

AM Series Inductive Proximity Sensors

M12 (12 mm) metal – DC



- 26 standard length models available
- 8 short body length models available
- 2-wire and 3-wire models
- Metal housing
- Axial cable or M12 quick-disconnect models
- Complete overload protection
- IP67 rated
- LED status indicator
- DC powered
- Several sensing distances available
- Lifetime warranty



AM1 Series Standard Length M12 DC Inductive Prox Selection Chart

Part Number	Price	Sensing Range	Housing	Output State	Logic	Connection	Wiring	Dimensions	
Standard Distance									
AM1-AN-1A	\$20.00	0 to 2 mm (0-0.079 in)	Shielded	N.O.	NPN	2 m (6.5') axial cable	Diagram 1	Figure 1	
AM1-AP-1A	\$20.00				PNP	2 m (6.5') axial cable	Diagram 1	Figure 1	
AM1-A0-1A	\$22.00				Sink/source	2 m (6.5') axial cable	Diagram 2	Figure 1	
AM1-AN-1H	\$20.00				NPN	M12 (12 mm) connector	Diagram 1	Figure 2	
AM1-AP-1H	\$20.00				PNP	M12 (12 mm) connector	Diagram 1	Figure 2	
AM1-A0-1H	\$22.00				Sink/source	M12 (12 mm) connector	Diagram 2	Figure 2	
AM1-AN-2A	\$20.00		0 to 4 mm (0-0.157 in)	Unshielded	N.O.	NPN	2 m (6.5') axial cable	Diagram 1	Figure 1
AM1-AP-2A	\$20.00					PNP	2 m (6.5') axial cable	Diagram 1	Figure 1
AM1-A0-2A	\$22.00					Sink/source	2 m (6.5') axial cable	Diagram 2	Figure 1
AM1-AN-2H	\$20.00					NPN	M12 (12 mm) connector	Diagram 1	Figure 2
AM1-AP-2H	\$20.00					PNP	M12 (12 mm) connector	Diagram 1	Figure 2
AM1-A0-2H	\$22.00					Sink/source	M12 (12 mm) connector	Diagram 2	Figure 2
Extended Distance									
AM1-AN-3A	\$25.50	0 to 4 mm (0-0.157 in)	Shielded	N.O.	NPN	2 m (6.5') axial cable	Diagram 1	Figure 1	
AM1-AP-3A	\$25.50				PNP	2 m (6.5') axial cable	Diagram 1	Figure 1	
AM1-A0-3A	\$27.50				Sink/source	2 m (6.5') axial cable	Diagram 2	Figure 1	
AM1-AN-3H	\$25.50				NPN	M12 (12 mm) connector	Diagram 1	Figure 2	
AM1-AP-3H	\$25.50				PNP	M12 (12 mm) connector	Diagram 1	Figure 2	
AM1-A0-3H	\$27.50				Sink/source	M12 (12 mm) connector	Diagram 2	Figure 2	
AM1-AN-4A	\$25.50	0 to 8 mm (0-0.314 in)	Unshielded	N.O.	NPN	2 m (6.5') axial cable	Diagram 1	Figure 1	
AM1-AP-4A	\$25.50				PNP	2 m (6.5') axial cable	Diagram 1	Figure 1	
AM1-A0-4A	\$27.50				Sink/source	2 m (6.5') axial cable	Diagram 2	Figure 1	
AM1-AN-4H	\$25.50				NPN	M12 (12 mm) connector	Diagram 1	Figure 2	
AM1-AP-4H	\$25.50				PNP	M12 (12 mm) connector	Diagram 1	Figure 2	
AM1-A0-4H	\$27.50				Sink/source	M12 (12 mm) connector	Diagram 2	Figure 2	
Triple Distance									
AM1-AN-5H	\$65.00	6 mm (0.236 in)	Shielded	N.O.	NPN	M12 (12 mm) connector	Diagram 1	Figure 3	
AM1-AP-5H	\$65.00				PNP	M12 (12 mm) connector	Diagram 1	Figure 3	

AM6 Series Short Body M12 DC Inductive Prox Selection Chart

Part Number	Price	Sensing Range	Housing	Output State	Logic	Connection	Wiring	Dimensions
Extended Distance								
AM6-AN-3A	\$31.00	0 to 4 mm (0-0.157 in)	Shielded	N.O.	NPN	2 m (6.5') axial cable	Diagram 1	Figure 4
AM6-AP-3A	\$31.00				PNP	2 m (6.5') axial cable	Diagram 1	Figure 4
AM6-AN-3H	\$31.00				NPN	M12 (12 mm) connector	Diagram 1	Figure 5
AM6-AP-3H	\$31.00				PNP	M12 (12 mm) connector	Diagram 1	Figure 5
AM6-AN-4A	\$31.00	0 to 8 mm (0-0.314 in)	Unshielded	N.O.	NPN	2 m (6.5') axial cable	Diagram 1	Figure 4
AM6-AP-4A	\$31.00				PNP	2 m (6.5') axial cable	Diagram 1	Figure 4
AM6-AN-4H	\$31.00				NPN	M12 (12 mm) connector	Diagram 1	Figure 5
AM6-AP-4H	\$31.00				PNP	M12 (12 mm) connector	Diagram 1	Figure 5

AM Series Inductive Proximity Sensors

Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Limit Switches

Sensors: Encoders

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow Switches

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

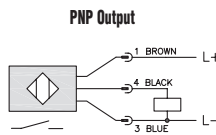
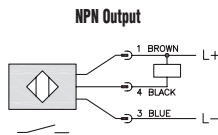
Appendix Book 2

Terms and Conditions

AM Series Specifications					
Mounting Type	Standard Distance Models		Extended Distance Models		Triple Distance Models
	Shielded	Unshielded	Shielded	Unshielded	Shielded
Nominal Sensing Distance	2 mm (0.079 in)	4 mm (0.157 in)	4 mm (0.157 in)	8 mm (0.315 in)	6 mm (0.236 in)
Operating Distance	N/A				
Material Correction Factors	See Material Influence table #1 later in this section			See Material Influence table #2 later in this section	
Output Type	NPN or PNP/N.O. only/3-wire				
Operating Voltage	10 to 30 VDC				
No-load Supply Current	≤20mA		≤10mA		
Operating (Load) Current	3-wire: ≤200mA / 2-wire: 3-100mA		3-wire: ≤200mA / 2-wire: 3-100mA		≤200mA
Off-state (Leakage) Current	3-wire: ≤10µA / 2-wire: ≤0.8mA		3-wire: ≤120µA / 2-wire: ≤0.8mA		≤100µA
Voltage Drop	3-wire: 1.2 volts max. / 2-wire: 2.8 volts max.				≤2.0 V
Switching Frequency	3-wire: 2kHz / 2-wire: 1.5 kHz		3-wire: 2kHz / 2-wire: 1 kHz		800 Hz
Differential Travel (% of Nominal Distance)	2 to 10%		1 to 20		
Repeat Accuracy	≤2%		≤5%		
Ripple	≤10%			≤20%	
Time Delay Before Availability (tv)	3-wire: 100ms / 2-wire: 50ms		100 ms		
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	Yellow (output energized)				
Housing Material	Nickel-plated brass		Chrome-plated brass		
Sensing Face Material	Polybutylene Terephthalate (PBT)				
Shock/Vibration	See terminology section				
Tightening Torque	10 Nm (7.37 lb-ft)				
Weight (cable/M12 connector)	70 g (2.47 oz)/30 g (1.06 oz)		96 g (3.39 oz)/34 g (1.2 oz)		
Connection	2 meter PVC axial cable / M12 connector				
Agency Approvals	N/A			UL file E328811	

Wiring diagrams

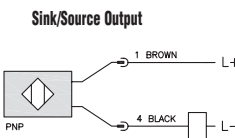
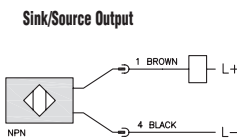
Diagram 1



Connector



Diagram 2



Wiring diagram when sensor is wired in sinking mode used with a sourcing module.

Wiring diagram when sensor is wired in sourcing mode used with a sinking module.

Note: Negative (-) lead is Black on M12 quick disconnect cables and Blue on axial cables.

AM Series Inductive Proximity Sensors

Dimensions

mm [inches]

Figure 1

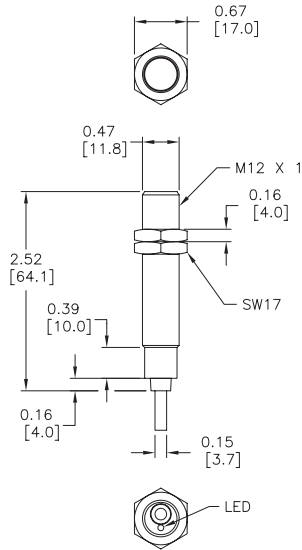


Figure 2

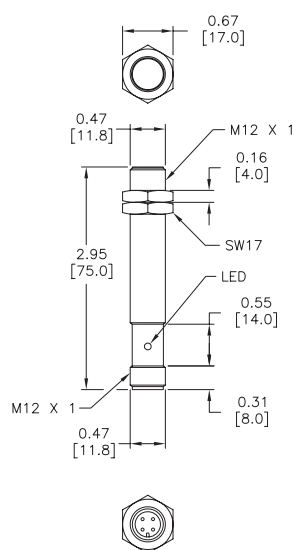


Figure 3

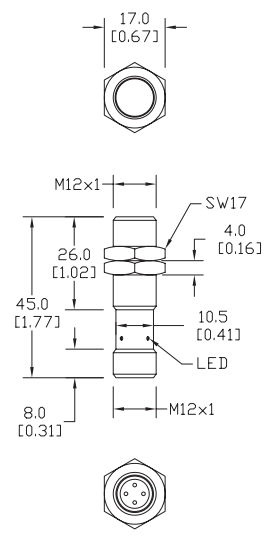


Figure 4

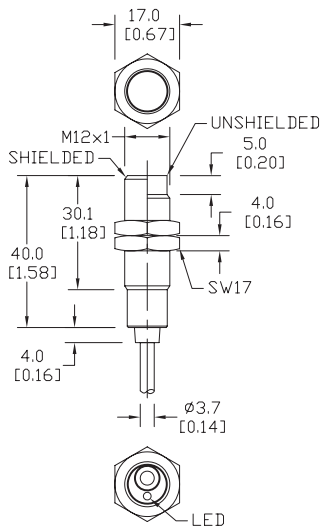
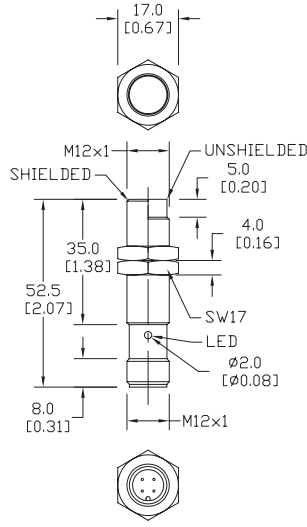


Figure 5



Sensor Cables and Connectors

Cables with quick-disconnect plugs

- Industry standard axial and right-angle M8/M12 screw-lock connectors with open leads. The cables listed can be used with patch cables
- 2m, 3m, 5m, 7m, 10m and 15m cable lengths

- PVC (polyvinyl chloride) jacket for typical industrial applications
- PUR (polyurethane) jacket for oily and direct sunlight applications
- IP67 rated



CD08-0A-020-C1 and -A1 shown



CD08-0A-050-C1 and -A1 shown



CD12L-0B-020-A0 and -C0 shown



CD12M-0B-050-C1 and -A1 shown



7000-12221-2141000



7000-12241-2150500



7000-17041-2951000



7000-19041-7050500

M8 Quick-Disconnect Cables (Pico, Nano)						
Part Number	Price	Length	Poles	Connector	Jacket	Dimensions
M8 Quick-Disconnects						
CD08-0A-020-A1	\$7.75	2m (6.5 ft.)	3	Axial female	PVC	Figure 1
CD08-0A-020-C1	\$7.75	2m (6.5 ft.)	3	Right-angle female	PVC	Figure 2
CD08-0A-050-A1	\$10.50	5m (16.4 ft.)	3	Axial female	PVC	Figure 4
CD08-0C-050-A1	\$11.25	5m (16.4 ft.)	3	Axial female	PUR	Figure 3
CD08-0A-050-C1	\$10.50	5m (16.4 ft.)	3	Right-angle female	PVC	Figure 5
CD08-0C-050-C1	\$11.25	5m (16.4 ft.)	3	Right-angle female	PUR	Figure 5
CD08-0A-070-A1	\$12.00	7m (23 ft.)	3	Axial female	PVC	Figure 1
CD08-0A-070-C1	\$12.00	7m (23 ft.)	3	Right-angle female	PVC	Figure 2

M12 Quick-Disconnect Cables (Euro, Micro DC-Single Key)						
Part Number	Price	Length	Poles	Connector	Jacket	Dimensions
M12 Quick-Disconnects						
CD12M-0B-050-A1*	\$10.50	5m (16.4 ft)	3	Axial female	PVC	Figure 8
CD12M-0D-050-A1*	\$12.50	5m (16.4 ft)	3	Axial female	PUR	Figure 9
CD12M-0B-050-C1*	\$10.50	5m (16.4 ft)	3	Right-angle female	PVC	Figure 10
CD12M-0D-050-C1*	\$12.50	5m (16.4 ft)	3	Right-angle female	PUR	Figure 11
CD12L-0B-020-A0	\$7.75	2m (6.5 ft)	4	Axial female	PVC	Figure 6
CD12L-0B-020-C0	\$7.75	2m (6.5 ft)	4	Right-angle female	PVC	Figure 7
CD12M-0B-070-A1	\$12.00	7m (23 ft)	4	Axial female	PVC	Figure 6
CD12M-0B-070-C1	\$12.00	7m (23 ft)	4	Right-angle female	PVC	Figure 7
7000-12221-2141000	\$14.00	10m (32.8 ft)	4	Axial female	PVC	Figure 13
7000-12221-2141500	\$19.00	15m (49.2 ft)	4	Axial female	PVC	Figure 13
7000-12341-2141000	\$14.00	10m (32.8 ft)	4	Right-angle female	PVC	Figure 14
7000-12341-2141500	\$19.00	15m (49.2 ft)	4	Right-angle female	PVC	Figure 14
7000-12241-2150300	\$9.00	3m (9.8 ft)	5	Axial female	PVC	Figure 15
7000-12241-2150500	\$11.50	5m (16.4 ft)	5	Axial female	PVC	Figure 15
7000-12241-2151000	\$17.00	10m (32.8 ft)	5	Axial female	PVC	Figure 15
7000-12361-2150300	\$9.00	3m (9.8 ft)	5	Right-angle female	PVC	Figure 16
7000-12361-2150500	\$11.50	5m (16.4 ft)	5	Right-angle female	PVC	Figure 16
7000-12361-2151000	\$17.00	10m (32.8 ft)	5	Right-angle female	PVC	Figure 16
7000-17041-2950300	\$20.50	3m (9.8 ft)	8	Axial female	PUR	Figure 17
7000-17041-2950500	\$26.00	5m (16.4 ft)	8	Axial female	PUR	Figure 17
7000-17041-2951000	\$39.50	10m (32.8 ft)	8	Axial female	PUR	Figure 17
7000-17061-2950300	\$20.50	3m (9.8 ft)	8	Right-angle female	PUR	Figure 18
7000-17061-2950500	\$26.00	5m (16.4 ft)	8	Right-angle female	PUR	Figure 18
7000-17061-2951000	\$39.50	10m (32.8 ft)	8	Right-angle female	PUR	Figure 18
7000-19041-7050300	\$32.00	3m (9.8 ft)	12	Axial female	PUR	Figure 19
7000-19041-7050500	\$39.00	5m (16.4 ft)	12	Axial female	PUR	Figure 19
7000-19041-7051000	\$56.50	10m (32.8 ft)	12	Axial female	PUR	Figure 19
7000-19061-7050300	\$32.00	3m (9.8 ft)	12	Right-angle female	PUR	Figure 20
7000-19061-7050500	\$39.00	5m (16.4 ft)	12	Right-angle female	PUR	Figure 20
7000-19061-7051000	\$56.50	10m (32.8 ft)	12	Right-angle female	PUR	Figure 20

* Note: Do not use with sensors that require 4-pole cables.

Company Information

Terminal Blocks

Power Distribution Blocks

Wiring Accessories

ZIPLink Connection System

Multi-wire Connectors

Sensor Cables and Connectors

M12 Junction Blocks

Panel Interface Connectors

Wiring Duct

Cable Ties

Wire

Flexible Cord

Multi-conductor Flex Cable

Data Cables

Wire Management Products

Power Supplies

DC Converters

Transformers and Filters

Circuit Protection

Tools

Test Equipment

Enclosures

Enclosure Climate Control

Safety: Electrical Components

Safety: Protective Wear

Terms and Conditions

Sensor Cables and Connectors

Shielded M12 Cables with quick-disconnect plugs

- Industry standard axial and right-angle M12 screw-lock connectors with open leads
- Braided shield located inside the cord jacket and connected to the coupling nut
- 5m and 10m cable lengths
- PUR (polyurethane) jacket for oily and direct sunlight applications
- IP67 rated



7000-17121-2941000

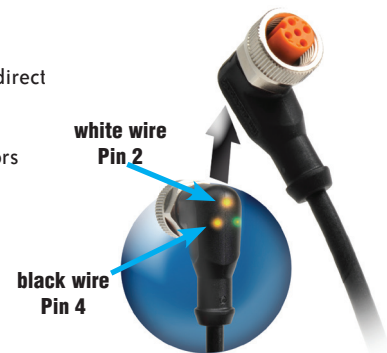


7000-17141-2940500

Shielded M12 Quick-Disconnect Cables (Euro, Micro DC-Single Key)						
Part Number	Price	Length	Poles	Connector	Jacket	Dimensions
M12 Quick-Disconnects (shielded)						
7000-13201-3310500	\$18.00	5m (16.4 ft)	4	Axial female	PUR	Figure 21
7000-13201-3311000	\$27.50	10m (32.8 ft)	4	Axial female	PUR	Figure 21
7000-13261-3310500	\$18.00	5m (16.4 ft)	4	Right-angle female	PUR	Figure 22
7000-13261-3311000	\$27.50	10m (32.8 ft)	4	Right-angle female	PUR	Figure 22
7000-13221-3490500	\$21.00	5m (16.4 ft)	5	Axial female	PUR	Figure 23
7000-13221-3491000	\$32.50	10m (32.8 ft)	5	Axial female	PUR	Figure 23
7000-13281-3490500	\$21.00	5m (16.4 ft)	5	Right-angle female	PUR	Figure 24
7000-13281-3491000	\$32.50	10m (32.8 ft)	5	Right-angle female	PUR	Figure 24
7000-17121-2940500	\$34.50	5m (16.4 ft)	8	Axial female	PUR	Figure 25
7000-17121-2941000	\$52.00	10m (32.8 ft)	8	Axial female	PUR	Figure 25
7000-17141-2940500	\$34.50	5m (16.4 ft)	8	Right-angle female	PUR	Figure 26
7000-17141-2941000	\$52.00	10m (32.8 ft)	8	Right-angle female	PUR	Figure 26

Cables with LED and quick-disconnect plugs

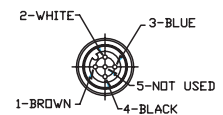
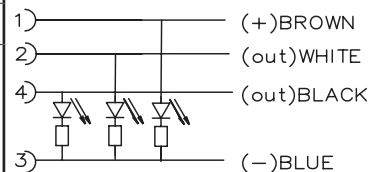
- Industry standard M12 right angle female plug with open leads
- These cables can be used with patch cables.
- 2m, 5m and 10m cable lengths
- PUR (polyurethane) jacket for oily and direct sunlight applications
- IP67 /IP68 / IP69K, II rated
- LED indication for 10-36 VDC PNP sensors only



M12 Quick-Disconnect Cables with LED Indicator (Euro, Micro DC-Single Key)							
Part Number	Price	Length	Poles	Connector	LED	Jacket	Dimensions
M12 Quick-Disconnects							
EVC178*	\$11.00	2m (6.5 ft)	4	Right-angle female	Yes	PUR	Figure 12
EVC179*	\$11.50	5m (16.4 ft)	4	Right-angle female	Yes	PUR	Figure 12
EVC180*	\$14.00	10m (32.8 ft)	4	Right-angle female	Yes	PUR	Figure 12

**Note: LED for 10 to 36 VDC PNP devices only.
Do not use with NPN or analog output devices.
Do not use when white wire (Pin 2) is used for selection of a sensor function.
Do not use when emitter has check function.*

LED Models' Wiring



Sensor Cables and Connectors

Cable Specifications					
Specification	M8		M12		
			CD Series		7000 Series (unshielded)
Length	2m (6.5 ft) / 7m (23 ft)	5m (16.4 ft)	2m (6.5 ft) / 7m (23 ft)	5m (16.4 ft)	3m (9.8 ft) / 5m (16.4 ft) / 10m (32.8 ft) / 15m (49.2 ft)
Nominal Voltage	50 VAC/75 VDC	60 VAC/VDC	250 VAC/VDC		30 VAC/VDC; 125 VAC/VDC; 250 VAC/VDC
Max Current	4A		4A		3/4 pin: 250 VAC/VDC, 4A 5 pin: 125 VAC/VDC, 4A 8 pin: 30 VAC/VDC, 2A 12 pin: 30 VAC/VDC, 1.5A
LED Current Loading	N/A				
Protection Degree	IP67	IP65 / IP68 / IP69K	IP67	PVC: IP68 PUR: IP68 / IP69K	IP67
Material Nut	Nickel plated brass				Nickel plated Zinc
Housing Material	Polyurethane (PUR) or Polyvinyl-chloride (PVC)				
Contacts Material	Gold plated Copper-Tin Alloy (CuSn)				Gold plated brass
Tightening Torque	0.5 Nm	≤ 0.4 Nm	0.5 Nm	≤ 0.4 Nm	0.6 Nm
Conductors Cross Section (AWG)	0.25 mm ² (24 AWG)	0.25 mm ² (24 AWG)	0.25 mm ² (24 AWG)	0.34 mm ² (22 AWG)	4 x 0.34 mm ² (4 x 22 AWG) 5 x 0.34 mm ² (5 x 22 AWG) 8 x 0.25 mm ² (8 x 24 AWG) 12 x 0.14 mm ² (12 x 26 AWG)
Ø Outer Cable	5mm	PVC: 4mm PUR: 4mm	5mm	PVC: 4.2 mm PUR: 4.3 mm	PVC: 5 - 5.2 mm PUR: 6.0 mm
Temperature Range	-25° to +80°C (-13° to 176°F)	-25° to 90°C (-13° to 194°F)	-25° to +80°C (-13° to 176°F)	PVC: -30° to 70°C (-22° to 158°F) PUR: -50° to 90°C (-58° to 194°F)	PVC: -25° to +70°C (-13° to 158°F) PUR: -25° to +85°C (-13° to 185°F)
Environmental	N/A	Halogen/Silicone free	N/A	Halogen/Silicone free	N/A
Function Display Power LED	N/A				
Switching Status LED	N/A				
Drag Chain (Roller Cable Tray) Suitability	Bending Radius	min. 10 x cable diameter			
	Bending Cycles	N/A			
	Travel Speed	N/A			
	Torsional Strain	N/A			
Agency Approvals	RoHS				RoHS (UL E325311 8/12 pole)

Company Information

Terminal Blocks

Power Distribution Blocks

Wiring Accessories

ZIPLink Connection System

Multi-wire Connectors

Sensor Cables and Connectors

M12 Junction Blocks

Panel Interface Connectors

Wiring Duct

Cable Ties

Wire

Flexible Cord

Multi-conductor Flex Cable

Data Cables

Wire Management Products

Power Supplies

DC Converters

Transformers and Filters

Circuit Protection

Tools

Test Equipment

Enclosures

Enclosure Climate Control

Safety: Electrical Components

Safety: Protective Wear

Terms and Conditions

Sensor Cables and Connectors

Cable Specifications		
Specification	M12 7000 Series (shielded)	M12 with LED
Length	5m (16.4 ft) / 10m (32.8 ft)	2m (6.5 ft) / 5m (16.4 ft) / 10m (32.8 ft)
Nominal Voltage	30 VAC/VDC / 60 VAC/VDC	10 to 36 VDC
Max Current	2A / 4A	4A
LED Current Loading	N/A	10 V input Brown wire LED: 1.7 mA White and/or Black LED: 0.9 mA 36V input Brown wire LED: 7.3 mA White and/or Black LED: 4.7 mA
Protection Degree	IP67	IP67 / IP68 / IP69K
Material Nut	Nickel plated Zinc	Nickel plated Brass
Jacket Material	Polyurethane (PUR)	
Housing Material	Polyurethane (PUR)	
Contacts Material	Gold plated Brass	
Tightening Torque	0.6 Nm	0.6 to 1.5 Nm
Conductors Cross Section (AWG)	4 x 0.34 mm ² (4 x 22 AWG) 5 x 0.34 mm ² (5 x 22 AWG) 8 x 0.25 mm ² (8 x 24 AWG)	4 x 0.34 mm ² (4 x 22 AWG)
Ø Outer Cable	4/5 pole: 5.9 mm 8 pole: 7mm	5mm
Temperature Range	-25° to +80°C (-13° to 176°F)	-25° to +90°C (-13° to 194°F)
Function Display Power LED	N/A	Green
Switching Status LED	N/A	2 x Yellow
Drag Chain (Roller Cable Tray) Suitability	Bending Radius	min. 10 x cable diameter
	Bending Cycles	N/A
	Travel Speed	N/A
	Torsional Strain	N/A
Agency Approvals	RoHS	UL File E191684, RoHS

UL Reference	
Part Number	Mini-Series Female Cord Connectors Series M12, UL Catalog Number
EVC178	ADOAH043MSS0002H04
EVC179	ADOAH043MSS0005H04
EVC180	ADOAH043MSS0010H04
Note: Shown in UL file under Mini-series Female Cord Connectors using catalog number	

Sensor Cables and Connectors

Company Information

Terminal Blocks

Power Distribution Blocks

Wiring Accessories

ZIPLink Connection System

Multi-wire Connectors

Sensor Cables and Connectors

M12 Junction Blocks

Panel Interface Connectors

Wiring Duct

Cable Ties

Wire

Flexible Cord

Multi-conductor Flex Cable

Data Cables

Wire Management Products

Power Supplies

DC Converters

Transformers and Filters

Circuit Protection

Tools

Test Equipment

Enclosures

Enclosure Climate Control

Safety: Electrical Components

Safety: Protective Wear

Terms and Conditions

Dimensions

mm [inches]

Figure 1

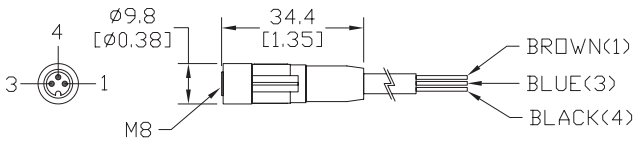


Figure 2

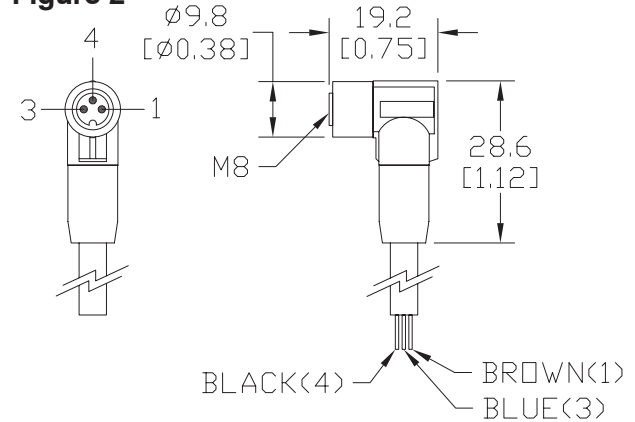


Figure 3

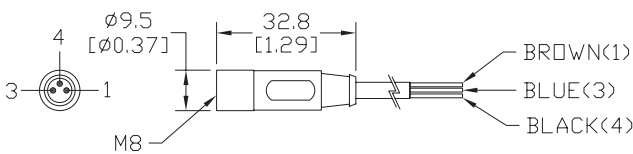


Figure 4

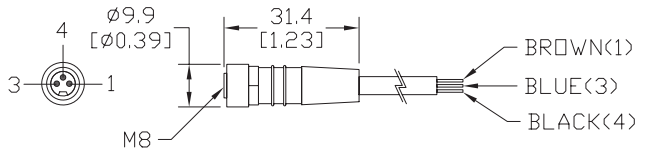


Figure 5

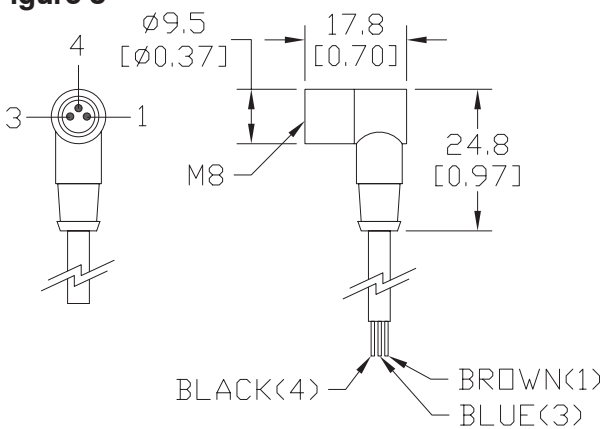


Figure 6

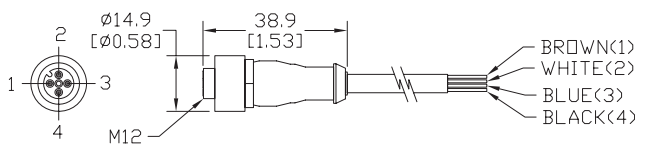


Figure 7

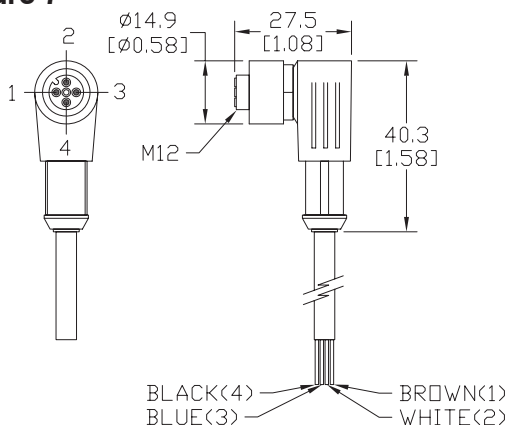
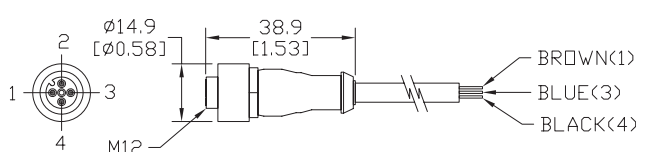


Figure 8



Sensor Cables and Connectors

Dimensions

mm [inches]

Figure 9

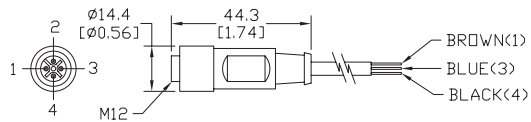


Figure 10

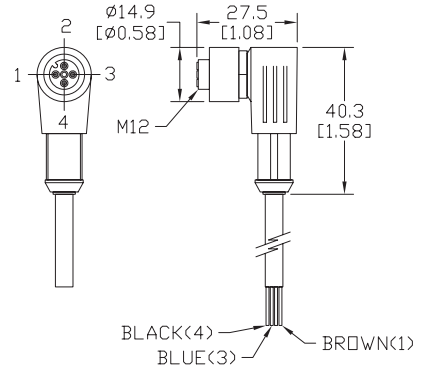


Figure 11

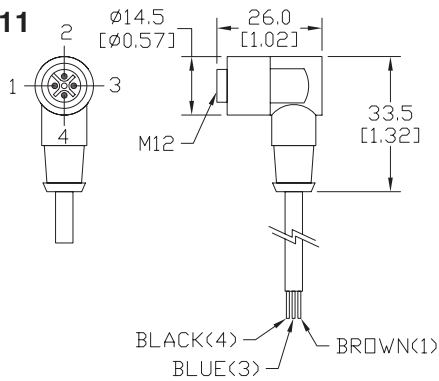


Figure 12

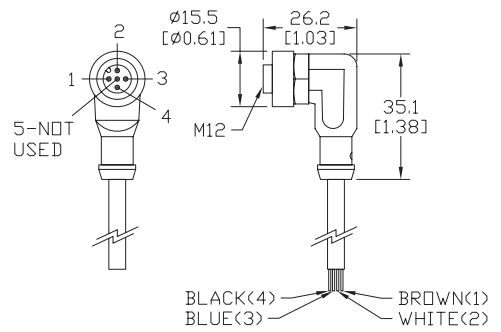


Figure 13

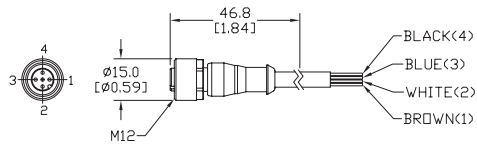


Figure 14

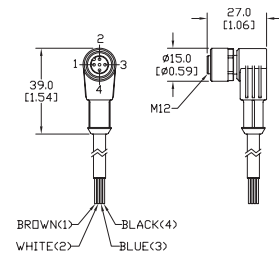


Figure 15

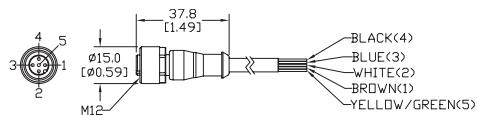
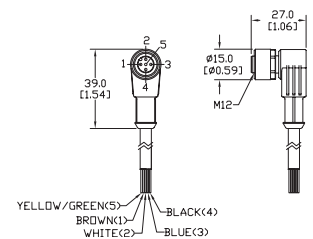


Figure 16



Sensor Cables and Connectors

Company Information

Terminal Blocks

Power Distribution Blocks

Wiring Accessories

ZIPLink Connection System

Multi-wire Connectors

Sensor Cables and Connectors

M12 Junction Blocks

Panel Interface Connectors

Wiring Duct

Cable Ties

Wire

Flexible Cord

Multi-conductor Flex Cable

Data Cables

Wire Management Products

Power Supplies

DC Converters

Transformers and Filters

Circuit Protection

Tools

Test Equipment

Enclosures

Enclosure Climate Control

Safety: Electrical Components

Safety: Protective Wear

Terms and Conditions

Dimensions

mm [inches]

Figure 17

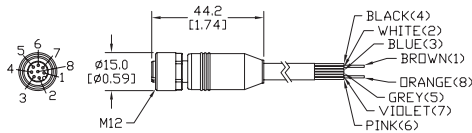


Figure 18

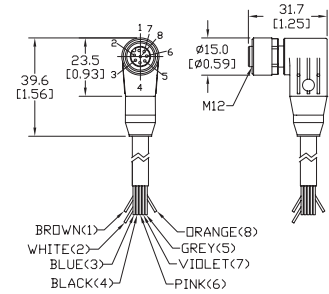


Figure 19

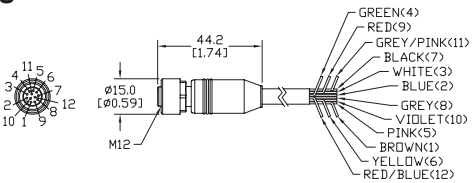


Figure 20

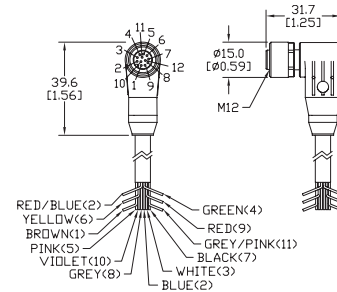


Figure 21

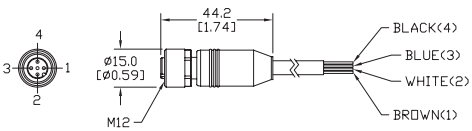


Figure 22

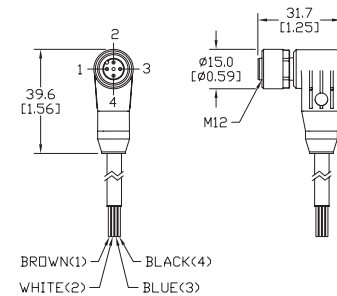


Figure 23

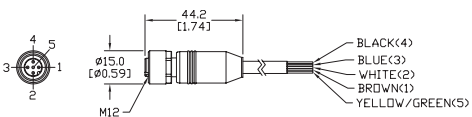


Figure 24

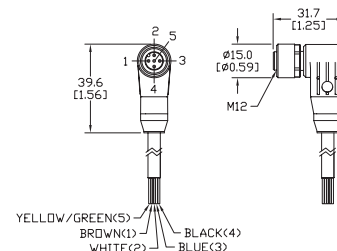


Figure 25

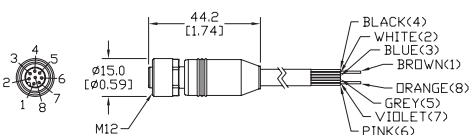
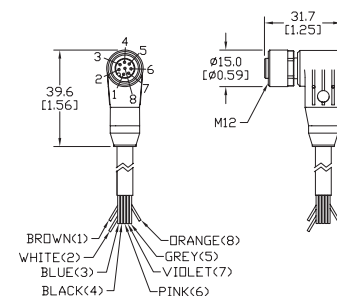


Figure 26



Sensor Cables and Connectors

Patch cables with quick-disconnect plugs on each end



Available patch cables include:

- Industry standard M8 and M12 screw-lock connectors
- One male and one female connector
- Axial and right-angle connector models
- 1m and 3m cable lengths
- PVC (polyvinyl chloride) jacket for typical industrial applications
- IP67 rated

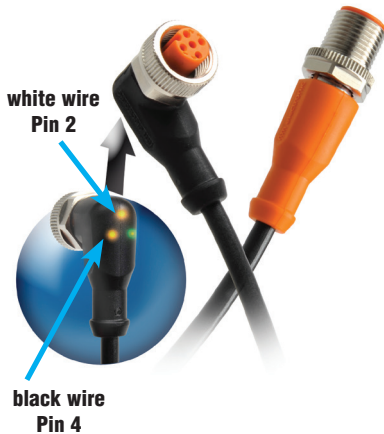
M8 Patch Cables with Quick-Disconnect on Each End (Pico, Nano)						
Part Number	Price	Length	Poles	Connectors	Jacket	Dimensions
M8 Quick-Disconnect Patch Cables						
CDP08-0A-010-AA	\$7.75	1m (3.28 ft)	3	2 Axial - One male and one female connector	PVC	Figure 1
CDP08-0A-010-BB	\$7.75	1m (3.28 ft)	3	2 Right-angle - One male and one female connector	PVC	Figure 3
CDP08-0A-030-AA	\$9.50	3m (9.84 ft)	3	2 Axial - One male and one female connector	PVC	Figure 2
CDP08-0A-030-BB	\$7.75	3m (9.84 ft)	3	2 Right-angle - One male and one female connector	PVC	Figure 3

M12 Patch Cables with Quick-Disconnect on Each End (Euro, Micro DC-Single Key)						
Part Number	Price	Length	Poles	Connectors	Jacket	Dimensions
M12 Quick-Disconnect Patch Cables						
CDP12-0B-010-AA	\$7.75	1m (3.28 ft)	4	2 Axial - One male and one female connector	PVC	Figure 4
CDP12-0B-010-BB	\$7.75	1m (3.28 ft)	4	2 Right-angle - One male and one female connector	PVC	Figure 5
CDP12-0B-030-AA	\$7.75	3m (9.84 ft)	4	2 Axial - One male and one female connector	PVC	Figure 4
CDP12-0B-030-BB	\$9.50	3m (9.84 ft)	4	2 Right-angle - One male and one female connector	PVC	Figure 5
7000-40041-2150100	\$11.50	1m (3.28 ft)	5	2 Axial - One male and one female connector	PVC	Figure 7
7000-40041-2150300	\$14.00	3m (9.84 ft)	5	2 Axial - One male and one female connector	PVC	Figure 7

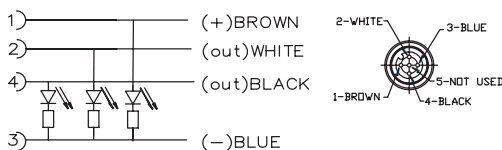
Patch Cables with LED

Available patch cables with LED include:

- Right-angle M12 female plug with LED indication on one end and axial male plug on the other end
- 0.3m, 0.6m, 1m, 2m, 5m, and 10m cable lengths
- PUR (polyurethane) jacket for oily and direct sunlight applications
- IP67 / IP68 / IP69K, II rated
- LED indication for 10 -36 VDC PNP sensors only



LED Models' Wiring



M12 Patch Cables with LED Indicator (Euro, Micro DC-Single Key)							
Part Number	Price	Length	Poles	Connectors	LED	Jacket	Dimensions
M12 Patch Cables							
EVC322*	\$11.00	0.3m (0.98 ft)	4	Right-angle female, axial male	Yes	PUR	Figure 6
EVC323*	\$12.00	0.6m (1.97 ft)	4	Right-angle female, axial male	Yes	PUR	Figure 6
EVC324*	\$12.50	1m (3.28 ft)	4	Right-angle female, axial male	Yes	PUR	Figure 6
EVC325*	\$14.50	2m (6.5 ft)	4	Right-angle female, axial male	Yes	PUR	Figure 6
EVC326*	\$17.00	5m (16.4 ft)	4	Right-angle female, axial male	Yes	PUR	Figure 6
EVC327*	\$21.50	10m (32.8 ft)	4	Right-angle female, axial male	Yes	PUR	Figure 6

***Note: LED for 10 to 36 VDC PNP devices only.
Do not use with NPN or analog output devices.
Do not use when white wire (Pin 2) is used for selection of a sensor function.
Do not use when emitter has check function.**



Sensor Cables and Connectors

Company Information

Terminal Blocks

Power Distribution Blocks

Wiring Accessories

ZIPLink Connection System

Multi-wire Connectors

Sensor Cables and Connectors

M12 Junction Blocks

Panel Interface Connectors

Wiring Duct

Cable Ties

Wire

Flexible Cord

Multi-conductor Flex Cable

Data Cables

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Transformers and Filters

Circuit Protection

Tools

Test Equipment

Enclosures

Enclosure Climate Control

Safety: Electrical Components

Safety: Protective Wear

Terms and Conditions

Cable Specifications				
Specification	M8	M12	M12 with LED	
Length	1m (3.28 ft.) / 3m (9.84 ft.)		0.3m (0.98 ft) / 0.6m (1.97 ft) / 1m (3.28 ft) 2m (6.5 ft) / 5m (16.4 ft) / 10m (32.8 ft)	
Nominal Voltage	60 VAC/VDC	125 VAC/VDC 250 VAC/VDC	10 to 36 VDC	
Max Current	4A		4A	
LED Current Consumption	N/A		10V input Brown wire LED: 1.7 mA White and/or Black LED: 0.9 mA 36V input Brown wire LED: 7.3 mA White and/or Black LED: 4.7 mA	
Protection Degree	IEC IP67		IEC IP67/IP68/IP69K	
Material Nut	Nickel plated brass	Zinc pressure die casting surface (Ni4-6), Nickel plated brass	Nickel plated brass	
Jacket Material	PolyVinyl Chloride (PVC)		Polyurethane (PUR)	
Housing Material	Polyurethane (PUR)		Connector: Orange PUR, Socket: Black PUR	
Contacts Material	Copper-tin(CuSn) plated brass		Gold plated brass	
Conductors Cross Section (AWG)	0.34 mm ²		0.34 mm ² (22 AWG)	
Tightening Torque	0.5 Nm	0.6 Nm, 0.5 Nm	Plug: 0.6 to 1.5 Nm (take into account the maximum value of the counterpart) Socket: 0.6 to 1.5 Nm	
Ø Outer Cable	5mm	5.2 mm, 5mm	5mm	
Temperature Range	-25° to +70°C (-13° to 158°F)		-25° to +90°C (-13° to 194°F)	
Function Display LED	N/A		Green	
Switching Status LED	N/A		2 x Yellow	
Drag Chain (Roller Cable Tray) Suitability	Bending Radius	min. 10 x cable diameter		
	Bending Cycles	>5 million		
	Travel Speed	N/A	Max. 3.3 m/s for a horizontal travel length of 5 m and max. acceleration of 5 m/s ²	
	Torsional Strain	N/A	±180°/m	
Agency Approvals	RoHS		UL File E191684, RoHS	

UL Reference	
Part Number	Cable Assemblies Series M12, UL Catalog Number
EVC322	VDOAH043MSS00.3H04STGH040MSS
EVC323	VDOAH043MSS00.6H04STGH040MSS
EVC324	VDOAH043MSS0001H04STGH040MSS
EVC325	VDOAH043MSS0002H04STGH040MSS
EVC326	VDOAH043MSS0005H04STGH040MSS
EVC327	VDOAH043MSS0010H04STGH040MSS
Note: Shown in UL file under Cable Assemblies using catalog number	

Sensor Cables and Connectors

Dimensions mm [inches]

Figure 1

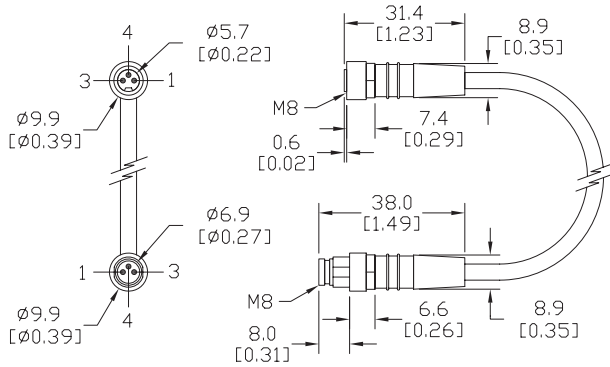


Figure 2

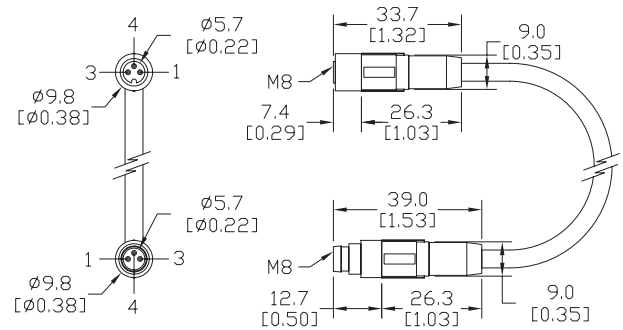


Figure 3

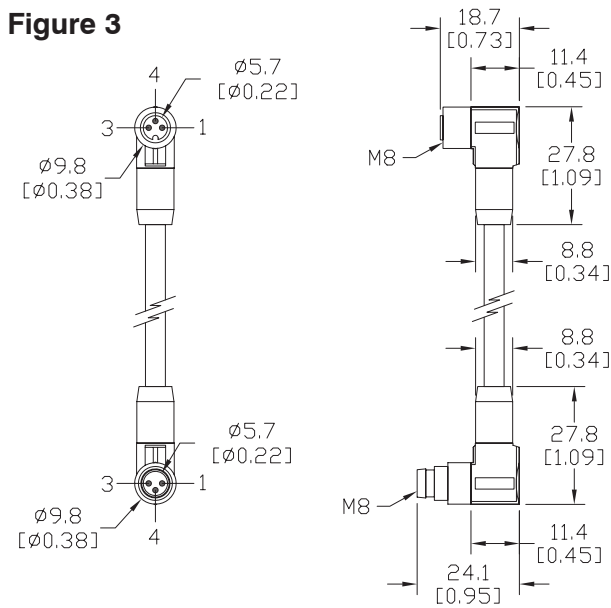


Figure 4

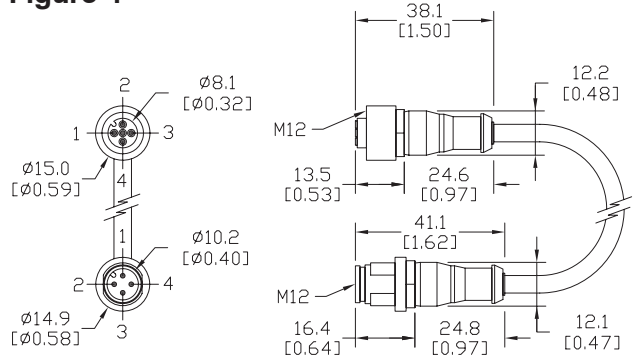


Figure 5

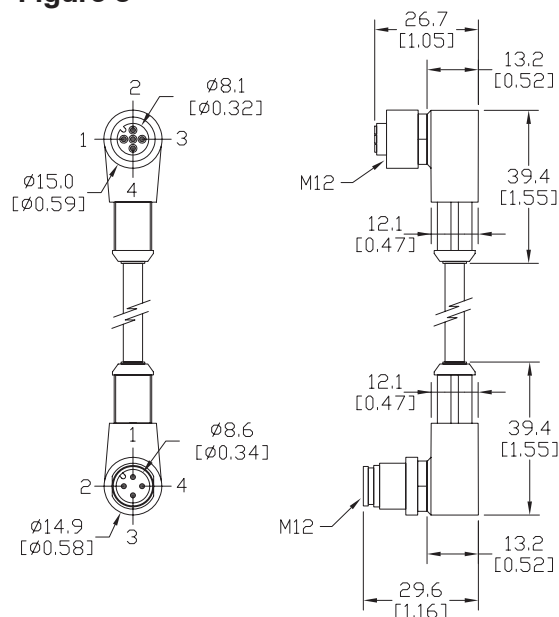


Figure 6

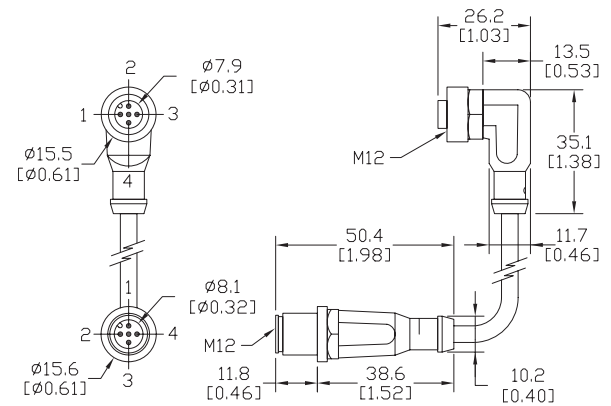
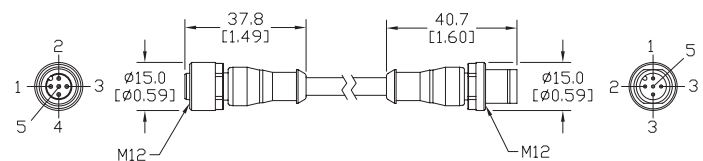


Figure 7



Accessories: Adapter, Mounting Brackets

ST12A axial bracket

For mounting M12 (12 mm) sensors. Has two mounting holes (use 3 mm screws) and allows the rotation of an optical axis for right-beam angle adapter sensors. Hexagonal nuts not included.



ST12C right-angle bracket

Angular mounting bracket for use with M12 (12 mm) sensors. Has two mounting holes (use 3 mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.

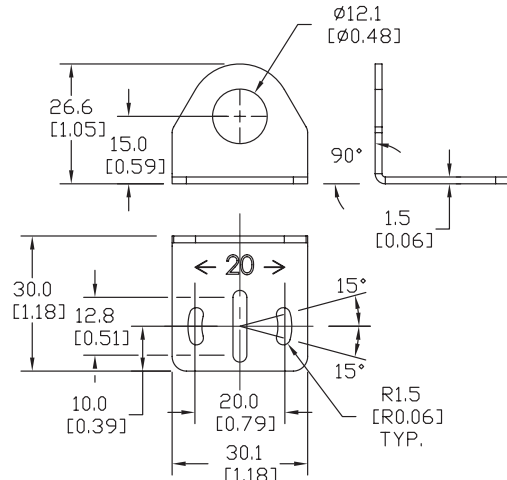
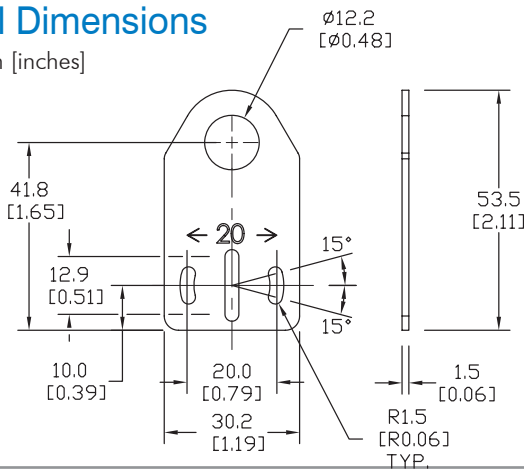


Brackets		
Part Number	Price	Description
ST12A	\$2.00	Zinc plated iron axial bracket for 12 mm sensors, 1/pk
ST12A7W	\$6.00	316L stainless steel axial bracket for 12 mm sensors, 1/pk

Brackets		
Part Number	Price	Description
ST12C	\$2.00	Zinc plated iron right angle bracket for 12 mm sensors, 1/pk
ST12C7W	\$6.00	316L stainless steel right angle bracket for 12 mm sensors, 1/pk

All Dimensions

mm [inches]



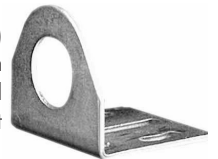
ST18A axial bracket

Mounting bracket for M18 (18 mm) sensors. Has two mounting holes (use 4 mm screws) and allows the rotation of an optical axis for right-beam-angle-adapter sensors. Hexagonal nuts not included.



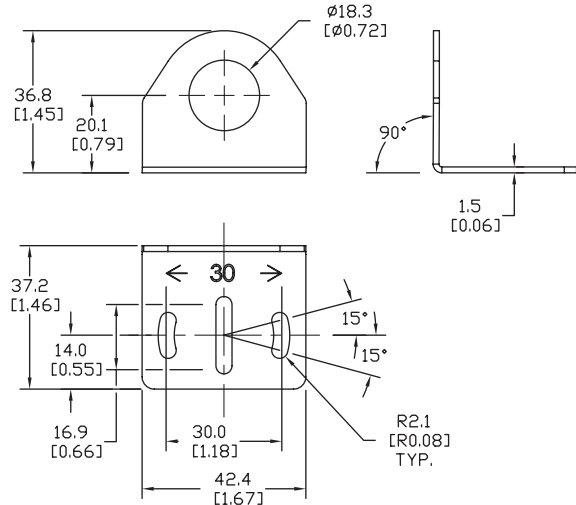
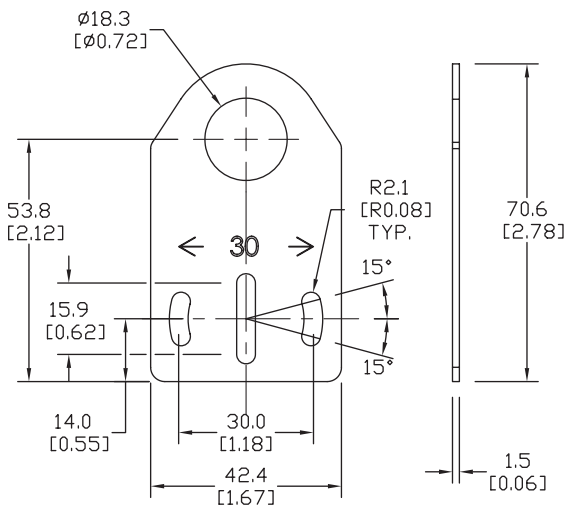
ST18C right-angle bracket

Angular mounting bracket for M18 (18 mm) sensors. Has two mounting holes (use 4 mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.



Brackets		
Part Number	Price	Description
ST18A	\$1.25	Zinc plated iron axial bracket for 18 mm sensors, 1/pk
ST18A7W	\$6.00	316L stainless steel axial bracket for 18 mm sensors, 1/pk

Brackets		
Part Number	Price	Description
ST18C	\$1.25	Zinc plated iron right angle bracket for 18 mm sensors, 1/pk
ST18C7W	\$6.00	316L stainless steel right angle bracket for 18 mm sensors, 1/pk



Accessories: Mounting Brackets

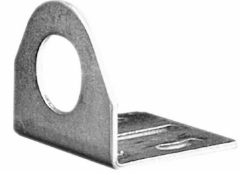
ST30A axial bracket

Mounting M30 (30 mm) sensors. Has two mounting holes (use 5 mm screws) and allows the rotation of an optical axis for right-beam-angle-adapter sensors. Hexagonal nuts not included.



ST30C right-angle bracket

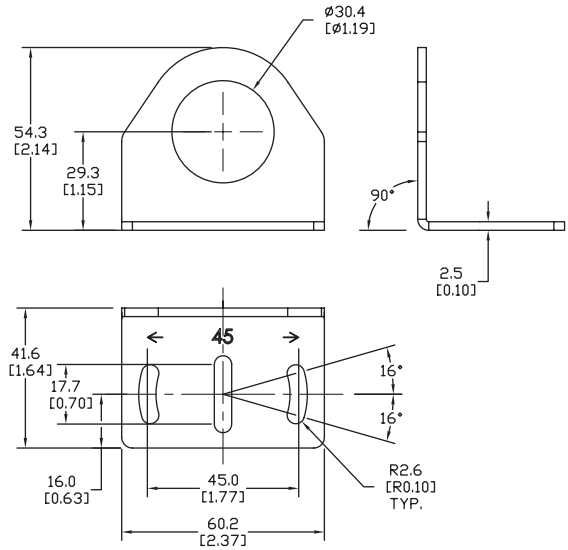
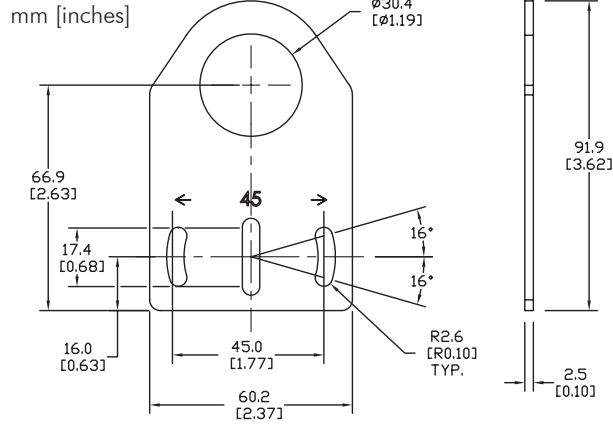
Angular mounting bracket for M30 (30 mm) sensors. Has two mounting holes (use 5 mm screws) and allows the rotation of an optical axis for axial sensors. Hexagonal nuts not included.



Brackets		
Part Number	Price	Description
ST30A	\$2.25	Zinc plated iron axial bracket for 30 mm sensors, 1/pk

Brackets		
Part Number	Price	Description
ST30C	\$2.25	Zinc plated iron right angle bracket for 30 mm sensors, 1/pk

All Dimensions



Company Information

Drives

Soft Starters

Motors

Power Transmission

Motion: Servos and Steppers

Motor Controls

Sensors: Proximity

Sensors: Photoelectric

Sensors: Limit Switches

Sensors: Encoders

Sensors: Current

Sensors: Pressure

Sensors: Temperature

Sensors: Level

Sensors: Flow Switches

Pushbuttons and Lights

Stacklights

Signal Devices

Process

Relays and Timers

Pneumatics: Air Prep

Pneumatics: Directional Control Valves

Pneumatics: Cylinders

Pneumatics: Tubing

Pneumatics: Air Fittings

Appendix Book 2

Terms and Conditions



We sell good proximity sensors at great prices – and we back them up!

AutomationDirect Lifetime Warranty

Registration required

For inductive proximity sensors sold to the Original User for the lifetime of the original application.

The following terms apply to the LIFETIME WARRANTY in addition to the General Terms:

1. This warranty is available only to AUTOMATIONDIRECT's authorized Value Added Resellers and to the Original User. In the event the ownership of the product is transferred to a person, firm, or corporation other than the Original User, this WARRANTY shall terminate.
2. This WARRANTY is applicable only to the original installation of the product. In the event the machinery, equipment, or production line to which the product is connected, or on which it is installed, is substituted, changed, moved or replaced, the WARRANTY shall terminate.
3. This WARRANTY shall be valid only if the product was purchased by the Original User from AUTOMATIONDIRECT, or from an authorized AUTOMATIONDIRECT Value Added Reseller, or was an integral part of a piece of machinery and equipment obtained by the Original User from an original equipment manufacturer, where the part was purchased by the original equipment manufacturer directly from AUTOMATIONDIRECT or from an authorized AUTOMATIONDIRECT Value Added Reseller.

Purchaser's remedies

This remedy shall apply to all WARRANTIES. If an AUTOMATIONDIRECT Value Added Reseller desires to make a WARRANTY claim, the Value Added Reseller shall, if requested by AUTOMATIONDIRECT, ship the product to AUTOMATIONDIRECT's facility in Cumming, GA postage or freight prepaid. If the Original User desires to make a WARRANTY Claim, they shall notify the authorized Value Added Reseller from whom it was purchased or, if purchased directly from AUTOMATIONDIRECT, shall notify AUTOMATIONDIRECT and, if requested by AUTOMATIONDIRECT, ship the Product to AUTOMATIONDIRECT's facility in Cumming, GA postage or freight prepaid. AUTOMATIONDIRECT shall, at its option, take any of the following two courses of action for any products which AUTOMATIONDIRECT determines are defective in materials or workmanship.

1. Repair or replace the product and ship the product to the Original User or to the authorized AUTOMATIONDIRECT Value Added Reseller, postage or freight prepaid; or
- 2.-Repay to the Original User that price paid by the Original User; provided that if the claim is made under the lifetime warranty, and such product is not then being supplied by AUTOMATIONDIRECT, then the amount to be repaid by AUTOMATIONDIRECT to the Original User shall be reduced according to the following schedule:

Number of Years Since Date of Purchase by Original User	Percent of Original Purchase Price To Be Paid by AutomationDirect
10	50 percent
15	25 percent
20	10 percent
More than 20	5 percent

REMEDIES OF PURCHASER'S AND VALUE ADDED RESELLERS SHALL BE LIMITED EXCLUSIVELY TO THE RIGHT OF REPLACEMENT, REPAIR OR REPAYMENT AS PROVIDED ABOVE AND DOES NOT INCLUDE ANY LABOR COST OR REPLACEMENT AT ORIGINAL USER'S SITE. AUTOMATIONDIRECT.COM SHALL NOT BE LIABLE FOR ANY CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF ANY WARRANTY, EXPRESSED OR IMPLIED, APPLICABLE TO THE PRODUCT, INCLUDING WITHOUT LIMITATION, ANY DAMAGES RESULTING FROM PROPERTY DAMAGE, PERSONAL INJURY OR BUSINESS INTERRUPTION, EVEN IF NOTIFIED OF THE POSSIBILITY OF SUCH DAMAGES.

Inductive proximity sensors warranty form may be obtained online at:
<http://www.automationdirect.com/static/specs/proxwarranty.pdf>

- Company Information
- Drives
- Soft Starters
- Motors
- Power Transmission
- Motion: Servos and Steppers
- Motor Controls
- Sensors: Proximity
- Sensors: Photoelectric
- Sensors: Limit Switches
- Sensors: Encoders
- Sensors: Current
- Sensors: Pressure
- Sensors: Temperature
- Sensors: Level
- Sensors: Flow Switches
- Pushbuttons and Lights
- Stacklights
- Signal Devices
- Process
- Relays and Timers
- Pneumatics: Air Prep
- Pneumatics: Directional Control Valves
- Pneumatics: Cylinders
- Pneumatics: Tubing
- Pneumatics: Air Fittings
- Appendix Book 2
- Terms and Conditions

Proximity Sensor Lineup

Proximity sensors allow non-contact detection of objects. They are used in many industries, including manufacturing, robotics, semiconductor, etc. Inductive sensors detect metallic objects while capacitive sensors detect all other materials. Ultrasonic sensors detect all materials by using sound wave reflections to determine presence.

Lifetime Warranty



12, 18, 30 mm IP69K FDA-approved materials

PFM, PFK, PFT, VF & MAF SERIES
New! An assortment of AC and DC IP69K rated Q/D proximity sensors.
Suitable for harsh environments

- 12 mm, from \$35.50
- 18 mm, from \$35.50
- 30 mm, from \$45.50

Starting from **\$35.50**



Miniature (3, 4, 5 mm)

PY & PD SERIES
Three-wire DC
3 mm prox, from \$79.00
4 mm prox, from \$79.00
5 mm prox, from \$43.50 (quick-disconnect)

Sensing distance:
• Standard

Starting from **\$43.50**



8 mm round

AE and PEW SERIES
Three-wire DC with embedded cable, M8 or M12 quick-disconnect

Sensing distance:
• Standard, from \$21.00
• Extended, from \$26.50
• Triple, from \$61.00
• Stainless Steel, from \$45.00

Starting from **\$21.00**



12 mm round

AM and PBM SERIES
Two- and three-wire DC, embedded cable or M12 quick-disconnect

Sensing distance:
• Standard, from \$13.50
• Extended, from \$25.50
• Triple, from \$65.00

Starting from **\$13.50**



18 mm round

AK and PBK SERIES
Two- and three-wire DC, embedded cable or M12 quick-disconnect

Sensing distance:
• Standard, from \$14.00
• Extended, from \$26.50

Starting from **\$14.00**



30 mm round

AT and PBT SERIES
Two- and three-wire DC, IP67 rating, embedded cable or M12 quick-disconnect

Sensing distance:
• Standard, from \$16.50
• Extended, from \$32.50

Starting from **\$16.50**



5 mm x 5 mm rectangular

CR5 SERIES
Three-wire DC, IP67 rating, embedded cable or M8 quick-disconnect

Sensing distance:
• Standard, from \$36.00
• Extended, from \$58.00

Starting from **\$36.00**



8 mm x 8 mm rectangular

CR8 SERIES
Three-wire DC with embedded cable or M8 quick-disconnect

Sensing distance:
• Standard, from \$25.00
• Extended, from \$34.50
• Triple, from \$77.00

Starting from **\$25.00**



10 mm x 16 mm rectangular

DR10 SERIES
Three-wire DC with embedded cable or M12 quick-disconnect, IP67 rating

Sensing distance:
• Standard, from \$26.00
• Extended, from \$26.00

Starting from **\$26.00**



12 mm x 27 mm rectangular

APS4 SERIES
Three-wire DC with embedded cable, IP67 rating

Sensing distance: **Standard** from \$17.50

Starting from **\$17.50**



Stainless steel triple sensing range

PKW, PTW and PMW SERIES triple
Three-wire DC, one-piece body, virtually same sensing distance of all metals, Q/D version is IP67 rated, cable version is IP68 to 290 psi

Sensing distance: **Triple**
• 12 mm prox, from \$103.00
• 18 mm prox, from \$78.25
• 30 mm prox, from \$132.00

Starting from **\$103.00**



Stainless steel round standard

PKW, PMW and PTW SERIES standard
Three and four-wire DC with M12 quick-disconnect, IP67 rating

Sensing distance: **Standard & Extended**
• 12 mm prox, from \$38.50
• 18 mm prox, from \$41.50
• 30 mm prox, from \$49.00

Starting from **\$38.50**



AC prox (12, 18, 30 mm)

V SERIES
Two-wire AC with embedded cable or quick-disconnect, 20-253 VAC input signals

Sensing distance: **Standard**
• 12 mm, from \$35.50
• 18 mm, from \$31.00
• 30 mm, from \$37.50

Starting from **\$31.00**