Time Electronics
1006 DC Millivolt Source



Description

The 1006 is an accurate low cost millivolt source suitable for voltage injection applications. 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 1006 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 instrument. The 1006 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 1006 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 1006 in the optional 9027 carry case.

Applications

As an accurate millivolt source, the 1006 can be used for many applications including thermocouple simulation (using appropriate lookup table), chart recorder calibration, A/D converter and DMM calibration, and 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
- Safety terminals
- Removable protective cover
- Powered by 6 x AA batteries
- 100 hours typical battery life
- Optional carry case



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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).

Operative 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 bandgap reference diode, for stability and low temperature coefficient.

Maximum overload ..... The instrument can withstand continuous short circuit on the output for all ranges.

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 re-charger 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

1006 ..... **DC Millivolt Source**

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.

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