



PASS PTC-8 TEMPERATURE CALIBRATOR FOR THERMOCOUPLE PROBES

OPERATING MANUAL & SPECIFICATIONS

PLEASE READ BEFORE SWITCHING ON THE UNIT, IMPORTANT SAFETY INFORMATION INSIDE

Safety Information

To avoid possible electric shock or personal injury:

- Never apply more than 30V between any two terminals, or between any terminal and earth
- Make sure the battery door is closed and latched before you operate the calibrator
- Remove test leads from the calibrator before you open the battery door
- Do not operate the calibrator if it is damaged
- Do not operate the calibrator around explosive gas, vapour, or dust

To avoid possible damage to the calibrator:

- Use only the terminals and wires corresponding to the function chosen
- Remove the calibrator from its working environment when it is off

Introduction

The PTC-8 is capable of measuring and simulating up to 8 types of thermocouples (J, K, T, E, R, S, B, N), as well as a voltage in mV. It cannot be used as a measuring instrument and as a generator at the same time.

Included Accessories

- Carry Case
- 2x Thermocouple Adapters
- 6x AAA 1.5 V Batteries
- Operating Manual

Specification

All of the specifications are guaranteed for one year after calibration, at temperatures between 18°C and 28°C, with battery power.

Millivolt Input/Output Parameters

Input/Output Range	Resolution	Accuracy
-10mV~100mV	0.01mV	$\pm (0.025\%+2\text{counts})$

Max. Input voltage 30V pp

Thermocouple Input/Output Parameters






Function	Range	Resolution	Accuracy	Reference Junction Error
J TYPE	-200~1200°C / -328~2192°F	0.1°C/°F	±(0.3°C+10uV)	±0.3°C
K TYPE	-200~1370°C / -328~2498°F	0.1 °C/°F	±(0.3°C+10uV)	±0.3°C
T TYPE	-200~400°C / -328 ~ 752°F	0.1 °C/°F	±(0.3°C+10uV)	±0.3°C
E TYPE	-200~950°C / -328~1742°F	0.1 °C/°F	±(0.3°C+10uV)	±0.3°C
R TYPE	-20~1750°C / -4~3182°F	1 °C/°F	±(1°C+10uV)	±0.3°C
S TYPE	-20~1750°C / -4~3182°F	1 °C/°F	±(1°C+10uV)	±0.3°C
B TYPE	600~1800°C / 1112~3272°F	1 °C/°F	±(1°C+10uV)	±0.3°C
N TYPE	-250~1300°C / -418~2372°F	0.1 °C/°F	±(0.3°C+10uV)	±0.3°C

Max. Input voltage 30V pp

General Specifications

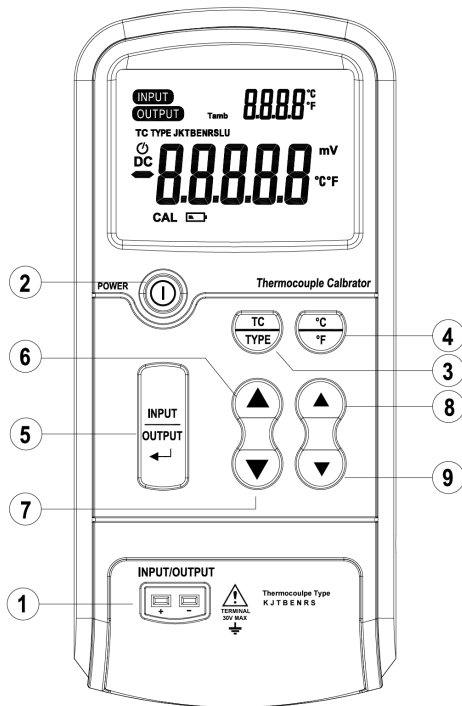
30 V Max. Voltage applied between a terminal and earth or between two terminals	
Storage Temperature	-40°C ~ 60°C
Operating Temperature	0 - 50°C
Operating Altitude	3000 Metres Max.
Temperature Coefficient	± 0.02% / °C on 0°C ~ 18°C and 28°C ~ 50°C
Relative Humidity	95% up to 30°C 75% up to 40°C 45% up to 50°C
Shock	Random, 2 g, 5 Hz to 500 Hz
Safety	1 Metre Drop Test
Power Requirements	6x 1.5 V AAA Batteries
Size (LxWxH)	205 mm × 98 mm × 46 mm, 472g (with batteries)

International Symbols

Symbol	Meaning
	Earth Ground
	Conforms to European Union Directives (CE marking)
	Warning! Take note of Safety Recommendations
	Battery
	Double Insulation

Explanation of the Front Panel

1. Input / output terminal
2. On/Off button
3. Mode button
4. °C / °F button
5. Input / output button
6. Increase upper value
7. Decrease upper value
8. Increase lower value
9. Decrease lower value



Explanation of the Display Screen

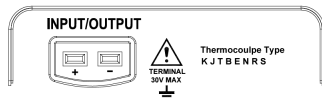
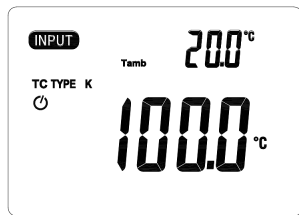
10. Indication of Input Measurement Mode
11. Indication of Generator Mode
12. Indication of activation of Auto Power Off
13. Display of the values measured or generated
14. Indicates Calibration Mode
15. Indicates battery life
16. Unit indicator
17. Probe type indicator
18. Ambient temperature display



Operating Instructions

Thermocouple Or Millivolt Input

1. Press **(2)** to turn on the calibrator
2. Press **(5)** to change to 'INPUT' mode
3. Press **(3)** to select the type of thermocouple
4. Connect the measurement thermocouple or the millivolt generator to input terminal **(1)**
5. Read the value on the display **(13)** In thermocouple measurement mode, ambient temperature value **(18)** is displayed on LCD
In voltage measurement, there is no temperature display

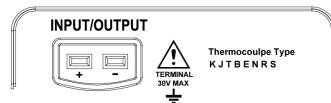
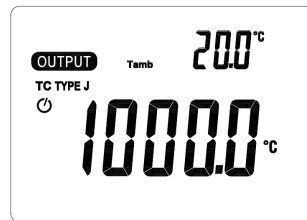


The numbers in brackets refer to the [EXPLANATION OF THE FRONT PANEL](#)

Operating Instructions

Simulation / Thermocouple Or Millivolt Output

1. Press **(2)** to turn on the calibrator
2. Press **(5)** to change to 'OUTPUT' mode
3. Press **(3)** to select the type of thermocouple
4. Press buttons **(6, 7, 8, and 9)** to define the desired value
5. Connect the thermocouple or the voltmeter to output terminal **(1)**
6. If you want to change the output value, press buttons **(6, 7, 8, 9)**, or change the type of thermocouple using **(3)**



Connecting Leads

Use the thermocouple adapter provided as an accessory to make the various connections desired.

Operating Instructions

Auto Shut Off

The default auto shut-off time is 30 minutes.

Setting Auto-power off option:

1. Hold **(4)** then turn on the power
2. Release **(4)**, press **(6) or (7)** to adjust the time (off, 15min~60min.)
3. Then press **(4)** to finish setting auto-power off option

After changing the battery, the auto-power off setting returns to the default setting.

If after changing the battery, the unit no longer powers on, please remove the battery, wait 3 minutes, then try again.

Display all Symbols

Setting display all symbols:

1. Hold **(3)** then turn on the power
2. It will display all symbols on the LCD
3. Press any button to exit

Connecting a Mains Adapter (Accessory)

1. Connect the AC power cord to the AC-DC converter
2. Plug the AC power cord into an electrical outlet (220V-240V)
3. Plug the DC power plug of the converter into DC power socket of the meter

AC/DC Characteristics of the Mains Adapter

Input: 220V-240VAC, 50-60Hz 1A

Output: DC 9V 1A MAX $\pm 8\%$



Plug size: DCPLUG (Round) -5.5mm-2.1mm(hole)

Ripple: $\leq 50\text{mVpp}$

WARNING

1. Only use the original mains adapter
2. The AC power adapter can only be used indoors
3. Plug the AC power cord into an electrical outlet first, then, put the DC plug into the DC input in the right of the meter. When unplugged, firstly pull out the DC plug perpendicular to DC input end, and then unplug the AC plug from the electrical outlet
4. Do not use the mains adapter with any other device
5. It is normal for the mains adapter to warm up in operation
6. Do not dismantle the mains adapter
7. Do not use the adapter in an overheated or damp room
8. It is normal for the mains adapter to make noise when in operation
9. The battery symbol may appear when plugging the AC power adapter

Maintenance



Use only manufacturer-specified spare parts for maintenance. The manufacturer is not responsible for accidents resulting from repairs performed by unapproved repairers.

Cleaning

Periodically wipe the case with a damp cloth and gentle detergent; do not use abrasives or solvents.

Calibration

Calibrate your calibrator once a year to ensure that it performs according to its specifications. You can visit www.calibrate.co.uk for a quote.

Replacing the Battery

Please change the battery when the LCD indicates the battery symbol

1. Turn off the instrument
2. Remove the battery cover, discard old batteries properly and safely, and replace them with new 1.5V AAA batteries

Replacing a Fuse



Warning

To avoid personal injury or damage to the calibrator, use only a 0.125A 250V fast fuse.

In the thermocouple input mode, if OL does not appear on LCD with no thermocouple input, the fuse may be blown.



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