

# C5 Series Stainless Steel Photoelectric Sensors

## M5 (5 mm) stainless steel - DC



- 14 models available
- Diffuse and through-beam styles
- Long operating distances
- Compact stainless steel housing
- Scratch resistant and easy to clean glass lens
- Axial cable or M8 quick-disconnect models
- Complete overload protection
- IP67 rated



**C5 Series M5 Photoelectric Sensors Selection Chart**

Part Number	Price	Sensing Range	Output State	Logic	Connection	Wiring	Dimensions	Characteristic Curves
<b>Diffuse</b>								
<b>C5D-AN-1A</b>	\$76.00	50 mm, (1.97 in) <sup>1</sup>	N.O.	NPN	2 m (6.5') axial cable	Diagram 1	Figure 1	Chart 1
<b>C5D-AP-1A</b>	\$76.00			PNP	2 m (6.5') axial cable	Diagram 2	Figure 1	Chart 1
<b>C5D-AN-1F</b>	\$76.00			NPN	M8 (8 mm) connector	Diagram 1	Figure 2	Chart 1
<b>C5D-AP-1F</b>	\$76.00			PNP	M8 (8 mm) connector	Diagram 2	Figure 2	Chart 1
<b>C5D-AN-2A</b>	\$103.00	10 mm (0.40 in)		NPN	2 m (6.5') axial cable	Diagram 1	Figure 1	Chart 3
<b>C5D-AP-2A</b>	\$103.00			PNP	2 m (6.5') axial cable	Diagram 2	Figure 1	Chart 3
<b>C5D-AN-3A</b>	\$103.00	20 mm, <sup>1</sup> (0.79 in)		NPN	2 m (6.5') axial cable	Diagram 1	Figure 1	Chart 4
<b>C5D-AP-3A</b>	\$103.00			PNP	2 m (6.5') axial cable	Diagram 2	Figure 1	Chart 4
<b>Through-beam*</b>								
<b>C5R-AN-1A</b> Receiver	\$58.00	250 mm (9.84 in)	N.O.	NPN	2 m (6.5') axial cable	Diagram 1	Figure 1	Chart 2
<b>C5R-AP-1A</b> Receiver	\$58.00			PNP	2 m (6.5') axial cable	Diagram 2	Figure 1	Chart 2
<b>C5R-AN-1F</b> Receiver	\$58.00			NPN	M8 (8 mm) connector	Diagram 1	Figure 2	Chart 2
<b>C5R-AP-1F</b> Receiver	\$58.00			PNP	M8 (8 mm) connector	Diagram 2	Figure 2	Chart 2
<b>C5E-ON-1A</b> Emitter	\$46.00		Receiver dependent	Receiver dependent		2 m (6.5') axial cable	Diagram 3	Figure 1
<b>C5E-ON-1F</b> Emitter	\$46.00				M8 (8 mm) connector	Diagram 3	Figure 2	Chart 2

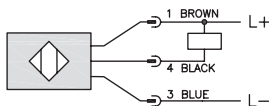
<sup>1</sup>With 100x100mm white matte paper

\*Purchase one receiver and one emitter for a complete set.

## Wiring diagrams

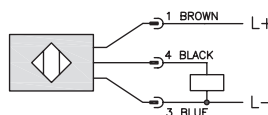
**Diagram 1**

NPN output



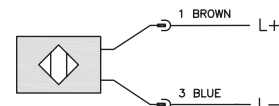
**Diagram 2**

PNP output



**Diagram 3**

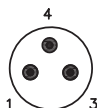
Emitter



Emitter test input (<4V: OFF/ >8V or open: ON) 0.5mA

### Connector

M8 Connector



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

### Switching Element Function

	Thru-beam and Reflective Models	Diffuse Reflective Models
<b>Light on</b>	N.C.	N.O.
<b>Dark on</b>	N.O.	N.C.

# C5 Series Stainless Steel Photoelectric Sensors

Specifications	Diffuse and Through-beam Models	
<b>Type</b>	Diffuse	Through-beam
<b>Sensing Distance</b>	10 to 50 mm (0.39 to 1.97 in)	250 mm (9.84 in)
<b>Light Spot Diameter</b>	See charts	
<b>Emission</b>	Infrared (880nm)	
<b>Sensitivity</b>	Fixed	
<b>Output Type</b>	NPN or PNP; N.O. only	
<b>Operating Voltage</b>	10-30VDC	
<b>No-load Supply Current</b>	Emitter: 10mA Receiver: 5mA	
<b>Operating (Load) Current</b>	≤100mA	
<b>Off-state (Leakage) Current</b>	≤10μA	
<b>Voltage Drop</b>	≤2.0V	
<b>Switching Frequency</b>	250Hz	
<b>Ripple</b>	≤20%	
<b>Time Delay Before Availability (tv)</b>	20ms	
<b>Short-Circuit Protection</b>	Yes (switch autoresets after overload is removed)	
<b>Operating Temperature</b>	0° to +55° C (32° to 131° F)	
<b>Protection Degree (DIN 40050)</b>	IEC IP67	
<b>LED Indicators - Switching Status</b>	Yellow (output energized), yellow flashing (excess light indication)	
<b>Housing Material</b>	Stainless steel	
<b>Lens Material</b>	Glass	
<b>Shock/Vibration</b>	See terminology section	
<b>Tightening Torque</b>	1.5 Nm (13.3 lb-in)	
<b>Weight (cable/connector)</b>	76g (2.68 oz)/18g (0.63 oz)	
<b>Connectors</b>	2m (6.5') axial cable; M12 (12mm) connector	
<b>Agency Approvals</b>	UL file E328811	

## Dimensions

(mm)

Figure 1

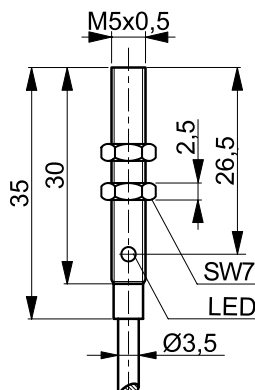
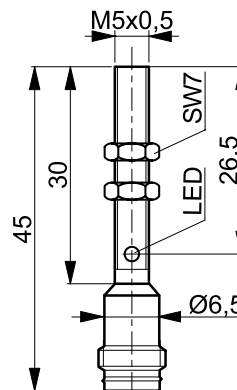


Figure 2



## Characteristic curves

Chart 1 (Diffuse C50\*-1\*)

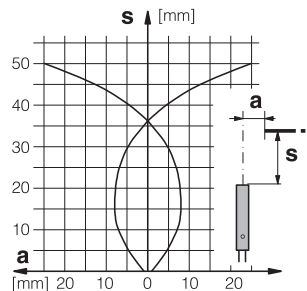


Chart 2 (Through-Beam)

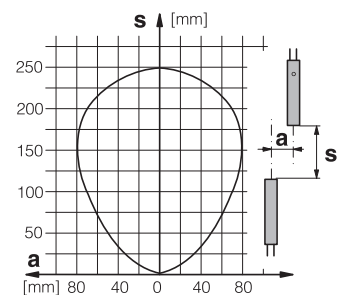


Chart 3 (Diffuse c5D-\*-2\*)

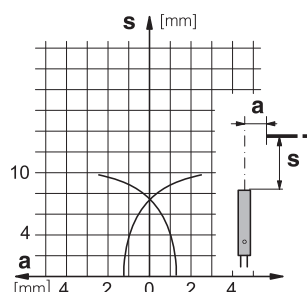
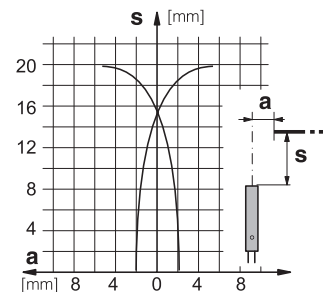


Chart 4 (Diffuse C5D-X-3\*)



# Accessories for 5mm Sensors

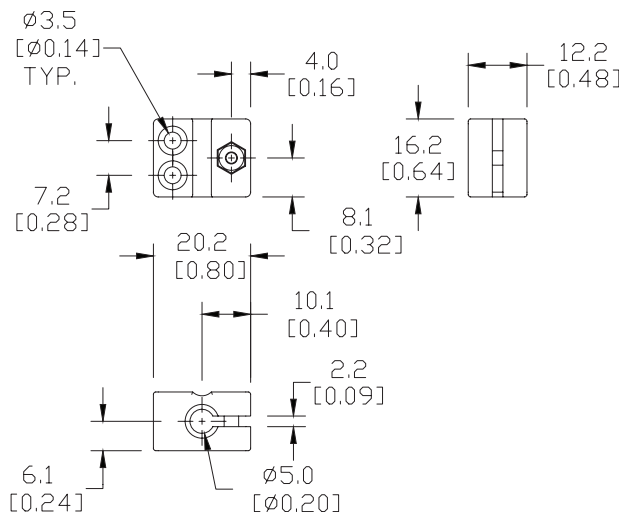
## Right-angle Mounting Bracket

Mounting bracket, right-angle, plastic. For use with 5mm sensors.

Accessories for 5mm Sensors			
Part Number	Price	Description	Weight [lb]
OPT2100	\$6.00	Mounting bracket, right-angle, plastic. For use with 5mm sensors.	0.02

## Dimensions

mm [inches]



**OPT2100**

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