



Time Electronics

5030 Electrical Tester Calibrator



- RCD 3mA to 2500mA, 10ms to 2000ms
- Loop 50mΩ to 1.8kΩ
- Insulation up to 2GΩ / 1kV
- Continuity 0.1Ω to 10kΩ
- RS232 / USB Control
- Fast and intuitive user interface
- PC/laptop control via EasyCal software

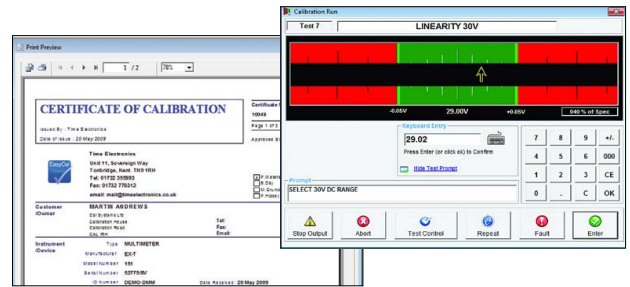
DESCRIPTION

A precision instrument designed to calibrate RCD, loop, insulation, earth testers and multifunction installation testers. The 5030 accurately simulates RCD trip times and measures currents produced by RCD testers. It replicates loop impedance and auto adjusts for local line impedance. It also provides insulation resistances and measures test voltages and currents.

SIMPLE OPERATION AND AUTOMATED CALIBRATION

User control is via the central navigation keypad. Scrolling through menus and settings is intuitive and easy, with measurements and settings shown on the large clear LCD display.

Alternatively connect the 5030 to a PC/laptop (via RS232 or USB) installed with Time Electronics' EasyCal software and automate the calibration process. Increase speed of calibration and consistency of results. Easily produce calibration certificates and reports to ISO 9001, ISO 17025, and other international quality standards.



REGIONAL TEST SOCKETS AND FAULT DETECTION

For loop and RCD tests the electrical tester (device under test) connects directly to the dedicated front panel mains socket. The 5030 can be fitted with a number of regional type sockets (specified on order). In these test conditions, if the device under test is faulty, the 5030 auto detects the fault, disconnects the output and warns the user. The 5030 is designed not to trip any RCDs on the local supply.

LOOP IMPEDANCE WITH AUTO LOCAL LOOP COMPENSATION

With 10 measurement points the 5030 covers a wide range of loop testers. The precision resistors that make up the loop calibration function are high power and capable of withstanding up to 40A. An accurate automatic measurement of the local loop is made by the 5030 and added to the resistor value to give the loop impedance value, allowing for precise loop impedance calibration.

PRECISE RCD TRIP TIMES

Set between 10 and 2000ms, with an accuracy of 0.1ms. Predefined values are available for quick selection via the front panel. Alternatively any value, with 1ms resolution, can be set via EasyCal calibration software. To avoid false trip times the 5030 incorporates a 'pre-test trigger delay' setting. This feature is for use with RCD testers that produce a pre-test signal. A test current threshold setting (0 to 100% of nominal current) is also user selectable.

RCD CURRENT MEASUREMENTS

RCD current measurements are true RMS for AC, half wave rectified and DC. The ranges covered are from 6mA to 1000mA, with multipliers of x0.5, x1, x2, and x5 up to a maximum of 2500mA.

INSULATION RESISTANCE AND TEST VOLTAGE MEASUREMENT

The 5030 tests the functions of megohm meters using precision high value resistors up to 2GΩ, accurately measuring test voltages up to 1kV under 0.5mA or 1mA test conditions. Short circuit current measurement is also available up to 3mA.

CONTINUITY AND EARTH RESISTANCE

The 5030 precision low ohm resistors allow calibration of continuity functions found on most multifunction testers and insulation testers. Test voltages and currents are also measured.

MAINS VOLTAGE AND FREQUENCY

The local mains supply voltage and frequency is precisely measured by the 5030. This is used to cross reference the voltage reading on the unit under test and confirm the instruments accuracy.

5030 Specifications

TECHNICAL SPECIFICATIONS

Loop

Function	Range / Values	Resolution	Accuracy
Loop Impedance Resistor Values	1800, 330.0, 180.0, 33.00, 18.00, 3.300, 1.800, 0.330, 0.150 & 0.050Ω	4 digit	±0.5% of displayed value ± 10mΩ
Local Loop Compensation	0 to 9.999Ω	0.001Ω	±0.5% of value ± 10mΩ
Test Current	40A max (200ms) / 50W max	–	–

RCD

Function	Range / Values	Resolution	Accuracy
Trip Time	10, 20, 30, 40, 50, 60, 80, 100, 300, 500, 1000, 1500, 2000ms (Fully variable from via remote commands - EasyCal software)	1ms	±0.1ms
Current	6.000, 10.00, 30.00, 100.0, 300.0, 500.0, 1000mA	4 digit	±0.5% of reading ±1% with x5 multiplier
Current Multipliers	x0.5, x1, x2, x5	–	–
Maximum Current	2500mA	–	–
Waveforms	AC, DC & half wave rectified	–	–
Phase Detection	0° or 180°	–	–
Pre Trigger Delay	0 to 2000ms	–	–
Pre Trigger Threshold	0 to 100% of nominal current	–	–

Insulation (option ICO1)

Function	Range / Values	Resolution	Accuracy
Resistance	1MΩ to 2000MΩ	1MΩ	1% of value
	50kΩ to 1990kΩ	50kΩ	1% of value
Test Voltage Measurement @ 0.5mA or 1.0mA Load	50.0 to 99.9V DC	0.1V	1% of reading
	1000 to 1200V DC	1V	1% of reading
Short Circuit Current	0.00 to 300.00mA DC	0.01mA	1% of range

Continuity (option ICO1)

Function	Range / Values	Resolution	Accuracy
Resistance	0.1Ω to 100.0Ω	0.1Ω	1% of value
	250Ω, 500Ω, 1.00kΩ, 2.50kΩ, 5.00kΩ & 10.0kΩ	3 digit	1% of value
Test Voltage Measurement (input resistance 10MΩ)	0.0 to 50.0V DC	0.1V	0.5% of range
Test Current Measurement (between 0.1Ω and 100Ω)	0 to 400mA DC	1mA	0.5% of range
Power Dissipation	1 watt maximum	–	–

Voltage

Function	Range	Resolution	Accuracy
Line Voltage Measurement	200.0 to 260.0V RMS	0.1V	0.5% of reading
Line Frequency Measurement	45.00 to 65.00Hz	0.01Hz	0.1% of reading

GENERAL SPECIFICATIONS

Warm up	30 minutes to full accuracy
Settling Time	Less than 5 seconds
Standard Interfaces	RS-232 and USB
Temperature Performance	Operating: 10 to 35°C, Full Spec: 23°C +/- 5°C, Storage: -10°C to 50°C
Operating Humidity/Altitude	< 80% non condensing / Altitude: 0 to 3km. Non operating: 3km to 12km
Line Power	220 - 240V AC 50Hz. Power Consumption 200W max
Dimensions / Weight	W430mm x H155mm x D255mm. Weight: 8kg
Supplied With	User manual, RS-232 cable, USB adaptor/cable

ORDERING INFORMATION

5030	Electrical Tester Calibrator
ICO1	Insulation and Continuity option
C201	Factory Calibration Certificate (NPL traceable)
C137	UKAS Calibration Certificate (ISO 17025)
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.

Time Electronics Ltd, Unit 11 Sovereign Way, Botany Industrial Estate, Tonbridge, Kent, TN9 1RH. United Kingdom.

T: +44 (0) 1732 355993 F: +44 (0) 1732 770312 E: mail@timeelectronics.co.uk W: www.timeelectronics.com