Time Electronics
Calibration, Test and Measurement

Decade Boxes

Portable Test Instruments

Multifunction Calibrators

Process Control Equipment

Calibration Benches

Calibration Software

www.timeelectronics.com

Contents

Introduction

About Time Electronics

Established in 1967 Time Electronics Ltd is an international company that designs and manufactures calibration and metrology instrumentation. We have a comprehensive range of test equipment for use in applications across various industries. Products include decade boxes, portable and benchtop calibrators, DMMs, and custom-made test benches. Time Electronics' headquarters is based in Tonbridge, Kent, in the United Kingdom, situated 30 miles south of London and occupies 10,000 sq ft of factory and office space. Time Electronics also has sales offices in New York (USA) and Moscow (Russia).

During our 40 plus years of continuous development we have built strong business relationships and a wealth of engineering experience. We have a global distribution network, and are represented by companies with strong technical work staffs and highly skilled engineers.

Quality is an integral part of our company philosophy. In addition to building accurate and durable products we provide extensive customer support. This has given us a valuable reputation with organisations worldwide and is one reason for our continued success in the trading market. Time Electronics is accredited to ISO 9001:2008.

Examples of Time Electronics' Industry Coverage:

Aerospace	Power Generation	Transport	Refineries
Petrochemical	Manufacturing	Chemical	Military/Defence
Pharmaceuticals	Nuclear	Aeronautics	Shipping
Telecommunications	Automotive	Metrology	Education
Medical	Research/Development	Process Control	Automation

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1051 – 8 DECADE LOW OHM RESISTANCE BOX

Range / Resolution: .... 0 to 1MΩ / 0.01Ω steps

Decade	0.01Ω	0.1Ω	1Ω	10Ω	100Ω	1kΩ	10kΩ	100kΩ
Accuracy	± 10%	± 5%	± 1%	± 0.5%	± 0.1%	± 0.1%	± 0.1%	± 0.1%
Max Current	1A	1A	1A	0.3A	0.1A	33mA	10mA	3mA

Residual Resistance: ....Less than 90mΩ
Power Rating: ....1 watt per resistor
Voltage Rating: .... Maximum 250V DC/AC RMS
Temperature Coefficient: ....100ppm/°C
Dimensions / Weight: .... W215 x H100 x D120mm / 1kg (incl. protective boot)
Features: ....Colour coded digits, safety terminals, and protective rubber boot

1040 – 8 DECADE WIDE RANGE RESISTANCE BOX

Range / Resolution: .... 0 to 100MΩ / 1Ω steps

Decade	1Ω	10Ω	100Ω	1kΩ	10kΩ	100kΩ	1MΩ	10MΩ
Accuracy	± 1%	± 0.5%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 0.1%	± 1%
Max Current	0.5A	0.3A	100mA	30mA	3mA	0.3mA	30µA	3µA

Residual Resistance: ....Less than 250mΩ
Power Rating: ....1 watt per resistor
Voltage Rating: .... Maximum 250V DC/AC RMS
Temperature Coefficient: ....100ppm/°C
Dimensions / Weight: .... W215 x H100 x D120mm / 1kg (incl. protective boot)
Features: ....Colour coded digits, safety terminals, and protective rubber boot

1041 – 5 DECADE LOW OHM RESISTANCE BOX

Range / Resolution: ....0 to 1kΩ / 0.01Ω steps

Decade	0.01Ω	0.1Ω	1Ω	10Ω	100Ω
Accuracy	± 10%	± 5%	± 1%	± 0.5%	± 0.1%
Max Current	1A	1A	1A	0.3A	0.1A

Residual Resistance: ....Less than 60mΩ
Power Rating: ....1 watt per resistor
Voltage Rating: .... Maximum 100V DC/AC RMS
Temperature Coefficient: ....100ppm/°C
Dimensions / Weight: .... W215 x H100 x D120mm / 1kg (incl. protective boot)
Features: ....Colour coded digits, safety terminals, and protective rubber boot

1061 – 6 DECADE RESISTANCE BOX

Range / Resolution: .... 0 to 1.2MΩ / 1Ω steps
Accuracy: .... ± 1%
Residual Resistance: ....Less than 150mΩ
Power Rating: .... 0.75 watt per resistor
Voltage Rating: .... Maximum 300V DC/AC RMS
Dimensions / Weight: .... W355 x H63 x D82mm / 0.75kg
Features: .... Slim line design and front panel safety terminals

1067 – 6 DECADE PRECISION RESISTANCE BOX

Range / Resolution: .... 0 to 12kΩ / 10mΩ steps
Accuracy: .... ± 0.01%
Residual Resistance: .... Less than 10mΩ. Less than 1mΩ variation
Power Rating: .... 0.35 watt per resistor
Stability: ....20ppm/year (>1Ω), 100ppm/year (<1Ω)
Voltage Rating: .... Maximum 200V DC/AC RMS
Insulation: .... Case to resistance terminals 2kV / 50Hz maximum
Temperature Coefficient: ....10ppm/°C (20ppm/°C below 1Ω)
Dimensions / Weight: .... W355 x H63 x D89mm / 1.1kg
Contacts: .... Make before break – silver alloy

1065 – 6 DECADE POWER RESISTANCE BOX

Range / Resolution: ....0 to 120kΩ / 0.1Ω steps
Accuracy: .... ± 5% (0.1Ω), ± 1% (1Ω to 120kΩ)
Residual Resistance: ....Less than 20mΩ
Power Rating: ....10 watt per resistor
Voltage Rating: .... Maximum 500V DC/AC RMS
Temperature Coefficient: ....200ppm/°C
Dimensions / Weight: .... W390 x H60 x D150mm / 2kg
Features: ....Ventilated robust metal case and multi-wafer
switches for low switch contact resistance

1070 – 7 DECADE CAPACITANCE BOX
1071 – 7 DECADE CAPACITANCE BOX

1070 Range / Resolution: ....0 to 10µF / 100pF steps
1070 Accuracy: 1%
1070 Residual Capacitance: .... Less than 38pF
1071 Range / Resolution: ....0 to 100µF / 10pF steps
1071 Residual Capacitance: .... Less than 50pF
Accuracy: .... 1% (5% above 10µF – 1071)
Voltage Rating: ....Maximum 300V DC, 200V AC
Dimensions / Weight: .... W215 x H100 x D120mm / 1kg (incl. protective boot)
Features: .... Bi-polar working, colour coded digits,
safety terminals, and protective rubber boot

1053 – 4 DECADE INDUCTANCE BOX

Range / Resolution: ....0 to 10H / 1mH steps
Accuracy at 1kHz: ....3% of setting
Voltage Rating: .... Maximum 30V AC
Maximum Current: 150mA
Residual Resistance: ....Less than 0.2Ω
Residual Inductance: .... Less than 1µH
Dimensions / Weight: .... W248 x H62 x D102mm / 0.8kg
Features: .... Robust metal case and front panel safety terminals

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 1V
- Accuracy 0.02%
- 20mA output current
- Best resolution 1μV
- 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 D120mm, weight 1.2kg

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.

- 0.01μV to 10V in 5 ranges
- Accuracy 0.02%
- 10ppm/hr stability
- 30mA output current
- Safety terminals
- Battery or mains operation
- 40 hours typical use between charges
- Battery level indicator
- Optional carry case
- W217 x H160 x D193mm, weight 3.3kg

1024 DC CURRENT CALIBRATOR

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

- 0 to100mA output in 5 ranges
- Accuracy 0.02%
- 10ppm/hr stability
- 30ppm/°C temperature coefficient
- Up to 15V output drive
- Null meter measures to 1μA resolution
- Safety terminals
- Battery or mains operation
- 12 hours typical use between charges
- Battery level indicator
- Optional carry case
- W217 x H160 x D193mm, weight 3.3kg

1021 MILLIAMP SOURCE WITH NULL INDICATOR

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

- 0 to 100mA output in 3 ranges
- Accuracy 0.02%
- 25ppm/hr stability
- Up to 40V output drive
- LED null measuring facility
- Short circuit overload protected
- Safety terminals
- Removable protective boot
- 10 hours typical use between charges
- Battery charger supplied
- Optional carry case
- H215 x W100 x D120mm, weight 1.4kg

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%
- 100mA source and load
- 24V line mode
- Variable drive source 14 to 40V
- Short circuit and overload protected
- Safety terminals
- Removable protective boot
- 10 hours typical use between charges
- Battery charger supplied
- Optional carry case
- H215 x W100 x D120mm, weight 1.5kg

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 10nV to 100V
- DC Current 100nA to 100mA
- Resistance 10mΩ to 10kΩ
- Accuracy 0.005% (50ppm)
- 1ppm setting resolution
- Noise <2ppm (0.1 to 1Hz)
- Stability <5ppm/day, <25ppm/yr
- End resistance <200mΩ
- Deviation control – Voltage and Current
- Battery or mains operation
- 12 hours typical use between charges
- W250x H119 x D314mm, weight 2.4kg

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.

- 10mV, 100mV, 1V ranges
- 10mA, 100mA ranges
- Accuracy 0.1%
- Linearity 0.15%
- Up to 8V output (using 1kΩ resistor)
- Precision 10-turn dial
- 1kΩ resistor supplied
- Battery level indicator
- Battery powered 9V PP3
- 60 hours typical battery life
- Supplied with carry case
- H115 x W62 x D55mm, weight 0.24kg

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 20V
- 3 current ranges 0 to 20mA
- Accuracy 0.05%
- 4.5 digit LCD display
- Battery powered 9V PP3
- 28 hours typical battery life
- Optional mains power supply
- Supplied with carry case
- H142 x W78 x D50mm, weight 0.30kg
- Voltage/Current/Loop version 1048

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 22mA and 0 to 22V
- 3 measure ranges: 0 to 70mA and 0 to 50V
- Accuracy 0.02%
- Transmitter simulator/sink loop control
- Output steps and ramps
- Fine adjustment (inching)
- Battery powered 9V PP3, 20 hours typical use
- H142 x W78 x D50mm, weight 0.34kg

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: 125mA, source 50mA. Resolution 1μA
- Voltage measurement: 25V, source 21V. Resolution 1mV
- Accuracy 0.01%
- 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
- H165 x W90 x D45mm, weight 0.42kg

7006 LOOP-MATE 1: LOOP SIMULATOR AND SOURCE

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

- 4 to 20mA or 0 to 10V ranges
- Set-points: 0, 10, 25, 50, 75, 90, 100% of range
- Accuracy 0.1%
- TxSim or RxTest modes
- Internal loop supply, 25mA maximum
- Auto-stepping mode: up/down/up, 0.5, 1, 2, 4, or 8 sec/step
- Battery powered 9V PP3, 40 hours typical use
- Supplied with carry case
- H140 x W65 x D30mm, weight 0.18kg

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 20mA, 0 to 10V, 0 to 50V ranges
- LCD 4 digit display, mA, V, or % of range
- Accuracy 0.05%
- RxSim, TxTest, or 50mA/50V measure modes
- Internal loop supply, 25mA maximum
- Battery powered 9V PP3, 40 hours typical use
- Supplied with carry case
- H140 x W65 x D30mm, weight 0.20kg

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 with 23 set points
- Accuracy ± 0.3°C
- Less than 30ppm/°C temperature coefficient
- ITS-90 IEC60751
- Exceeds class A
- Passive resistance source
- Supplied with carry case
- H112 x W61 x D55mm, weight 0.17kg
- °F version available – 1050 (-100°F to 1000°F, ± 0.5°F accuracy)

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 0.03Ω. Resolution 0.01Ω
- 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
- H165 x W90 x D45mm, weight 0.42kg

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 values.

- Measures/simulates 8 thermocouple types, PT100-RTD, mV and mA
- Displays units in °C, °F, μV/mV, or mA
- Automatic or manual cold junction compensation
- Inching and step functions with time configurable steps
- Process loops 4 to 20mA and 0 to 50mA
- 24V loop drive voltage
- Mains or battery operation – 60 hours typical use between charges
- Supplied with battery charger and carry case
- H235 x W150 x D75mm, weight 1.2kg

7050 PROCESS AND THERMOCOUPLE CALIBRATOR

A process calibrator that combines the essential functions of measurement and simulation of volts, millivolts, milliamps, and ohms with the direct readout simulation of thermocouples and RTDs in °C or °F units.

- Measure (3 ranges) up to 400V, 400mA, 40kΩ
- Output voltage (3 ranges) up to 10V, 1μV resolution
- Output current (3 ranges) up to 20mA, 1μA resolution
- Output resistance: 0 to 400Ω, 0.01Ω resolution
- Thermocouple measure and simulate: J, K, T, E, R, S, B, N
- RTD measure and simulate: PT100
- Ramp function
- Battery or mains operation
- W270 x H175 x D250mm, weight 4.5kg

5068 INSULATION TESTER/MEGOHMMETER CALIBRATOR

A precision instrument for calibrating general purpose insulation testers and megohmmeters with test voltages up to 2.5kV. Rugged, compact, and portable it is ideal for site calibration.

- Insulation resistance from 100KΩ to 10GΩ
- Low ohm verification at 1Ω, 10Ω, 100Ω, 1KΩ
- Basic accuracy 1%
- Up to 2.5kV operation
- Battery operation (over 150 hours between charges)
- Continuous connection – no arcing
- Fully shrouded safety connectors
- Display of open circuit voltage (0 to 1.999kV or 0 to 2.50kV)
- Display of short circuit current (0 to 2mA or 0 to 20mA)
- W270 x H175 x D250mm, weight 2.1kg

5069 INSULATION TESTER/MEGOHMMETER CALIBRATOR

A high accuracy calibrator for insulation testers and megohmmeters with test voltages up to 9kV. Sturdy and transportable it is suitable for both lab and site calibration.

- Insulation resistance from 100kΩ to 100GΩ
- Basic accuracy 1%
- Up to 9kV operation
- Battery operation (over 150 hours between charges)
- Continuous connection – no arcing
- Fully shrouded safety connectors
- Display of open circuit voltage (0 to 2kV or 0 to 9kV)
- Display of short circuit current (0 to 2mA or 0 to 20mA)
- W406 x H175 x D330mm, weight 4.4kg

5070 DUCTOR TESTER/MICRO-OHMMETER CALIBRATOR

The DuctorCal is a portable instrument suitable for calibrating high current ductor testers and micro-ohmmeters. It contains 5 sets of high current rating standard resistors that simulate the resistance being measured.

- Calibrate ductor testers and micro-ohmmeters
- 0.2, 2, 20, 200, 2000mΩ ranges
- 5 point calibration: 0, 25, 50, 75, 100%
- Gold plated terminals
- Low thermal EMF connection
- Portable robust carrying case
- W540 x H210 x D410mm, weight 11kg

5080 PORTABLE APPLIANCE TESTER CALIBRATOR

Designed to provide rapid high accuracy calibration of portable appliance testers and insulation/continuity testers. The 5080 has calibration functions for earth bond, insulation, leakage, touch leakage, and load test.

- Earth bond range 18Ω to 20mΩ
- Earth bond currents up to 50A AC
- Load test currents up to 13A AC
- Voltage and current displayed on integral LCD display
- Safety interlock feature
- Portable robust carrying case
- Battery powered (over 200 hours between charges)
- W406 x H175 x D330mm, weight 5.5kg

7040 DIGITAL PRESSURE/CURRENT CALIBRATOR

A versatile calibrator that combines a digital pressure gauge and current indicator. Suitable for pressure testing and maintenance as well as process loop applications.

- 0.2, 2, 5, 10, or 20bar versions (vacuum available on 2bar model)
- Pressure/vacuum calibration, 0.04% accuracy
- Loop current calibration (displayed in mA, or % of range, 4 to 20mA)
- 9 engineering units – bar, psi, KPa, inWg,cmWg, inHg, mmHg, Kg/cm2, Atm
- Minimum/Maximum logging and leak rate functions
- 4.5 digit display
- RS232 serial interface and EasyCal software compatible
- Battery powered 9V PP3, 50 hours typical use
- Supplied with carry case, fittings kit and hose, test lead, and RS232 cable
- H157 x W90 x D33mm, weight 0.29kg

7010 SINGLE CHANNEL PRESSURE CALIBRATOR
7015 DUAL CHANNEL PRESSURE CALIBRATOR

Portable battery or mains powered pressure calibrators designed for both lab and field applications.

- Vacuum, 0.2, 2, 5, 10, 20, 35, 70, 100, 200, 400, or 600bar versions
- Accuracy 0.04% of full scale
- Pneumatic or hydraulic
- Up to 5 selectable engineering units per channel
- Loop current measure
- 24/36V loop power
- Over-pressure alarm
- RS232 serial interface and EasyCal software compatible
- W270 x H175 x D250mm, weight 3kg

7016 REGULATED LOW PRESSURE CALIBRATOR
7018 DIFFERENTIAL PRESSURE CALIBRATOR

Portable pressure calibrators that are rugged design and simple operation. Suitable for pneumatic field instrumentation.

- 7016 – Regulated low pressure: Vacuum, 0.2, 2, 5, 10, or 20bar versions
- 7018 – Differential pressure: Vacuum, 0.2, 2, 5, 10bar versions
- Pneumatic
- Up to 5 selectable engineering units
- Loop current measure
- 24/36V loop power
- Over-pressure alarm
- RS232 serial interface and EasyCal software compatible
- W270 x H175 x D250mm, weight 3kg

7090 PNEUMATIC CALIBRATION PUMP
7095 HYDRAULIC CALIBRATION PUMP

Pneumatic and hydraulic calibration pumps that combine high performance with durability. Features include contoured cushioned handles for comfort and dual o-rings on all pistons to ensure zero leakage.

- 7090 – Pneumatic pressure to 40bar, Vacuum to -950mbar
- 7095 – Hydraulic pressure to 700bar
- Non-oil based lubricant used on all moving parts
- Both supplied as kits with carry case, hoses, and fittings
- 7090 – H200 x W125mm, weight 0.91kg
- 7095 – H240 x W125mm, weight 1.4kg
- Digital pressure gauges available

5025 and 5051 Multifunction Calibrators

Precision calibration for wide workload coverage

MULTI INSTRUMENT CALIBRATION

The 5025 is a high performance multi-product calibrator that provides the foundation for cost-effective calibration. Designed for a wide workload the 5025 calibrates both traditional and new test equipment quickly and accurately. Standard features include AC/DC voltage and current, digital frequency, decade resistance, conductance, and thermocouple simulation. Further options include capacitance and inductance, wideband AC voltage, full range resistance (incorporating PT100 simulation), power calibration, and oscilloscope calibration. In addition external adaptors are available for clamp meter and optical tachometer calibration, and a power amplifier for demanding analogue instruments.

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.

CALIBRATION MADE EASY

Connect the 5025 to a PC/Laptop installed with Time Electronics' EasyCal software and automate the calibration process. Increase speed of calibration and consistency of results, produce calibration certificates and reports to industry quality standards.

Calibrates

Digital/Analogue Multimeters	AC/DC Millivoltmeters	Timer Counters
Handheld/Bench Multimeters	Thermocouple Indicators	Oscilloscopes
Frequency Meters	Clamp Meters	Decade Boxes
Ohmmeters	Temperature Indicators	Data Loggers

GENERAL SPECIFICATION

Warm up	30 minutes to full accuracy
Settling Time	Less than 5 seconds
Interfaces	GPIB (IEEE-488), RS-232, USB
Temperature Performance	Operating: 5 to 45°C. Calibration: 15 to 28°C. Storage: -10 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	w455mm, H155mm, D480mm. Weight: 16.5kg

STANDARD FEATURES

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

ADDITIONAL / EXTERNAL OPTIONS

9747	EasyCal Software and options (see page 19)	9767	External Low Noise Attenuator 100:1
9780	Clamp Meter Adaptor (1 and 50 turns)	9766	External Low Noise Attenuator 1000:1
9773	Optical Tachometer Calibration Adaptor	9728	19" Rack Mount Kit
5065	6½ Digit Bench Multimeter	9796	Test Lead Set
9790	100A AC Current Transformer	9085	Carry Case
9760	Power Amplifier (60V AC, 90V DC – 100mA)	9159	Factory Calibration Certificate (NPL traceable)
9762	Rubidium Frequency Standard	9103	UKAS Calibration Certificate (ISO 17025)

Also available: 5025A Superior Specification Calibrator Package. AC/DC 1050V/22A, Variable Resistance 1Ω to 120MΩ. Capacitance and Inductance. Power Calibration 20kW, ACV 1MHz. Thermocouples (J,K,T,R,S,B,N,E,C,M,U,L). RTD (PT10,100,200,500,1000).

OPTIONS

	Range/Values	Best 1 year Specification
Wideband AC Voltage (9771)	20 to 200mV/300kHz. 0.2 to 2V/1MHz. 2 to 20V/100kHz	± 0.05% of setting
Capacitance (9798)	1nF, 10nF, 100nF, 1μF, 10μF, 100μF	± 0.25% of setting
Inductance (9798)	1mH, 1.9mH, 5mH, 10mH, 19mH, 50mH, 100mH, 190mH, 500mH, 1H, 10H	± 0.1% of setting
Full Range Resistance (9787)	1Ω to 120MΩ (Variable)	± 100ppm of setting
- PT100	-200 to 850°C	± 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	± 90°/ 0.00 to 1.00PF	± 0.3°
- External Options	AC Current Transformer (9790): 100A / 100kW. Clamp Meter Adaptor x50 turn (9780): 1100A / 1.1MW	
Oscilloscope Calibration (9770)		
- Amplitude	0mV to 200V and 0mV to 2V 50Ω (square-wave or DC)	± 0.05%
- Frequency/Period	0.1Hz to 100MHz / 100nS to 10S	± 20ppm (± 0.1ppm optional)
- Duty Cycle	3 frequencies: 100Hz, 1kHz, 10kHz, settable from 0 to 100%	
- Fast-Rise	< 300ps. Bandwidth checking up to 600MHz	
2.2GHz Sweep (9769)	100MHz to 2.2GHz levelled sine-wave (0.5, 1, 1.5V pk-pk)	Amplitude ± 1%, Frequency ± 20ppm

5051 MULTIFUNCTION CALIBRATION SYSTEM

The 5051 is a universal calibration system providing the same high specification, features and options as the 5025. It is ideal for engineers requiring an all-in-one unit which can be used for both lab and site calibration work. The internal features include a 6½ digit multimeter and industrial PC that can be preloaded with EasyCal software. In addition the 5051's touch screen user interface can speed up operation and helps maximise bench space.

The 5051 PLUS

A comprehensive package that provides a lab ready solution. It comes equipped with every item required for a complete calibration station: DMM; Oscilloscope Calibration; Capacitance and Inductance; Full Range Resistance; Clamp Meter Adaptor; Touch Screen; Test Lead Set; EasyCal; Factory Calibration Certificate; Carry Case; Printer and Connectivity Kit.

5051 Dimensions: w430mm, H202mm, D538mm. Weight: 23kg

Visit www.timeelectronics.com

5011 RESISTANCE/TEMPERATURE CALIBRATOR

A versatile, high accuracy calibrator that is primarily a programmable resistance/RTD source. Internal options such as DC voltage and thermocouple simulation, DC current, and 10MHz frequency can be added to increase capabilities.

- 1Ω to 120MΩ, 100ppm basic accuracy
- RTD simulation
- Optional thermocouple simulation
- 0 to 22V DC voltage option
- 0 to 220mA DC current option
- 10MHz frequency option
- RS232/GPIB/USB interface
- Front panel operation
- PC/laptop control via EasyCal software
- Rack mount kit option
- W451 x H152 x D272mm, weight 7kg

EasyCal

5018 PROGRAMMABLE DC-AC V-I CALIBRATOR

A high precision calibration instrument that can be configured as a simple benchtop DC voltage calibrator or advanced AC/DC voltage and current source controlled via PC, performing any number of tasks as part of a complex ATE test rig.

- 15ppm accuracy, 0.5ppm resolution
- 1999999 full scale +10% over-range
- 20mV-200mV-2V-20V DC voltage
- Deviation control -9.999% to +9.999%
- Ramping feature
- RS232/GPIB/USB interface
- Ideal for ATE applications
- Front panel operation
- PC/laptop control via EasyCal software
- Rack mount kit option
- W451 x H152 x D272mm, weight 8.2kg

EasyCal

5045 OSCILLOSCOPE CALIBRATOR

A high performance benchtop instrument for calibrating a wide range of oscilloscopes and frequency meters. It provides outputs for amplitude, frequency, period, duty cycle, and bandwidth. Frequencies are generated from an internal 0.1ppm temperature controlled oscillator.

- 1mV to 220V square wave/DC
- Frequency 0.1Hz to 100MHz
- Time marker/period 15s to 10ns
- Fast rise <300ps
- Bandwidth check up to 600MHz
- Optional 2.2GHz levelled sweep
- Rubidium frequency reference option
- Front panel operation
- Virtual front panel control software supplied as standard
- PC/laptop control via EasyCal software
- W451 x H152 x D272mm, weight 8.2kg

VIRTUAL FRONT PANEL

EasyCal

5077 POWER CALIBRATOR

A high accuracy power calibrator suitable for calibrating watt-meters, power meters, and kW-Hr meters. Supplied with its own "Virtual Front Panel" software allowing the user full control via laptop or PC.

- Phase angle ± 90°, power factor 0.00 to 1.00
- 1mV to 1050V AC/DC
- 0.02 to 22A AC/DC
- 0 to 22kVA or 0 to 22kW
- 100A AC current transformer option
- 45 to 400Hz in 0.1Hz steps
- Clamp meter adaptor option
- RS232/GPIB/USB interface
- Virtual front panel control software supplied as standard
- W455 x H155 x D480mm, weight 25kg

EasyCal

VIRTUAL FRONT PANEL

5065 BENCH DIGITAL MULTIMETER

A versatile 6½ digit bench multimeter with 19 measurement functions. Low cost, easy to use, stability, and high accuracy make the 5065 an ideal DMM for a variety of applications. With a comprehensive range of features the 5065 is suitable for test engineers, R&D, service, and calibration technicians.

- 6½ digit resolution
- Accuracy 0.005% DC voltage
- RS232 and USB interface
- Optional GPIB interface
- Temperature measurements
- SCPI command set
- High sample rate
- 10 channel scanner card option
- PC/laptop control via EasyCal software
- W210 x H85 x D350mm, weight 4.4kg

EasyCal

5075 PRECISION DIGITAL MULTIMETER

A benchtop digital multimeter that combines high performance with simple operation. The 5075 easily measures from nanovolts to 10kV, from picoamps to 30 amps, from micro-ohms up to 1GΩ, from picofarads to 300μF, with up to 7½ digit accuracy.

- 7 digit resolution
- 10nV to 10kV, 10pA to 30A
- Resistance, capacitance, frequency
- 18ppm accuracy/best 1 year
- 10 channel low thermal emf scanner option
- PC/laptop control via EasyCal software
- GPIB interface (USB adaptor available)
- Rack mount kit option
- W423 x H89 x D415mm, weight 8.5kg

EasyCal

Calibration Benches

Comprehensive modular test benches and complete laboratory design

Calibrates

Multimeters	Pressure Gauges	Thermocouple Transmitters
AC/DC Signal Sources	Clamp Meters, Tachometers	Pressure Transducers
Signal Generators	Power Supplies	Frequency Meters
Oscilloscopes	Temperature Indicators, Sensors	Decade Boxes
AC/DC Millivoltmeters	RTD Transmitters	Pressure Transmitters
Loop Signal Indicators	Timer Counters	Ohmmeters

INTRODUCTION

CalBench is the ultimate multifunction calibration station from Time Electronics. Each bench is custom-made to meet specific user requirements. Offering versatility and precision it is ideal for laboratories and workshops in need of multi-product testing that meets the highest industry standards. A wide range of modules can be fitted to the primary console creating a highly flexible system that is both functional and easy to use. Further expansion can be achieved by adding the secondary console, mounted under the primary.

Core modules cover electronic signal, temperature, loop, and pressure applications. Non-standard modules for special applications can also be incorporated into the bench consoles. Functions are clearly defined on each module and a competent technician will quickly master the operation of the system without training or constant reference to manuals.

Bench set up is fast and simple as the consoles are supplied complete, fully tested, and with the modules installed. The complete system requires only basic construction and once the mains power and line pressure is connected it is ready for use.

Each bench is heavy duty, constructed from mild steel throughout with side panels and console support arms welded to provide a reinforced frame. The worktop is a durable finish with rolled front edge. In addition a full range of fittings and accessories can be added to the bench as per customer requirement. Time Electronics CalBench systems are used worldwide in calibration laboratories, engineer training institutes, and on-site test facilities in refineries, offshore platforms, and processing plants.

Bench Dimensions: W2000 x H1568 (or 1413) x D850mm. Weight 175kg typical.

MODULE OPTIONS AND EXTRAS

Pressure: Calibrators, indicators, and control modules. Ranges from vacuum to 600bar.

Power Supplies: Variable AC mains, variable DC and fixed quad or dual DC supplies can be fitted.

Loop and Temperature: High accuracy loop calibrator modules with source, measure and sink functions. Temperature calibrators capable of measuring and simulating RTDs/thermocouples.

Multifunction Calibrator and DMM Modules: The 7051 provides high accuracy multi-product calibration and has an internal 6½ digit multimeter. Also available are the 5065B and 5075B DMM modules.

Custom-Design Modules: User-specific modules incorporating various instruments for necessary applications can be fitted. These can be designed from Time Electronics' range of portable and benchtop test equipment, or from external instruments such as oscilloscopes, multimeters, and power supplies.

External Options: Pneumatic and hydraulic calibration pumps, pressure gauges, dry block calibrators, pressure test kits with hoses and connectors, test lead sets, solder stations, vices, and much more.

Bench Fittings: Various fittings can be added to CalBench to improve usability and create a more efficient workspace. Under-worktop drawers, cabinets, CPU holders, and keyboard trays; tool holders and hooks for the perforated back panel; air preparation kits, desktop mountable devices, and more are available.

Laboratory Design and Supply: Time Electronics offers a turnkey laboratory design service for customers requiring a complete and efficient test facility. Using 3D software we create the layout then generate images and videos to visualise the concept. We supply all the necessary test equipment and surrounding laboratory furniture.

7051 MULTIFUNCTION CALIBRATOR AND BENCH CONTROL CENTRE

- 0 to 22V AC/DC, 0 to 220mA AC/DC
- 0 to 1GΩ – decade steps
- 10MHz frequency
- Thermocouple simulation/measure 10 types
- RTD simulation/measure
- Internal 6½ digit multimeter
- Simulated resistance 10Ω to 40MΩ
- High voltage/current option – 1kV/22A AC/DC
- Pressure calibration control software
- HART/Fieldbus compatible
- EasyCal calibration software
- Touch screen
- Additional internal/external options (see 5051)

Mounted centrally in the primary console the 7051 acts as a control centre for the whole bench. It incorporates an industrial PC that is preloaded with Time Electronics' EasyCal calibration software. Full control of electrical, temperature, pressure, and loop signals, both in source and measure modes is available. EasyCal enables simple and fast generation of calibration certificates, reminders, reports, and labels.

ON-SITE BENCH INSTALLATION, TRAINING, AND CALIBRATION

In addition to supplying calibration benches and workshop equipment Time Electronics offers comprehensive after-sales support packages for customers. Training and testing can be performed at Time Electronics UK or our calibration engineers can conduct site visits worldwide. The following services are available:

- On-site bench and lab installation and commissioning
- On-site bench training and demonstration
- On-site annual calibration and maintenance service
- Online EasyCal software training
- Factory Acceptance Testing & training at Time Electronics UK

Visit www.timeelectronics.com

Calibration Bench Modules

Power, Pressure, Temperature, Loop, and Custom-Design Modules

POWER SUPPLY MODULES

7082 Mains Power Controller: Fitted as standard in every bench. A single phase unit with 2 power sockets and digital voltage meter.
Protection: 16A overload for entire bench with RCBO. Sockets: 2 front panel, 4 under console. Type can be specified.
Switches: Power on/off switch for bench, separate switch for under console light.
Options: Isolated mains output sockets (7063), 110V 7.5A DC (separate module – 7075).

7083 Dual 24V DC Supply: Suitable for powering loop signal instrumentation.
Outputs: Two 24V, 2A, floating with respect to each other and ground. Features: Power on/off switch, fuses, and LED indicators.

7086 Adjustable DC Power Supply: 0 to 60V 3A (0 to 60V 6A with side panel option).
Large Dual LED Display: Voltage – 3½ Digits/green. Current – 3½ Digits/red. Accuracy: ± 0.5% of rdg + 2 digits.

7087 Quad DC Power Supplies: 4 fixed independent floating supplies.
V and I Ratings: 6V(8A), 12V(8A), 24V(4A), 48V(3A). Current Overload Protection: Current roll back feature and individual fuses.

7088 Adjustable AC Power Supply: Provides variable AC power up to 10A.
Meters: 2 analogue meters monitor the output voltage and current.
Power: Variable 0 to 265V 50Hz, 10A at 240V input. Variable 0 to 121V 50Hz, 10A at 110V input.
Features: Power on/off switch, output overload trip, and voltage output socket.

PRESSURE MODULES

Available Units of Measure:	Bar, PSI, kPa, MPa, inWg, cmWg, inHg, mmHg, Kg/cm2, atm. Standard modules can have 5 selectable units.
Display:	4½ digits on pressure calibrator and indicator modules.
Fittings:	Under 20bar: Quick Release. Over 20bar: Minimess.

Range (bar)	Vacuum	0.2	2	5	10	20	35	70	100	200	400	600
Resolution	.0001	0.01mbar	.0001	0.001	0.001	0.001	0.01	0.01	0.01	0.01	0.1	0.1
Accuracy (%)	0.04	0.1	0.04	0.04	0.04	0.04	0.04	0.04	0.04	0.1	0.1	0.1

Module	Pressure Range Available (bar)
7062 Pressure Calibrator with self venting regulator	Vac, 0.2, 2, 5, 10, 20
7059 Vacuum and Pressure Calibrator with self venting regulator	Vac and 0.2, 2, 5, 10
7064 High Pressure Calibrator with self venting regulator	35, 70, 100, 200
7066 Differential Pressure Calibrator	0.2, 2, 5, 10
7032 Automatic Pressure Calibrator	0.2, 2, 5, 10
7065 Pressure Indicator	Vac, 0.2, 2, 5, 10, 20, 35, 70, 100, 200, 400, 600
7038 Pressure Indicator (9 selectable pressure units)	Vac, 0.2, 2, 5, 10, 20, 35, 70, 100, 200, 400, 600
7084 Pneumatic Line Pressure Controller with gauge	5, 35, 70

TEMPERATURE AND LOOP CALIBRATION MODULES

7085 Temperature Distribution Panel: Switches 7 thermocouple inputs and 1 RTD reference to a common output.
Optional: Automatic switching version 7085A (requires 7051).
Features: Cold junction temperature display with min/max recording.

7068 Programmable RTD Temperature Calibrator: Precisely simulate and measure RTD probes.
Temperature: Accuracy 0.05°C (0.09°F). Resolution 0.01°C (0.02°F). Resistance: Accuracy 0.03Ω. Resolution 0.01Ω.
Features: PT100 plus 7 other RTD types, measure and simulate °C/°F/°K/ohms, ramp and step functions.

7001 Class A °C PT100 Simulator (ITS-90): A precision simulator for PT100 0.3850 platinum resistance elements.
PT100 Scale: −200°C to +800°C with 23 set points. Accuracy: ± 0.3°C. Optional: °F version (-100°F to 1000°F, ± 0.5°F accuracy).

7077 Temperature Calibrator: Source and measurement functions for thermocouples, RTDs, mV, and mA.
Measure/Simulate: 8 thermocouple types, PT100-RTD, mV and mA. Displays Units: °C, °F, μV/mV, or mA.
Features: Automatic cold junction compensation, 10 point memory recall, inching and step functions, 24V process loop drive.

7061 Multifunction Process Calibrator: Comprehensive temperature and loop calibration.
Measure: 3 ranges up to 400V, 400mA, 40kΩ. Outputs: Voltage: 3 ranges up to 10V, 1μV resolution. Current: 3 ranges up to 20mA, 1μA resolution.
Resistance: 0 to 400Ω, 0.01Ω resolution. Features: PT100 plus 8 other RTD types, measure and simulate °C/°F/°K/ohms, ramping function.

7067 Loop Calibrator: For the calibration of voltage and current loop signals.
3 Operating Modes: Loop V/I source, sink of loop current, measurement of loop current/voltage. Accuracy: 0.01%.
Resolution: 1μA or 1mV. Features: Programmable ranges, manual step, auto-step and ramp, square root functions for flow.

7069 V-I Loop Calibrator: A current, voltage, and process loop calibrator that can source and measure current and voltage.
3 Source Ranges: 0 to 22mA and 0 to 22V. 3 Measure Ranges: 0 to 70mA and 0 to 50V. Accuracy: 0.02% of range.
Display Resolution: 4½ digits. Features: Transmitter simulator/sink function, output steps and ramps, fine adjustment (inching).

7079 Loop Ancillaries Calibrator: Test and calibrate electrical process loop signals.
Measurement: 0 to 199.99mA. Continuity Test: Up to approximately 100Ω. Output: Separate isolated 24V DC supply.

CUSTOM DESIGN MODULES

Time Electronics Instruments: Any product from our range of decade boxes, calibrators, and dmms can be fitted.
Multifunction calibrator and DMM modules are fully compatible with EasyCal software.

Non-Standard Modules: Specific products can be custom fitted into the bench as per customer requirement.
Allows the user to integrate a familiar instrument. Handheld multimeters, oscilloscopes, power supplies, function generators, and more.

Communicator Modules: Enables communication with Hart and Fieldbus devices.
The 7051 and EasyCal software provides monitoring of PVs and sensor outputs, device configuration, and more.

EasyCal Calibration Software

The comprehensive solution to calibration work and management

EasyCal

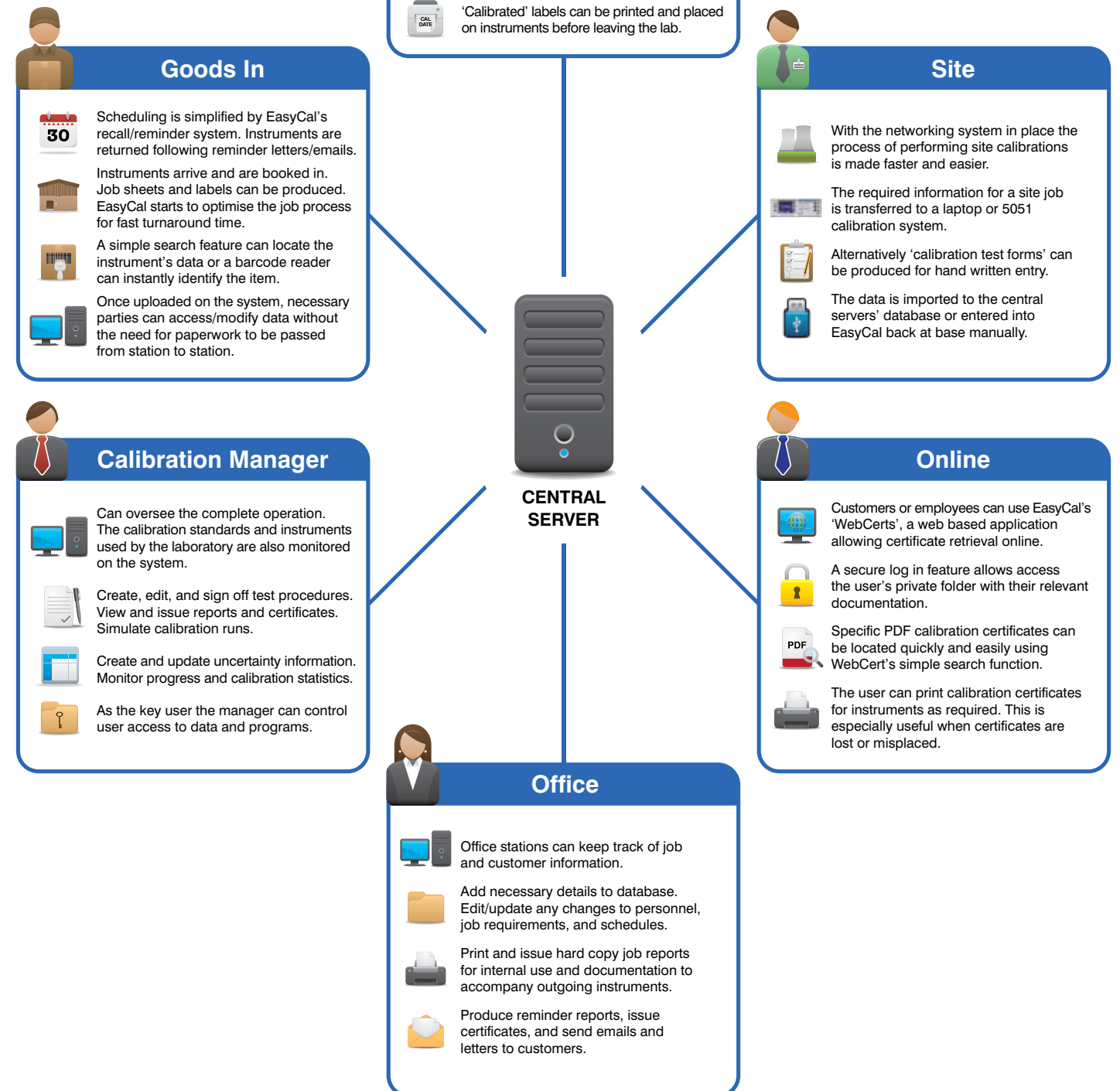### LABORATORY • SITE • OFFICE

EasyCal is a complete software package with features covering all aspects of calibration work and management. With a familiar user interface all users can quickly learn and navigate through the applications. It is designed to be implemented quickly and easily.

EasyCal simplifies the administration process from reminder reports through to despatch. Automating the calibration process brings important benefits and provides increased speed of calibration and consistency of results. Easily produce calibration certificates and reports to ISO 9001, ISO 17025, and other quality standards.

- **Calibrate electrical, dimensional, mechanical, pressure devices, and more**
- **Print/email/store certificates and reports**
- **Network compatible for multi-station and site calibration work**
- **Produce calibration labels**
- **Quickly generate procedures using templates**
- **Over 1000 pre-written calibration procedures included**
- **Calibration due reminder system**
- **E-mail reminder letters and lists**
- **Customise reports and certificates**
- **Generate PDF reports and certificates (built-in PDF engine)**
- **Print and read bar codes**
- **Universal instrument control via RS232/USB/GPIB/Ethernet**
- **HART and Foundation Fieldbus communication**
- **Secure user log in and electronic signatures**
- **Create uncertainty tables for laboratory and site**
- **Produce online certificates using EasyCal's WebCert feature**

EASYCAL NETWORKING:

With networking capabilities a multi-user system can be implemented.

Calibration Lab

Calibration and verification is performed using a 5025 multifunction calibrator or similar unit.

EasyCal can be used to automate the calibration process, create or edit test procedures, and enter in any 'ongoing' job information.

Certificates can be created, issued, and signed off as required. PDF copies can be held on the server for web upload or email purposes.

'Calibrated' labels can be printed and placed on instruments before leaving the lab.

Goods In

Scheduling is simplified by EasyCal's recall/reminder system. Instruments are returned following reminder letters/emails.

Instruments arrive and are booked in. Job sheets and labels can be produced. EasyCal starts to optimise the job process for fast turnaround time.

A simple search feature can locate the instrument's data or a barcode reader can instantly identify the item.

Once uploaded on the system, necessary parties can access/modify data without the need for paperwork to be passed from station to station.

Calibration Manager

Can oversee the complete operation. The calibration standards and instruments used by the laboratory are also monitored on the system.

Create, edit, and sign off test procedures. View and issue reports and certificates. Simulate calibration runs.

Create and update uncertainty information. Monitor progress and calibration statistics.

As the key user the manager can control user access to data and programs.

CENTRAL SERVER

Site

With the networking system in place the process of performing site calibrations is made faster and easier.

The required information for a site job is transferred to a laptop or 5051 calibration system.

Alternatively 'calibration test forms' can be produced for hand written entry.

The data is imported to the central servers' database or entered into EasyCal back at base manually.

Online

Customers or employees can use EasyCal's 'WebCerts', a web based application allowing certificate retrieval online.

A secure log in feature allows access the user's private folder with their relevant documentation.

Specific PDF calibration certificates can be located quickly and easily using WebCert's simple search function.

The user can print calibration certificates for instruments as required. This is especially useful when certificates are lost or misplaced.

Office

Office stations can keep track of job and customer information.

Add necessary details to database. Edit/update any changes to personnel, job requirements, and schedules.

Print and issue hard copy job reports for internal use and documentation to accompany outgoing instruments.

Produce reminder reports, issue certificates, and send emails and letters to customers.

Visit www.timeelectronics.com

INVENTORY, REMINDERS, AND JOBS

A comprehensive inventory database can be created and customised to company requirements. For internal calibration and quality management, departments and users can be specified. Alternatively EasyCal can be used as the controlling system for a calibration business based around customers and owners.
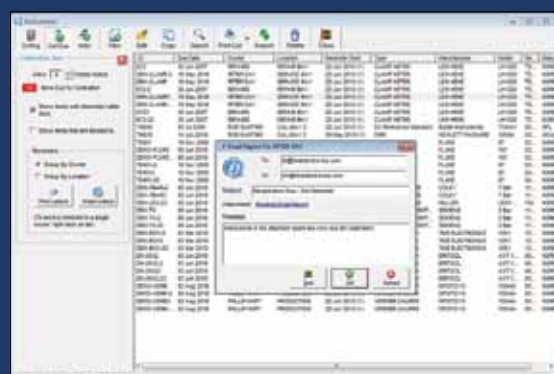
Search: A powerful search feature enables the user to enter specific criteria to quickly find the required data. When adding details the user is aided by drop-down lists, which automatically update when new information is added.

Input Fields: Used to add details such as id and serial number, manufacturer and model, instrument status and service notes. In addition custom fields can be created to integrate with a company system. Images can be uploaded to provide further reference.

Instrument Recall and Reminder System: Instruments which are due for calibration are listed on screen. Reminder letters and lists can be printed or emailed directly to the customer or department. An advanced notice period can be set to bring forward the recall date allowing for response and shipping times.

Job Management: When an instrument is booked in the job process starts. Specific information about the job is entered; such as 'service required', 'sub contracted' and 'accessories supplied'. A job sheet and label can be produced at this stage to accompany the instrument. As the job is put through the system these parameters can be updated, for example 'quote price', 'job status' and 'invoiced'.

Calibrating Instruments, Standards, and Uncertainties: Traceability information for calibrating instruments and standards is stored and maintained by EasyCal. Uncertainty tables for laboratory and site can be created for each calibrating instrument. These are then automatically processed and applied to certificates as required.

PROCEDURE WRITING AND EDITING

Creating and editing test procedures is made simple with an intuitive, user-friendly interface. Editing test information can be done by adding, inserting, or copy and pasting. EasyCal keeps track of each time a procedure is edited.

Procedure Library: A calibration library comprising of over 1000 procedures covering a wide variety of instruments is included as standard.

Procedure Templates: Procedure templates for multimeters, clamp meters, decade boxes, insulation testers, and more can be used for creating any new procedures as required.

Fast Procedure Creation and Editing: Copy and paste multiple tests. Globally edit a group of tests. Colour coded listing helps sort and identify different test types.
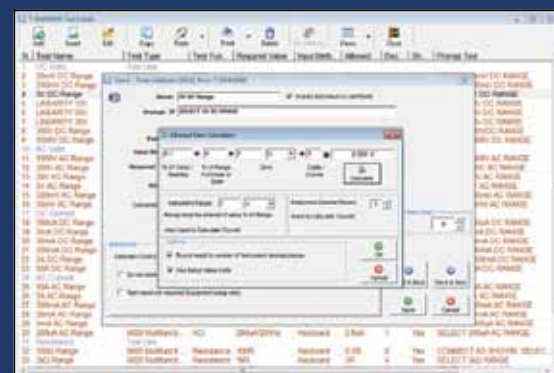
Procedure Simulation: The Calibration Run Simulator enables a procedure to be tested without the need for a controlling instrument. To further assist with development of procedures a test can also be edited during the actual calibration run.

Format Certificates: Colour code and add borders to test group titles. Add column headers where a change of layout is required. A preview feature allows the user to check the certificate layout to determine if formatting is correct.

Document Links: Create links to technical files, specifications, web pages, word documents, videos, and more. These can be set to automatically display prior to the calibration run.

Conversion Tables: Conversion tables for thermocouples, RTDs, current transformers, and clamp meter adaptors are included. Alternatively user-defined tables can be created.

Remote Commands: For more complex instrument control, commands can be sent on a test-by-test basis or run as a script. Closed loop calibration is also achievable using the universal readback feature.

INSTRUMENT AND DEVICE CALIBRATION

Automated calibration run provides fast and accurate collection of data, whether using direct instrument control or manual entry. EasyCal guides the operator through the procedure using graphical test screens and user prompts.

Search: Selection of the device under test is quick and easy. With the use of a barcode scanner this selection becomes automatic.

Calibration Prompts: Text and graphical prompts aid the user with instrument range selection and connection. So even the most complex calibrations can be performed with relative ease.

Graphical Test Screen: The calibration run is made simple and efficient by a graphical user-interface, which increases speed of data entry. The colour coded indication bar displays the test limits. This allows the operator to easily identify out of tolerance results.

Test Control: At any stage during the calibration run a summary can be displayed, this includes both completed and remaining tests. Colour coding indicates tests passed or failed. The operator is able to move forward or backward through the procedure as required.

End of Calibration Run: Data for every test is stored, including a snap shot of the procedure used. If required calibration comments and service history can be updated. The operator is able to print the certificate, produce a calibration label and/or store the results to be issued as required.

Recovery Mode: If for any reason a calibration run is interrupted, recovery mode allows the user resume from the point of termination.

Calibration Test Forms: Alternatively 'calibration test forms' for hand written results are available. This data is then entered manually into EasyCal at a later date.

CERTIFICATES/REPORTS/DATA MANAGEMENT

Produce, print, and store calibration certificates, reports, and labels. Simple search facilities enable the user to locate any data on demand. Keeping track of instrument history and servicing is made easy.

Certificate Templates: A range of pre-formatted templates are available for immediate use. A company logo can be added without the need for 3rd party software.

Electronic Signatures: Password protected electronic signatures allow management to approve certificates. In addition a scanned image of the signature can automatically be inserted, eliminating the need to print certificates.

**Built-in PDF Engine:** Generate PDF reports and certificates ready for emailing and universal review.

Calibration Reports: Documented traceability provides a recorded audit trail. Reports showing calibration duration times can assist with costing and assessments.

Archive: The results database can be streamlined by using the archive feature. This improves data organisation and management. Archives are quickly retrieved, giving instant access to historical certificate data.

Import / Export: Exchange data from one system to another using the import/export feature. This method is ideal for site and field calibration work, where data is recorded externally then uploaded to the main database upon return.

WebCerts: Enables the retrieval of PDF calibration certificates via a web based application. A secure log in feature allows access the user's private folder with their relevant documentation.

Customise: Crystal Reports (optional) allows full modification of certificate, label and report layouts. Design custom reports using queries, formulas, and running totals.
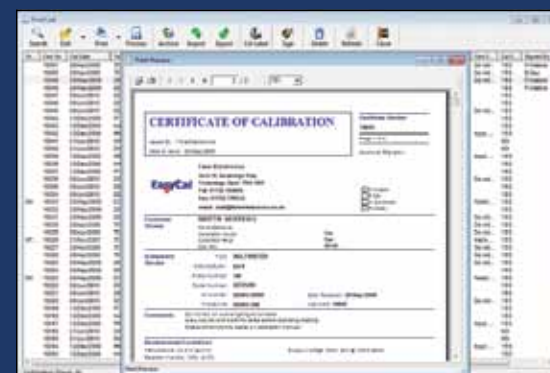
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For more information please contact your local Time Electronics representative: