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F500 PRECISION THERMOMETER

ASL's F500 provides you with high accuracy, dual channel temperature measurement for Platinum Resistance Thermometers (PRT) and exploits the inherent advantages of AC bridge technology to maintain repeatable measurements with unique levels of performance and speed.

Features:

- Accuracy: $\pm 0.005^{\circ}\text{C}$, $\pm 5\text{mK}$, over the full range (Typically $\pm 0.001^{\circ}\text{C}$, $\pm 1\text{mK}$, at 0.01°C)
- Resolution: 0.001°C / 0.0001Ω
- Temperature ranges: -200°C to $+962^{\circ}\text{C}$
- Display update rate: 500ms to full instrument performance
- 25R and 100R Internal reference resistors (user or auto selectable)
- Single, differential and alternate measurement
- 2 Channels as standard with optional 4 or 6 channels
- Expandable up to an additional 64 channels with multiplexers
- Store up to 72 calibrated probe data, unlimited when using Smart probes
- Stand alone Data logging with output to PC or USB Memory Stick
- Sequential Channel scan
- Common Inputs for both 'SMART' and passive probes
- SMART probe review and editor
- Coefficient generation from data pairs
- Individual probe Over Temperature (T_{max} , T_{min}) visual and audible warning
- Anti-reflective LCD backlit display with numeric, statistical or graphical information
- Self calibrating against traceable external references
- USB interface as standard with optional, RS232, IEEE or LAN interfaces



The F500 comes with two channels as standard, but four and six channel variations are available with each channel able to work with up to 72 user-defined probes. It can also provide a sequential channel scan with a data logging function that can also be sent to PC or USB Memory Stick. The F500 also offers single, differential and alternative measurement modes with the ability to provide direct comparison calibration.

Using calibrated probes with the F500 you can choose between storing the calibration data into the memory of the instrument or if using ASL 'SMART' probes the data can be reviewed and edited therefore easy calibration. The F500 can also generate coefficients from reference temperature / resistance data pairs.

The F500 has 25Ω and 100Ω Internal Standard resistors and with an extended range of 0-500 ohms is capable of measuring temperature ranges to meet ITS90, CVD, EN60751 & IEC751 standards and results are delivered via an anti-reflective LCD backlit display with large numeric, Average, Std Dev, Min, Max and n sample count statistical or graphical information. It also comes with USB interface as standard, but optional RS232, IEEE or LAN interfaces are also available.

To ensure long term reliability the F500 uses surface mount technology with no mechanical relays or potentiometers.

F500 Specification	
Temperature Range:	-200°C to +962°C
Resistance range:	0 to 500Ω
Instrument Accuracy:	+/-0.005°C, +/-5mK over the full range (Typically ±0.001°C, ±1mK, at 0.01°C)
Internal Reference:	25Ω and 100Ω (user, auto selectable)
TCR:	+/-0.1ppm/ °C
Stability:	+/-5ppm / year
Resolution:	0 to 0.001°C/°F/K 0.0001Ω (user selectable)
Display update rate:	500ms to full instrument performance
Probe Current:	Industry standard 1mA, 5mA constant current source (Auto selectable)
Probe Types:	Industrial PRTs and SPRTs with Ro = 25Ω and 100Ω up to an alpha of 0.00392
Data entry format:	ITS90 coefficients, Callender Van Dusen coefficients EN60751 and IEC751 and data pairs for un-calibrated probes.
Thermometer Input Connectors:	2 (front panel), 4 or 6 (rear panel) 5 pin industrial DIN sockets can be used with passive or proprietary 'Smart connector'. Expandable up to an additional 64 channels with SB500 multiplexers
Data logging:	Sequential scan of all channels, log up to 8,000 individual time and date stamped readings to internal memory, export logged data direct to PC or USB Memory Stick
Cable Length:	maximum 30 metres of 4-core 19/0.15 SPC/PTFE screened cable.
Optional Interfaces:	RS232, IEEE-488.2 or LAN Ethernet
Operating Conditions:	15°C to 35°C, < 80% RH non condensing (15°C to 25°C for full range accuracy)
Power Requirements:	90–264VAC universal IEC320 input on rear panel, 47-63Hz, 25VA Max
Dimensions / Weight:	260mm (w) x 80mm (H) x 270mm (D) 2.7Kgs