

# CM Series Capacitive Proximity Sensors



## M12 (12mm) metal – DC

- Sensitivity adjustment via potentiometer
- IP65 rated
- LED status indicators
- M12 quick-disconnect; purchase cable separately



### CM Series Capacitive Proximity Selection Chart

Part Number	Price	Sensing Distance	Mounting	Output State	Logic	Connection	Wiring	Dimensions
<b>CM1-AP-1H</b>	\$92.00	6mm [0.24 in]	Flush	N.O.	PNP	M12 (12mm) quick-disconnect	Diagram 1	Figure 1
<b>CM1-AP-2H</b>	\$92.00	12mm [0.47 in]	Non-flush	N.O.	PNP	M12 (12mm) quick-disconnect	Diagram 1	Figure 1

### CM Series Capacitive Proximity Specifications

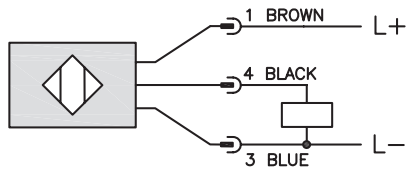
Part Number	CM1-AP-1H	CM1-AP-2H
<b>Mounting Type</b>	Flush	Non-flush
<b>Nominal Sensing Distance</b>	6mm [0.24 in]	12mm [0.47 in]
<b>Operating Distance</b>	NA	
<b>Material Correction Factors</b>	NA	
<b>Output Type</b>	PNP; N.O. only	
<b>Operating Voltage</b>	10 to 36VDC	
<b>No-load Supply Current</b>	< 12mA	
<b>Operating (Load) Current</b>	100mA	
<b>Off-state (Leakage) Current</b>	NA	
<b>Voltage Drop</b>	< 2.5V	
<b>Switching Frequency</b>	50Hz	
<b>Differential Travel (% of Nominal Distance)</b>	NA	
<b>Repeat Accuracy</b>	NA	
<b>Ripple</b>	NA	
<b>Time Delay Before Availability (tv)</b>	NA	
<b>Reverse Polarity Protection</b>	Yes	
<b>Short-circuit Protection</b>	Yes, pulsed	
<b>Operating Temperature</b>	-25 to 70°C [-13 to 158°F]	
<b>Protection Degree (DIN 40050)</b>	IEC IP65	
<b>Indication/Switch Status</b>	Yellow (output energized)	
<b>Housing Material</b>	Stainless steel	
<b>Sensing Face Material</b>	Polyether Ether Ketone (PEEK)	
<b>Shock/Vibration</b>	DIN EN 60947-5-2	
<b>Tightening Torque</b>	5.0 N•m [3.69 lb•ft]	
<b>Weight</b>	54g [1.90 oz]	
<b>Connectors</b>	M12 connector. 2 lock nuts included	
<b>Agency Approvals</b>	cULus file E328811, CE	

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

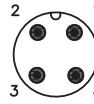
# CM Series Capacitive Proximity Sensors

## Wiring Diagrams

**Diagram 1**  
PNP Output



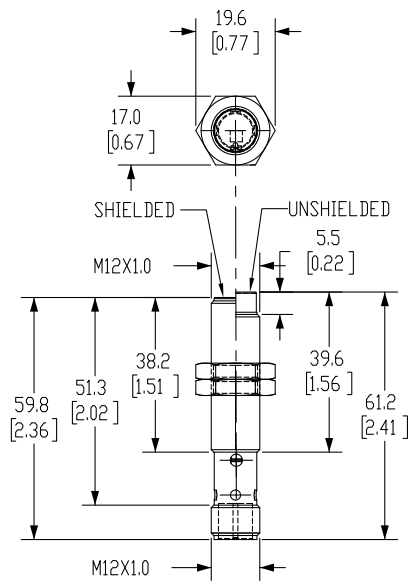
**Connectors**  
M12 connector



## Dimensions

mm [inches]

**Figure 1**



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

# Accessories for 12mm Sensors

## Axial Mounting Bracket

Mounting bracket, axial, available in zinc-plated steel or 316L stainless steel. For use with 12mm sensors. Has two mounting holes (use 3mm screws) and allows the rotation of an optical axis for right-angle adapter sensors. Hexagonal nuts not included.

Accessories for 12mm Sensors				
Part Number	Price	Description	Drawing Link	Weight lb [g]
<a href="#">ST12A</a>	\$2.00	Micro Detectors mounting bracket, axial, zinc plated steel. For use with 12mm sensors.	<a href="#">PDF</a>	0.03 [13.6]
<a href="#">ST12A7W</a>	\$7.25	Micro Detectors mounting bracket, axial, 316L stainless steel. For use with 12mm sensors.	<a href="#">PDF</a>	0.03 [13.6]



[ST12A](#)

## Right-angle Mounting Bracket

Mounting bracket, right-angle, zinc-plated steel or 316L stainless steel. For use with 12mm sensors. Has two mounting holes (use 3mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal screws not included.

Accessories for 12mm Sensors				
Part Number	Price	Description	Drawing Link	Weight lb [g]
<a href="#">ST12C</a>	\$2.00	Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 12mm sensors.	<a href="#">PDF</a>	0.03 [13.6]
<a href="#">ST12C7W</a>	\$7.25	Micro Detectors mounting bracket, right-angle, 316L stainless steel. For use with 12mm sensors.	<a href="#">PDF</a>	0.03 [13.6]



[ST12C](#)

# Accessories for 12mm Sensors

## Right-angle Mounting Brackets

Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 12mm sensors. Available with or without fixed insertion stop.



[OPT2102](#), [OPT2103](#)

Accessories for 12mm Sensors				
Part Number	Price	Description	Drawing Link	Weight lb [g]
<a href="#">OPT2102</a>	\$8.00	Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 12mm sensors.	<a href="#">PDF</a>	0.05 [22.7]
<a href="#">OPT2103</a>	\$8.00	Wenglor mounting bracket, right-angle, plastic. For use with 12mm sensors.	<a href="#">PDF</a>	0.05 [22.7]

## Right-angle Swivel Mounting Systems

Mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 12mm rod mount. For use with 12mm sensors. Available in all stainless steel or with an aluminum head and stainless steel mounting plate.



[OPT2114](#), [OPT2115](#)

Accessories for 12mm Sensors						
Part Number	Price	Description	Mounting Head	Mounting Plate	Drawing Link	Weight lb [g]
<a href="#">OPT2114</a>	\$11.50	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 12mm sensors.	Aluminum	Stainless steel	<a href="#">PDF</a>	0.14 [63.5]
<a href="#">OPT2115</a>	\$21.00	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 12mm sensors.	304 Stainless steel	304 Stainless steel	<a href="#">PDF</a>	0.27 [122.5]

Note: 304 stainless steel mounting rods sold separately: [OPT2109](#) (200mm [7.87 in] length), [OPT2110](#) (300mm [11.81 in] length), and [OPT2111](#) (500mm [19.69 in] length).

# Mounting Rods and Brackets

## Mounting Rods

304 Stainless steel rods for mounting swivel brackets [OPT2112](#) - [OPT2127](#). Available in three lengths: 200mm, 300mm, and 500mm. 12mm diameter.

Mounting Rods for OPT2112-2127 Swivel Mounting Brackets				
Part Number	Price	Description	Drawing Link	Weight lb (g)
<a href="#">OPT2109</a>	\$13.00	Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	<a href="#">PDF</a>	0.41 [185.97]
<a href="#">OPT2110</a>	\$16.00	Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	<a href="#">PDF</a>	0.60 [272.16]
<a href="#">OPT2111</a>	\$21.00	Wenglor mounting rod, 12mm diameter, 500mm length, 304 stainless steel.	<a href="#">PDF</a>	0.98 [444.52]



## Right-angle Mounting Bracket

Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods [OPT2109](#), [OPT2110](#) & [OPT2111](#).

Right-angle Mounting Brackets for 12mm Sensors				
Part Number	Price	Description	Drawing Link	Weight lb [g]
<a href="#">OPT2108</a>	\$16.00	Wenglor mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods <a href="#">OPT2109</a> , <a href="#">OPT2110</a> & <a href="#">OPT2111</a> .	<a href="#">PDF</a>	0.07 [31.8]

