



# Time Electronics

## 1030 MicroCal - Voltage and Current Source



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

### 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 55mm) 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 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 $\mu$ V to 1V and two current ranges for 10 $\mu$ A to 100mA. An additional 0 to 8V output can be obtained by using a precision 1K $\Omega$  resistor that is supplied with the unit. The resistor is connected across the output terminals and the 10mA current range selected. This allows the output to be set between 0 and +/- 8V with a 10mV 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.

### 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 10mV range of the 1030 is ideal for simulation of all types of thermocouple.

# 1030 Specifications

## TECHNICAL SPECIFICATION

### VOLTAGE

Range	Accuracy	Resolution	Max Output Current	Output Resistance
0 to 10mV	0.2% of full scale	10 $\mu$ V	Limited by o/p resistance	10 $\Omega$
0 to 100mV	0.1% of full scale	100 $\mu$ V	20mA	0.2 $\Omega$
0 to 1V	0.1% of full scale	1mV	20mA	0.2 $\Omega$
0 to 8V (using supplied 1k $\Omega$ resistor)	0.3% of full scale	10mV	Limited by o/p resistance	1k $\Omega$

### CURRENT

Range	Accuracy	Resolution	Max Output Voltage
0 to 10mA	0.2% of full scale	10 $\mu$ A	8V
0 to 100mA	0.2% of full scale	100 $\mu$ A	8V

Linearity ..... 0.15%

Temperature Coefficient ..... 150ppm of full scale per °C (Outside 18°C to 28°C )

Noise ..... 30ppm of full scale

Battery ..... PP3 size, 9V. Approximately 60 hours life. An optional alternative power source is a NiMH rechargeable cell of the same type. This can be recharged via the socket on the top of the unit without removing the cell from the unit.

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.

## GENERAL SPECIFICATION

Dimensions ..... H115 x W62 x D55mm

Weight ..... 0.24kg

Optional Extras ..... Rechargeable Battery Pack (charger connects via socket on top of 1030)  
Calibration Certificates – traceable to NPL and UKAS

Country of Origin ..... UK

## ORDERING INFORMATION

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

1031 ..... Rechargeable Battery Pack (NiMH Battery and 240V Mains Charger)

1032 ..... Rechargeable Battery Pack (NiMH Battery and 110V Mains Charger)

C155 ..... Factory (NPL Traceable) Calibration Certificate

C110 ..... UKAS Calibration Certificate (ISO 17025)

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