

Specifications

Base Unit Specifications

Temperature Range at 23 °C.....	–95 °C to 140 °C (–139 °F to 284 °F)
Display Accuracy.....	±0.2 °C Full Range
Accuracy with External Reference ^[3]	±0.05 °C Full Range
Stability.....	±0.015 °C Full Range
Axial Uniformity at 40 mm (1.6 in).....	±0.05 °C Full Range
Radial Gradient.....	±0.01 °C Full Range
Loading Effect	
(with a 6.35 mm reference probe and three 6.35 mm probes).....	±0.006 °C Full Range
(versus display with 6.35 mm probes).....	±0.25 °C at –95 °C ±0.10 °C at 140 °C
Operating Conditions.....	0 °C to 35 °C, 0 % to 90 % RH (non-condensing) < 2000 m altitude
Environmental conditions for all specifications except temperature range.....	
	13 °C to 33 °C
Immersion (Well) Depth.....	160 mm (6.3 in)
Well Diameter.....	30 mm (1.18 in)
Heating Time ^[1]	–95 °C to 140 °C: 40 min
Cooling Time ^[1]	23 °C to –90 °C: 80 min 23 °C to –95 °C: 90 min 140 °C to 23 °C: 60 min
Stabilization Time ^[2]	15 min
Resolution.....	0.01 °
Display.....	LCD, °C or °F user selectable
Size (H x W x D).....	480 mm x 205 mm x 380 mm (18.8 in x 8.0 in x 14.9 in)
Weight.....	16 kg (35 lb)
Power Requirements.....	100 V to 115 V (±10 %) 50/60 Hz, 575 W 200 V to 230 V (±10 %) 50/60 Hz, 575 W
System Fuse Ratings.....	115 V: 6.3 A T 250 V 230 V: 3.15 A T 250 V
4–20 mA Fuse (–P model only).....	50 mA F 250 V
Computer Interface.....	RS-232, USB Serial, and 9930 Interface-it Temperature Calibration Software included
Safety.....	IEC 61010-1, Installation Category II, Pollution degree 2
Electromagnetic Environment.....	IEC 61326-1: Basic
Refrigerants	
R32 (Difluoromethane).....	< 20 g, ASHRAE Safety Group A2L
R704 (Helium).....	< 20 g, ASHRAE Safety Group A1

-P Specifications

Built-in Reference Thermometer Readout

Accuracy (4-Wire Reference Probe) ^[3] ± 0.010 °C at -95 °C
 ± 0.013 °C at -25 °C
 ± 0.015 °C at 0 °C
 ± 0.020 °C at 50 °C
 ± 0.025 °C at 140 °C

Reference Resistance Range..... 0 Ω to 400 Ω

Reference Resistance Accuracy ^[4] 0 Ω to 42 Ω : ± 0.0025 Ω
 42 Ω to 400 Ω : ± 60 ppm of reading

Reference Characterizations ITS-90, CVD, IEC-751, Resistance

Reference Measurement Capability 4 wire

Reference Probe Connection 6-Pin Din with INFO-CON Technology

Built-in RTD Thermometer Readout Accuracy .. NI-120: ± 0.015 °C at 0 °C
PT-100 (385): ± 0.02 °C at 0 °C
PT-100 (3926): ± 0.02 °C at 0 °C
PT-100 (JIS): ± 0.02 °C at 0 °C

RTD Resistance Range..... 0 Ω to 400 Ω

Resistance Accuracy ^[4] 0 Ω to 25 Ω : ± 0.002 Ω
 25 Ω to 400 Ω : ± 80 ppm of reading

RTD Characterizations PT-100 (385),(JIS),(3926), NI-120, Resistance

RTD Measurement Capability 2-wire, 3-wire, and 4-wire RTD with Jumpers only

RTD Connection..... 4-terminal input

Built-in TC Thermometer

Readout Accuracy ^[5] Type J: ± 0.70 °C at 140 °C
Type K: ± 0.75 °C at 140 °C
Type T: ± 0.60 °C at 140 °C
Type E: ± 0.60 °C at 140 °C
Type R: ± 1.60 °C at 140 °C
Type S: ± 1.60 °C at 140 °C
Type M: ± 0.65 °C at 140 °C
Type L: ± 0.65 °C at 140 °C
Type U: ± 0.70 °C at 140 °C
Type N: ± 0.75 °C at 140 °C
Type C: ± 1.00 °C at 140 °C

TC Millivolt Range..... -10 mV to 75 mV

Voltage Accuracy..... 0.025 % of reading $+0.01$ mV

Internal Cold Junction

Compensation Accuracy..... ± 0.35 °C (ambient of 13 °C to 33 °C)

TC Connection Miniature Connectors (ASTM E1684)

Built-in mA Readout Accuracy 0.02 % of reading $+ 0.002$ mA

mA Range Cal 4 - 22 mA, Spec 4 - 24 mA

mA Connection 2 terminal input

Loop Power Function 24 VDC loop power

Built-in Electronics Temperature Coefficient

(0 °C to 13 °C, 33 °C to 50 °C)..... ± 0.005 % of range per °C

Notes:

- [1] – For ambient temperature of 23 °C.
- [2] – Time from when the SETPOINT is reached to when the unit is with in Stability specification.
- [3] – The temperature range may be limited by the reference probe connected to the readout. The built-in Reference Accuracy does not include the sensor probe accuracy. It does not include the probe uncertainty or probe characterization errors.
- [4] – Measurement accuracy specifications apply within the operating range and assume 4 wires for PRTs. With 3-wire RTDs add 0.05 Ω to the measurement accuracy plus the maximum possible difference between the resistances of the lead wires.
- [5] – The thermocouple input readout is sensitive to EM fields in the frequency range of 500 MHz to 700 MHz.