

- Up to 100mA output
- 0.02% accuracy
- 10 ppm/hr stability
- Null facility
- Portable
- Battery & mains operation



Introduction

The 1024 (609N) is a precision DC Current Source suitable for calibration and test applications from nanoamp levels up to 100 mA.

The 1024 is a solid state battery powered instrument which is easily portable and convenient for laboratory field or industrial use. It incorporates many of the well proven circuit techniques of the Time Electronics Type 2003 DC Voltage Calibrator.

The null balance system enables the 1024 to be used for making accurate current measurement in addition to its basic function as a calibrator. Operation is by backing the current source output against the current to be measured with the difference being displayed on a sensitive centre zone null meter. At the null point, there is no voltage drop across the 1024.

The 1024 employs a precision aged reference diode as a basic reference source. Excellent zero stability is ensured by the use of a high performance FET chopper amplifier system. Precision metal film resistors with temperature co-efficients of less than 10 ppm per °C are used to maintain the accuracy and stability of the initial calibration.

Operation is from battery or mains. The battery supply condition is monitored by a front panel indicator that also serves as a supply on-off display. A minimum line on the indicator shows when the batteries should be recharged. Charging is performed by its own internal charger/ power supply. Simply plugging the 1024 into a mains supply will charge the batteries. Operation of the 1024 may be continued when plugged into the mains.

Applications include calibration and testing of current sensitive transducers; calibration ad linearity tests on digital and electronic current meters; and semiconductor parameter measurements e.g. diode conduction voltages at specified current levels.





Specifications

Output	0 – 100 mA in 5 ranges 0 – 99.999 mA in 1 μ A steps 0 – 9.9999 mA in 100 nA steps 0 – 999.99 μ A in 10 nA steps 0 – 99.999 μ A in 1 nA steps 0 – 9.9999 μ A in 0.1 nA steps
Accuracy	± 0.02% of setting + ± 0.005% of range + ± 0.2 nA
Voltage Capacity	15 V with new batteries or mains power (11 V with minimum allowable battery volts).
Regulation	Load : better than 5 ppm per volt. Supply : better than 5 ppm per volt
Output Polarity	Positive or negative switch selected. A centre 'off' position provides an open circuit on the output terminals.
Out of Limit Warning	A front panel LED indicator provides warning of insufficient drive voltage.
Output Stability	Less than 30 ppm per °C (0°C to + 50°C) Less than 10 ppm per hour at constant temperature. Less than 75 ppm per 6 months
Output Noise	100mA, 10mA and 1mA ranges : less than 5 ppm of full scale 100uA and 10uA ranges : less than 10 ppm of full scale \pm 0.1nA.
Null Sensitivity	Adjustable from ±25 mA to ± 25 μA FSD via front panel control. Maximum resolution is 0.5 $\mu A.$
Power Supply	The power unit will power the 1024 direct from the mains or by the internal rechargeable battery pack. The batteries are automatically charged when mains power is connected. Alternatively an optional battery unit taking 10 off 1.5V 'D' cells may be fitted in place of the power unit. Access to the battery compartment is from the instrument rear.

General Information

Dimensions	215 x 175 x 190 mm (overall width, depth, height).
Weight	3.3 kg (including power unit).
Optional Extras	Carry Case : houses the 1024 for field use. etc a leather shoulder strap and leads compartment are provided. The 1024 can be operated without removing it from the case.
Country of Origin	UK.

Ordering Information

DC Current Calibrator with null measuring facility Model 609N	
Carrying Case N.P.L Traceable Calibration Certificate UKAS Calibration Certificate	1024 9021 9154 9106