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**
- **RS-232 / USB Control**
- **Fast and intuitive user interface**
- **PC/laptop control via EasyCal software**

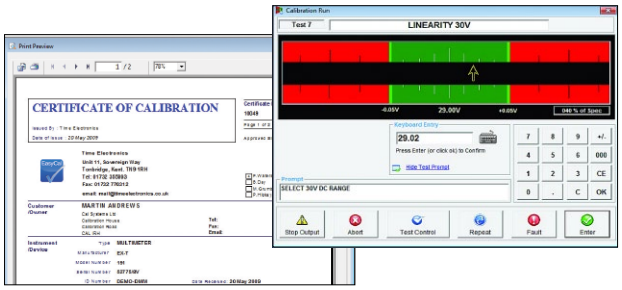
DESCRIPTION

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 though 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 RS-232 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 MEASUREMENT

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 30A. 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

RCD trips can be simulated from 10 to 2000ms in duration. The trip time can be set to predefined values for quick selection, or to a user time via the front panel.

RCD CURRENT MEASUREMENTS

Current measurement is made of the applied RCD test current. Current measurements are true RMS for AC, half wave rectified as well as being able to measure DC tests. The ranges covered are from 6mA to 1000mA, with multipliers of x0.5, x1, x2, and x5 up to a maximum of 2500mA. To avoid false current measurements the 5030 incorporates a 'pre-test 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.

INSULATION RESISTANCE AND TEST VOLTAGE MEASUREMENT

The 5030 tests the functions of megohm meters using precision high value resistors up to 2GΩ. Resistance value can be set via front panel or via remote control to allow many test points to be automated. Voltage measurement functions allow accurate test voltages up to 1kV to be measured whilst under 0.5mA or 1mA test conditions.

CONTINUITY AND EARTH RESISTANCE

The 5030 precision low ohm resistors allow calibration of continuity functions found on most multifunction testers and insulation testers. Applied 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 ± 30mΩ
Local Loop Compensation	0 to 9.999Ω	0.001Ω	±0.5% of value ± 30mΩ
Test Current	30A max (200ms) / 50W max	–	–

RCD

Function	Range / Values	Resolution	Accuracy
Trip Time	10 to 2000ms	1ms	±0.5ms
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	10ms	–
Pre Trigger Threshold	0 to 100% of nominal current	1%	–

Insulation

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
	100 to 1200V DC	1V	1% of reading

Continuity

Function	Range / Values	Resolution	Accuracy
Resistance	0.1Ω to 100.0Ω	0.1Ω	1% of value + 20mΩ
	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	0.01V	0.5% of range
Test Current Measurement (between 1Ω and 2Ω)	0 to 400mA DC	0.1mA	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**
C201 ..... Factory Calibration Certificate (NPL traceable)
C137 ..... UKAS Calibration Certificate (ISO 17025)
ECFLA ..... EasyCal Software (see separate datasheet for options)

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