



TEL-TRU MANUFACTURING COMPANY

STAA3 SANITARY RTD PROBE ASSEMBLY WITH BUILT-IN TRANSMITTER

FEATURES:

- Configured to meet your exact needs
- High accuracy, long term stability, consistent repeatability
- Fast response time
- All welded construction
- Options include various termination and transmitter selections
- NIST traceable calibration certificate available

Standard sanitary assemblies include a proven thin film Pt100 platinum RTD sensing element, packaged in an all welded 316SS stainless steel probe. Configurations feature Tri-Clover® fittings and surface finishes that comply with 3A Standard Number 74-07 for food, dairy, beverage, pharmaceutical and chemical processing applications. A compact programmable transmitter can also be built into the probe assembly.

SPECIFICATIONS:

Environmental

Protection:	IP67 (NEMA 6)
Operating temp. range:	-40°F to 176°F (-40°C to 80°C)

Mechanical

Probe lengths:	2.5" to 18" (6.35cm to 45.72cm)
Probe diameters:	0.187" or 0.250" (0.47cm to 0.64cm)
Probe and housing material:	316SS with Tri-Clamp CIP fitting
Max operating pressure:	1500 PSIG max (probe only)
Connection head:	Polypropylene, 316SS, Anodized Aluminum

Electrical

Input:	RTD, type Pt100 ($\alpha=0.00385$), 3-wire
Sensor:	Thin film Pt100 RTD TCR .00385 Accuracy Class A +/- .06% at 0°C, Conforms to IEC 751
Lead wires:	3 wires, Teflon insulated
Termination:	M12 connector with or without male and cable, strain relief with cable See configurator at teltru.com
Output (transmitter equipped)	4-20mA loop powered Induced current required < 2.5mA Current limit < 25mA
Power supply:	9-32VDC, polarity protected
Supply effect:	0.001%/V
Accuracy:	$\pm(.25^{\circ}\text{C} + 0.40\%$ of span) with one-point calibration ¹ $\pm(.10^{\circ}\text{C} + 0.10\%$ of calibrated span) with two-point calibration ²
Maximum loop resistance:	$[(V_{\text{supply}} - 7) / 0.025\text{A}]$ ohms
Sensor open circuit:	Upscale 24mA or Downscale 2.5mA
Undershooting measurement range:	Decreases to 3.5mA
Exceeding measurement range:	Increases to 23mA
Switch on delay:	2s
Electronic response time:	1s at startup



RFI effect: 1% or less typical
 Isolation: 500VDC Input/Output
 Temp. effects: $\pm 0.001\%$ of Span/ $^{\circ}\text{C}$
 Long term drift: $< 0.1\%$ FS/Year

¹ Max. error on complete span. Error at calibration point $< 0.1\%$ of Span.

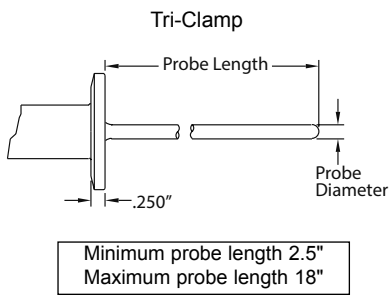
² Max. error on complete calibrated span. Error at calibration points $< 0.1\%$ of Span.

Temperature ranges: See temperature chart for standard ranges
 Custom ranges available from -103 to 392°F
 (-75 to 200°C)
 Minimum span 45°F (25°C)

Temperature Range Chart			
Ranges available (factory configured, built-in transmitters)			
Code	Range $^{\circ}\text{F}$	Code	Range $^{\circ}\text{C}$
52	-50/120	71	-50/100
53	-40/160	72	-50/25
54	0/140	73	-50/50
55	0/180	84	-40/70
50	0/200	86	-20/120
56	0/220	74	-10/110
67	0/250	75	0/50
57	0/300	95	0/60
59	20/240	EI	0/80
60	25/125	76	0/100
61	50/250	77	0/150
62	50/300		

► DIMENSIONS:

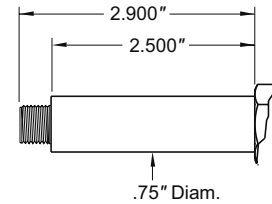
Process Connection



Termination

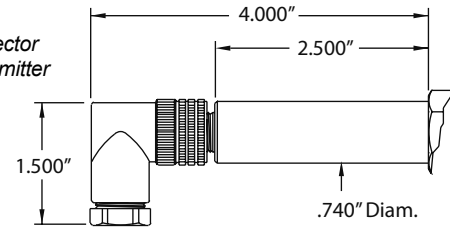
E00

M12 Connector w/o Mate



AXX

M12 w/Mating Connector and Integrated Transmitter



► ELECTRICAL CONNECTION AND WIRING (with built-in transmitter):

Electrical connection of the compact thermometer (view from above) – M12 plug, 4-pin

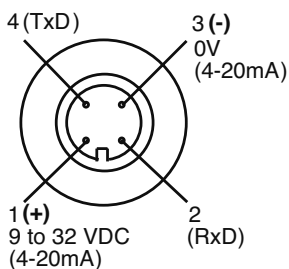
Pin 1: Power supply 9 to 32Vdc; Current output 4 to 20mA

Pin 2: PC configuration cable connection

Pin 3: Power supply 0Vdc; Current output 4 to 20mA

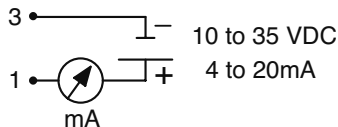
Pin 4: PC configuration cable connection

AXX (M12 w/Mating Connector) and
E00 (M12) w/out Mate



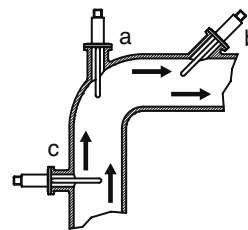
Wiring

1 = red
 3 = black



Installation Instructions

Mounting Location



- At angle sections, against the direction of flow.
- In smaller pipe, against the direction of flow.
- Perpendicular to the direction of flow.

Refer to www.teltru.com/rtd_trans.asp for temperature and pressure limits.



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