

## Bench Top Instrumentation

Bench top instruments, some which work in conjunction with a PC, that can provide accurate monitoring of your application. Thermocouple and Pt100 options available.



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# Tempmaster PRO Precision Thermometer

**XE-6000-001**

The Tempmaster PRO (precision thermometer) from Labfacility provides very high precision temperature measurement with Pt100 sensors. Data can be displayed in °C, °F, K or 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.

Resolution is 0.01°C and all computations are performed digitally without drift. Overall stability is optimised by utilising only the highest quality components including high precision, expensive metal film resistor networks.

There are two input ports on the Tempmaster PRO precision thermometer for 3 or 4 wire Pt100 sensors; the instrument automatically recognises 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.

Individual calibrated sensors can have up to 10 appropriate calibration values programmed into the Tempmaster PRO. The instrument then digitally self-calibrates to the associated probe over the range embraced in the calibrated values used; the temperature readout is corrected accordingly.



Type	Pt100 sensors
Accuracy	$\pm 0.01^{\circ}\text{C} \pm 0.0005\%$ of span
Dimensions	190mm(W) x 70mm(H) x 250mm(D)
Weight	3.0kg approx.
Linearisation Conformity	Better than $\pm 0.01^{\circ}\text{C}$
Stability (vs ambient temperature)	Better than 0.0025°C per 1°C ambient change
Pt100 Sensor Current	0.5mA
Warm-up	Negligible under normal ambient conditions
Resolution of data display	0.01

# Labcal PRO Precision Thermometer

## XE-6015-001

The Labcal PRO from Labfacility is fully characterised for Pt100 sensors and all major thermocouples J,K,N,T,E,R,S and B. Exceptionally stable automatic cold junction compensation with a rejection of 100:1 is incorporated for thermocouple ranges. Alternatively, external or manual referencing can be selected as required.

Displayed values and user information are indicated on a bright clear OLED screen with diffused backlighting. Data can be displayed in °C, °F, K, Ω or mV 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.

Resolution is a user selectable 0.001 or 0.01°C for Pt100 sensors and 0.1°C for thermocouples. All computations are performed digitally without drift. Overall stability is optimised by utilising only the highest quality components including high precision, expensive metal film resistor networks.

There are four input ports, two for thermocouples and two for 3 or 4 wire Pt100 sensors; the instrument automatically recognises 3 or 4 wire configurations.

The Labcal PRO can accept two Pt100 sensors and/or two thermocouples of similar or different types (J,K,N,T,E,R,S and B). The measured temperature can be displayed directly from one of the inputs or differentially between similar or different inputs. Differential temperature and the two individual channel temperatures are displayed simultaneously.

Individual calibrated sensors can have up to 10 appropriate calibration values programmed into the Labcal PRO. The instrument then digitally self-calibrates



to the associated probe over the range embraced in the calibrated values used; the temperature readout is 'corrected' accordingly.

Type	Pt100 sensors and all major thermocouples J,K,N,T,E,R,S and B
Accuracy	$\pm 0.01^{\circ}\text{C} \pm 0.0005\%$ of span Thermocouples i) Base Metal ii) Noble Metal $\pm 0.2^{\circ}\text{C}$ from $-50^{\circ}\text{C}$ to $700^{\circ}\text{C}$ $\pm 0.3^{\circ}\text{C}$ from $850^{\circ}\text{C}$ to full scale $\pm 0.4^{\circ}\text{C}$ from $-200^{\circ}\text{C}$ to $-50^{\circ}\text{C}$ $\pm 0.4^{\circ}\text{C}$ below $850^{\circ}\text{C}$ $\pm 0.4^{\circ}\text{C}$ from $700^{\circ}\text{C}$ to $\pm 0.7^{\circ}\text{C}$ below $0^{\circ}\text{C}$ full scale Note: Type B not characterized below $+200^{\circ}\text{C}$
Linearisation Conformity	Pt100 Better than $\pm 0.01^{\circ}\text{C}$ Thermocouples $\pm 0.05^{\circ}\text{C}$ base metal ( $-200^{\circ}\text{C}$ to span) $\pm 0.1^{\circ}\text{C}$ noble metal above $200^{\circ}\text{C}$
Stability (vs ambient temperature)	Pt100 Better than $0.0025^{\circ}\text{C}$ per $1^{\circ}\text{C}$ ambient change Thermocouples Zero: negligible drift excluding CJC effect Scale: $< \pm 0.1^{\circ}\text{C}$ in $15^{\circ}\text{C}$
Warm-up	Negligible under normal ambient conditions. Allow 5-10 minutes for full stability unless stored at low temperature, then 30 minutes minimum.
Resolution of data display	Pt100 0.01/0.001 user select for $^{\circ}\text{C}$ , K and $\Omega$

# L200-TC Temperature Monitor

**XE-6030-001**

The Labfacility L200 TC thermocouple thermometers (Temperature Logger) can be used in conjunction with a PC to provide accurate, versatile 8 channel thermocouple temperature measurement, scanning and logging of measured values. It can also be used as a stand-alone indicator/logger and incorporates a digital display of measured temperature.

The in-built, self-calibration facility is a rapid and convenient method for on-site calibration and does not require any additional equipment other than a special, external link.

The L200 TC is designed to provide exceptional stability with high measurement resolution and represents an ideal crossover between plant practicality and laboratory performance at a very competitive price.

- Simple operation
- Low cost - high performance
- USB PC interface 8 thermocouple inputs, types J, K, T, E, N, R, S & B
- Built in display for selected channel or all channels auto-scrolling
- Resolution 0.1°C on L200 display, 0.01°C in software
- Self calibration feature
- Select °C or °F
- PC software included for remote control and measure, logging and calibration



**Bench Top Instrumentation**



Thermocouple Type	8 thermocouple (type J,K,T,E,N,R,S & B) inputs
Accuracy	Thermocouples J K T E & N better than +/- 0.1°C +/-0.1% of range -100°C to span (Zero to span Type N) +/- 0.15% of range -101 to -200°C (J K T & E) Thermocouples R S & B better than +/-0.1°C +/-0.15% of range
Input / Ranges	Thermocouple to IEC 584 Type J -200°C to 750°C Type K -200°C to 1200°C Type T -200°C to 350°C Type E -200°C to 900°C Type N 0°C to 1300°C Type R 0°C to 1760°C Type S 0°C to 1760°C Type B 300°C to 1800°C
Resolution of data display	Thermocouple ranges 0.1°C
Linearisation Conformity	±0.05°C
User Interface	Front panel key for channel No. or auto-scan selection. PC software for all other functions.
Self Calibration	User facility incorporated. The instrument auto-calibrates on every A/D cycle

[www.labfacility.com](http://www.labfacility.com)

# L200-PT Temperature Monitor

**XE-6040-001**

The Labfacility L200 PT Temperature Logger can be used in conjunction with a PC to provide accurate, versatile 8 channel Pt100 temperature measurement, scanning and logging of measured values. It can also be used as a stand alone indicator/logger and incorporates a digital display of measured temperature. Self-calibration of Pt100 ranges is simple and uses plug-in precision resistors.

The L200 PT is designed to provide exceptional stability with high measurement resolution and represents an ideal crossover between plant practicality and laboratory performance at a very competitive price.

- Simple operation
- Low cost - high performance
- USB PC interface
- 8 Pt100 (3 wire) inputs
- Built in display for selected channel or all channels auto-scrolling
- 0.01°C resolution
- Self calibration feature
- Select °C or °F
- PC software included for remote control and measure, logging and calibration



Accuracy	better than $\pm 0.05^{\circ}\text{C} \pm 0.1\%$ of range
Input / Ranges	Pt100 (3 wire) inputs - Pt100 to IEC751, 3 wire $-200^{\circ}\text{C}$ to $850^{\circ}\text{C}$
Resolution of data display	Pt100 range $0.01^{\circ}\text{C}$
Linearisation Conformity	$\pm 0.05^{\circ}\text{C}$
User Interface	Front panel key for channel No. or auto-scan selection. PC software for all other functions.
Self Calibration	User facility incorporated. The instrument auto-calibrates on every A/D cycle
Accessories	Supplied as standard on CD-ROM Remote control & measure:- Log readings to file Download to PC Logging, calibration

# L300-TC 8 Zone Temperature Alarm / Controller

**XE-6031-001**

The Labfacility L300-TC (Thermocouple) temperature alarm / on-off controller can be used in conjunction with a PC to provide accurate monitoring and alarm or on-off control of up to 8- zones simultaneously. It can also be used as a stand-alone instrument without the need for a PC.

The PC software supplied with the instrument allows control, configuration, measurement, logging, charting, alarm & relay configuration and calibration functions via a PC.

The in-built, self-calibration facility for the thermocouple version is a rapid and convenient method for on-site calibration and does not require any additional equipment other than a special, external link. Self-calibration of Pt100 ranges is equally simple and uses plug-in precision resistors.



General Description	Built-in display for selected channel or all channels auto-scrolling. PC software included for remote control and measure, logging, configuration and calibration. 8 x configurable change-over relays 10A/250V. Simple operation. On-board memory 512 sets of readings
Thermocouple Type	8 thermocouple types (J,K,T,E,N,R,S& B)
Accuracy	Thermocouples J K T E & N better than +/- 0.1°C +/-0.1% of range -100°C to span (Zero to span Type N) +/- 0.15% of range -101 to -200°C (J K T & E) Thermocouples R S & B better than +/-0.1°C +/-0.15% of range
Input / Ranges	Thermocouple to IEC 584 Type J -200°C to 750°C Type K -200°C to 1200°C Type T -200°C to 350°C Type E -200°C to 900°C Type N 0°C to 1300°C Type R 0°C to 1760°C Type S 0°C to 1760°C Type B 300°C to 1800°C
Resolution of data display	Thermocouple ranges 0.1°C
Linearisation Conformity	±0.05°C

# L300-PT 8 Zone Temperature Alarm / Controller

**XE-6041-001**

The Labfacility L300 Pt100 temperature alarm / on-off controller can be used in conjunction with a PC to provide accurate monitoring and alarm or on-off control of up to 8- zones simultaneously. It can also be used as a stand-alone instrument without the need for a PC.

The PC software supplied with the instrument allows control, configuration, measurement, logging, charting, alarm & relay configuration and calibration functions via a PC.

The in-built, self-calibration facility for the thermocouple version is a rapid and convenient method for on-site calibration and does not require any additional equipment other than a special, external link. Self-calibration of Pt100 ranges is equally simple and uses plug-in precision resistors.



Accuracy	better than $\pm 0.05^{\circ}\text{C} \pm 0.1\%$ of range
Input / Ranges	Pt100 to IEC751, 3 wire $-200^{\circ}\text{C}$ to $850^{\circ}\text{C}$
Linearisation Conformity	$\pm 0.05^{\circ}\text{C}$
User Interface	Front panel keys for selecting channel number for display or auto-scan selection; front panel keys for relay configuration and alarm parameters. 8 x LED indicators for relay actuation
Self Calibration	User facility incorporated. The instrument auto-calibrates on every A/D cycle
Power Supply	6Vdc (5.5-9.0V) via universal mains adaptor (supplied) 120-250V 50/60Hz
Accessories	Supplied as standard on CD-ROM Remote control & measure: - Log readings to file Download to PC Logging, charting, alarm configuration and calibration