

proSense™ RTD Temperature Probes

BY AUTOMATIONDIRECT



Features

- 10 mm diameter, 4-wire 100 ohm RTD sensing element and 1/4 inch diameter, 3-wire 100 ohm RTD sensing element versions
- DIN EN 60751, Class A
TCR 0.00385 ohm/ohm/°C
- Probe made of durable 316 stainless steel
- Measuring temperature range of -40 to 302°F (-40 to 150°C)
- Probe lengths of 160 mm, 260 mm, 360 mm, and 560 mm (10 mm diameter only)
- 4-pin M12 plug
- 3-Year warranty

Agency Approvals

- cULus, File number E324411
- RoHS



ProSense RTD Series						
Part Number	Description	Pcs/Pkg	Wt(lb)	Price	Use With	Cable Assemblies
RTD0100-06-010-H	RTD, Pt 100, 1/4 inch (6 mm) diameter probe, 6.3 inch (160 mm) long, 3-wire, 4-pin micro M12 plug, -40 to 302°F (-40 to 150°C) range.	1	0.10	<--->	CF06-25N RTD0100-06-010-50N	CD12L-0B-020-A0 CD12L-0B-020-C0 CD12M-0B-070-A1 CD12M-0B-070-C1 CDP12-0B-010-AA CDP12-0B-030-AA CDP12-0B-010-BB CDP12-0B-030-BB (order separately - See Proximity Sensor section for cable specs)
RTD0100-06-020-H	RTD, Pt 100, 1/4 inch (6 mm) diameter probe, 10.2 inch (260 mm) long, 3-wire, 4-pin micro M12 plug, -40 to 302°F (-40 to 150°C) range.	1	0.20	<--->	CF06-25N RTD0100-06-020-50N	
RTD0100-06-030-H	RTD, Pt 100, 1/4 inch (6 mm) diameter probe, 14.2 inch (360 mm) long, 3-wire, 4-pin micro M12 plug, -40 to 302°F (-40 to 150°C) range.	1	0.30	<--->	CF06-25N RTD0100-06-030-50N	
RTD0100-10-010-H	RTD, Pt 100, 10mm (0.4 inch) diameter probe, 160mm (6.3 inch) long, 4-wire, 4-pin micro M12 plug, -40 to 302°F (-40 to 150°C) range.	1	0.10	<--->	CF10-50N RTD0100-10-010-50N	
RTD0100-10-020-H	RTD, Pt 100, 10mm (0.4 inch) diameter probe, 260mm (10.2 inch) long, 4-wire, 4-pin micro M12 plug, -40 to 302°F (-40 to 150°C) range.	1	0.15	<--->	CF10-50N RTD0100-10-020-50N	
RTD0100-10-030-H	RTD, Pt 100, 10mm (0.4 inch) diameter probe, 360mm (14.2 inch) long, 4-wire, 4-pin micro M12 plug, -40 to 302°F (-40 to 150°C) range.	1	0.22	<--->	CF10-50N RTD0100-10-030-50N	
RTD0100-10-050-H	RTD, Pt 100, 10mm (0.4 inch) diameter probe, 560mm (22.0 inch) long, 4-wire, 4-pin micro M12 plug, -40 to 302°F (-40 to 150°C) range.	1	0.33	<--->	CF10-50N RTD0100-10-050-50N	

ProSense RTD Series Technical Specifications	
Application	Liquids and Gases
Accuracy	± (0.15°C + 0.002 x T)
Measuring Element	1 x Pt 100, to DIN EN 60751, class A; TCR = 0.00385 Ω/Ω/°C
Dynamic Response (DIN EN 60751)**	*t _{0.5} = 1 sec/ t _{0.9} = 3 sec
Minimum Installation Depth	0.6 in (15 mm)
Nominal Pressure	2320 psi (160 bar) - Refer to compression mounting fitting maximum pressure rating.
Ambient Temperature	-13 to 176°F (-25 to 80°C)
Protection	IP 68 / IP 69K, Class III
Housing Material	Stainless steel (316S12)
Materials (wetted parts)	Stainless steel (316S12)
Measuring Range	-40 to 302°F (-40 to 150°C)
Connection	M12 connector; gold-plated contacts

* t_{0.5} = a 50% of full scale change in output when immersed in water at 0.4m/s, t_{0.9} = a 90% FS change.

** Response time is reduced when installed in a thermowell. Be sure to use thermal compound and install the probe so that it contacts the end of the thermowell for faster response.



NOTE: CHECK THE CHEMICAL COMPATIBILITY OF THE SENSOR'S WETTED PARTS WITH THE MEDIUM TO BE MEASURED.

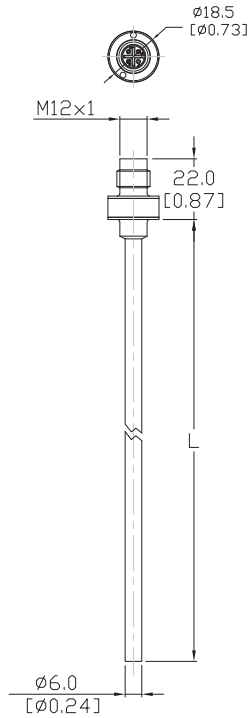
WWW.AUTOMATIONDIRECT.COM/STATIC/SPECS/PROSENSECHEMRESISTANCE.PDF

proSense™ RTD Temperature Probes

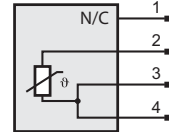
AutomationDirect

RTD Dimensions/Wiring

RTD0100-06 Series



Wiring



Cable Assembly Wiring Colors:

- Pin 1 - Brown
- Pin 2 - White
- Pin 3 - Blue
- Pin 4 - Black

Note: wiring colors are based on AutomationDirect CD12L and CD12M 4-pole cable assemblies.

Part Number	Length	L
RTD0100-06-010-H	160 mm	[6.3]
RTD0100-06-020-H	260 mm	[10.2]
RTD0100-06-030-H	360 mm	[14.2]

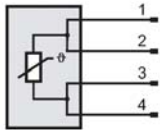
Dimensions shown mm [inches]



NOTE: MOUNT 1/4 INCH DIAMETER RTDs BY USING PROSENSE RTDTW SERIES THERMOWELLS AND / OR CF06-25N COMPRESSION FITTING.

RTD0100-10 Series

Wiring



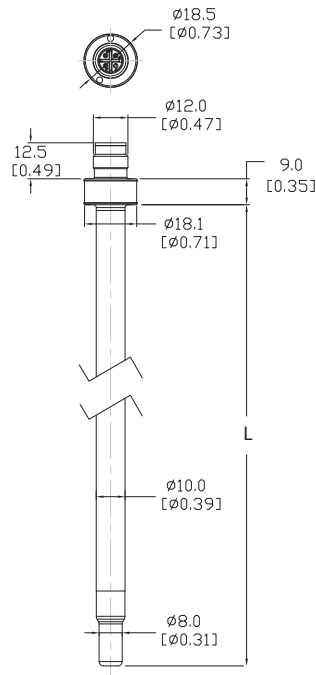
Cable Assembly Wiring Colors:

- Pin 1 - Brown
- Pin 2 - White
- Pin 3 - Blue
- Pin 4 - Black

Note: wiring colors are based on AutomationDirect CD12L and CD12M 4-pole cable assemblies.

Part Number	Length	L
RTD0100-10-010-H	160 mm	[6.3]
RTD0100-10-020-H	260 mm	[10.2]
RTD0100-10-030-H	360 mm	[14.2]
RTD0100-10-050-H	560 mm	[22.0]

Dimensions shown mm [inches]



NOTE: MOUNT 10MM DIAMETER RTDs BY USING PROSENSE RTDTW SERIES THERMOWELLS AND / OR CF10-50N COMPRESSION FITTING.



Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/Lights

Process

Relays/Timers

Comm.

Terminal Blocks & Wiring

Power

Circuit Protection

Enclosures

Tools

Pneumatics

Appendix

Product Index

Part # Index

Sensors Accessories: Cables

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, 5m, 7m and 10m cable lengths
- PVC (polyvinyl chloride) jacket for typical industrial applications
- PUR (polyurethane) jacket for oily and direct sunlight applications
- IP67 rated



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



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



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



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

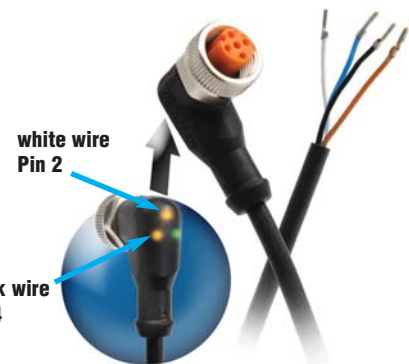
M8 Quick-Disconnect Cables (Pico, Nano)							
Part Number	Price	Length	Poles	Connector	LED	Jacket	Dimensions
M8 Quick-Disconnects							
CD08-0A-020-A1	<--->	2m (6.5ft.)	3	Axial	No	PVC	Figure 1
CD08-0A-020-C1	<--->	2m (6.5ft.)	3	Right-angle	No	PVC	Figure 2
CD08-0A-050-A1	<--->	5m (16.4ft.)	3	Axial	No	PVC	Figure 4
CD08-0C-050-A1	<--->	5m (16.4ft.)	3	Axial	No	PUR	Figure 3
CD08-0A-050-C1	<--->	5m (16.4ft.)	3	Right-angle	No	PVC	Figure 5
CD08-0C-050-C1	<--->	5m (16.4ft.)	3	Right-angle	No	PUR	Figure 5
CD08-0A-070-A1	<--->	7m (23ft.)	3	Axial	No	PVC	Figure 1
CD08-0A-070-C1	<--->	7m (23ft.)	3	Right-angle	No	PVC	Figure 2

M12 Quick-Disconnect Cables (Euro, Micro DC-Single Key)							
Part Number	Price	Length	Poles	Connector	LED	Jacket	Dimensions
M12 Quick-Disconnects							
CD12L-0B-020-A0	<--->	2m (6.5ft)	4	Axial	No	PVC	Figure 6
CD12L-0B-020-C0	<--->	2m (6.5ft)	4	Right-angle	No	PVC	Figure 7
CD12M-0B-050-A1*	<--->	5m (16.4ft)	3	Axial	No	PVC	Figure 8
CD12M-0D-050-A1*	<--->	5m (16.4ft)	3	Axial	No	PUR	Figure 9
CD12M-0B-050-C1*	<--->	5m (16.4ft)	3	Right-angle	No	PVC	Figure 10
CD12M-0D-050-C1*	<--->	5m (16.4ft)	3	Right-angle	No	PUR	Figure 11
CD12M-0B-070-A1	<--->	7m (23ft)	4	Axial	No	PVC	Figure 6
CD12M-0B-070-C1	<--->	7m (23ft)	4	Right-angle	No	PVC	Figure 7

* Note: Do not use with: DM, FA, QX, SS, SSF, SU, TU, VM, VK, MV, MS or MSF series sensors. These sensors require 4-pole cables.

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



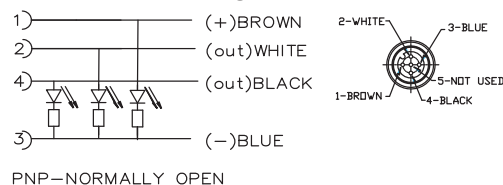
white wire Pin 2

black wire Pin 4

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 (6.5ft)	4	Right-angle	Yes	PUR	Figure 12
EVC179*	<--->	5m (16.4ft)	4	Right-angle	Yes	PUR	Figure 12
EVC180*	<--->	10m (32.8ft)	4	Right-angle	Yes	PUR	Figure 12

*Note: LED for 10 to 36 VDC PNP only.
Do not use when white wire (Pin 2) is used for selection of a sensor function.

LED Models' Wiring



Sensors Accessories: Cables

Cable Specifications					
Specification	M8		M12		M12 with LED
Length	2m (6.5ft) / 7m (23ft)	5m (16.4ft)	2m (6.5ft) / 7m (23ft)	5m (16.4ft)	2m (6.5 ft) / 5m (16.4ft) / 10m (32.8ft)
Nominal Voltage	50VAC/75VDC	60VAC/DC	300VAC	250VAC/DC	10 to 36VDC
Max Current	4A		4A		4A
LED Current Loading	N/A	N/A	N/A	N/A	10V input Brown wire LED: 1.7mA White and/or Black LED: 0.9mA 36V input Brown wire LED: 7.3mA White and/or Black LED: 4.7mA
Protection Degree	IP67	IP65 / IP68 / IP69K	IP67	PVC: IP68 PUR: IP68 / IP69K	IP67 / IP68 / IP69K
Material Nut	brass; nickel plated		brass; nickel plated		brass; nickel plated
Jacket Material	PVC	PVC:CD08-0A-xxx. PUR:CD08-0C-xxx	PVC	PVC:CD12M-0B-xxx. PUR:CD12M-0D-xxx	PUR
Housing Material	PUR		PUR		PUR
Contacts Material	Copper-Tin Alloy (CuSn) -gold plated		Copper-Tin Alloy (CuSn) -gold plated		Gold plated brass
Tightening Torque	0.5 Nm	≤ 0.4 Nm	0.5 Nm	≤ 0.4 Nm	0.6 to 1.5 Nm
Conductors Cross Section (AWG)	0.25mm ² (24 AWG)	0.25mm ² (24 AWG)	0.25mm ² (24 AWG)	0.34mm ² (22 AWG)	4 x 0.34mm ² (4 x 22 AWG)
Ø Outer Cable	5mm	PVC: 4 mm PUR: 4 mm	5mm	PVC: 4.2 mm PUR: 4.3 mm	5mm
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)	-25° to +90°C (-13° to 194°F)
Environmental	N/A	Halogen free, Silicone free	N/A	Halogen free, Silicone free	Halogen free, Silicone free
Function Display Power LED	N/A	N/A	N/A	N/A	Green
Switching Status LED	N/A	N/A	N/A	N/A	2 x Yellow
Drag Chain (Roller Cable Tray) Suitability	Bending Radius	min. 10 x cable diameter			
	Bending Cycles	N/A	N/A	N/A	>5 million
	Travel Speed	N/A	N/A	N/A	Max. 3.3 m/s for a horizontal travel length of 5 meters and max. acceleration of 5 m/s ²
	Torsional Strain	N/A	N/A	N/A	±180°/m
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	



Company Information

Systems Overview

Programmable Controllers

Field I/O

Software

C-more & other HMI

Drives

Soft Starters

Motors & Gearbox

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temperature Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

Comm.

Terminal Blocks & Wiring

Power

Circuit Protection

Enclosures

Tools

Pneumatics

Appendix

Product Index

Part # Index

Sensors Accessories: Cables

Dimensions (in/mm)

Figure 1

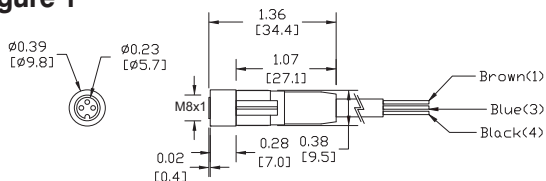


Figure 2

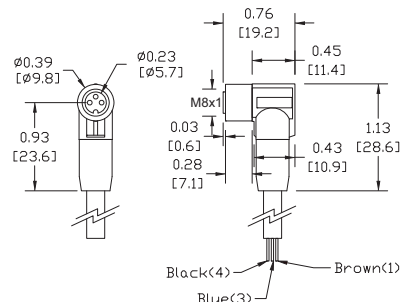


Figure 3

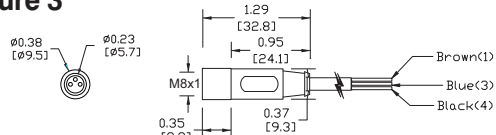


Figure 4

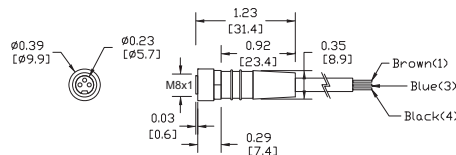


Figure 5

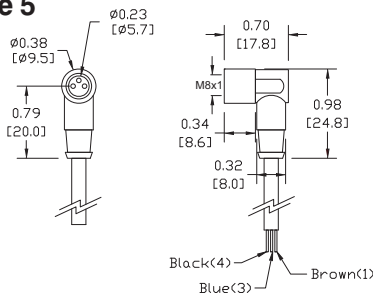


Figure 6

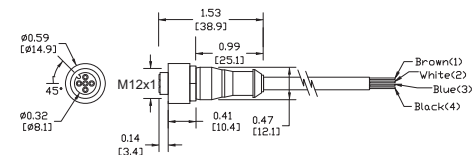


Figure 7

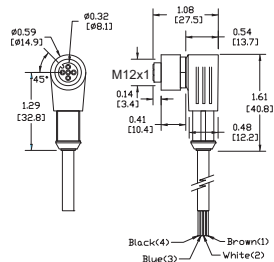


Figure 8

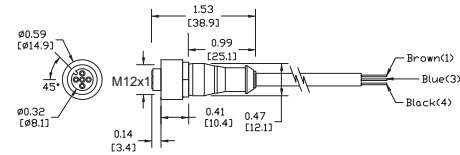


Figure 9

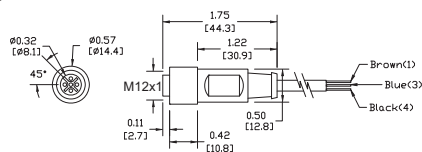


Figure 10

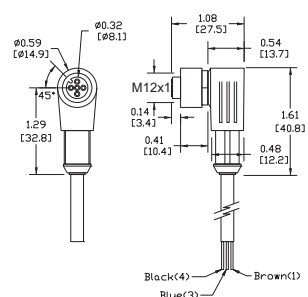


Figure 11

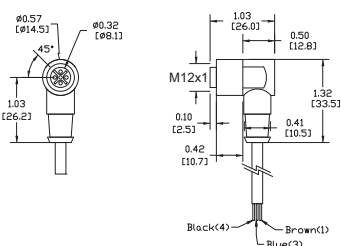
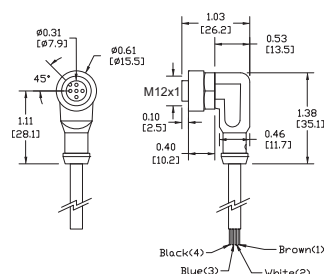


Figure 12



Sensors Accessories: Cables

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	<-->	1m (3.28ft)	3	2 Axial. One male and one female connector	PVC	Figure 1
CDP08-0A-010-BB	<-->	1m (3.28ft)	3	2 Right-angle. One male and one female connector	PVC	Figure 3
CDP08-0A-030-AA	<-->	3m (9.84ft)	3	2 Axial. One male and one female connector	PVC	Figure 2
CDP08-0A-030-BB	<-->	3m (9.84ft)	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	<-->	1m (3.28ft)	4	2 Axial. One male and one female connector	PVC	Figure 4
CDP12-0B-010-BB	<-->	1m (3.28ft)	4	2 Right-angle. One male and one female connector	PVC	Figure 5
CDP12-0B-030-AA	<-->	3m (9.84ft)	4	2 Axial. One male and one female connector	PVC	Figure 4
CDP12-0B-030-BB	<-->	3m (9.84ft)	4	2 Right-angle. One male and one female connector	PVC	Figure 5

Patch Cables with LED

Available patch cables with LED include:

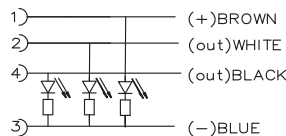
- Right-angle M12 female plug with LED indication on one end and axial male plug on the other end
- 0.3m, 0.6m, 1m, 2m, 5m, and 10m cable lengths

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



black wire
Pin 4

LED Models' Wiring



PNP—NORMALLY OPEN



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

**Note: LED for 10 to 36 VDC PNP only.
Do not use when white wire (Pin 2) is used for selection of a sensor function.**



- Company Information
- Systems Overview
- Programmable Controllers
- Field I/O
- Software
- C-more & other HMI
- Drives
- Soft Starters
- Motors & Gearbox
- Steppers/ Servos
- Motor Controls
- Proximity Sensors
- Photo Sensors
- Limit Switches
- Encoders
- Current Sensors
- Pressure Sensors
- Temperature Sensors
- Pushbuttons/ Lights
- Process
- Relays/ Timers
- Comm.
- Terminal Blocks & Wiring
- Power
- Circuit Protection
- Enclosures
- Tools
- Pneumatics
- Appendix
- Product Index
- Part # Index

Sensors Accessories: Cables

Cable Specifications		
Specification	M8 / M12	M12 with LED
Length	1m (3.28ft.) / 3m (9.84ft.)	0.3m (0.98ft) / 0.6m (1.97ft) / 1m (3.28ft) 2m (6.5ft) / 5m (16.4ft) / 10m (32.8ft)
Nominal Voltage	50VAC/75VDC	10 to 36VDC
Max Current	4A	4A
	N/A	10V input Brown wire LED: 1.7mA White and/or Black LED: 0.9mA 36V input Brown wire LED: 7.3mA White and/or Black LED: 4.7mA
Protection Degree	IEC IP67	IEC IP67/IP68/IP69K
Material Nut	Brass: nickel plated	Brass: nickel plated
Jacket Material	PVC	PUR
Housing Material	PUR	Connector: Orange PUR, Socket: Black PUR
Contacts Material	Copper-tin(CuSn)=Brass	Brass; gold plated
Conductors Cross Section (AWG)	0.34mm ²	0.34mm ² (22 AWG)
Tightening Torque	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	5mm
Temperature Range	-25° to +70°C (-13° to 158°F)	-25° to +90°C (-13° to 194°F)
Environmental		Halogen-free, Silicone-free
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	

Sensors Accessories: Cables

Dimensions (in/mm)

Figure 1

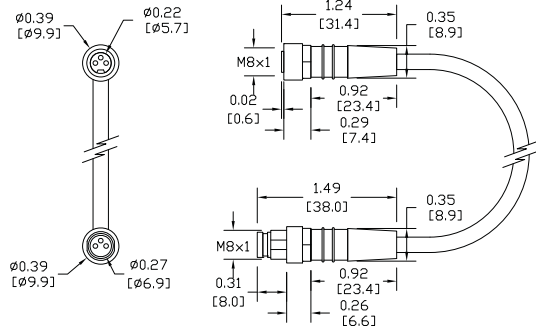


Figure 2

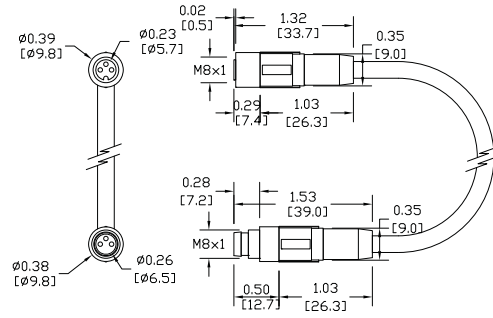


Figure 3

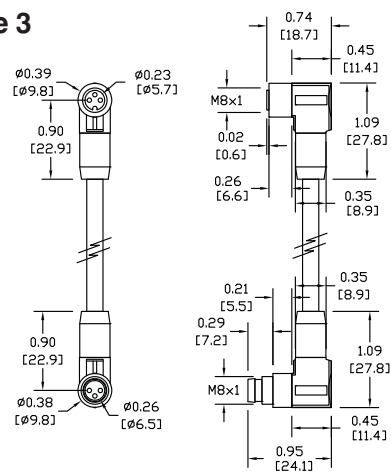


Figure 4

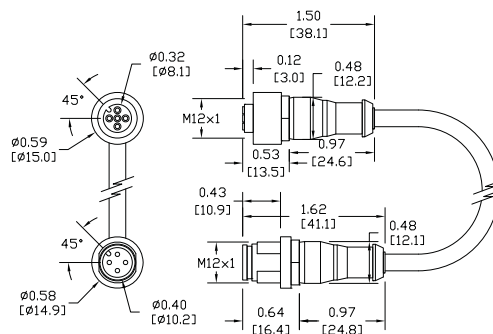


Figure 5

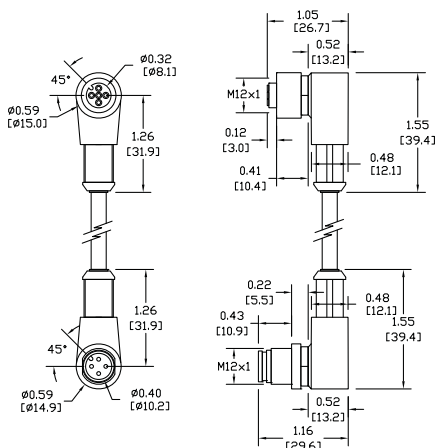


Figure 6

