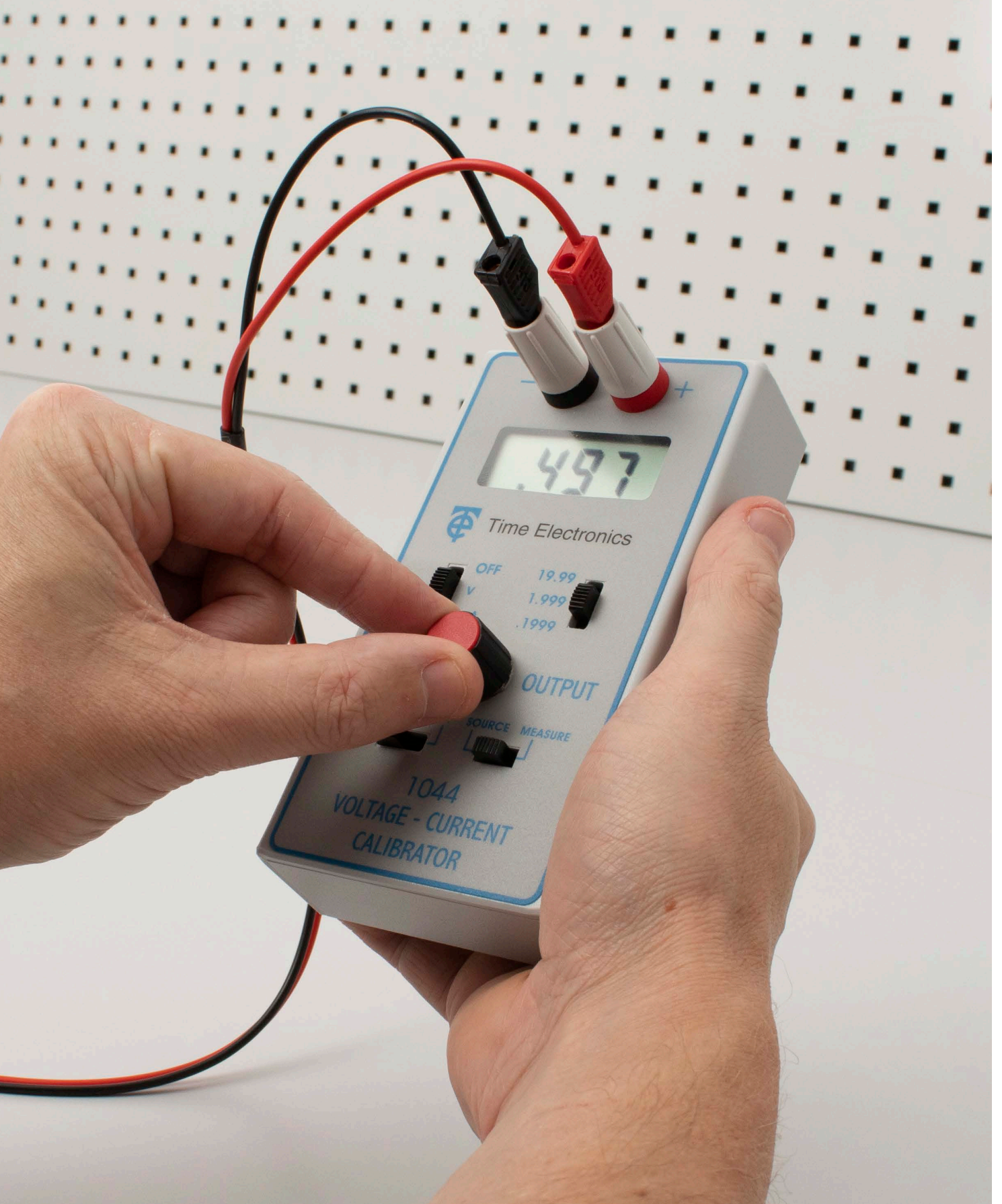




Portable Electrical and Process Calibrators



Handheld and portable calibration instruments
for industrial test and measurement applications



Portable Electrical & Process Calibrators



Portable Electrical & Process Calibrators

Time Electronics manufacture a wide range of portable test instruments for sourcing and measuring voltage, current and process signals. Products include handheld electrical simulators and sources, compact multifunction calibrators, and battery-powered transportable calibrators for use in the lab or on-site.

These practical calibration instruments combine simple operation with accuracy and reliability. They provide a high-performance portable solution for diagnostics and testing work. Robust design means they can be utilised in various field conditions.

Applications include dedicated DC voltage and current signal injection, transducer simulation and 4 to 20 mA loop checking. Calibrate electrical functions on measuring devices, test and verify instrumentation like transmitters, controllers and recorders. Temperature calibrators and simulators are used for RTD, Pt100 and thermocouple testing applications.



Portable Electrical Calibration Instruments

Handheld and transportable Calibrators, Simulators, and Sources



1006 DC Millivolt Source 1007 DC Millivolt Potentiometer and Calibrator

High accuracy handheld millivolt sources primarily used for voltage injection or potentiometric voltage measurement (1007). Applications include thermocouple simulation and calibration of A/D converters and chart recorders.

- 3 ranges up to 1 V
- Accuracy 0.02 % of setting + 0.02 % of rng
- 20 mA output current
- Best resolution 1 μ V
- Short circuit and overload protected
- LED null measuring facility (1007)
- Safety terminals
- Removable protective boot
- Powered by 6 x AA batteries
- 100 hours typical battery life
- Optional carry case
- H215 x W100 x D120 mm, weight 1.2 kg



1010 DC Voltage Calibrator

A highly stable and accurate calibrator designed for applications requiring a precision voltage source of low internal resistance. Suitable for calibration, linearity, and gains stability measurements on DC amplifiers, voltmeters, data loggers, and chart recorders.

- 0.01 μ V to 10 V in 5 ranges
- Accuracy 0.02 % of setting
- 10 ppm/hr stability
- 30 mA output current
- Safety terminals
- Battery or mains operation
- 40 hours typical use between charges
- Battery level indicator
- Optional carry case
- W217 x H160 x D193 mm, weight 3.3 kg



1024 DC Current Calibrator

A portable benchtop DC current source for calibration and test applications from nanoamp levels to 100 mA. Applications include current transducer testing and calibration and linearity tests on digital and electronic current meters.

- 0 to 100 mA output in 5 ranges
- Accuracy 0.02 % of setting
- 10 ppm/hr stability
- 30 ppm/ $^{\circ}$ C temperature coefficient
- Up to 15 V output drive
- Null meter measures to 1 μ A resolution
- Safety terminals
- Battery or mains operation
- 12 hours typical use between charges
- Battery level indicator
- Optional carry case
- W217 x H160 x D193 mm, weight 3.3 kg



1021 Milliamp Source with Null Indicator

A precision DC current source suitable for calibration and test applications from micro-amp levels up to 100 mA. The 1021 is used to calibrate current sensitive transducers and their associated indicating and recording instruments.

- 0 to 100 mA output in 3 ranges
- Accuracy 0.02 % of setting + 0.02 % of rng
- 25 ppm/hr stability
- Up to 40 V output drive
- LED null measuring facility
- Short circuit overload protected
- Safety terminals
- Removable protective boot
- Supplied with rechargeable batteries
- 10 hours typical use between charges
- Optional carry case
- H215 x W100 x D120 mm, weight 1.4 kg



1077 Milliamp Transducer Simulator

A multi-purpose handheld test instrument that can be used as an adjustable current load, adjustable power supply, or precision current source. The 1077 is commonly used for the testing and simulation of milliamp transducer systems.

- 3 operating modes
- Accuracy 0.02 % of setting + 0.02 % of rmg
- 100 mA source and load in 3 ranges
- 24 V line mode
- Variable drive source 14 to 40 V
- Short circuit and overload protected
- Safety terminals
- Removable protective boot
- Supplied with rechargeable batteries
- 10 hours typical use between charges
- Optional carry case
- H215 x W100 x D120 mm, weight 1.5 kg



1017 Voltage/Current/Resistance Calibrator

A portable multifunction calibrator with voltage, current, and resistance ranges. The 1017 is suitable for calibrating a wide range of instruments including thermocouples, transducers, transmitters, and platinum resistance thermometers.

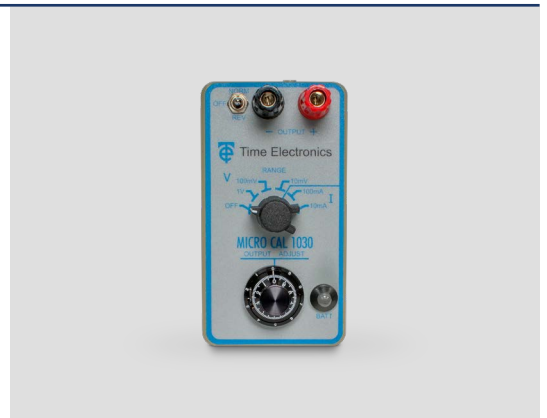
- DC Voltage 10 nV to 100 V
- DC Current 100 nA to 100 mA
- Resistance 10 mΩ to 10 kΩ
- Accuracy 0.005 % of setting + 0.002 % of rmg
- 1 ppm setting resolution
- Noise < 2 ppm (0.1 to 1 Hz)
- Stability < 5 ppm/day, < 25 ppm/yr
- Residual resistance < 200 mΩ
- Deviation control – Voltage and Current
- Battery or mains operation
- 12 hours typical use between charges
- W250 x H119 x D314 mm, weight 2.4 kg



1030 Voltage/Current Source

A simple operation pocket-sized calibrator suitable for voltage and current loop signal simulation as well as thermocouple simulation. A cost-effective and popular instrument used in various applications across industries.

- 10 mV, 100 mV, 1 V ranges
- 10 mA, 100 mA ranges
- Accuracy 0.1 % of range
- Linearity 0.15 %
- Up to 8 V output (using 1 kΩ resistor)
- Precision 10-turn dial
- 1 kΩ resistor supplied
- Battery level indicator
- Battery powered 9 V PP3
- 60 hours typical battery life
- Supplied with carry case
- H115 x W62 x D55 mm, weight 0.24 kg



1044 Voltage/Current Calibrator

A precision handheld calibrator that can be used as a general purpose current and voltage source. High performance and ease of use make it suitable for test engineers, R&D, service, and calibration technicians.

- 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 % of range
- 3.5 digit LCD display
- Battery powered 9 V PP3
- 28 hours typical battery life
- Optional mains power supply
- Supplied with carry case
- H142 x W78 x D50 mm, weight 0.30 kg
- Voltage/Current/Loop version 1048





Portable Process Calibration Instruments

Handheld Loop Calibrators, RTD and Thermocouple Calibrators



1048 Voltage/Current/Loop Calibrator

A compact voltage, current, and process loop calibrator for engineering, manufacturing, test, and process control applications. The 1048 combines digital accuracy with simple analogue control and is well suited to plant operations such as powering control loops.

- Source/measure voltage and current
- 3 source ranges: 0 to 22 mA and 0 to 22 V
- 3 measure ranges: 0 to 70 mA and 0 to 50 V
- Accuracy 0.02 % of range
- Transmitter simulator/sink loop control
- Output steps and ramps
- Fine adjustment (inching)
- Battery powered 9 V PP3, 20 hours typical use
- H 142 x W 78 x D 50 mm, weight 0.34 kg



7005 Voltage/Current/Loop Calibrator

A handheld instrument for the calibration and simulation of voltage and current loops. The 7005 is a high accuracy compact calibrator with source and measure capabilities.

- Current measurement: 125 mA, source 50 mA. Resolution 1 μ A
- Voltage measurement: 25 V, source 21 V. Resolution 1 mV
- Accuracy: Source 0.01 % of setting. Measure 0.01 % of reading
- Transmitter and square root functions
- Auto-ranging feature
- Programmable steps and ramp
- 9 hours typical use between charges
- Supplied with battery charger and carry case
- H 165 x W 90 x D 45 mm, weight 0.42 kg



7006 Loop-Mate 1: Loop Simulator and Source

A cost-effective handheld loop simulator that provides 4 to 20 mA or 0 to 10 V loop signals. Features include manual and automatic step modes with audible indication that changes pitch as the output increases/decreases.

- 4 to 20 mA or 0 to 10 V ranges
- Set-points: 0, 10, 25, 50, 75, 90, 100 % of range
- Accuracy 0.1 % of range
- TxSim or RxTest modes
- Internal loop supply, 25 mA maximum
- Auto-stepping mode: up/down/up, 0.5, 1, 2, 4, or 8 sec/step
- Battery powered 9 V PP3, 40 hours typical use
- Supplied with carry case
- H 140 x W 65 x D 30 mm, weight 0.18 kg



7007 Loop-Mate 2: Loop Signal Indicator

A simple operation portable loop signal indicator with LCD display. Suitable for use with the 7006 Loop-Mate 1.

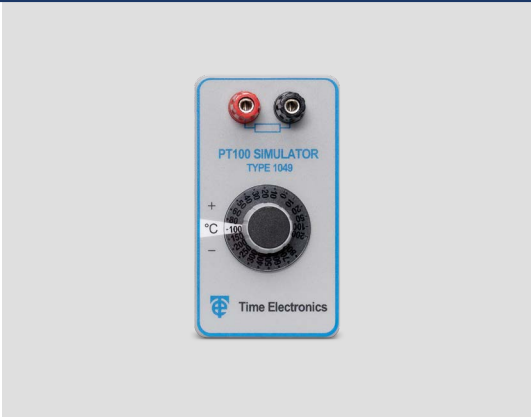
- 4 to 20 mA, 0 to 10 V, 0 to 50 V ranges
- LCD 4 digit display, mA, V, or % of range
- Accuracy 0.05 % of reading
- RxSim, TxTest, or 50 mA/50 V measure modes
- Internal loop supply, 25 mA maximum
- Battery powered 9 V PP3, 40 hours typical use
- Supplied with carry case
- H 140 x W 65 x D 30 mm, weight 0.20 kg



1049 Pt100 Simulator

A handheld precision simulator for Pt100 0.3850 platinum resistance elements used for accurate temperature measurement. High performance metal film resistors are used throughout which ensures a good temperature coefficient and long term stability.

- -200 °C to +800 °C, 23 set points
- Accuracy ± 0.3 °C
- Less than 30 ppm/°C temperature coefficient
- ITS-90 IEC60751
- Exceeds class A
- Passive resistance source
- Supplied with carry case
- H 112 x W 61 x D 55 mm, weight 0.17 kg



1050 Pt100 Simulator

A compact pocket-sized simulator, the °F version of the 1049 model. It follows the Pt100 scale from -100 to +1000 °F with 23 set points. High performance metal film resistors are used to ensure a good temperature coefficient and long term stability.

- -100 °F to +1000 °F, 23 set points
- Accuracy ± 0.5 °F
- Less than 30 ppm/°F temperature coefficient
- ITS-90 IEC60751
- Exceeds class A
- Passive resistance source
- Supplied with carry case
- H 112 x W 61 x D 55 mm, weight 0.17 kg



7000 RTD Temperature Calibrator

A portable process control instrument that combines a precision digital thermometer (using RTD probes) with an RTD/ohms calibrator.

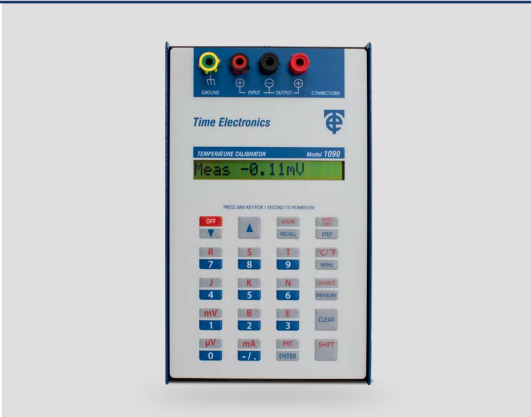
- Temperature: Accuracy 0.05 °C (0.09 °F). Resolution 0.01 °C (0.02 °F)
- Resistance: Accuracy 0.03 Ω . Resolution 0.01 Ω
- 2, 3, and 4-wire connections
- Measure and simulate °C, °F, °K, and ohms
- Ramp and step
- Pt100 plus 7 other RTD types
- User programmable
- 24 hours typical use between charges
- Supplied with battery charger and carry case
- H 165 x W 90 x D 45mm, weight 0.42 kg



1090 Process and Temperature Calibrator

A portable, key-press operation instrument that combines source and measurement functions for thermocouples, RTDs, mV and mA. The 1090 features a memory storage function that holds frequently used value.

- Measures/simulates 8 thermocouple types, Pt100-RTD, mV and mA
- Displays units in °C, °F, μ V/mV, or mA
- Accuracy: Source 0.02 % of range, 0.5 °C. Measure 0.05 % of range, 0.7 °C
- Automatic or manual cold junction compensation
- Inching and step functions with time configurable steps
- Process loops 4 to 20 mA and 0 to 50 mA
- Mains or battery operation, 60 hours typical use between charges
- Supplied with battery charger and carry case
- H 235 x W 150 x D 75 mm, weight 1.2 kg



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Y E A R S



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