High Precision Digital RTD Thermometer/Data Logger
With USB Port

DP9601 Series

- Reference Standard Thermometer for Pt100 Sensors
- High Accuracy ± 0.01°C Pt100
- 40 Millikelvin (0.040°C)
- System Accuracy
- Simple, Fast Digital Matching to Calibrated Sensors, Up to 10 Points Per Channel Retained in Memory
- Alpha Numeric Display
- Resolution 0.01°C for Pt100 Inputs
- Data Logging
- Wide Temperature Range
- Readout Directly In °C, °F, K, Ω
- Two Sensor Input Ports
- Channel A, B or A-B Reading
- USB Serial Communications
- USB Flash Drive Port
- Supplied with PC Software
- Programmable Analog Retransmission Output
- Rechargeable Lithium Ion Battery/Mains Powered

The DP9601 provides precise platinum resistance thermometer temperature measurement and logging for exacting applications in both laboratory and site locations. It is an exceptionally accurate and stable digital thermometer particularly suitable for use with thermal calibration baths as a reference standard. Applications include medical, pharmaceutical, food, environmental testing, R&D and educational establishments.

Displayed values and user information are indicated on a bright clear LED screen with diffused backlighting. Data can be displayed in °C, °F, K, Ω as required; nine front panel push keys, the only user controls, are used in conjunction with the display screen. It is this arrangement which makes for very simple and “friendly” operation.

There are two input ports for 3- or 4-wire Pt100 sensors; the instrument automatically recognizes 3- or 4-wire configurations. The measured temperature can be displayed directly from one of the inputs or differentially between the two inputs. Differential temperature and the two individual channel temperatures are displayed simultaneously.

A flash drive USB port is provided to allow data to be stored and/or exported. PC software running in Windows® is provided as standard; it allows programming of custom calibration, remote control and measure and logging functions.
Specifications
Inputs/Ranges/Sensors
Type: Pt100 to IEC 751 (ITS 90 refers) -200 to 850ºC (-328 to 1562ºF) R₀ = 100 Ω 3- or 4-wire connection with automatic recognition (with manual override)
Overall Accuracy: ±0.01ºC ±0.0005% of span
Linearisation Conformity: Better than ±0.01ºC
Stability (vs Ambient Temperature): Better than 0.0025ºC per 1ºC ambient change
Warm-Up: Negligible under normal ambient conditions. Allow 5 to 10 minutes for full stability unless stored at low temperature, then 30 minutes minimum
Pt100 Sensor Current: 0.5 mA
Resolution of Data Display: 0.01
Variable Filter: Sampling rate selectable between 4 and 64 (measurements averaged per reading)
Measurement Units: °C, °F, K, Ω
Measurement Modes: A, B or A-B
Custom Calibration: Up to 10 calibration values can be allocated to Pt100 input A & B; values are retained in non-volatile memory until replaced by user; ITS 90 or IPTS 68 coefficients can be used for custom calibration
Smart Sensor Connection: Correction values stored in connector
Null Function: Corrects differential temperature readout between two sensors to zero
Sensor Lead Resistance: 5 Ω each lead maximum
Logging: 8000 readings
Supply: Internal lithium ion rechargeable batteries; mains 90 to 260V 50/60 Hz universal adaptor included; battery charge life up to 12 hours with full charge
Series Mode Rejection: 60 dB @ 50 Hz (50 mV RMS applied)
Common Mode Rejection: 30V RMS applied between input and earth produces no measurable effect
Display: 128 x 64 pixel character OLED screen with diffused backlighting; wide viewing angle, high contrast (adjustable)
Front Panel Controls: 9 membrane push-keys to control all instrument functions
Mechanical/Case: Metal bench top case/adjustable tilt
Dimensions: Overall 190 W x 70 H x 250 mm D (7.5 x 2.75 x 9.85”)
Weight: 3 kg (6.61 lb) approximately
Input Connections: 2 x Pt100 via D type connectors
USB Serial: Isolated, 38400 Baud, 8 data, no parity, 1 stop bit
Communications: Remote control and measure
PC Software (Standard): Supplied as standard on CD-ROM. Remote control and measure: log readings to file/download to PC/programming corrections
Analog Output (Standard): User programmable, 0 to 1 Vdc
Application Note: Inputs are not isolated in the instrument, which is primarily designed for laboratory applications and site calibration of industrial temperature sensors. Probes connected to the instrument must therefore be isolated from high voltage pick-up.
Precision Pt100 Probes: 304 Stainless steel probes, 6 mm diameter with 2 m (6.6’) screened PTFE lead Pt100 Probes and connector
DP9600-L250: 250 mm (9.85”) L, -50 to 250ºC (-58 to 482ºF)
DP9600-H450: 350 mm (13.75”) L, -50 to 450ºC (-58 to 842ºF)

To Order Visit omega.com/dp9601 for Pricing and Details

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<td>High precision digital RTD thermometer</td>
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Accessories

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<td>Calibration for instrument alone (no NIST)</td>
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<td>DP9600-SYS-CAL</td>
<td>Calibration of instrument and sensor together at five points (no NIST)</td>
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<tr>
<td>DP9600-SYS-COR-CAL</td>
<td>Calibration of instrument and sensor together at five points, after initial calibration of sensor only and programming of corrections (no NIST)</td>
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<td>DP9600-TBLK4</td>
<td>Terminal block for connection of 3- or 4-wire Pt100s</td>
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OCW-2, OMEGACARESM extends standard 1-year warranty to a total of 3 years.