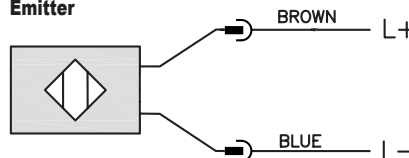
**Diagram 5**

**Emitter**



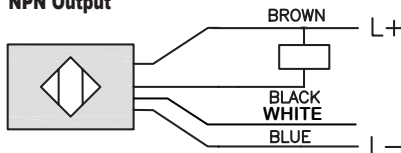
**Diagram 6**

**Emitter**



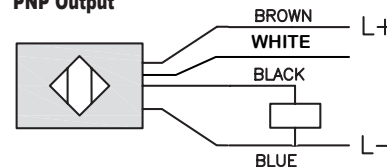
**Diagram 7**

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

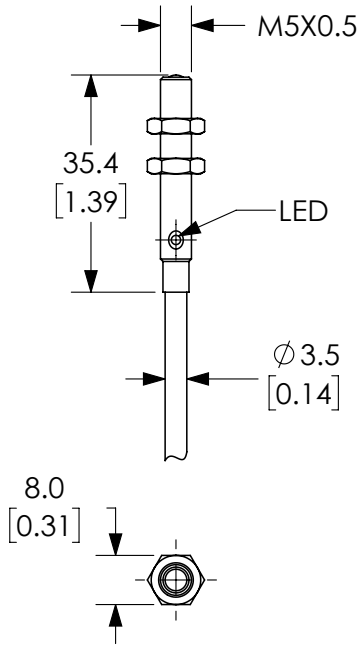
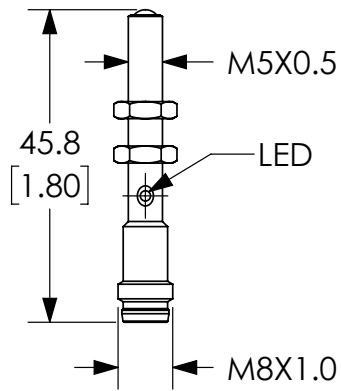


Figure 2



See our website [www.AutomationDirect.com](http://www.AutomationDirect.com) for complete engineering drawings.