



Texas Electronics, Inc.

The Gold Standard in Weather Instrumentation Since 1957

Water / Soil Temperature Sensor Probe

TT-103R-W



Description

The Texas Electronics, Inc. Model TT-103R-W Temperature Sensor utilizes a highly sensitive linear thermistor-resistor network as the sensing element. Sensors feature direct interchangeability with one another without system recalibration. Temperature variations create a resistance bridge imbalance, the subsequent output signal varying linearly with temperature.

The TT-103R-W has the same characteristics as the TT-101QR. The sensor is housed in a brass thermowell with a waterproof connector. The thermowell can be screwed into a 1/4" - 14 NPT pipe thread for monitoring fluids or pipes or can be mounted to a surface by the bracket provided. It can also be directly buried in soil or pavement.

(Specifications on next page)

Features & Benefits

- Available in four different temperature ranges
- Signal Conditioner output can be interfaced with indicators or dataloggers
- Brass thermowell with waterproof connector provides ease in installation and maintenance
- Sensing element utilizes a highly sensitive linear thermistor-resistor network
- Optional Yellow Springs sensing element available
- Over 25 years in production
- Rugged construction allows varied applications in fluid or solid mediums

Installation & Maintenance

Installation:

Brass thermowell housing with waterproof connector can be screwed into a 1/4" NPT pipe thread for monitoring fluid in pipes, or mounted to a surface by provided bracket. It can also be directly buried in soil or pavement. Probe comes with a 6 ft. (1.82 meter) or a 60 ft. (18.28 meter) sensor cable.

Calibration / Cleaning Frequency:

The temperature system should not require calibration, however, the system may be checked for accuracy each six months, if desired. In the event that it is required, field calibration (zeroing and spanning) can be readily accomplished by substituting fixed standard resistor values for the sensor output.

No cleaning program should be required with normal use.

Specifications

Ranges Available:	-40° to +120°F -60° to +40°C -40° to +50°C +60° to +220°F
Response (Nominal):	Time to reach 90% of DT 0.8 sec./F
Signal:	Signal output in many forms, depending on signal processor
Accuracy:	+/- 1° within the range of -30° to + 110°F (-34.4° to +43.3°C) +/- 3° from -30° to -40°F (-34.4° to -40°C) and +/- 3° from +110° to + 120°F (+43.3° to +48.8°C)
Environmental Limits:	Temperature: -55° to +180°F (operating range: -40° to +120°F) Humidity: 0-100%
Cable:	60 ft. (18.28 meters)
Warranty:	3 year

Temperature Sensor Characteristics

Degrees F	Degrees C	Resistance	Degrees F	Degrees C	Resistance
Null	Null	34,274	+40°	+4.44°	5,942
-40°	-40°	33,336	+50°	+10°	5,051
-30°	-34.44°	24,904	+60°	+15.55°	4,282
-20°	-28.88°	18,985	+70°	+21.11°	3,642
-10°	-23.33°	14,824	+80° span	+26.66°	3,087
0° Null	-17.77°	12,002	+190°	+32.22°	2,602
+10°	-12.22°	9,844	+100° span	+37.77°	2,186
+20°	-6.66°	8,252	+110°	+43.33°	1,839
+30°	-1.11°	7,002	+120°	+48.88°	1,543

Ordering Information

<u>Model #</u>	<u>Description</u>
TT-103R-W	Temperature Sensor Probe w/ 6 ft. or 60 ft. cable

Optional Parts / Accessories

Cable	Additional Cable available upon request
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