**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 µV 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 mounted 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 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 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 µV
- 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......................................................... 0 to 999.9 mV in 3 ranges:
   1 V range: 0 to 999.9 mV in 0.1 mV steps.
   100 mV range: 0 to 99.99 mV in 10 µV steps.
   10 mV range: 0 to 9.999 mV in 1 µV steps.

Accuracy ...................................................... ± (0.02 % of setting + 0.02 % of range + 1 µV).

Output resistance ............................................ Less than 0.2 Ω on 1 V and 100 mV ranges. 1 Ω 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 kΩ will give greater than 0.1 % error.

Output voltage stability ..................................... Less than 60 ppm/°C. Less than 100 ppm per 3 months (non-cumulative).

Operating temperature .................................... -10 °C to + 60 °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 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: ± 20 µV f.s.d. (3 µV resolution).
   Minimum sensitivity: ± 200 mV f.s.d.
   Input resistance: Greater than 1 MΩ.

Power supply ................................................ 6 AA size (51 x 14 mm) 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 110 mm (215 x 100 x 120 mm including protective cover).

Weight ....................................................... 0.75 kg (1.2 kg including protective cover).

Optional extras ............................................ Leather carry case.
   Rechargeable battery packs with either 240 V and 110 V mains chargers.
   Calibration certificates - traceable (factory) or accredited (ISO 17025).

Country of origin ......................................... UK.

Ordering Information

1007............................................................. DC Millivolt Potentiometer and Calibrator
9027........................................................... Carry case
9529........................................................... Rechargeable battery pack (6 NiMH cells and 240 V mains charger)
9528........................................................... Rechargeable battery pack (6 NiMH cells and 110 V mains charger)
C150........................................................... Traceable calibration certificate (Factory)
C100........................................................... Accredited calibration certificate (ISO 17025)