Thermometer 273

Precision Temperature Measurements

The 2-channel digital thermometer is designed for stable, high precision temperature measurement over the range of -200 to +660°C. To further enhance stability, the measurement electronics are encapsulated in a constant temperature oven.

Dual Range, Dual Current Source

Each channel of the 273 has two distinct measuring ranges (0-100 ohms and 0-400 ohms) and associated current sources (1 mA and 300 uA respectively) allowing both 25 and 100 ohm nominal PRTs to span the full range of the Delta-Sigma A/D converter. This current source/range selection allows the system to maintain high resolution regardless of the PRT's nominal value.

Full Current Reversal

Employing a full reversal current source, the 273 eliminates polarity sensitive errors normally inherent in DC measuring techniques. Accuracy is further enhanced by referencing all measurements to an internal reference resistor placed in series with the PRT to be measured. With this resistance ratio technique, the 273 accurately determines the probe resistance independent of the current source accuracy.

Graphical Display, Full Color Touch Screen

View your data numerically or graphically at any time. The color touch screen simplifies the user interface. Select parameters, change graph scaling, enter probe coefficients, and configure the system; all from the front panel.

Enter & Store Probe Coefficients

Enter your probe coefficients in ITS-90 format (the 273 even includes ITS-90 sub range 5) or use either the *abc* or $\alpha\delta\beta$ coefficients of the Callendar - van Dusen equation. For standard industrial probes, pre-programmed IEC-751 standard coefficients are also selectable. Once entered, store the probe configuration in one of 10 memory locations for later retrieval and use. Each probe can be identified with a serial number and a short description.

Time Stamped Data Logging

With the large on board flash memory, the 273 can log tons of time stamped data with user selectable intervals from one second to several hours. This feature is great for unattended remote measurements and for creating a digital record of probe calibration data. Download the data to a PC at any time using HyperTerminal or any other simple terminal emulator program.

Communications

All 273 Thermometers include bi-directional RS-232 communications capability. You can retrieve readings in real time, download previously logged data, modify probe coefficients, change channel configurations, and more. The protocol is straight forward, intuitive, and powerful.

Model:	273
Display:	4 Line Numeric/Graph User Selectable
Probe Channels:	2
Connection Modes:	2, 3, 4 Wire User Selectable
Measuring Ranges per Channel: 100 ohm max range 400 ohm max range	2 1mA, switching DC (-200 to +670 C) 300 uA, switching DC (-200 to +670 C)
Units:	°C, °F, K, ohms
Display Values:	R1, R2, T1, T2, T1-T2
Statistics Display:	min, max, mean, StdDev
Data Logging:	time/date stamped more than 10,000 points
Probe Configuration Options:	ITS-90, ITS-90 SubRange 5, CVD (ABC or AlphaDeltaBeta), DIN 385
Coefficient Entry:	User entry via touch panel or RS-232
Basic Accuracy:	+/- 0.006°C
Measuring Electronics:	Temperature controlled and stabilized
Width:	265 mm (600 mm with transport case)
Height:	155 mm (450 mm with transport case)
Depth:	310 mm (410 mm with transport case)
Weight:	4.7 Kg (14.7 Kg with transport case)

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