

## MODEL TMP - FIELD CUTTABLE TEMPERATURE SENSOR PROBES AND ACCESSORIES

### GENERAL DESCRIPTION

Model TMP Thermocouple and RTD Temperature Probes are field cuttable to the desired length. The probes can be trimmed to within 3.5" (88.9 mm) of the probe tip allowing for greater application flexibility. Accessory hardware is available to wire and mount the probes in the user's existing thermowell.

Optional spring loaded fittings (sold separately) slide along the probe sheath to proper immersion depth as determined by the user. These fittings allow for strong contact between the probe and the thermowell to improve response. The spring loaded fittings are adjustable and reusable.



### SPECIFICATIONS

#### 1. TYPES:

**Thermocouple:** J, K, T, E

**RTD:** Platinum, 100 Ω @ 0°C, alpha = 0.00385 (DIN = 43760)

#### 2. RANGE AND ACCURACY:

**Thermocouple**

TC TYPE	RANGE	ACCURACY	WIRE COLOR
			ANSI
T	-200 to 0°C	±1.0°C or ±1.5%	blue (+) red (-)
	-328 to 32°F	±1.8°F or ±1.5%	
E	0 to 350°C	±1.0°C or ±0.75%	violet (+) red (-)
	32 to 682°F	±1.8°F or ±0.75%	
J	0 to 900°C	±1.7°C or ±0.5%	white (+) red (-)
	32 to 1682°F	±3.0°F or ±0.5%	
K	0 to 750°C	±2.2°C or ±0.75%	yellow (+) red (-)
	32 to 1382°F	±4.0°F or ±0.75%	
K	0 to 1250°C	±2.2°C or ±0.75%	yellow (+) red (-)
	32 to 2282°F	±4.0°F or ±0.75%	

**Note:** Where the error is given in percent, the percentage applies to the temperature being measured, not the range. Select whichever is greater.

#### RTD

TEMP °C	ACCURACY ±°C	WIRE COLOR
-200	.42	There are no standard wire colors for RTD probes. When connecting the RTD wiring, two wires are the same color and one is a different color. The two wires of the same color connect to signal (+) and excitation (+). These two wires are interchangeable. The other wire connects to signal common.
-100	.25	
0	.26	
100	.44	
200	.65	
300	.86	
400	1.09	
500	1.34	
600	1.60	
650	1.74	

3. **SHEATH:** Constructed of 304 stainless steel with an outside diameter of 0.25" (6.35 mm)

#### 4. THERMOCOUPLE MEASURING JUNCTION:

Ungrounded thermocouple junction

5. **PROBE LENGTH:** 2 ft. (0.6 M). Min. length after cutting is 3.5" (88.9 mm).

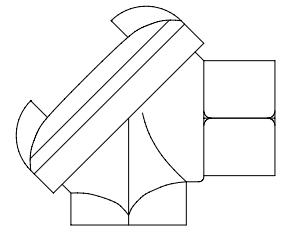
6. **LEAD LENGTH:** 6" (152.4 mm) beyond the end of the uncut tube

7. **LEAD WIRE INSULATION:** Available in Teflon (400°F), Fiberglass (900°F), or High Temperature Fiberglass (1300°F) (Thermocouple only)

### ACCESSORIES (sold separately)

#### Weatherproof Heads:

- Meets NEMA 4/IP65 requirements
- Cast Aluminum
- Protects against dust, rain, splashing, and hose directed water
- Weatherproof gasket
- Stainless steel chain

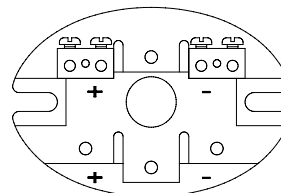


TMPACC02

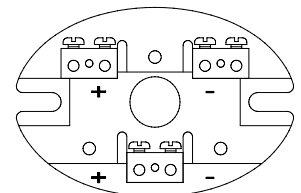
#### Terminal Blocks

2 Terminal Simplex for use with TCs

3 Terminal for use with RTDs

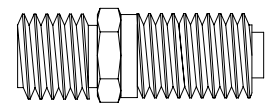


TMPACC04



TMPACC05

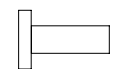
**Spring Loaded Fittings:** Connects probe to thermowell and attaches to weatherhead 1/2" NPT X1/2" NPT Stainless Steel.



TMPACC01

#### Tube Sleeve

Tube sleeve to protect probe leads from burrs after cutting probe.

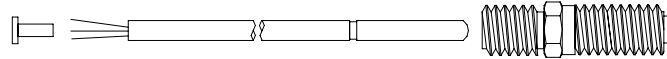


TMPACC03

## CUTTING THE TUBING

The thermocouple and RTD probes have a crimp mark located 3" (76.2 mm) from the tip. This indicates the end of the internal seal. Damage to the probe will occur if trimmed within 3.5" (88.9 mm) of the tip.

1. Determine the desired length of the probe and mark with a pen or marker. Secure the probe within a tube vice being careful not to deform or flatten the probe.
2. "Score" the tubing with a tubing cutter. Make one or two revolutions with the cutter. Do not cut completely through the tubing to prevent burrs or a sharp lip on the inside of the tubing.
3. Use a pair of pliers to grasp the excess tubing to be removed.
4. Use a narrow range of motion to slowly work the excess tubing from side to side until it separates from the probe. Using a wide range of motion will deform the tube and prevent installation of the tube sleeve.
5. Remove the excess tubing and trim the leads to the desired length.
6. Install the tube sleeve in the open end of the tube to protect the leads from any sharp edges on the inside of the tube.



TMPXXXXX

(One tube sleeve is included with each probe.)

## INSTALLATION

1. Orient the probe and the spring loaded fitting as shown below.
2. Screw the spring loaded fitting one complete turn into the thermowell (not included).
3. Push the probe into the fitting until it touches the bottom of the thermowell.
4. Hold the probe to the bottom of the thermowell and tighten the fitting. This ensures good contact between the probe and the bottom of the thermowell.
5. Completely tighten the fitting into the thermowell.

*Note: The probe must be inserted only as shown below to prevent damage to the fitting.*

If it becomes necessary to separate the probe and the fitting, first disconnect the wires and then unscrew the fitting completely from the thermowell. Pull the probe through the fitting from the end that was screwed into the thermowell. The fitting will present resistance to the probe removal if you attempt to go in the wrong direction.

## ORDERING INFORMATION

MODEL NO.	DESCRIPTION	MAX TEMP. °F	LEAD INSULATION	TYPE	PART NUMBER
TMP	TC Temp Probe	400	Teflon	J	TMPJ2SU1
		900	Fiberglass	J	TMPJ2SU2
		1300	High Temp Fiberglass	J	TMPJ2SU3
		400	Teflon	K	TMPK2SU1
		900	Fiberglass	K	TMPK2SU2
		1300	High Temp Fiberglass	K	TMPK2SU3
		400	Teflon	T	TMPT2SU1
		400	Teflon	E	TMPE2SU1
		900	Fiberglass	E	TMPE2SU2
	1300	High Temp Fiberglass	E	TMPE2SU3	
	RTD Temp Probe	400	Teflon	Plat	TMPA2S01
		900	Fiberglass	Plat	TMPA2S02

*Note: One tube sleeve is included with each probe.*

## ACCESSORIES (All accessories are sold separately)

MODEL NO.	DESCRIPTION	PART NUMBER
TMPACC	Spring Loaded Fitting	TMPACC01
	Cast Aluminum Weatherproof Head	TMPACC02
	Spare Tube Sleeve	TMPACC03
	Simplex Terminal Block (for TCs)	TMPACC04
	Three Terminal Block (for RTDs)	TMPACC05

