DW Series Analog Inductive Proximity Sensors

M12 (12mm) Metal – Analog Output

- Voltage or current analog output
- Metal housing
- Axial cable or M12 quick-disconnect models
- IP67 rated
- Purchase cable separately (for quick-disconnect model)
- Lifetime warranty

NEED CABLES?

DW Series M12 Analog Inductive Proximity Selection Chart

Part Number	Price	Sensing Range	Mounting	Output	Connection	Wiring	Dimensions
DW-AD-509-M12	$04b29:		Semi-flush	0-5 VDC / 1-5 mA	2m [6.5 ft] axial cable	Diagram 1	Figure 1
DW-AS-509-M12	$04b20:	0-6 mm [0.236 in]	Semi-flush	0-5 VDC / 1-5 mA	M12 [12mm] quick-disconnect	Diagram 1	Figure 2
DW-AD-509-M12-390	$04b21:		Semi-flush	0-10 VDC / 4-20 mA	2m [6.5 ft] axial cable	Diagram 1	Figure 1
DW-AS-509-M12-390	$04b22:		Semi-flush	0-10 VDC / 4-20 mA	M12 [12mm] quick-disconnect	Diagram 1	Figure 2

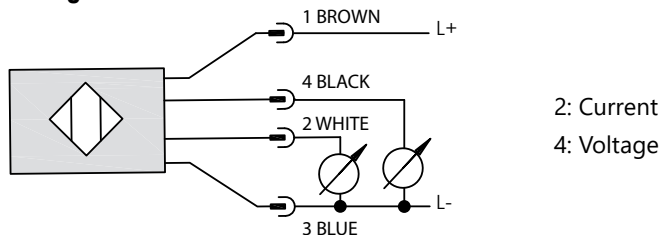### DW Series M12 Analog Inductive Proximity Specifications

Specification	DW-Ax-509-M12	DW-Ax-509-M12-390
Mounting Type	Semi-flush	
Nominal Distance	0-6 mm [0.236 in]	
Operating Distance	NA	
Material Correction Factors	See the Material influence table	
Output Type	0-5 VDC / 1-5 mA	0-10 VDC / 4-20 mA
Current Output Max. Load / Power Supply	1kΩ / 10VDC; 5 kΩ / 30VDC	0.5kΩ / 15VDC; 1 kΩ / 30VDC
Voltage Output Min. Load	500Ω	1kΩ
Operating Voltage	10-30 VDC	15-30 VDC
No-load Supply Current	≤ 10mA	≤ 12mA
Operating (Load) Current	≤ 10mA	
Off-state (Leakage) Current	NA	
Voltage Drop	≤ 2.0 V	
Switching Frequency	NA	
Differential Travel (% of Nominal Distance)	NA	
Repeat Accuracy	± 0.01 mm	
Ripple	≤ 20%	
Response Time	1ms	
Time Delay Before Availability (tv)	≤ 50ms	
Reverse Polarity Protection	Yes	
Short-Circuit Protection	Yes (switch auto-resets after overload is removed)	
Operating Temperature	-25 to +70°C [-13 to 158°F]	
Protection Degree (DIN 40050)	IEC IP67	
Indication/Switch Status	NA	
Housing Material	Chrome-plated brass	
Sensing Face Material	Polybutylene Terephthalate (PBT)	
Shock/Vibration	IEC 60947-5-2	
Tightening Torque	10 N•m [7.37 lb•ft]	
Weight (cable/M12 connector)	95g [3.35 oz] / 33g [1.16 oz]	
Connection	2m [6.5 f]) axial cable or M12 [12mm] connector	
Agency Approvals	UL file E239373	

To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.
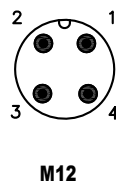
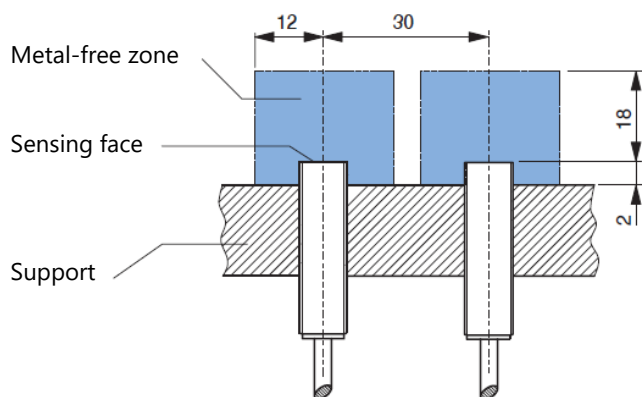# DW Series Analog Inductive Proximity Sensors

Wiring Diagram

Diagram 1

1 BROWN — L+

4 BLACK

2 WHITE

3 BLUE — L-

2: Current
4: Voltage

Connector

2 1

3 4

M12

Installation

Metal-free zone

Sensing face

Support

12   30

18

2

Dimensions

mm [inches]

Figure 1

M12X1.0

Ø 5.0
[0.20]

50.0
[1.97]

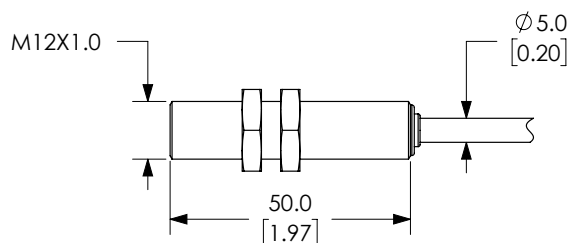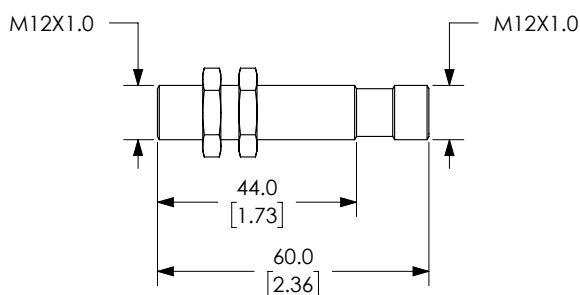**Figure 2**

M12X1.0   M12X1.0
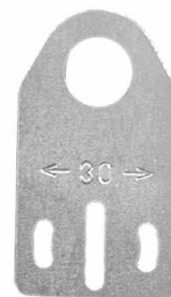
44.0
[1.73]

60.0
[2.36]

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]
ST12A	$97_:	Micro Detectors mounting bracket, axial, zinc plated steel. For use with 12mm sensors.	PDF	0.03 [13.6]
ST12A7W	$97#:	Micro Detectors mounting bracket, axial, 316L stainless steel. For use with 12mm sensors.	PDF	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]
ST12C	$;97!:	Micro Detectors mounting bracket, right-angle, zinc plated steel. For use with 12mm sensors.	PDF	0.03 [13.6]
ST12C7W	$97?:	Micro Detectors mounting bracket, right-angle, 316L stainless steel. For use with 12mm sensors.	PDF	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.

Accessories for 12mm Sensors				
Part Number	**Price**	**Description**	**Drawing Link**	**Weight lb [g]**
OPT2102	$-1nlq:	Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 12mm sensors.	PDF	0.05 [22.7]
OPT2103	$-1nls:	Wenglor mounting bracket, right-angle, plastic. For use with 12mm sensors.	PDF	0.05 [22.7]

OPT2102, OPT2103

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.

Accessories for 12mm Sensors						
Part Number	**Price**	**Description**	**Mounting Head**	**Mounting Plate**	**Drawing Link**	**Weight lb [g]**
OPT2114	$;-1nl[:	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 12mm sensors.	Aluminum	Stainless steel	PDF	0.14 [63.5]
OPT2115	$-1nl_:	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	PDF	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).

OPT2114, OPT2115

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)*
OPT2109	$1nn9:	Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	PDF	0.41 [185.97]
OPT2110	$1nna:	Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	PDF	0.60 [272.16]
OPT2111	$1nnb:	Wenglor mounting rod, 12mm diameter, 500mm length, 304 stainless steel.	PDF	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]*
OPT2108	$-1nly:	Wenglor mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	PDF	0.07 [31.8]