

Precision RTD Thermometer

- ✓ NIST Traceable
- ✓ 4-Wire AC Bridge for Long Term Stability Without Recalibration
- ✓ 0.01°C Instrument Accuracy
- ✓ 0.025°C System Accuracy
- ✓ 0.001°C or 0.01°C Resolution
- ✓ -200 to 800°C (-328 to 1472°F) Range
- ✓ Display Data in °F/°C/K/Ohms
- ✓ Dual Channel Inputs A and B, with Differential A-B
- ✓ Optional 8 or 16 Input Multiplexers for Multi-Point Measurements
- ✓ Optional RS-232, IEEE-488 or Analog Outputs
- ✓ DP252 works with DP250-SP Standards Psychrometer for RH and Dew Point Measurement



DP251 Precision RTD Thermometer, \$3210 with PRP-2 Traceable RTD Probe, \$520, shown smaller than actual size.

DP250 Series
\$3210
 Basic Unit



OMEGA's DP251 Precision RTD Thermometer can be used as a single probe laboratory instrument, a portable site standard or as a permanently wired multi-channel scanning system. RTD probes can be connected either to front panel DIN sockets or rear panel screw terminal plugs. Probe input A or B, differential display (A-B), zero, resolution and readout units are front panel selectable. The Run/Cal key-operated switch selects the measurement (Run) or data entry (Cal) modes.

DP251-SOFT LabWindows software is a PC compatible data acquisition package that uses a virtual front panel display to represent the DP251 on your monitor. The software controls all of the DP251 functions, plus those of the DP250-8 and DP250-16 multiplexers when used with a system. A time vs. temperature

screen incorporated into the virtual front panel allows you to plot temperature trends.

Like the DP251, the DP252 is a precision RTD thermometer and also an RH and dew point indicator when used with the DP250-SP standards psychrometer. The DP250-SP psychrometer uses a low power fan to draw air across two traceable calibrated platinum RTD's housed in a flow chamber to measure wet and dry bulb temperatures.

Specifications for DP251/252 Thermometers

Temperature Range: -200 to 800°C (-328 to 1472°F), depending on traceable RTD probe range

Accuracy:
 DP251 only; ±0.01°C from -200 to 800°C with PRP-2; ±0.025°C from -50 to 250°C with PRP-3; ±0.025°C from -50 to 250°C
 ±0.04°C from -70 to -50°C
 ±0.09°C from 250 to 450°C

Resolution: 0.01°C or 0.001°C, user selectable in A, B and A-B modes

Repeatability: ±2 LSD (±0.002°C), included in accuracy



DP251 System Calibration of the MDS41-RTD Benchtop Meter. System includes the DP251, DP251-16 Multiplexer, DP251-SOFT Software, CL950 Multi-port hot point® Block Calibrator, PRP-2 Traceable RTD Probe



DP250-16 Multiplexer rear panel

Stability: Better than 0.005°C/yr, long term
Temperature Coefficient: Better than ±0.0005°C/°C ambient change
Operating Ambient:
 Overall: 0 to 50°C (32 to 122°F), noncondensing; for best accuracy: 15 to 25°C (59 to 77°F)

Data Entry Format: Typically ITS90 coefficients for high “alpha” probes (alpha = 0.00392), Callendar van Dusen coefficients or Callendar van Dusen data pairs for low α probes (α = 0.00385), DIN for uncalibrated probes
Instrument: Digital, dual input channel AC transformer ratio bridge

Display: 6 digit VFD for A, B and A-B in °C, °F, K and Ohms, plus data entry instructions (RH and dew point

DP251 Rear panel

replace K and Ohms in the DP252, for use with the DP250-SP standards psychrometer)

Probe Current: Low frequency AC, 1 mA, constant current source

Power: 100/120/220/240 Vac ±10%, 50/60 Hz

Probes: 100 Ohm platinum RTD to IEC751/BS1904/DIN43760 with α = 0.00385 or 0.00392. Probes fitted with 6 ft cable and DIN plugs (front panel), or screw terminal plugs (back panel)

Input Connectors: 5 pin industrial DIN sockets (front panel), 5 pin screw terminal plugs (back panel)

RS-232 Communications: Optional; 4800, 9600 and 19,200 baud; parity, data and stop bits user settable

DP251, \$3210, shown with DP250-16 Multiplexer, \$3480, shown smaller than actual size.

ALL MODELS AVAILABLE FOR FAST DELIVERY!

To Order (Specify Model Number)

Model No.	Price	Description
DP251	\$3210	Precision RTD thermometer
DP252	4090	Precision RTD thermometer, RH & dew point indicator
DP250-8	2290	8-channel multiplexer
DP250-16	3480	16-channel multiplexer
DP250-SP	5230	Standards psychrometer

DP251/DP252 thermometers come complete with power cord, NIST traceable calibration report and operator's manual.

Ordering Example 1: DP251, Precision thermometer, PRP-2 probe, DP251-SOFT software, DP250-CASE hard case, \$3210 + 520 + 480 + 280 = \$4490.

Ordering Example 2: DP251, Precision thermometer, DP250-8, 8-channel multiplexer, six (6), PRP-4, 100Ω RTD probes, \$3210 + 2290 (6 x 870) = \$10,540.

Ordering Example 3: DP252 Precision thermometer, two PRP-2 100Ω RTD probes, DP250-RACK, 19" rack mount kit, \$4090 + (2 x 520) + 260 = \$5390.

100 Ω Traceable RTD Probes*

Model No.	Price	Description
PRP-2	\$520	DIN plug, -50 to 250°C (-58 to 482°F)
PRP-3	520	5-pin screw terminals, -50 to 250° (-58 to 482°F)
PRP-4	840	DIN plug, -196 to 420°C (-320 to 788°F)
PRP-5	700	5-pin screw terminals, -70 to 450°C (-94 to 842°F)

*Supplied complete with NIST traceable calibration report

Accessories

Model No.	Price	Description
DP250-RACK	\$260	19-inch rack mount kit for DP251 or DP252
DP251-SOFT	480	LabWindows software for DP251
DP252-SOFT	480	LabWindows software for DP252
DP250-DT	50	DIN plug to 5-pin screw terminal plug converter
DP250-TD	50	5-pin screw terminal plug to DIN plug converter
DP250-DIN5	50	One additional DIN plug
DP250-STP5	90	Pkg. of 18 additional 5-pin screw terminal plugs
DP250-CASE	280	Hard case for DP251 or DP252 and probes
EE-2621	90	Reference Book: Electrical Equipment Handbook

IEEE-488 Communications: Optional; address range 1 to 7

Analog Output: optional; ±10 V analog output. Output sensitivity can be set over the range 10 V, 1 V, 0.1 V or 0.01 V/°C. The analog output represents whichever channel is selected, A, B or A-B, and can also be zeroed.

Dimensions:
 260 W x 80 H x 240 mm D
 (10.2 x 3.15 x 9.45")

Weight: 2.6 kg (5.7 lb)

Specifications for DP250-SP Standards Psychrometer

(Performance when used with DP252 Thermometer)

Range: 5 to 95% RH, 0 to 100 °C (32 to 212°F)

Accuracy: ±1% RH and ± 0.06°C

Repeatability: ±0.1% RH

Resolution:
 0.01% RH, 0.01°C or 0.001°C

Power: 12 Vdc

Dimensions: 100 x 130 x 210 mm
 (8.3 W x 3.9 H x 5.1" D)

Weight: 1.9 kg (4.2 lb)

Reservoir: 110 cc (6.7in³)

Communications/Output Options for DP251 or DP252

Order Suffix	Add'l Price	Description
-RS2	\$490	RS-232C
-IEEE	455	IEEE-488
-A	615	Analog Output

*All 3 options can be installed in a single unit



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