Time Electronics
1044 Voltage and Current Calibrator



Description

A precision handheld calibrator that can be used as a general purpose current and voltage source. High performance and simple operation make it suitable for test engineers, R&D, service, and calibration technicians. Offering both versatility and practicality the 1044 is a compact test tool for quick and convenient sourcing and measuring of voltage and current. The 0.05 % accuracy is ideal for simulation and calibration in most engineering applications.

The 1044 combines the advantages of digital accuracy with analog control. Progressing from the familiar functions of the Time Electronics 1030 calibrator, the 1044 offers additional ranges, superior accuracy and the ability to measure as well as source.

The large, easy to read LCD display shows the actual output, even when the connected load exceeds the specifications. This important feature eliminates the risk of large errors when connecting to unknown loads. The display also indicates if the battery becomes critically low.

In the source mode, voltage up to 20 V and current up to 20 mA are generated in three ranges. When in current source mode the 1044 has a high 24 V compliance voltage which is ideal for powering process loops.

In the measurement mode, the range and function can be easily selected, with the measured input accurately shown on the LCD display.

The 1044 is housed in a pocket sized ABS case, and comes with a leatherette carry case containing a compartment for storing test leads. Connections are by standard 4 mm plugs or by simply clamping the wires under the terminals. A single 9 V battery powers the unit or an external 12 V DC power supply may be used which disconnects the internal battery.

Features

- Measure voltage and current
- Source voltage and current
- 3 voltage ranges 0 to 20 V
- 3 current ranges 0 to 20 mA
- Accuracy 0.05 %
- 3.5 digit LCD display
- Portable test tool with 28 hours typical battery life
- Supplied with carry case
- Optional mains power supply (230 V and 110 V available)

Applications

Common use of the 1044 is to simulate a transducer or measure the current flow in a transducer loop. The 1044 can be used to check a 4 to 20 mA system in either source or measure modes of operation, with the 24 V compliance voltage powering the loop when current source mode is selected.

In the source mode, the 1044 may be used to calibrate meters, thermocouple indicators, data loggers, for signal injection, semiconductor characterisation, or as a backing off source. In the measure mode, the 1044 may be used in the same way as a digital multimeter, checking DC voltages and current over 3 ranges with excellent resolution and accuracy.

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Technical Specifications

Voltage source

Range	Resolution	Accuracy	Output current	Temp coefficient	Noise
0 to 200 mV	100 µV	0.05 % of full scale + 2 digits	20 mA	± 150 ppm/°C	< 30 ppm of full scale
0 to 2 V	1 mV				
0 to 20 V	10 mV				

Voltage measure

Range	Resolution	Accuracy	Input impedance	Temp coefficient
0 to 200 mV	100 µV	0.05 % of full scale + 2 digits	1 MΩ	± 150 ppm/°C
0 to 2 V	1 mV		1 MΩ	
0 to 20 V	10 mV		10 MΩ	

Current source

Range	Resolution	Accuracy	Output voltage	Temp coefficient	Noise
0 to 200 µA	100 nA	0.05 % of full scale + 3 digits	24 V max	± 200 ppm/°C	< 50 ppm of full scale
0 to 2 mA	1 µA				
0 to 20 mA	10 µA				

Current measure

Range	Resolution	Accuracy	Shunt resistance	Temp coefficient
0 to 200 µA	100 nA	0.05 % of full scale + 3 digits	10 Ω	± 200 ppm/°C
0 to 2 mA	1 µA			
0 to 20 mA	10 µA			

General Specifications

Connections ..... Made by 4 mm connectors or clamped using the wire compression feature.

Power ..... PP3 size, 9 V battery. Approximately 28 hours life depending on the current sourced.
Alternatively an optional 12 V power supply can be plugged into the 2.5 mm socket on the top of the unit.

Protection ..... The 1044 can withstand open circuits, short circuits and reverse polarity up to 25 V.
Additional protection is by an internal fuse.

Operating temperature ..... –10 to 50 °C.

Storage temperature ..... –30 to 70 °C.

Operating humidity ..... 0 to 90 % non-condensing at 25 °C.

Dimensions ..... H 142 x W 78 x D 50 mm.

Weight ..... 0.30 kg.

Optional extras ..... 230 V or 110 V mains power supplies.
Calibration certificates: Traceable (Factory) and accredited (ISO 17025).

Country of origin ..... UK.

Ordering Information

1044 ..... **Voltage and Current Calibrator**

7643 ..... Mains power supply (230 V)

7652 ..... Mains power supply (110 V)

C156 ..... Traceable calibration certificate (Factory)

C133 ..... Accredited calibration certificate (ISO 17025)

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

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