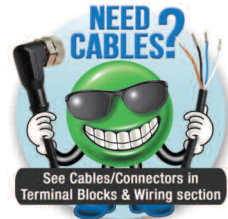


UK1 Series Ultrasonic Sensors

M18 (18 mm) plastic – Discrete or analog output

- 15 to 30 VDC
- Discrete models available with adjustable sensitivity
- Analog output models available
- Models available with analog and discrete switching outputs
- Complete overload protection
- IP67 rated
- LED status indicators
- Mounting hex nuts included
- Purchase cable for M12 plug separately
- Lifetime warranty



M12 Quick Disconnect



2m Output Cable

UK 1A Series Ultrasonic Discrete or Analog Output Sensor Selection Chart						
Part Number	Price	Sensing Range	Output State	Connection	Wiring	Function
UK1A-EN-0E	<--->	50 to 400 mm (1.97 to 15.75 in)	NPN, N.O./N.C. selectable	M12 quick disconnect	Diagram 1	1
UK1A-EN-0A	<--->		NPN, N.O./N.C. selectable	2m output cable	Diagram 1	1
UK1A-EP-0E	<--->		PNP, N.O./N.C. selectable	M12 quick disconnect	Diagram 2	1
UK1A-EP-0A	<--->		PNP, N.O./N.C. selectable	2m output cable	Diagram 2	1
UK1A-E1-0E	<--->		0 to 10 VDC analog output	M12 quick disconnect	Diagram 3	2
UK1A-E1-0A	<--->		0 to 10 VDC analog output	2m output cable	Diagram 3	2
UK1A-E2-0E	<--->		4 to 20 mA analog output	M12 quick disconnect	Diagram 3	2
UK1A-E2-0A	<--->		4 to 20 mA analog output	2m output cable	Diagram 3	2
UK1A-E3-0E	<--->		NPN, 2 N.O./N.C. selectable	M12 quick disconnect	Diagram 4	3
UK1A-E3-0A	<--->		NPN, 2 N.O./N.C. selectable	2m output cable	Diagram 4	3
UK1A-E4-0E	<--->		4 to 20 mA analog output, NPN, N.O./N.C. selectable	M12 quick disconnect	Diagram 5	4
UK1A-E4-0A	<--->		4 to 20 mA analog output, NPN, N.O./N.C. selectable	2m output cable	Diagram 5	4
UK1A-E5-0E	<--->		PNP, 2 N.O./N.C. selectable	M12 quick disconnect	Diagram 6	3
UK1A-E5-0A	<--->		PNP, 2 N.O./N.C. selectable	2m output cable	Diagram 6	3
UK1A-E6-0E	<--->		4 to 20 mA analog output, PNP, N.O./N.C. selectable	M12 quick disconnect	Diagram 7	4
UK1A-E6-0A	<--->		4 to 20 mA analog output, PNP, N.O./N.C. selectable	2m output cable	Diagram 7	4
UK1A-E7-0E	<--->		0 to 10 VDC analog output, PNP, N.O./N.C. selectable	M12 quick disconnect	Diagram 7	4
UK1A-E7-0A	<--->		0 to 10 VDC analog output, PNP, N.O./N.C. selectable	2m output cable	Diagram 7	4
UK1A-E9-0E	<--->		0 to 10 VDC analog output, NPN, N.O./N.C. selectable	M12 quick disconnect	Diagram 5	4
UK1A-E9-0A	<--->		0 to 10 VDC analog output, NPN, N.O./N.C. selectable	2m output cable	Diagram 5	4

UK1 Series Ultrasonic Sensors

UK 1C Series Ultrasonic Discrete or Analog Output Sensor Selection Chart

Part Number	Price	Sensing Range	Output State	Connection	Wiring	Function
UK1C-EN-0E	<--->	100 to 900 mm (3.94 to 35.43 in)	NPN, N.O./N.C. selectable	M12 quick disconnect	Diagram 1	1
UK1C-EN-0A	<--->		NPN, N.O./N.C. selectable	2m output cable	Diagram 1	1
UK1C-EP-0E	<--->		PNP, N.O./ N.C. selectable	M12 quick disconnect	Diagram 2	1
UK1C-EP-0A	<--->		PNP, N.O./N.C. selectable	2m output cable	Diagram 2	1
UK1C-E1-0E	<--->		0 to 10 VDC analog output	M12 quick disconnect	Diagram 3	2
UK1C-E1-0A	<--->		0 to 10 VDC analog output	2m output cable	Diagram 3	2
UK1C-E2-0E	<--->		4 to 20 mA analog output	M12 quick disconnect	Diagram 3	2
UK1C-E2-0A	<--->		4 to 20 mA analog output	2m output cable	Diagram 3	2
UK1C-E3-0E	<--->		NPN, 2 N.O./N.C. selectable	M12 quick disconnect	Diagram 4	3
UK1C-E3-0A	<--->		NPN, 2 N.O./N.C. selectable	2m output cable	Diagram 4	3
UK1C-E4-0E	<--->		4 to 20 mA analog output, NPN, N.O./N.C. selectable	M12 quick disconnect	Diagram 5	4
UK1C-E4-0A	<--->		4 to 20 mA analog output, NPN, N.O./N.C. selectable	2m output cable	Diagram 5	4
UK1C-E5-0E	<--->		PNP, 2 N.O./ N.C. selectable	M12 quick disconnect	Diagram 6	3
UK1C-E5-0A	<--->		PNP, 2 N.O./ N.C. selectable	2m output cable	Diagram 6	3
UK1C-E6-0E	<--->		4 to 20 mA analog output, PNP, N.O./N.C. selectable	M12 quick disconnect	Diagram 7	4
UK1C-E6-0A	<--->		4 to 20 mA analog output, PNP, N.O./N.C. selectable	2m output cable	Diagram 7	4
UK1C-E7-0E	<--->		0 to 10 VDC analog output, PNP, N.O./N.C. selectable	M12 quick disconnect	Diagram 7	4
UK1C-E7-0A	<--->		0 to 10 VDC analog output, PNP, N.O./N.C. selectable	2m output cable	Diagram 7	4
UK1C-E9-0E	<--->		0 to 10 VDC analog output, NPN, N.O./N.C. selectable	M12 quick disconnect	Diagram 5	4
UK1C-E9-0A	<--->		0 to 10 VDC analog output, NPN, N.O./N.C. selectable	2m output cable	Diagram 5	4

UK 1D Series Ultrasonic Discrete or Analog Output Sensor Selection Chart

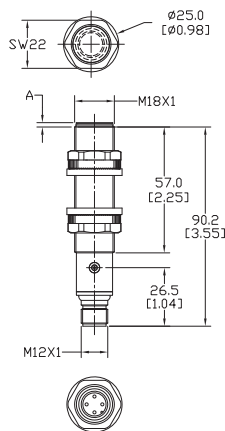
Part Number	Price	Sensing Range	Output State	Connection	Wiring	Function
UK1D-EN-0E	<--->	150 to 1600 mm (5.90 to 62.99 in)	NPN, N.O./N.C. selectable	M12 quick disconnect	Diagram 1	1
UK1D-EN-0A	<--->		NPN, N.O./N.C. selectable	2m output cable	Diagram 1	1
UK1D-EP-0E	<--->		PNP, N.O./ N.C. selectable	M12 quick disconnect	Diagram 2	1
UK1D-EP-0A	<--->		PNP, N.O./N.C. selectable	2m output cable	Diagram 2	1
UK1D-E1-0E	<--->		0 to 10 VDC analog output	M12 quick disconnect	Diagram 3	2
UK1D-E1-0A	<--->		0 to 10 VDC analog output	2m output cable	Diagram 3	2
UK1D-E2-0E	<--->		4 to 20 mA analog output	M12 quick disconnect	Diagram 3	2
UK1D-E2-0A	<--->		4 to 20 mA analog output	2m output cable	Diagram 3	2
UK1D-E3-0E	<--->		NPN, 2 N.O./N.C. selectable	M12 quick disconnect	Diagram 4	3
UK1D-E3-0A	<--->		NPN, 2 N.O./N.C. selectable	2m output cable	Diagram 4	3
UK1D-E4-0E	<--->		4 to 20 mA analog output, NPN, N.O./N.C. selectable	M12 quick disconnect	Diagram 5	4
UK1D-E4-0A	<--->		4 to 20 mA analog output, NPN, N.O./N.C. selectable	2m output cable	Diagram 5	4
UK1D-E5-0E	<--->		PNP, 2 N.O./ N.C. selectable	M12 quick disconnect	Diagram 6	3
UK1D-E5-0A	<--->		PNP, 2 N.O./ N.C. selectable	2m output cable	Diagram 6	3
UK1D-E6-0E	<--->		4 to 20 mA analog output, PNP, N.O./N.C. selectable	M12 quick disconnect	Diagram 7	4
UK1D-E6-0A	<--->		4 to 20 mA analog output, PNP, N.O./N.C. selectable	2m output cable	Diagram 7	4
UK1D-E7-0E	<--->		0 to 10 VDC analog output, PNP, N.O./N.C. selectable	M12 quick disconnect	Diagram 7	4
UK1D-E7-0A	<--->		0 to 10 VDC analog output, PNP, N.O./N.C. selectable	2m output cable	Diagram 7	4
UK1D-E9-0E	<--->		0 to 10 VDC analog output, NPN, N.O./N.C. selectable	M12 quick disconnect	Diagram 5	4
UK1D-E9-0A	<--->		0 to 10 VDC analog output, NPN, N.O./N.C. selectable	2m output cable	Diagram 5	4

UK1 Series Ultrasonic Sensors

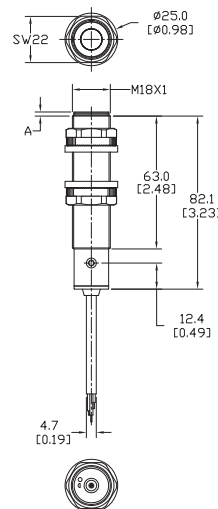
UK 1F Series Ultrasonic Discrete or Analog Output Sensor Selection Chart						
Part Number	Price	Sensing Range	Output State	Connection	Wiring	Function
UK1F-EN-0E	<--->	200 to 2200 mm (7.87 to 86.61 in)	NPN, N.O./N.C. selectable	M12 quick disconnect	Diagram 1	1
UK1F-EN-0A	<--->		NPN, N.O./N.C. selectable	2m output cable	Diagram 1	1
UK1F-EP-0E	<--->		PNP, N.O./N.C. selectable	M12 quick disconnect	Diagram 2	1
UK1F-EP-0A	<--->		PNP, N.O./N.C. selectable	2m output cable	Diagram 2	1
UK1F-E1-0E	<--->		0 to 10 VDC analog output	M12 quick disconnect	Diagram 3	2
UK1F-E1-0A	<--->		0 to 10 VDC analog output	2m output cable	Diagram 3	2
UK1F-E2-0E	<--->		4 to 20 mA analog output	M12 quick disconnect	Diagram 3	2
UK1F-E2-0A	<--->		4 to 20 mA analog output	2m output cable	Diagram 3	2
UK1F-E3-0E	<--->		NPN, 2 N.O./N.C. selectable	M12 quick disconnect	Diagram 4	3
UK1F-E3-0A	<--->		NPN, 2 N.O./N.C. selectable	2m output cable	Diagram 4	3
UK1F-E4-0E	<--->		4 to 20 mA output, NPN, N.O./N.C. selectable	M12 quick disconnect	Diagram 5	4
UK1F-E4-0A	<--->		4 to 20 mA output, NPN, N.O./N.C. selectable	2m output cable	Diagram 5	4
UK1F-E5-0E	<--->		PNP, 2 N.O./N.C. selectable	M12 quick disconnect	Diagram 6	3
UK1F-E5-0A	<--->		PNP, 2 N.O./N.C. selectable	2m output cable	Diagram 6	3
UK1F-E6-0E	<--->		4 to 20 mA analog output, PNP, N.O./N.C. selectable	M12 quick disconnect	Diagram 7	4
UK1F-E6-0A	<--->		4 to 20 mA analog output, PNP, N.O./N.C. selectable	2m output cable	Diagram 7	4
UK1F-E7-0E	<--->		0 to 10 VDC analog output, PNP, N.O./N.C. selectable	M12 quick disconnect	Diagram 7	4
UK1F-E7-0A	<--->		0 to 10 VDC analog output, PNP, N.O./N.C. selectable	2m output cable	Diagram 7	4
UK1F-E9-0E	<--->		0 to 10 VDC analog output, NPN, N.O./N.C. selectable	M12 quick disconnect	Diagram 5	4
UK1F-E9-0A	<--->		0 to 10 VDC analog output, NPN, N.O./N.C. selectable	2m output cable	Diagram 5	4

Dimensions

mm [inches]



DIMENSION TABLE	
DRAWING NO.	DIM A
UK1A and UK1C	1.0 [0.04]
UK1D	1.5 [0.06]
UK1F	2.5 [0.08]



DIMENSION TABLE	
DRAWING NO.	DIM A
UK1A and UK1C	1.0 [0.04]
UK1D	1.5 [0.06]
UK1F	2.5 [0.08]

UK1/UT1 Series Ultrasonic Sensors

Specifications					
Model	UK1A	UK1C	UK1D	UK1F	UT1B
Nominal Sensing Distance	50 to 400 mm (1.97 to 15.75 in)	100 to 900 mm (3.94 to 35.43 in)	150 to 1600 mm (5.90 to 62.99 in)	200 to 2200 mm (7.87 to 86.61 in)	250 mm to 3500 mm (9.84 in to 137.80 in)
Operating Distance (Sensing Range)	100 to 400 mm (3.94 to 15.75 in)	100 to 900 mm (3.94 to 35.43 in)	150 to 1600 mm (5.90 to 62.99 in)	200 to 2200 mm (7.87 to 86.61 in)	250 mm to 3500 mm (9.84 in to 137.80 in)
Output Type	See "Output State" column in selection chart				
Operating Voltage	15 to 30 VDC				12 to 30 VDC, 15 to 30 VDC (0 to 10 VDC)
No-load Supply Current	≤50 mA				
Operating (Load) Current	100 mA				
Off-state (Leakage) Current	10 µA @ 30 VDC				<10 µA (VDC max)
Analog Output	Voltage: minimum load is 3 kOhms / Current: maximum load is 500 Ohms at 24 VDC supply				
Voltage Drop	2.2 volts max@ 100 mA				
Switching Frequency	10 Hz	4 Hz	2 Hz	1 Hz	2 Hz
Repeat Accuracy	0.5%				0.2%
Time Delay Before Availability (tv)	≤500 ms; ≤900 ms (UK1*-E5/E3-0*)				≤300 ms; <900 ms for UT1B-EM/W-0*
Reverse Polarity Protection	Yes				
Short-Circuit Protection	Yes				
Linearity Error	<1%				0.5%
Ultrasonic Frequency	400 kHz	300 kHz	230 kHz	200 kHz	112 kHz
Ultrasonic Beam Angle	±8°	±7°	±8°	±7°	12° ±2°
Max. Response Time (digital output)	50 ms	125 ms	250 ms	500 ms	250 ms
Sensitivity Adjustment	Yes, via teach-in button				
Input Voltage Transient Protection	Yes				
Operating Temperature	-20° to 60°C (-4° to 140°F)				-20° to +70°C (-4° to +158°F)
Temperature Compensation	Yes				
Protection Degree	IEC IP67				
Indication/Switch Status	Multi-function LED indicator				
Housing Material	Polybutylene Terephthalate (PBT)				
Shock/Vibration	See Terminology Section				
Tightening Torque	1 Nm (0.737 lb-ft)				
Weight	35g (1.23 oz) (plug exit) 88g (3.10 oz) (cable exit)				90g (3.17 oz) (plug exit) 160g (5.64 oz) (cable exit)
Connection	M12 (12 mm) connector or 2m prewired output cable				
Agency Approvals	CE, cULus file E187310, RoHS				

Wiring Diagrams

Diagram 1

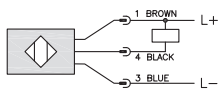


Diagram 2

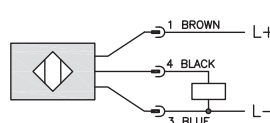


Diagram 3

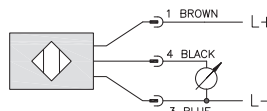


Diagram 4

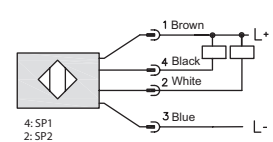


Diagram 5

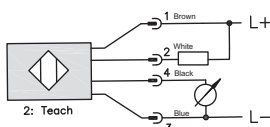


Diagram 6

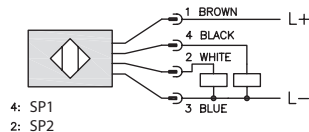
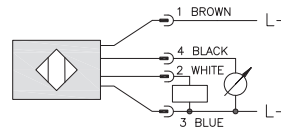
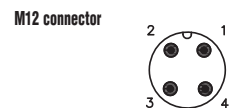


Diagram 7



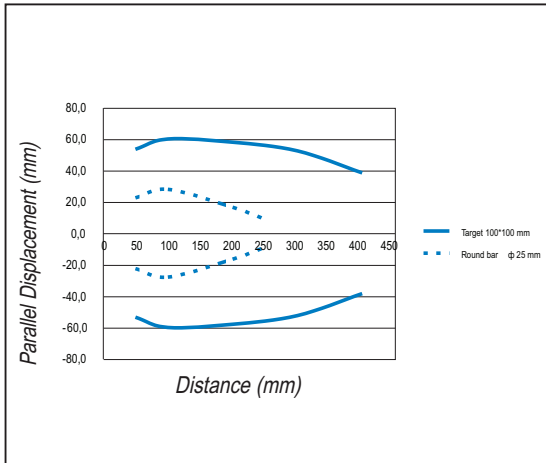
Connector



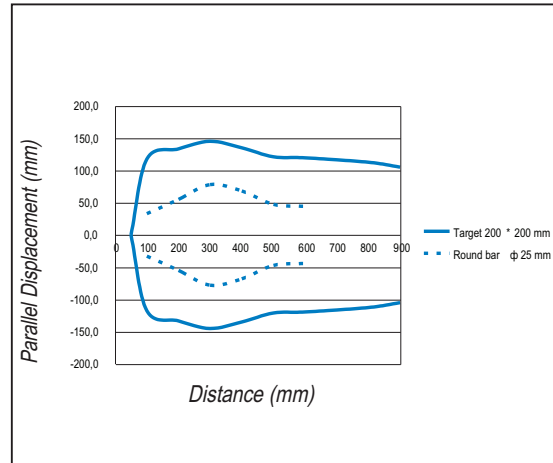
UK1/UT1 Series Ultrasonic Sensors

Characteristic Curves

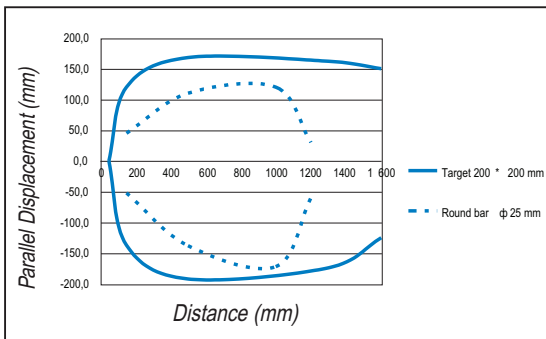
UK1A models



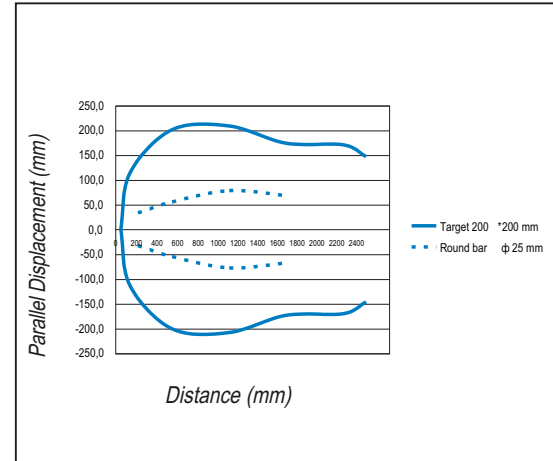
UK1C models



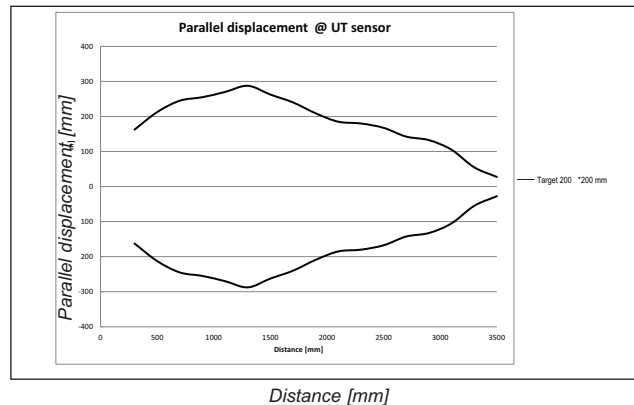
UK1D models



UK1F models



UT1B models

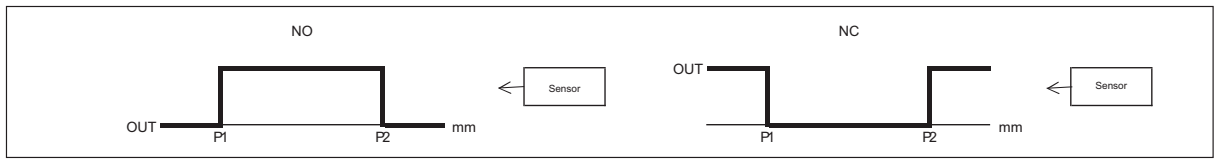


UK1/UT1 Series Ultrasonic Sensors

Functions

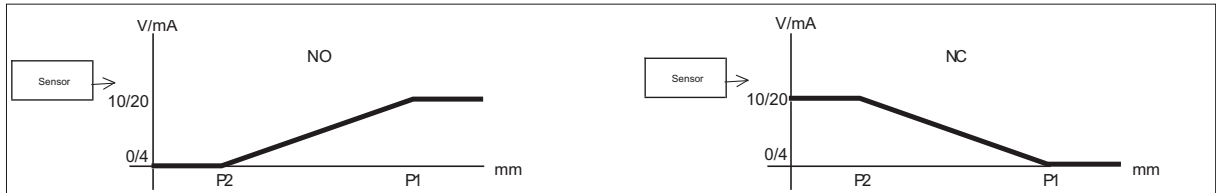
Function Models with single digital output

#1



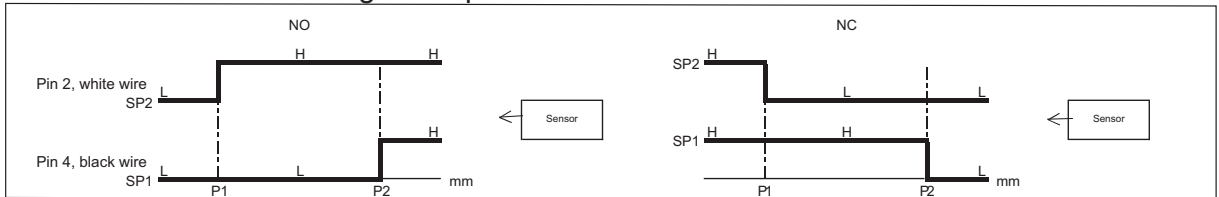
Models with single analog output

#2



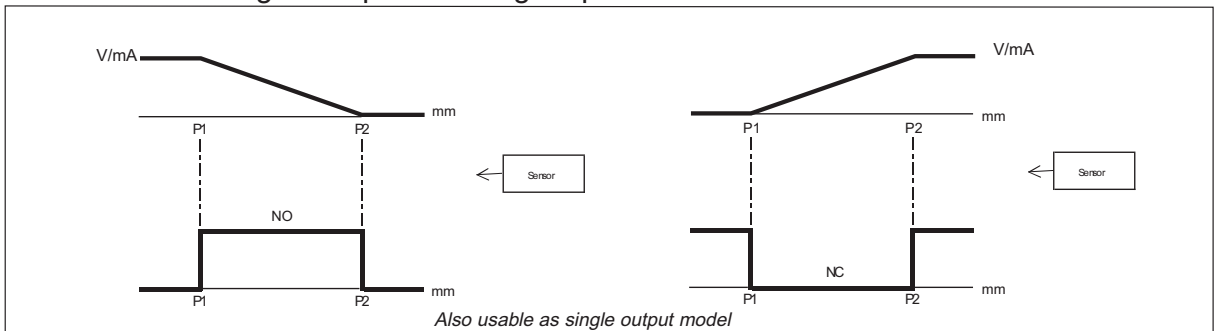
Models with double digital output

#3



Models with digital output + analog output

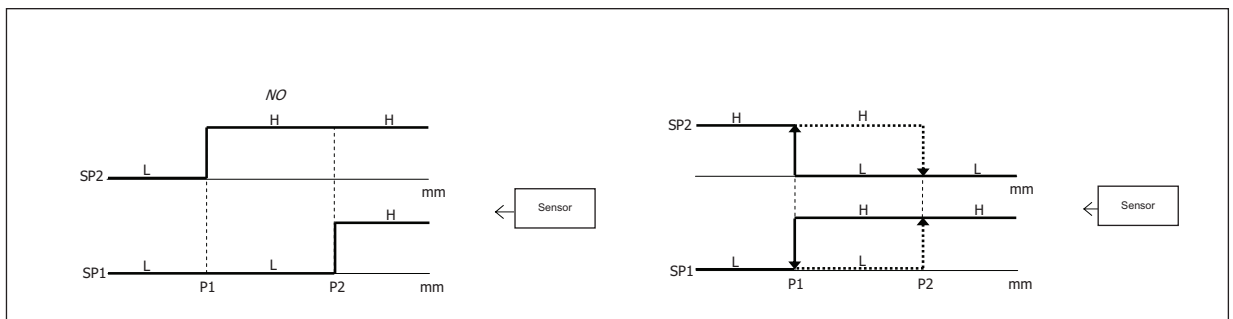
#4



Note: P1 maximum selected working distance and first point to select
 P2 minimum selected working distance and second point to select

Models with double digital output, hysteresis, + standard window

#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	<--->	2m (6.5 ft.)	3	Axial female	PVC	Figure 1
CD08-0A-020-C1	<--->	2m (6.5 ft.)	3	Right-angle female	PVC	Figure 2
CD08-0A-050-A1	<--->	5m (16.4 ft.)	3	Axial female	PVC	Figure 4
CD08-0C-050-A1	<--->	5m (16.4 ft.)	3	Axial female	PUR	Figure 3
CD08-0A-050-C1	<--->	5m (16.4 ft.)	3	Right-angle female	PVC	Figure 5
CD08-0C-050-C1	<--->	5m (16.4 ft.)	3	Right-angle female	PUR	Figure 5
CD08-0A-070-A1	<--->	7m (23 ft.)	3	Axial female	PVC	Figure 1
CD08-0A-070-C1	<--->	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*	<--->	5m (16.4 ft)	3	Axial female	PVC	Figure 8
CD12M-0D-050-A1*	<--->	5m (16.4 ft)	3	Axial female	PUR	Figure 9
CD12M-0B-050-C1*	<--->	5m (16.4 ft)	3	Right-angle female	PVC	Figure 10
CD12M-0D-050-C1*	<--->	5m (16.4 ft)	3	Right-angle female	PUR	Figure 11
CD12L-0B-020-A0	<--->	2m (6.5 ft)	4	Axial female	PVC	Figure 6
CD12L-0B-020-C0	<--->	2m (6.5 ft)	4	Right-angle female	PVC	Figure 7
CD12M-0B-070-A1	<--->	7m (23 ft)	4	Axial female	PVC	Figure 6
CD12M-0B-070-C1	<--->	7m (23 ft)	4	Right-angle female	PVC	Figure 7
7000-12221-2141000	<--->	10m (32.8 ft)	4	Axial female	PVC	Figure 13
7000-12221-2141500	<--->	15m (49.2 ft)	4	Axial female	PVC	Figure 13
7000-12341-2141000	<--->	10m (32.8 ft)	4	Right-angle female	PVC	Figure 14
7000-12341-2141500	<--->	15m (49.2 ft)	4	Right-angle female	PVC	Figure 14
7000-12241-2150300	<--->	3m (9.8 ft)	5	Axial female	PVC	Figure 15
7000-12241-2150500	<--->	5m (16.4 ft)	5	Axial female	PVC	Figure 15
7000-12241-2151000	<--->	10m (32.8 ft)	5	Axial female	PVC	Figure 15
7000-12361-2150300	<--->	3m (9.8 ft)	5	Right-angle female	PVC	Figure 16
7000-12361-2150500	<--->	5m (16.4 ft)	5	Right-angle female	PVC	Figure 16
7000-12361-2151000	<--->	10m (32.8 ft)	5	Right-angle female	PVC	Figure 16
7000-17041-2950300	<--->	3m (9.8 ft)	8	Axial female	PUR	Figure 17
7000-17041-2950500	<--->	5m (16.4 ft)	8	Axial female	PUR	Figure 17
7000-17041-2951000	<--->	10m (32.8 ft)	8	Axial female	PUR	Figure 17
7000-17061-2950300	<--->	3m (9.8 ft)	8	Right-angle female	PUR	Figure 18
7000-17061-2950500	<--->	5m (16.4 ft)	8	Right-angle female	PUR	Figure 18
7000-17061-2951000	<--->	10m (32.8 ft)	8	Right-angle female	PUR	Figure 18
7000-19041-7050300	<--->	3m (9.8 ft)	12	Axial female	PUR	Figure 19
7000-19041-7050500	<--->	5m (16.4 ft)	12	Axial female	PUR	Figure 19
7000-19041-7051000	<--->	10m (32.8 ft)	12	Axial female	PUR	Figure 19
7000-19061-7050300	<--->	3m (9.8 ft)	12	Right-angle female	PUR	Figure 20
7000-19061-7050500	<--->	5m (16.4 ft)	12	Right-angle female	PUR	Figure 20
7000-19061-7051000	<--->	10m (32.8 ft)	12	Right-angle female	PUR	Figure 20

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

Sensor Cables and Connectors

Shielded M12 Cables with quick-disconnect plugs



7000-17121-2941000



7000-17141-2940500

- 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

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	<--->	5m (16.4 ft)	4	Axial female	PUR	Figure 21
7000-13201-3311000	<--->	10m (32.8 ft)	4	Axial female	PUR	Figure 21
7000-13261-3310500	<--->	5m (16.4 ft)	4	Right-angle female	PUR	Figure 22
7000-13261-3311000	<--->	10m (32.8 ft)	4	Right-angle female	PUR	Figure 22
7000-13221-3490500	<--->	5m (16.4 ft)	5	Axial female	PUR	Figure 23
7000-13221-3491000	<--->	10m (32.8 ft)	5	Axial female	PUR	Figure 23
7000-13281-3490500	<--->	5m (16.4 ft)	5	Right-angle female	PUR	Figure 24
7000-13281-3491000	<--->	10m (32.8 ft)	5	Right-angle female	PUR	Figure 24
7000-17121-2940500	<--->	5m (16.4 ft)	8	Axial female	PUR	Figure 25
7000-17121-2941000	<--->	10m (32.8 ft)	8	Axial female	PUR	Figure 25
7000-17141-2940500	<--->	5m (16.4 ft)	8	Right-angle female	PUR	Figure 26
7000-17141-2941000	<--->	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

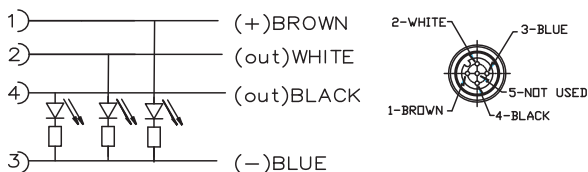
- PUR (polyurethane) jacket for oily and direct sunlight applications
- IP67 / IP68 / IP69K, II rated
- LED indication for 10-36 VDC PNP sensors only



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*	<--->	2m (6.5 ft)	4	Right-angle female	Yes	PUR	Figure 12
EVC179*	<--->	5m (16.4 ft)	4	Right-angle female	Yes	PUR	Figure 12
EVC180*	<--->	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)

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

Dimensions

mm [inches]

Figure 1

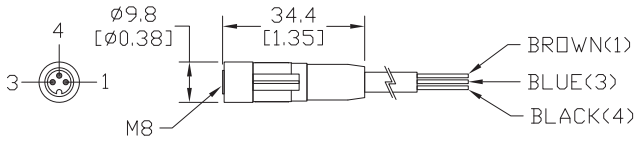


Figure 2

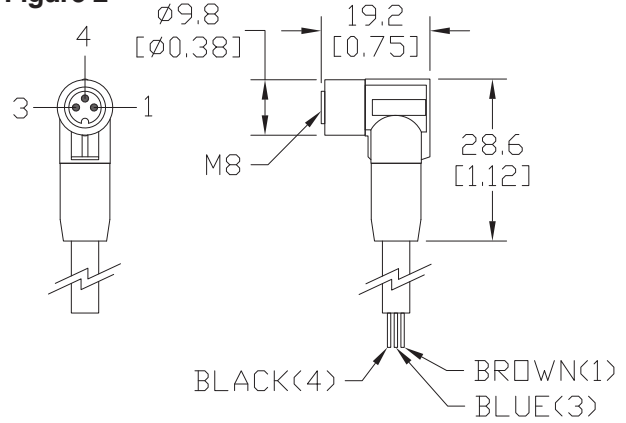


Figure 3

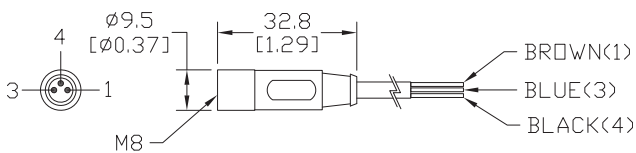


Figure 4

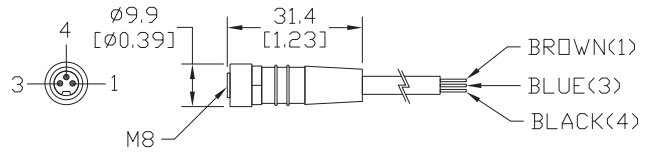


Figure 5

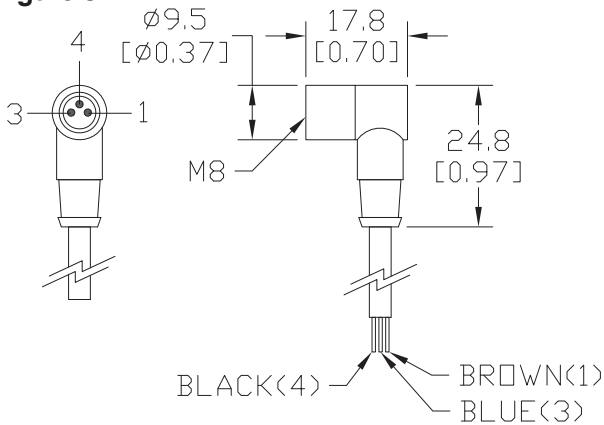


Figure 6

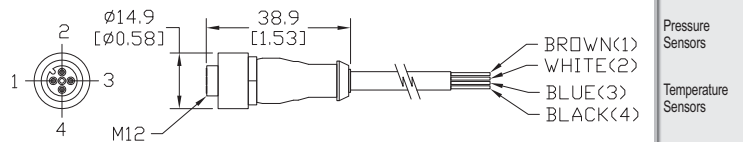


Figure 7

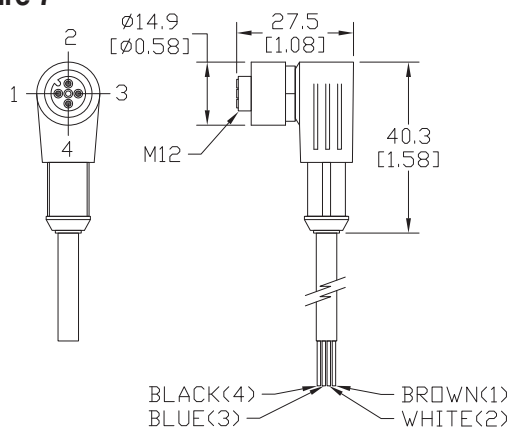
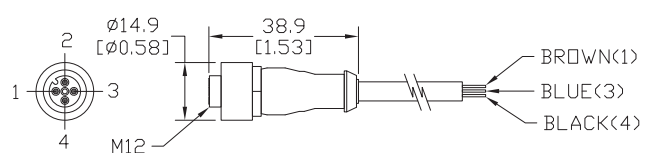


Figure 8



Sensor Cables and Connectors

Dimensions

mm [inches]

Figure 9

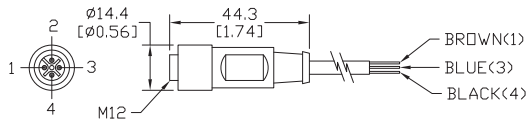


Figure 10

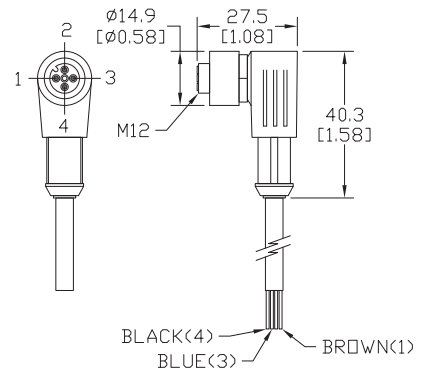


Figure 11

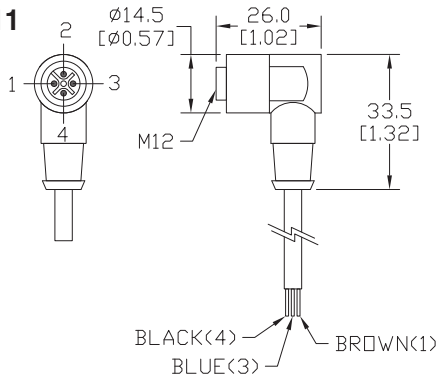


Figure 12

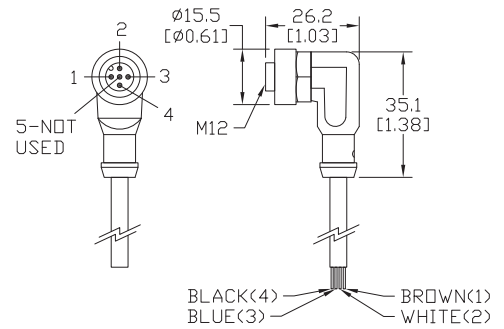


Figure 13

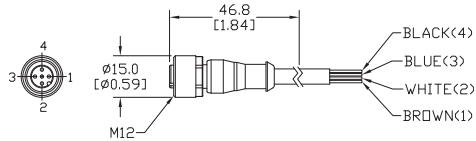


Figure 14

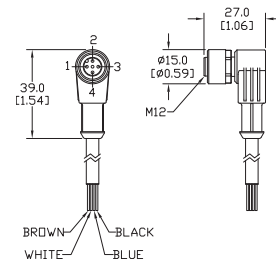


Figure 15

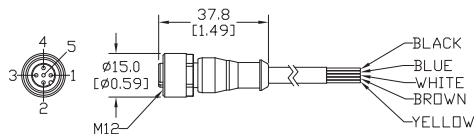
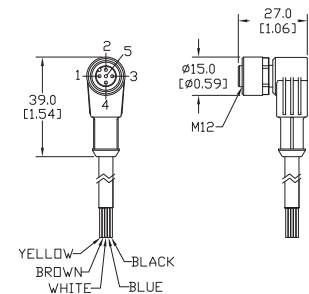


Figure 16



Sensor Cables and Connectors

Dimensions

mm [inches]

Figure 17

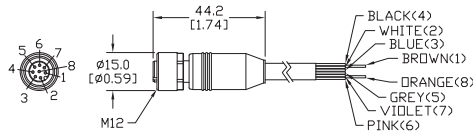


Figure 18

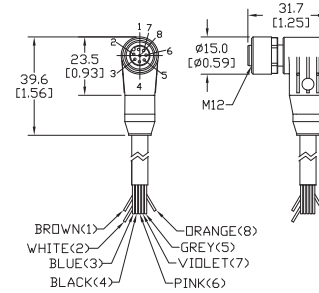


Figure 19

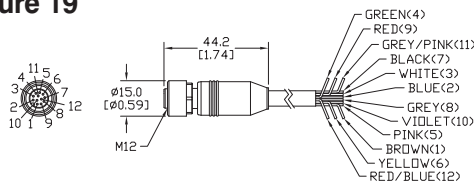


Figure 20

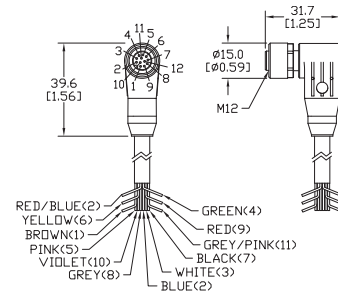


Figure 21

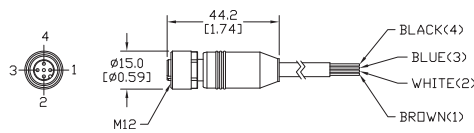


Figure 22

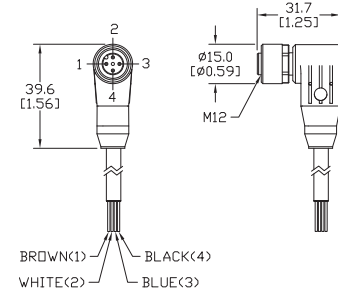


Figure 23

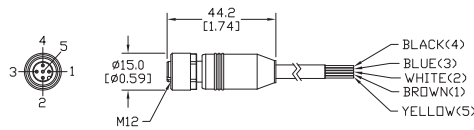


Figure 24

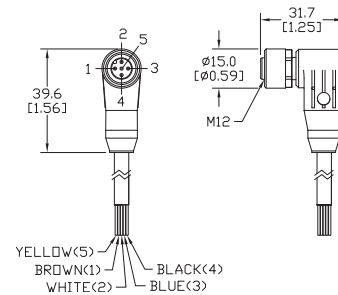


Figure 25

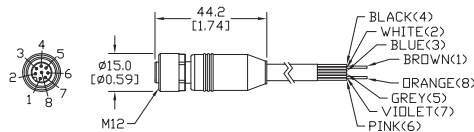
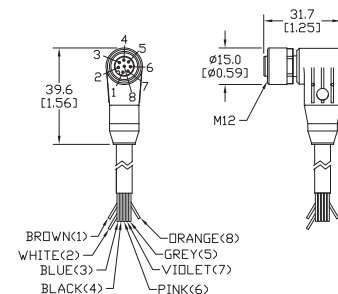


Figure 26



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>