

MODELS TMPT AND TMPTR - THERMOCOUPLE OR RTD CONNECTOR WITH BUILT IN 4-20 mA TEMPERATURE TRANSMITTER



- HIGH ACCURACY, REPEATABILITY AND STABILITY
- CONNECTOR DESIGN CONVERTS INPUT SIGNAL TO A STANDARD 2-WIRE, 4-20 mA OUTPUT
- PROVIDES "OPEN SENSOR WIRE" SIGNAL INDICATION
- ENCAPSULATED HOUSING
- COMPENSATES FOR LONG LEAD WIRES
- FACTORY CALIBRATED, NO ADJUSTMENTS REQUIRED
- MODELS FOR J, K, T (UNGROUND) THERMOCOUPLES AND 100 OHM, 0.00385 3-WIRE RTD'S

GENERAL DESCRIPTION

The model TMPT's internal circuitry conditions the non-linear millivolt output of a thermocouple, across a specified temperature range, and retransmits it as a standard 2-wire 4-20 mA analog output. The TMPTR also provides a 2-wire 4-20 mA output by conditioning the resistive change of a 100Ω, 0.00385 RTD sensor and transmitting it as a 4-20 mA output.

SPECIFICATIONS

TMPT SPECIFICATIONS

1. **SUPPLY VOLTAGE:** 9 to 24 VDC @ 30 mA
2. **OUTPUT:** 4 to 20 mA
3. **TEMPERATURE RANGE:** See Ordering Information
4. **ACCURACY:** $\pm 0.5\%$ of full scale millivolt input @ 23° C plus the non-linearity of the thermocouple type (note that the TMPT does not compensate for thermocouple non-linearity)
5. **TEMPERATURE COEFFICIENT:** $\pm 0.002 \text{ mA}/^{\circ}\text{C}$
6. **MAX LOOP LOAD:** $(\Omega) = (V \text{ supply} - 9 \text{ V})/0.02 \text{ A}$
7. **TRANSMITTER OPERATING TEMPERATURE:** -40° to 85°C
8. **AGENCY APPROVAL:** CE
9. **RESPONSE TIME:** 120 msec (0 to 63% FS)
10. **THERMOCOUPLE JUNCTION:** Ungrounded
11. **INPUT CONNECTION:** Standard size female connector mates with both standard and miniature male connectors.
12. **CABLE CONNECTIONS:** 10 foot 2-wire shielded cable

WIRE COLOR CODE	FUNCTION
RED	+VDC
BLACK	OUTPUT
WHITE	SHIELD

* Max cable run is determined by max loop load and wire resistance ($\approx 1000\text{ft}$).

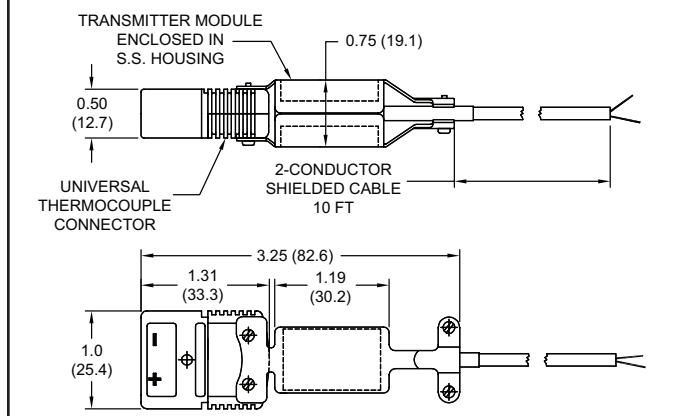
TMPTR SPECIFICATIONS

1. **SUPPLY VOLTAGE:** 9 to 24 VDC @ 30 mA
2. **OUTPUT:** 4 to 20 mA
3. **TEMPERATURE RANGE:** 2 – 569° C (36 – 1056° F)
4. **INPUT:** 3 wire, PT100 ($\alpha = 0.00385$)
5. **OPEN SENSOR WIRE INDICATION:**
 - Leg 1: Open = 27 mA
 - Leg 2: Open = 2.2 mA
 - Leg 3: Open = 2.2 mA
6. **INPUT CONNECTION:** 3 prong miniature connector mates with TMPCNM09
7. **CABLE CONNECTIONS:** 10 foot 2-wire shielded cable

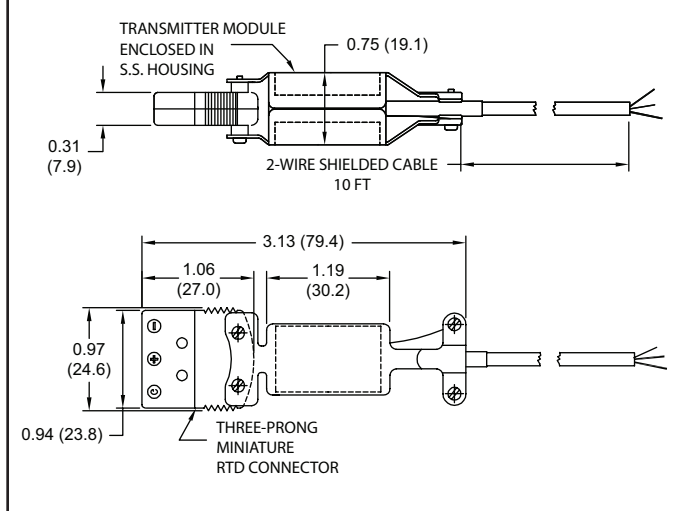
WIRE COLOR CODE	FUNCTION
RED	+VDC
BLACK	OUTPUT
WHITE	SHIELD

* Max cable run is determined by max loop load and wire resistance ($\approx 1000\text{ft}$).

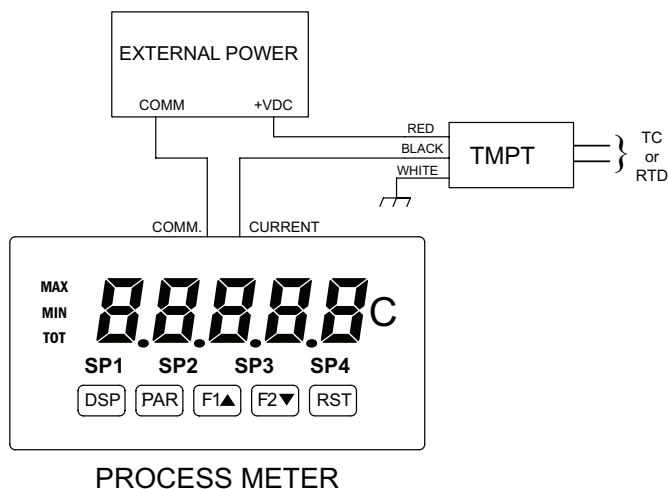
DIMENSIONS In inches (mm)



DIMENSIONS In inches (mm)



WIRING CONNECTION



ORDERING INFORMATION

MODEL NO.	DESCRIPTION	TC ANSI TYPE	TEMPERATURE RANGE	PART NUMBER
TMPT	TC TRANSMITTER WITH FEMALE CONNECTOR	K	-18 to 1093 °C (0 to 2000 °F)	TMPTRN01
		K	-18 to 538 °C (0 to 1000 °F)	TMPTRN02
		T	-18 to 121 °C (0 to 250 °F)	TMPTRN03
		T	-18 to 399 °C (0 to 750 °F)	TMPTRN04
		J	-18 to 121 °C (0 to 250 °F)	TMPTRN05
		J	-18 to 538 °C (0 to 1000 °F)	TMPTRN06
TMPTR	RTD TRANSMITTER WITH FEMALE CONNECTOR	-	2 to 569 °C (36 to 1056 °F)	TMPTRN07

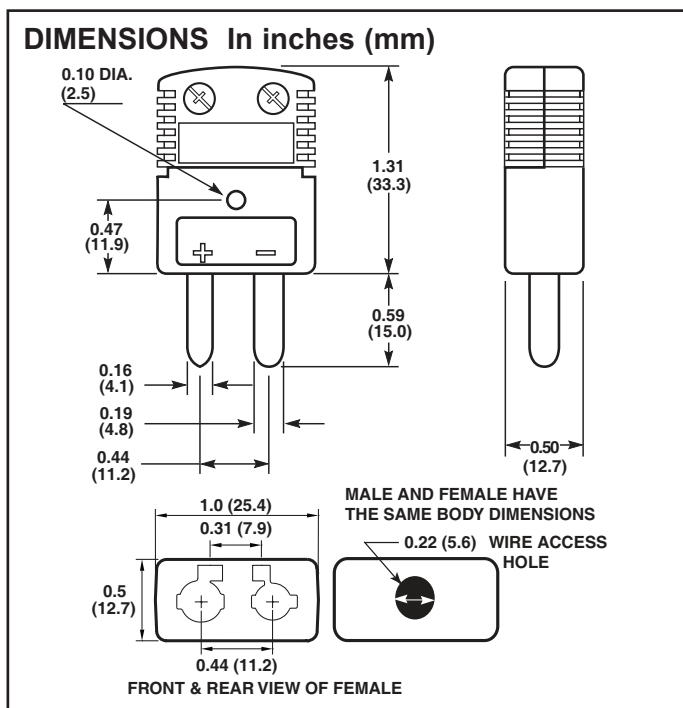
Covered by US and Foreign Patents.

ACCESSORIES

MODEL TMPCN - QUICK DISCONNECT STANDARD CONNECTORS

GENERAL DESCRIPTION

Standard Connectors are for use with the Standard Quick Disconnect TC Probes. They are available in both male and female termination, and include a "write on label" for easy identification. The female standard connector is a universal connector, meaning it can be used to terminate male versions of both the standard and miniature connector.



SPECIFICATIONS

1. **CONNECTOR BODY MATERIAL:** Glass Filled Nylon, for temperature ranges of -29 to 220° C. (-20 to 428 °F)
2. **CONNECTOR BODY COLOR:** ANSI color coded
3. **WIRE GAGE:** Accepts stranded or solid wire up to 14 AWG
4. **WIRE TERMINATION:** Combination Phillips/Slot Screws

ORDERING INFORMATION

DESCRIPTION	TYPE	TERMINATION	PART NUMBER
STANDARD CONNECTOR	K	MALE	TMPCNS01
		FEMALE	TMPCNS02
	T	MALE	TMPCNS03
		FEMALE	TMPCNS04
	E	MALE	TMPCNS05
		FEMALE	TMPCNS06
	J	MALE	TMPCNS07
		FEMALE	TMPCNS08

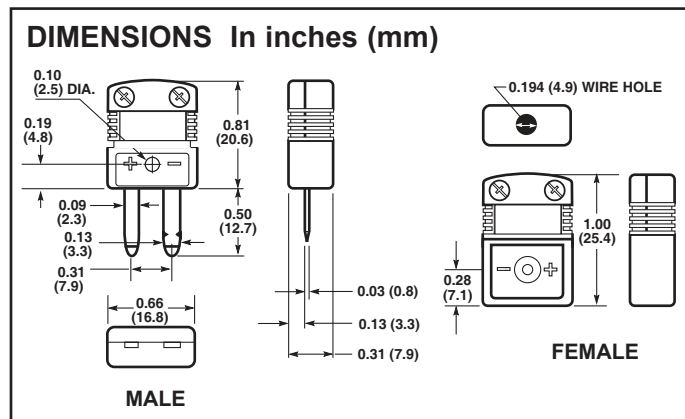
MODEL TMPCN - QUICK DISCONNECT MINIATURE CONNECTORS

GENERAL DESCRIPTION

Miniature Connectors are for use with the Miniature Quick Disconnect TC Probes. They are available in both male and female termination, and include a "write on label" for easy identification.

SPECIFICATIONS

1. **CONNECTOR BODY MATERIAL:** Glass Filled Nylon, for temperature ranges of -29 to 220° C. (-20 to 428 °F)
2. **CONNECTOR BODY COLOR:** ANSI color coded
3. **WIRE GAGE:** Accepts stranded or solid wire up to 20 AWG
4. **WIRE TERMINATION:** Combination Phillips/Slot Screws



ORDERING INFORMATION

DESCRIPTION	TYPE	TERMINATION	PART NUMBER
MINIATURE CONNECTOR	K	MALE	TMPCNM01
		FEMALE	TMPCNM02
	T	MALE	TMPCNM03
		FEMALE	TMPCNM04
	E	MALE	TMPCNM05
		FEMALE	TMPCNM06
	J	MALE	TMPCNM07
		FEMALE	TMPCNM08

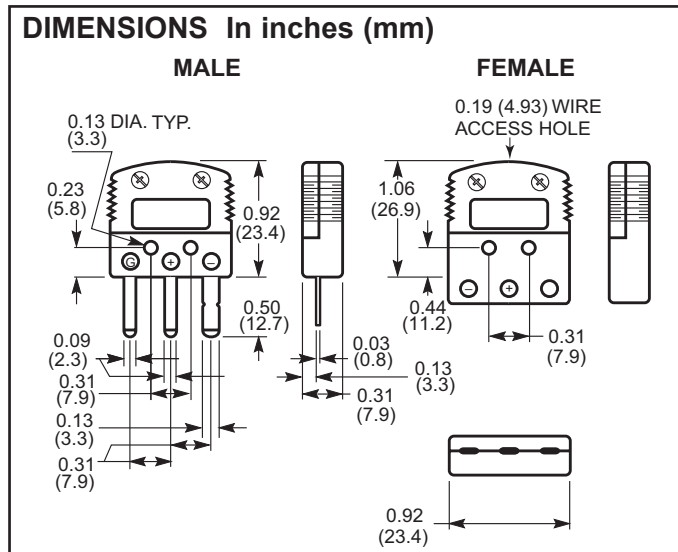
MODEL TMPCN - RTD PROBE CONNECTORS

GENERAL DESCRIPTION

RTD Mini Connectors are for use with RTD probes. They are miniature size, and are available in both male and female termination.

SPECIFICATIONS

1. **CONNECTOR BODY MATERIAL:** Glass Filled Nylon, for temperature ranges of -29 to 220 °C.
2. **CONNECTOR BODY COLOR:** White
3. **WIRE GAGE:** Accepts stranded or solid wire up to 20 AWG
4. **WIRE TERMINATION:** Combination Phillips/Slot Screws
5. **CONNECTOR ENDS:** Copper



ORDERING INFORMATION

MODEL NO.	DESCRIPTION	TYPE	TERMINATION	PART NUMBER
TMPCN	RTD Miniature Male Connector	U	Male	TMPCNM09
	RTD Miniature Female Connector	U	Female	TMPCNM10

LIMITED WARRANTY

The Company warrants the products it manufactures against defects in materials and workmanship for a period limited to two years from the date of shipment, provided the products have been stored, handled, installed, and used under proper conditions. The Company's liability under this limited warranty shall extend only to the repair or replacement of a defective product, at The Company's option. The Company disclaims all liability for any affirmation, promise or representation with respect to the products.

The customer agrees to hold Red Lion Controls harmless from, defend, and indemnify RLC against damages, claims, and expenses arising out of subsequent sales of RLC products or products containing components manufactured by RLC and based upon personal injuries, deaths, property damage, lost profits, and other matters which Buyer, its employees, or sub-contractors are or may be to any extent liable, including without limitation penalties imposed by the Consumer Product Safety Act (P.L. 92-573) and liability imposed upon any person pursuant to the Magnuson-Moss Warranty Act (P.L. 93-637), as now in effect or as amended hereafter.

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