



## 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  $\mu\text{V}$  to 1 V 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 situated on the top of the unit. The 1007 has up to 20 mA 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 4 mm 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 indicator 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 multimeter calibration, and use as a stable voltage for backing off DC offsets.

## Features

- 3 ranges up to 1 V
- Accuracy 0.02 %
- 20 mA output current
- Best resolution 1  $\mu\text{V}$
- 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





## Technical Specifications

Output	<b>0 to 999.9 mV in 3 ranges:</b> 1 V range: 0 to 999.9 mV in 0.1 mV steps. 100 mV range: 0 to 99.99 mV in 10 $\mu$ V steps. 10 mV range: 0 to 9.999 mV in 1 $\mu$ V steps.
Accuracy	$\pm$ (0.02 % of setting + 0.02 % of range + 1 $\mu$ V).
Output resistance	Less than 0.2 $\Omega$ on 1 V and 100 mV ranges. 1 $\Omega$ on 10 mV range.
Maximum output current	1 V and 100 mV ranges: 20 mA. 10 mV range: Up to short circuit value although it should be noted that loads of less than 1 k $\Omega$ will give greater than 0.1 % error.
Output voltage stability	Less than 60 ppm/ $^{\circ}$ C. Less than 100 ppm per 3 months (non-cumulative).
Operating 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 30 ppm of full scale.
Reference source	Precision bandgap reference diode, 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 1 M $\Omega$ .
Power supply	6 AA size (51 x 14 mm) batteries. A battery level indicator displays 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 110 mm (215 x 100 x 120 mm including protective cover).
Weight	0.75 kg (1.2 kg including protective cover).
Optional extras	Carry case. Rechargeable battery pack with mains charger. Calibration certificates - traceable (factory) or accredited (ISO 17025).
Country of origin	UK.

## Ordering Information

1007	<b>DC Millivolt Potentiometer and Calibrator</b>
9027	Carry case
9529	Rechargeable battery pack (6 NiMH cells and mains charger)
C150	Traceable calibration certificate (Factory)
C100	Accredited calibration certificate (ISO 17025)

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