

Start With The Features You Expect In A Thermistor

Thermometer: Add a wide range of state-of-the-art, microprocessor-based measurement capabilities, and you have the Model **5830** – the clear choice for a variety of applications.

A membrane key touch panel provides convenient single-key selection of all measurement functions. Audio feedback provides assurance of all keystroke entries. Multi-probe measurement functions are user-programmable. You can set up the instrument for your measurement needs.

The Model 5830 is ideal for both laboratory and field use, and operates from either its standard 115/230 VAC switch selectable wall adapter or an optional rechargeable battery pack.

The instrument utilizes both low-power CMOS circuitry and an energy-efficient LCD display to minimize power requirements and optimize reliability.

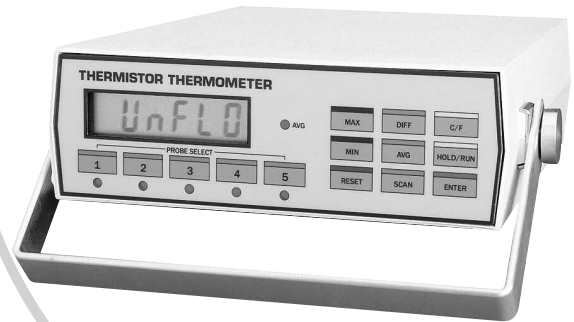
The 5830 is the only portable thermistor thermometer which offers multiple measurement functions, five input probes, and up to .01°C or .01°F (Model 5831) resolution. The instrument displays five digits of resolution plus sign. Measurement range is a wide –30 to 100°C (–22 to 212°F).

Accuracy is unsurpassed by any other multi-function portable thermistor thermometer. DigiTec's SELFCAL™ autocalibration technique ensures drift-free operation.

Both YSI Series 400 (low-cost single thermistor probe) and Series 700 (dual thermistor linear output probe) are supported via an internal user-selectable switch.

MODEL NUMBER >>>>>>	583		
	Model		
	.1° C/F, LCD	0	
	01° C/F, LCD	1	
	Options		
	Rechargeable Battery Pack	B	
	Analog Output (Not Field Installable)	R	
	Temperature Sensors* (accessories)		
	Probe, General Purpose, Vinyl	401	
	Probe, Small Flexible, Vinyl	402	
	Probe, Tubular Stainless	403	
	Probe, Tubular Glass, 5"	404	
	Probe, Air Temperature	405	
	Probe, Thin Tubular Stainless	406	
	Probe, Banjo Surface	408	
	Probe, Attachable Surface, Rugged	409B	
	Probe, Tubular with Fitting	410	
	Probe, Tubular Autoclavable	416	
	Probe, Tubular Pointed, Metal	418	
	Probe, Small Surface	421	
	Probe, Semi-Flexible, Nylon	423	
	Probe, Small Surface, (with 402 Type Junction)	427	
	Probe, Food Processing	433	
	Probe, Airway Temperature	441A	
	General Purpose, Immersible	701	
	Small Flexible	702A	
	Steel Tubular	703	
	Air Temperature	705	
	Flat Steel Surface	708	
	Cupped Steel Surface (Epoxy Backed)	709B	
	Steel Tubular with Pipe Fitting	710	
	Small Surface (Steel Disc)	729	
	General Purpose, Non Immersible	731	

* Thermal-linear Use with 5830 and 5831 thermometers



Thermistor Thermometer

This Thermistor Thermometer is a versatile, highly accurate instrument, perfect for a variety of field or laboratory applications.

- Multiple input probes uses 400 or 700 Series probes
- Degree C or degree F temperature display
- User-defined sequential probe scanning
- User-selectable single probe display
- Temperature display updated 5 times per second
- Min/Max temperature storage and display
- Multi-probe average temperature measurement
- Display hold function freezes displayed data
- Non-volatile storage of instrument setup
- Optional analog output
- Optional battery pack

SPECIAL FEATURES

An important and unique aspect of the 5830 is the wide range of measurement functions it puts at your fingertips.

Degree C or Degree F Selection: Select degree C or degree F temperature display at the touch of a key. The selected units of measure are clearly indicated on the large 1/2 inch LCD display.

Multiple Input Probes and Probe Types: The 5830 is the only portable thermistor thermometer with five probe inputs. Probes may be either Series 400 or Series 700 with standard phone-plug connectors. Many different probe styles are available in each series for specific measurement needs. A simple keystroke selects any probe for display. Bright LED indicators identify selected probes.

Probe Scan Mode: The 5830's unique scan mode sequentially scans a user-definable sequence of input probes and displays each probe's current temperature. The scan mode provides for hands-free measurement and display of two, three, four, or all five probes. The operator can select which probes to scan and the order in which to scan. Each probe is displayed for approximately three seconds for operator monitoring.

To program the scan sequence, simply press "SCAN", "ENTER", the probe "NUMBER" keys in the desired sequence, and "ENTER". The 5830 will begin to scan the selected probes in the desired sequence.

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Single Probe Measurement Mode: To measure and display the temperature of a single probe, just press the probe “NUMBER” key. The probe number LED will illuminate to indicate the selected probe. The displayed probe temperature is updated five times per second. This allows for monitoring of rapid temperature changes, trends, and even minute temperature variations with the 5830’s high resolution measurements.

MIN/MAX Temperature and Storage Display: The 5830 continually updates the minimum and maximum temperature of all selected probes for each mode of operation. To display the minimum or maximum values, simply press the “MIN” or “MAX” keys. The selected data will be displayed for three seconds and the display will then return to the previously selected mode of operation.

MIN and MAX values are continuously updated and permanently stored in memory during power-on operation. MIN and MAX temperature data may be updated and stored for periods ranging from minutes to hours or weeks, depending on data measurement needs.

Minimum and maximum values are updated five times per second for each mode of operation. The 5830 is capable of capturing most rapid temperature transients.

The 5830’s full complement of MIN/MAX temperature storage capability makes it ideal for unattended monitoring of temperature excursions for electrical equipment tests, biomedical experiments, environmental monitoring, etc.

Temperature Difference Measurement: Unlike many thermometers which limit you to “T1-T2” measurements, the 5830 lets you measure the temperature difference between ANY two inputs. You don’t have to switch probe inputs round to get the measurement you really want. Simply select the probes by front panel key entry.

The temperature difference between the two probes will be displayed along with the sign of the temperature difference. LEDs for the two selected probes will illuminate to indicate the probes used for the difference calculation.

This mode is useful for thermal transfer measurements and temperature comparisons. The high resolution of the 5831 makes it ideal for analysis of extremely small temperature differences such as those found in medical, chemical, and materials research laboratories.

Unique Multi-Probe Average Temperature Measurement: The 5830 has the unique capability to measure multiple probe temperatures and calculate the instantaneous average temperature of these probes. Two, three, four or five probes may be selected for average temperature measurements.

To select the probes for measurement, press “AVG”, “ENTER”, the probe “NUMBER” keys for each probe to be included in the average measurement calculation, and the “ENTER” key.

The 5830 will measure the temperature of each selected probe and display the average of all probe temperatures. The AVG LED will illuminate to indicate the measurement mode and all selected probe number LEDs will illuminate.

Display Hold Function: The display Hold function allows the operator to freeze the displayed data for the current mode of operation. All internal measurements for that mode of operation continue (MAX and MIN values continue to update). To enter the hold mode simply press the “HOLD/RUN” key.

This mode allows the operator to suspend the display for better readability of rapidly changing temperatures, allow sufficient time for the recording of important data, or simply sample-and-hold data upon request.

When in the Hold display mode, all probe number LEDs selected for that mode of operation will blink. To return to the previous mode of operation, again press the “HOLD/RUN” key.

Non-Volatile Storage of Instrument Setup: The 5830’s internal memory retains the setup data for all modes of operation—with or without power supplied—and with or without the optional battery pack—no power needed.

The 5830 even remembers the selected mode of operation, Probe-Scan mode, multi-probe Average Temperature mode, or two-probe Temperature Difference mode. Simply turn the instrument on and it returns to its last mode of operation.

Minimum and Maximum Temperature Values Available:

- A single minimum and maximum value for the selected probe when in the Single-Probe measurement mode.
- A minimum and maximum value for each scanned probe when in the Probe Scan mode (Press “MIN” or “MAX” to display all the MIN or MAX values in the programmed scan order).
- A single calculated minimum and maximum value for the temperature difference between the two selected probes when in the Difference measurement mode.
- A single calculated minimum and maximum value for the average temperature of the selected probes when in the Average temperature measurement mode.

Optional Battery Pack (For medical applications): Energy efficient design technology allows for up to eight hours of continuous operation with the unit’s field installable, rechargeable battery pack. Standard, readily available, rechargeable “AA” nickel-cadmium cells allow for easy field replacement. The standard AC wall adapter is used for both AC operation and battery re-charger. Full recharge takes less than 16 hours. The 5830 conveniently displays “Bat Low” when the battery needs recharging.

Optional Analog Output: Optional analog output provides 10mV per degree C or degree F for the selected measurement mode.

This option allows the 5830 to become an inexpensive analog multifunction temperature recorder/analyzer when used with a strip chart recorder.

Record the calculated Temperature Difference between two probes, the instantaneous Average Temperature of up to five selected probes, or a selected Single Probe temperature. Even record analog data while display updates are suspended for analysis in the Hold mode.

Accessories: Accessories include a carrying case which provides protection for your instrument during transportation and convenient storage for probes, AC adapter, spare fuse and operator’s manual; and a full complement of probe styles to choose from to meet your measurement needs.

NUMERICAL PERFORMANCE SPECIFICATIONS

Range	-30° to 100°C -22° to 212°F
Resolution	5830: 0.1° (C or F) 5831: 0.01° (C or F)
Accuracy	-30° to 100°C ±0.20C -22° to 212°F ±0.36F