prosense® TTD Series Temperature Transmitters

Overview

• **Converts RTD temperature probe output to 4-20mA signal**
• High accuracy 2-wire or 3-wire 4-20mA temperature transmitter
• M12 quick-disconnect for fast mounting
• 3 available temperature ranges
• 3-year warranty
• LED indication of loop current

Note: Above photo shows assembled unit with TTD Transmitter and RTD0100 Probe

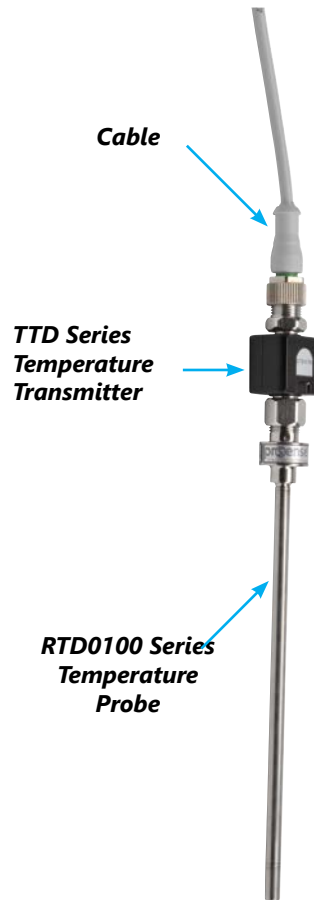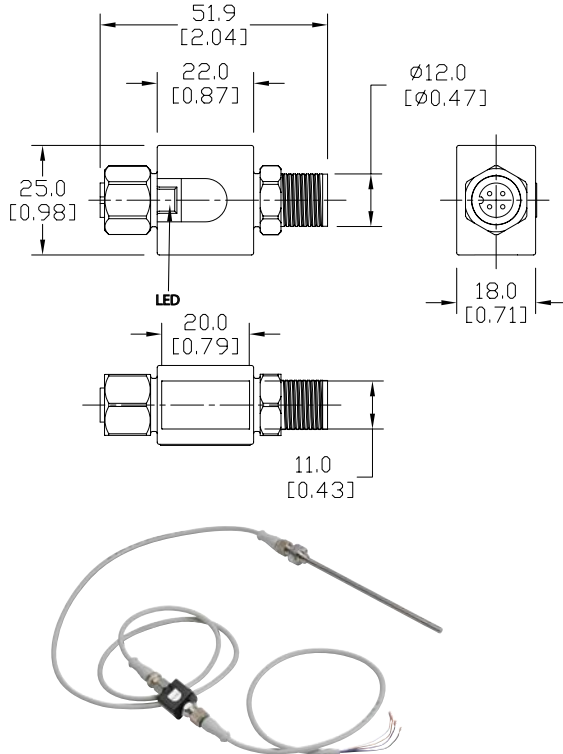| ProSense Temperature Transmitter TTD Series					
Part Number	Description	Pcs/Pkg	Wt (lb)	Price	Cable Assemblies*
TTD-20-N40160F-H	Temperature transmitter, 4-20mA output, over temperature range of -40°F to 160°F (-40°C to 71.1°C)	1	0.25	$79.00	CD12L-0B-020-A0 CD12L-0B-020-C0 CD12M-0B-070-A1 CD12M-0B-070-C1 CDP12-0B-010-AA CDP12-0B-030-AA CDP12-0B-010-BB CDP12-0B-030-BB
TTD-20-N40300F-H	Temperature transmitter, 4-20mA output, over temperature range of -40°F to 300°F (-40°C to 148.8°C)	1	0.25	$79.00	

* Order separately - See proximity sensor section for cable specs.

ProSense TTD Series Technical Specifications			
	TTD-20-N40160F-H	*TTD-20-N40300F-H*	*TTD-20-30300F-H*
Operating Voltage	20 to 32 VDC		
Electrical Connection	M12 connector; gold-plated contacts (torque 5 to 13 in/lbs)		
Short-Circuit Protection	Yes (non-latching)		
Overload Protection	Yes		
Reverse Polarity Protection	Yes		
Analog Output	4 to 20 mA (min/max 3.85 to 22 mA)		
Maximum Load	Rmax: 300 Ω		
Accuracy	± 0.3°C + (± 0.1 % span)		
Resolution	± 0.3°C + (± 0.1 % span)		
Measuring - Display [ms] / Cycle [ms]	100		
Scaled Range	-40°F to 160°F (-40°C to 71.1°C)	-40°F to 300°F (-40°C to 148.8°C)	30°F to 300°F (-1.1°C to 148.8°C)
Dynamic Response (DIN EN 60751)	*t0.5 + 1 sec. / t0.9 = 3 sec.		
Housing Material	Polyamide PACM 12 (TROGAMID); PED; sealing:FPM (Viton); nut: stainless steel 316L / 1.4404; connector: TPU (urethane)		
Ambient Temperature	-13°F to 158°F (-25°C to 70°C)		
Storage Temperature	-40°F to 185°F (-40°C to 85°C)		
Protection	IP 67		
Insulation Resistance	> 100MΩ / 500 VDC		
Shock Resistance	50g (DIN / IEC 68-2-27, 11ms)		
Vibration Resistance	20g (DIN / EN 68-2-6, (10 to 2000 Hz)		
EMC	EN 61326		
EN 61000-4-2 ESD	4 kV CD / 8 kV AD		
EN 61000-4-3 HF Radiated	10 V/m		
EN 61000-4-4 Burst	2 kV		
EN 61000-4-5 Surge	1 kV		
EN 61000-4-6 HF Conducted	10 V		
Power-On Delay Time	1 sec.		
Agency Approvals	UL 508 listed, File # E324411, CE, RoHS		

prosense® TTD Series Temperature Transmitter

Dimensions

mm [inches]

51.9 [2.04]
22.0 [0.87]
Ø12.0 [Ø0.47]
25.0 [0.98]
18.0 [0.71]

LED

20.0 [0.79]
11.0 [0.43]

Cable

TTD Series Temperature Transmitter

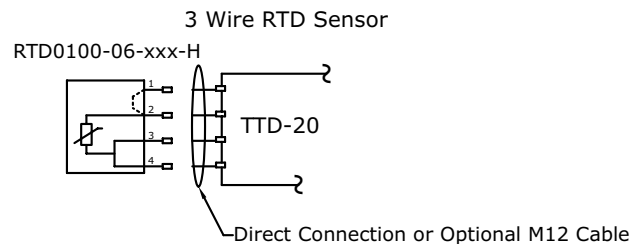**RTD0100 Series Temperature Probe**

Note: The TTD transmitter can be located remotely from the RTD0100 probe by using an additional patch cable.

Wiring

INPUT SENSOR CONNECTION
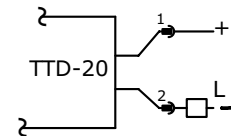
OUTPUT SIGNAL CONNECTION

3 Wire RTD Sensor

RTD0100-06-xxx-H

TTD-20

Direct Connection or Optional M12 Cable

2 Wire 4-20mA Output Signal

TTD-20

1 +
2 L

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.
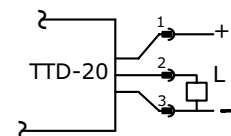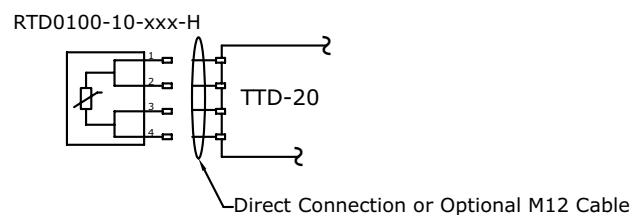
2 1
3 4

NEED CABLES?
See Cables/Connectors in Wiring (WD) section

4 Wire RTD Sensor

RTD0100-10-xxx-H

TTD-20

Direct Connection or Optional M12 Cable

3 Wire 4-20mA Output Signal

TTD-20

1 +
2
3 L

prosense® RTD Probes with M12 Cable Connector

Overview

- 100 ohm platinum RTD element
- Class A accuracy
- 316 stainless steel sheath to protect from harsh sensing applications
- 6 mm (0.24") diameter 3-wire or 10 mm (0.4") diameter 4-wire probes
- Probe lengths of 30mm, 50mm, 100mm, 150mm, 160mm, 260mm, and 360mm
- Process connections include 1/4" or 1/2" male NPT threads, 3-A approved sanitary CIP tri-clamp, or compression fitting for adjustable insertion depth.
- 4-pin M12 cable connector plug for simplified wiring

NEED CABLES? See Cables/Connectors in Wiring (WD) section

c**UL**us *(RTD1 & RTD1-S models)*

c**UL**us *(RTD0100 models)*

CE

A3 *(RTD1-S models)*

Part Number	Wt(lb)	Price	Type	Diameter	Length	Temperature Sensing Range	Process Connection	Thermowell (purchased separately)	Drawing Link
RTD0100-06-010-H	0.10	$40.50	Pt100, 3-wire	6mm (0.24")	160mm (6.3")	–40 to 302°F (–40 to 150°C)	None, use compression fitting (CF06-25N purchased separately)	RTDTW-06-010-50N CF06-25N	PDF
RTD0100-06-020-H	0.20	$42.00			260mm (10.24")			RTDTW-06-020-50N CF06-25N	PDF
RTD0100-06-030-H	0.30	$46.00			360mm (14.17")			RTDTW-06-030-50N CF06-25N	PDF
RTD0100-10-010-H	0.10	$40.50	Pt100 4-wire	10mm (0.4")	160mm (6.3")		None, use compression fitting (CF10-50N purchased separately)	RTDTW-10-010-50N CF10-50N	PDF
RTD1-25N-030-H	0.2	$78.00	Pt100, 3-wire	6mm (0.24")	30mm (1.18")	–58 to 302°F (–50 to 150°C)	1/4" Male NPT	None	PDF
RTD1-25N-050-H	0.21	$79.00			50mm (1.97")				PDF
RTD1-25N-100-H	0.22	$80.00			100mm (3.94")				PDF
RTD1-25N-150-H	0.23	$81.00			150mm (5.91")				PDF
RTD1-50N-030-H	0.3	$80.00			30mm (1.18")		1/2" Male NPT		PDF
RTD1-50N-050-H	0.31	$81.00			50mm (1.97")				PDF
RTD1-50N-100-H	0.32	$83.00			100mm (3.94")			TW04-0x STW04-0x	PDF
RTD1-50N-150-H	0.33	$84.00			150mm (5.91")			TW06-0x STW06-0x	PDF
RTD1-S15-030-H	0.41	$123.00			30mm (1.18")		1-1/2" Sanitary CIP Tri-Clamp (3-A)	None	PDF
RTD1-S15-050-H	0.42	$124.00			50mm (1.97")				PDF
RTD1-S15-100-H	0.44	$128.00			100mm (3.94")				PDF
RTD1-S15-150-H	0.44	$129.00			150mm (5.91")				PDF

Scan the QR Code or click to view the RTD1 Series product insert.

prosense® RTD Probes with M12 Cable Connector

RTD Probes With M12 Cable Connector Technical Specifications		
Series	**RTD0100 Series**	**RTD1 Series**
Sensing Element	Single 100Ω platinum (Pt100), TCR = 0.00385 Ω/Ω/°C	
Initial Accuracy	DIN EN 60751, Class A, ±(0.15 + 0.002[t])°C	
Probe Diameter	6mm (0.24") or 10mm (0.4")	6mm (0.24")
Minimum Installation Depth	15mm (0.6")	30mm (1.2")
Response Time	*t0.5 = 1 sec/ t0.9 = 3 sec (DIN EN 60751)	*t0.5 = <1 sec/ t0.9 = <2 sec (DIN EN 60751)
Electrical Connection	4-pin M12 quick disconnect	
Housing Material	Stainless steel (316L)	Stainless steel (304)
Materials (Wetted Parts)	Stainless steel (316L)	Stainless steel (316L)
Protection	IP68 or IP 69K with appropriately rated cable	IP66/67 or IP69K with appropriately rated cable
Ambient Temperature	-13 to 176°F (-25 to 80°C)	-40 to 185°F (-40 to 85°C)
Process Temperature	-40 to 302°F (-40 to 150°C)	-58 to 302°F (-50 to 150°C)
Storage Temperature	-40 to 212°F (-40 to 100°C)	-40 to 185°F (-40 to 85°C)
Pressure Rating	2320 psig (160 bar) maximum	With NPT process connection, 1450 psig (100bar) maximum With Sanitary Tri-clamp process connection, 232 psig (16bar) maximum
Certifications	cULus, CE	cURus, CE, 3-A (RTD1-S models only)

$t_{0.5}$ = a 50% of full scale change in output when immersed in water flowing at 0.4m/s, $t_{0.9}$ = a 90% FS change.
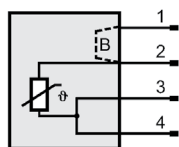
Note: Check the chemical compatibility of the sensor's wetted parts with the medium to be measured.
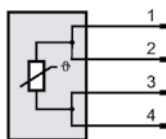
Note: Response time will be slower when installed in a thermowell. Be sure to install the probe so that it contacts the end of the thermowell for faster response. Thermal compound may be used depending on application.

Wiring Information RTD0100-06

B = Internal Jumper

Wiring Information RTD0100-10 Series

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

Cable Assembly Wiring Colors:
Pin 1 - Brown
Pin 2 - White
Pin 3 - Blue
Pin 4 - Black

RTD1 Series