Time Electronics
1030 MicroCal - Voltage and Current Source



Description

The 1030 MicroCal is a portable voltage and current calibrator for general purpose signal injection. It is suitable for voltage and current loop signal simulation as well as thermocouple simulation. Being both cost-effective and simple operation, it is a popular instrument used in various applications across industries.

The compact (115 x 62 x 55 mm) and durable design makes it ideal for use in both the lab and field, with carry case supplied as standard. Typically battery life is 60 hours. An optional rechargeable battery pack is available, with mains charger that connects via a socket on the top of the unit.

The MicroCal is designed for traditional and quick analogue control. The precision 10-turn dial provides a conventional feel to selecting the required output with a setting resolution of 1 part in a 1000 (0.1 %).

Three voltage ranges give an adjustable output from 10 μV to 1 V and two current ranges for 10 μA to 100 mA. An additional 0 to 8 V output can be obtained by using a precision 1 KΩ resistor that is supplied with the unit. The resistor is connected across the output terminals and the 10 mA current range selected. This allows the output to be set between 0 and +/- 8 V with a 10 mV resolution and an accuracy of 0.3 % of full scale.

The 1030 is simple to operate and does not require any standardisation prior to use. The operator needs only to switch on, check the battery condition, and set the required range and output value. The unit is a pocket-sized, practical test tool for engineers and technicians requiring a precision compact solution for low range V/I sourcing.

Features

- 10 mV, 100 mV, 1 V ranges
- 10 mA, 100 mA ranges
- Accuracy 0.1 %
- Linearity 0.15 %
- Up to 8 V output (using 1 kΩ resistor)
- Precision 10-turn dial
- 60 hours typical battery life
- Battery level indicator
- Supplied with carry case

Applications

Accurate measurements of low ohm values, such as platinum resistance thermometers, can be performed by using the 1030 as a current source and measuring the voltage across the load with a digital voltmeter. The 10 mV range of the 1030 is ideal for simulation of all types of thermocouple.

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Technical Specifications

Voltage

Range	Accuracy	Resolution	Max output current	Output resistance
0 to 10 mV	0.2 % of full scale	10 μV	Limited by output resistance	10 Ω
0 to 100 mV	0.1 % of full scale	100 μV	20 mA	0.2 Ω
0 to 1 V	0.1 % of full scale	1 mV	20 mA	0.2 Ω
0 to 8 V (using supplied 1 kΩ resistor)	0.3 % of full scale	10 mV	Limited by output resistance	1 kΩ

Current

Range	Accuracy	Resolution	Max output voltage
0 to 10 mA	0.2 % of full scale	10 μA	8 V
0 to 100 mA	0.2 % of full scale	100 μA	8 V

Additional and General Specifications

Linearity ..... 0.15 %

Temperature coefficient ..... 150 ppm of full scale per °C (outside 18 °C to 28 °C)

Noise ..... 30 ppm of full scale

Battery ..... PP3 size, 9 V. Approximately 60 hours life.
Optional NiMH rechargeable cell can be used, with mains charger supplied (see option 1031 or 1032).
Charging is made via the socket on the top of the unit without removing the cell from the housing.

Battery condition ..... Monitored by front panel indicator.

Output polarity ..... Positive or negative, switch selected. A centre 'off ' position is also provided.

Maximum overload ..... The 1030 can withstand continuous open circuit or short circuit on all ranges.

Dimensions ..... H 115 x W 62 x D 55 mm.

Weight ..... 0.24 kg.

Optional extras ..... Rechargeable battery packs (charger connects via socket on top of 1030).
Calibration certificates: Traceable (Factory) and Accredited (ISO 17025).

Country of origin ..... UK.

Ordering Information

1030 ..... **MicroCal - Voltage and Current Source**

1031 ..... Rechargeable battery pack (NiMH battery and 240 V mains charger)

1032 ..... Rechargeable battery pack (NiMH battery and 110 V mains charger)

C155 ..... Traceable calibration certificate (Factory)

C110 ..... Accredited calibration certificate (ISO 17025)

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

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