



- 3 ranges up to 1V
- Accuracy 0.02%
- 20mA output current
- Best resolution 1 $\mu$ V
- Short circuit and overload protected
- LED null measuring facility
- Removable protective cover
- Powered by 6 x AA batteries
- 100 hours typical battery life
- Optional carry case

### DESCRIPTION

The 1007 is a versatile portable calibrator that can be used for potentiometric voltage measurement in addition to its operation as a millivolt source. The null zero and sensitivity are adjustable via front panel controls. Maximum sensitivity enables null balance to resolve 3 microvolt.

Three output ranges are provided to give adjustable output values from 1 $\mu$ V to 1V with a basic 0.02% accuracy. For signal injection, the operator needs to switch on, check the battery condition, select the range, and set the required voltage using the thumbwheel switches. The 1007 uses a precision reference diode and low temperature coefficient resistors to give a highly stable output.

Power is provided by 6 AA batteries. Battery life is several months, depending on usage. The battery condition is monitored by an indicator mounted on the top of the unit. The 1007 has up to 20mA drive current and is short circuit and overload protected. An off/normal/reverse output polarity switch is provided.



**Safety Terminals:** Fitted as standard and fully compatible with 4mm shrouded plugs, as well as standard plugs, bare wires, and spade terminals.

**Added Protection:** The 1007 comes fitted with an ergonomic rubber cover providing increased protection and durability. It has a textured grip for comfortable handling and openings at the top and bottom to allow access to the battery meter and a position to place labels if required. It is easy to remove if the user prefers a stand-alone unit or to house the 1007 in the optional 9027 carry case.

### APPLICATIONS

Suitable for calibration and simulation of thermocouples. Accurate voltages equivalent to the output from a thermocouple can be set quickly and easily on the 1007, enabling fast calibration of temperature measuring equipment.

Alternatively, the 1007 can measure thermocouples output by operating as a potentiometer. Other applications include chart recorder calibration, A/D converter and DMM calibration, and use as a stable voltage for backing off DC offsets.

# 1007 Specifications

## TECHNICAL SPECIFICATION

Output .....	<i>0 to 999.9mV in 3 ranges</i> 0 to 999.9mV in 0.1mV steps 0 to 99.99mV in 10 $\mu$ V steps 0 to 9.999mV in 1 $\mu$ V steps
Accuracy .....	$\pm 0.02\%$ of setting + $\pm 0.02\%$ of range + $\pm 1\mu$ V.
Output Resistance .....	Less than 0.2 $\Omega$ on 1 V and 100 mV ranges. 1 $\Omega$ on 10mV range.
Maximum Output Current .....	1V and 100mV ranges –20mA. 10mV range – Up to short circuit value although it should be noted that loads of less than 1k $\Omega$ will give greater than 0.1% error.
Output Voltage Stability .....	Less than 60ppm/ $^{\circ}$ C. Less than 100ppm per 3 months (non-cumulative).
Operative Temperature .....	- 10 $^{\circ}$ C to + 60 $^{\circ}$ C.
Output Polarity .....	Positive or negative switch selected. A centre 'off' position is also provided.
Output Noise Level .....	Less than 30ppm of full scale
Reference Source .....	Precision zener diode, selected for stability and low temperature coefficient.
Maximum Overload .....	The instrument can withstand continuous short circuit on the output for all ranges.
Null Balance Display .....	On a front panel meter, zero and sensitivity controls are provided: Maximum sensitivity: $\pm 20\mu$ V f.s.d. (3 $\mu$ V resolution). Minimum sensitivity: $\pm 200$ mV f.s.d. Input resistance: Greater than 1M $\Omega$ .
Power Supply .....	6-AA size (51x14mm) batteries. A battery condition display indicates when the batteries should be changed. An alternative power source is 6 NiMH cells of the same dimensions. These can be recharged via a socket on the top of the unit. The 6 rechargeable batteries and mains recharger are available as an optional extra.

## GENERAL SPECIFICATION

Dimensions .....	200 x 75 x 110mm (215 x 100 x 120mm including protective cover)
Weight .....	0.75kg (1.2kg including protective cover)
Optional Extras .....	Carry Case Rechargeable Battery Packs – 240V and 110V mains Calibration Certificates – traceable to NPL and UKAS
Country of Origin .....	UK

## ORDERING INFORMATION

1007 .....	<b>DC Millivolt Potentiometer and Calibrator</b>
9027 .....	Leatherette Carry Case
9529 .....	Rechargeable Battery Pack – (6 NiMH Cells + 240V Mains Charger)
9528 .....	Rechargeable Battery Pack – (6 NiMH Cells + 110V Mains Charger)
C150 .....	Factory (NPL Traceable) Calibration Certificate
C101 .....	UKAS Calibration Certificate (ISO 17025)

Due to continuous development Time Electronics reserves the right to change specifications without prior notice.

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