



# Time Electronics

## 5025 Multifunction Calibrator



- 0 to 1050V AC/DC voltage
- 0 to 22A AC/DC current
- 1Ω to 1GΩ resistance
- Thermocouple simulation
- Digital frequency
- Optional oscilloscope calibration
- Optional PT100 simulation
- Capacitance and inductance option
- Power calibration option
- Clamp meter calibration (with adaptor)
- GPIB, RS232 and USB Interface

### DESCRIPTION

A high performance multi-product calibrator that provides the foundation for fast and cost-effective calibration. Designed for a wide workload the 5025 can be used to accurately test and verify both traditional and new test equipment.

The standard unit is fitted with AC/DC voltage to 1050V, AC/DC current to 22A, digital frequency to 10MHz, decade resistance to 1GΩ, conductance and thermocouple simulation. Further options enhance calibration capabilities and can be added as per customer requirement.

### MULTI INSTRUMENT CALIBRATION

The 5025 can calibrate various instruments and devices; digital and analogue multimeters, frequency meters, ohm meters, AC/DC millivoltmeters, thermocouple and PT100 meters, clamp meters, timer counters, oscilloscopes, and much more.

### SIMPLE OPERATION

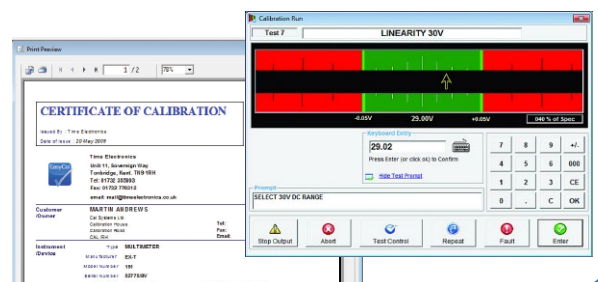
Functions and ranges are easily accessed from the front panel. Increase and decrease keys per digit, are used to quickly set the output value. Deviation control then enables the user to finely adjust the output value as a percentage (+/- 9.999%). All this information is shown on a clear, easy to read LED display.

### FLEXIBLE OPTIONS

A range of options provide added functionality and features. Internal additions include capacitance and inductance, wideband AC voltage, full range resistance (incorporating PT100 simulation), power calibration, and oscilloscope calibration. External adaptors are available for clamp meter calibration (up to 1100A), optical tachometer calibration, and torque wrench calibration. Also available is a power amplifier which increases the 5025's AC/DC voltage output drive capabilities to 100mA. This addition allows even the most demanding analogue instruments to be tested.

### CALIBRATION MADE EASY

Connect the 5025 to a PC/Laptop (via RS232, GPIB or USB) installed with Time Electronics' EasyCal software and automate the calibration process. This provides increased speed of calibration and consistency of results. Easily produce calibration certificates and reports to ISO 9001, ISO 17025, and other international quality standards.



# 5025 Specifications

## TECHNICAL SPECIFICATIONS

### STANDARD FEATURES

Function	Range	Best 1 year Specification
Voltage DC	0 to $\pm$ 1050V	$\pm$ 15ppm of setting
Current DC	0 to $\pm$ 22A	$\pm$ 80ppm of setting
Voltage AC	1mV to 1050V (10Hz to 20kHz, sine-wave)	$\pm$ 300ppm of setting
Current AC	10 $\mu$ A to 22A (20Hz to 1kHz, sine-wave)	$\pm$ 0.05% of setting
Resistance	1 $\Omega$ to 1G $\Omega$ (Fixed values, decade steps)	$\pm$ 20ppm of setting
Conductance	1s to 1ns (Fixed values, decade steps)	$\pm$ 20ppm of setting
Thermocouple Simulation	-270 to 1800°C (Type J, K, R, T, S, B, E, N)	$\pm$ 0.15°C
10MHz Digital Frequency/Period	0.1Hz to 10MHz / 100ns to 10s	$\pm$ 20ppm of setting

### OPTIONS (option code in brackets)

Option	Range / Values	Best 1 year Specification
Wideband AC Voltage (9771)	20 to 200mV/300kHz. 0.2 to 2V/1MHz. 2 to 20V/100kHz	$\pm$ 0.05% of setting
Capacitance (9798)	1nF, 10nF, 100nF, 1 $\mu$ F, 10 $\mu$ F, 100 $\mu$ F	$\pm$ 0.25% of setting
Inductance (9798)	1mH, 1.9mH, 5mH, 10mH, 19mH, 50mH, 100mH, 190mH, 500mH, 1H, 10H	$\pm$ 0.1% of setting
Full Range Resistance (9787)	1 $\Omega$ to 120M $\Omega$ (Variable)	$\pm$ 100ppm of setting
PT100	-200 to 850°C	$\pm$ 0.2°C
Power Calibration (9797)	22A, 1050V, 23kW, 45 to 400Hz	ACV: 0.03%, DCV: 0.01% ACI: 0.1%, DCI: 0.03%
Phase/Power Factor	$\pm$ 90°/ 0.00 to 1.00PF	$\pm$ 0.3°
<i>External Options</i>	<i>AC Current Transformer (9790): 100A / 100kW. Clamp Meter Adaptor x50 turn (9780): 1100A / 1.1MW</i>	
Oscilloscope Calibration (9770)		
Amplitude	0mV to 200V and 0mV to 2V 50 $\Omega$ (square-wave or DC)	$\pm$ 0.05%
Frequency/Period	0.1Hz to 100MHz / 100ns to 10s	$\pm$ 20ppm ( $\pm$ 0.1ppm optional)
Duty Cycle	3 frequencies: 100Hz, 1kHz, 10kHz, settable from 0 to 100%	
Fast-Rise	< 850ps. Bandwidth checking up to 400MHz	
2.2GHz Sweep (9769)	100MHz to 2.2GHz levelled sine-wave (0.5, 1, 1.5V pk-pk)	Amplitude $\pm$ 1%, Frequency $\pm$ 20ppm

## GENERAL SPECIFICATIONS

Warm up	30 minutes to full accuracy
Settling Time	Less than 5 seconds
Standard Interfaces	GPIB (IEEE-488), RS-232, USB
Temperature Performance	Operating: 5 to 40°C, Full Spec: 22°C +/- 3°C, Storage: -10°C to 50°C
Operating Humidity/Altitude	< 80% non condensing / Altitude: 0 to 3km. Non operating: 3km to 12km
Line Power	100 to 230V AC 50/60 Hz. 200W maximum
Dimensions / Weight	W455mm, H155mm, D480mm. Weight: 16.5kg

## ORDERING INFORMATION

<b>5025</b>	<b>Multifunction Calibrator</b>	9759	Torque Wrench Calibration Adaptor
9798	Capacitance (1000pF - 100 $\mu$ F) / Inductance (1mH - 10H)	9790	100 Amp AC Current Transformer
9774	Simulated Resistance (10 $\Omega$ - 40M $\Omega$ )	9760	Power Amplifier (60V AC, 90V DC - 100mA)
9787	Full Range Resistance (1 $\Omega$ - 120M $\Omega$ )	9766	External Low Noise Attenuator 1000:1
9771	Wideband AC Voltage (1MHz Max. 20mV - 20V)	9767	External Low Noise Attenuator 100:1
9797	Power Calibration (0 - 20KW AC and DC)	9085	Soft Carry Case for 5025
9770	Oscilloscope Calibration (1mV - 200V, 0.1Hz - 100MHz)	9728	19" Universal Rack Mount Kit
9769	Scope 2.2GHz Levelled Sine Generator	9541	5 piece Test Lead Set
9783	Oven-Controlled Frequency Reference (scope opts only)	9796	11 piece Premium Test Lead Set
9762	Rubidium Frequency Reference (external - scope opts only)	C159	Factory Calibration Certificate (NPL)
9764	Current Probe Calibration Adaptor (external - scope opts only)	C103	UKAS Calibration Certificate (ISO 17025)
5065	6.5 Digit Bench Multimeter	C113	Extended UKAS Calibration Certificate (ISO 17025)
9773	Optical Tacho Adaptor	9795	Printer & Connectivity Kit
9780	Clamp Meter Adaptor (1 & 50 turn coil)	ECFLA	EasyCal Software (see separate datasheet for options)

Full specifications are available on request. Due to continuous development Time Electronics reserves the right to change specifications without prior notice.

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