Time Electronics
7861 and 7871 Dry Block Calibrators

Description

Dry block calibrators that provide a solution for the calibration of RTDs, thermocouples, thermoswitches, thermistors, and other common temperature sensing devices. The 7861 and 7871 provide high performance, ease of operation and functionality to their dedicated applications. Models feature dual zone technology for fast and secure cooling and heating temperature changes. Features include programmable auto stepping, stability indicator and settable min/max temperature limits for UUT damage prevention. Users can also store up to ten instrument setups with relevant criteria that can be recalled at any time.

Each model has USB communication and is EasyCal software compatible for control and readback, enabling automated calibration. When utilised with a CalBench system, these dry block calibrators are used as the temperature source with the UUT (sensor) output measurement via a module. Modules like the 8060, 7051 or 5065B feature precision RTD and thermocouple measurement.

Additional multi-channel signal scanners are available for batch testing of temperature devices, automated via EasyCal software. These include the 7085A 10 channel scanner module and the 8085 advanced signal multi-scanner module (8 or 16 channel versions). Both modules are also available as benchtop units.

Features

- 7861: -30 to 155 °C (-22 to 311 °F)
- 7871: -45 to 155 °C (-49 to 311 °F)
- Excellent accuracy and stability
- Resolution select: 1°, 0.1°, 0.01° or 0.001°
- Simple operation and intuitive display
- Stability indicator
- Supplied with multi hole insert
- Auto stepping
- MVI Mains Variance Immunity
- EasyCal software compatible

Specifications

Model	Temp Range	Heating Times	Cooling Times	Accuracy	Resolution	Stability	Approx Time to Stability	Immersion depth	Insert diameter
7861	-30 to 155 °C (-22 to 311 °F)	-30 to 23 °C: 4 mins 23 to 155 °C: 15 mins	155 to 100 °C: 4 mins 100 to 23 °C: 8 mins 23 to -24 °C: 15 mins -24 to -30 °C: 10 mins	± 0.10 °C (0.18 °F)	1°, 0.1°, 0.01° or 0.001°	± 0.005 °C (0.009 °F)	10 mins	160 mm (6.3 in.)	29.7 mm (1.17 in.)
7871	-45 to 155 °C (-49 to 311 °F)	-45 to 23 °C: 7 mins 23 to 155 °C: 8 mins	155 to 100 °C: 5 mins 100 to 23 °C: 10 mins 23 to -30 °C: 17 mins -30 to -45 °C: 25 mins						

Supplied pre-drilled Inserts...................... Hole sizes (7861/7871): 3,4,4,5,6,6,9 mm and 1/4 ".
Imperial Versions (7861/7871): 1/8,1/4,1/4,3/16,3/8 " and 4 mm.
1 x undrilled insert supplied with each calibrator.

Interfaces... USB (EasyCal compatible) and Ethernet.

Environmental... Operating temperature: 0 to 40 °C (32 to 104 °F). Storage temperature: -20 to 50 °C (-4 to 122 °F). Humidity: 0 to 90 % RH.

Mains Supply .... 115 V AC / 60 Hz to 230 V AC / 60 Hz.

Dimensions .... 7861/7871: L 362 x W 171 x H 363 mm (14.3 x 6.7 x 14.3 in).

Weight... 7861/7871: 10.5 kg (23.2 lb).

Supplied Accessories/Extras .... 1 x multi hole insert, 1 x undrilled insert, carry case and traceable calibration certificate.

Optional Extras .... Inserts, cleaning brushes, reference probes, insulation plugs - available upon request.

Options

Insert Packs

7861-METP..Pack of 14 Metric Inserts for 7861 - 3,4,5,6,7,8,9,10,11,12,13,14,15,16 mm.

7861-IMPP..Pack of 9 Imperial Inserts for 7861 - 1/8,3/16,1/4,5/16,3/8,7/16,1/2,9/16,5/8 ".

7871-METP..Pack of 14 Metric Inserts for 7871 - 3,4,5,6,7,8,9,10,11,12,13,14,15,16 mm.

7871-IMPP..Pack of 9 Imperial Inserts for 7871 - 1/8,3/16,1/4,5/16,3/8,7/16,1/2,9/16,5/8 ".

Reference Sensors

TERS400/4/250......................................PT100 reference sensor, solid with handle (-50 to 400 °C / -58 to 752 °F), diameter 4 mm (0.16 in), straight, length 250 mm (9.84 in), cable length 2 m (6.6 ft), with ISO 17025 calibration certificate.

TERS400/4/350......................................PT100 reference sensor, solid, with handle (-50 to 400 °C / -58 to 752 °F), diameter 4 mm (0.16 in), straight, length 350mm (13.8 in), cable length 2m (3.3 ft), with ISO 17025 calibration certificate.

TERS650/4/250......................................PT100 reference sensor, solid (-150 to 650 °C / -238 to 1207 °F,), diameter 4 mm (0.16 in), straight, length 250 mm (9.84 in), cable length 2m (6.6 ft), with ISO 17025 calibration certificate and carry case.

TERS650/4/350......................................PT100 reference sensor, solid (-150 to 650 °C / -238 to 1207 °F,), diameter 4 mm (0.16 in), straight, length 350 mm (13.8 in), cable length 2 m (6.6 ft), with ISO 17025 calibration certificate and carry case.

For detailed specifications on TE reference sensors please see separate data sheet.

EasyCal Software

ECFLA..EasyCal Calibration Software (accompanying product license).

ECD-7861/7871......................................EasyCal software driver for dry block calibrators 7861 and 7871.

Note that a driver is included as standard when EasyCal software is purchased with a dry block calibrator or part of a turnkey package containing EasyCal. For further software options please see the EasyCal brochure.

Additional Options

ISO 17025 certificates...........................C226: ISO 17025 (UKAS) calibration certificate for dry block calibrator (traceable certificate supplied as standard).

Accessories upon request....................Insulation plugs, blank and pre-drilled inserts, cleaning brushes, thermal protection shields.

Ordering Information

7861 ....Dry Block Calibrator (-30 to 155 °C) with metric multi hole insert, blank insert, traceable certificate & carry case
7861-METP..Pack of 14 Metric Inserts for 7861 - 3,4,5,6,7,8,9,10,11,12,13,14,15,16 mm.

7861-I..Dry Block Calibrator (-30 to 155 °C) with imperial multi hole insert, blank insert, traceable certificate & carry case
7861-IMPP..Pack of 9 Imperial Inserts for 7861 - 1/8,3/16,1/4,5/16,3/8,7/16,1/2,9/16,5/8 ".

7871 ....Dry Block Calibrator (-45 to 155 °C) with metric multi hole insert, blank insert, traceable certificate & carry case
7871-METP..Pack of 14 Metric Inserts for 7861 - 3,4,5,6,7,8,9,10,11,12,13,14,15,16 mm.

7871-I..Dry Block Calibrator (-45 to 155 °C) with imperial multi hole insert, blank insert, traceable certificate & carry case
7871-IMPP..Pack of 9 Imperial Inserts for 7861 - 1/8,3/16,1/4,5/16,3/8,7/16,1/2,9/16,5/8 ".

Reference Sensors

TERS400/4/250......................................Pt100 Reference Sensor (-50 to 400 °C / -58 to 752 °F, diameter 4 mm, straight, length 250 mm).

TERS400/4/350......................................Pt100 Reference Sensor (-50 to 400 °C / -58 to 752 °F, diameter 4 mm, straight, length 350 mm).

TERS650/4/250......................................Pt100 Reference Sensor (-150 to 650 °C / -238 to 1207 °F, diameter 4 mm, length 250 mm).

TERS650/4/350......................................Pt100 Reference Sensor (-150 to 650 °C / -238 to 1207 °F, diameter 4 mm, length 350 mm).

Due to continuous development Time Electronics reserves the right to change specifications without prior notice.

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