Description

Dry block calibrators that provide a solution for the calibration of RTDs, thermocouples, thermoswitches, thermistors, and other common temperature sensing devices. The 7870 and 7872 provide high performance, ease of operation and functionality to their dedicated applications. The combination of models give coverage of a wide temperature range from -90 to 660 °C (-130 to 1220 °F). The 7870 is an efficient and stable unit with 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

- 7870: -90 to 125 °C (-130 to 257 °F)
- 7872: 33 to 660 °C (91 to 1220 °F)
- Excellent accuracy and stability
- User selectable resolution: 1, 0.1 or 0.01 °
- 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
7870	-90 to 125 °C (-130 to 257 °F)	-90 to 23 °C: 15 mins 23 to 125 °C: 13 mins	125 to 23 °C: 40 mins 23 to -80 °C: 75 mins -80 to -90 °C: 30 mins 125 to -90 °C: 145 mins	±0.30 °C (0.54 °F)	1 °, 0.1 °, or 0.01 °C/°F	±0.03 °C (0.054 °F)	10 mins	190 mm (7.48 in.)	30 mm (1.18 in.)
7872	33 to 660 °C (91 to 1220 °F)	33 to 660 °C: 20 mins	660 to 100 °C: 36 mins 100 to 50 °C: 15 mins	±0.30 °C* (0.54 °F)	1 °, 0.1 °, or 0.01 °C/°F	±0.04 °C (0.072 °F)	10 mins	150 mm (5.91 in.)	25 mm (1 in.)

*7872 Full Accuracy Specification: 33 to 420°C: ±0.30°C (±0.54°F). 420 to 660°C: ±0.50°C (±0.90°F).

Supplied pre-drilled Inserts...................... Hole sizes - 7870: 3,4,4,5,6,6,9 mm and 1/4". 7872: 3,4,4,5,6,9 mm
Imperial Versions - 7870-I: 1/8,1/4,1/4,3/16,3/8" and 4 mm. 7872-I: 1/8,3/16,1/4,3/8" 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 .... 7870: L531 x W169 x H432 mm (L20.9 x W6.65 x H17.0 in). 7872: L362 x W171 x H363 mm (L14.3 x W6.7 x H14.3 in).

Weight... 7870: 15.2 kg (33.5 lb). 7872: 8.9kg (19.6 lb)

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

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

Options

Insert Packs

Material: Inserts for the 7870: Aluminium. Inserts for the 7872: Brass.

7870-METP..Pack of 14 Metric Inserts for 7870 - 3,4,5,6,7,8,9,10,11,12,13,14,15,16 mm.

7870-IMPP..Pack of 9 Imperial Inserts for 7870 - 1/8,3/16,1/4,5/16,3/8,7/16,1/2,9/16,5/8 ".

7872-METP..Pack of 13 Metric Inserts for 7872 - 3,4,5,6,7,8,9,10,11,12,13,14,15 mm.

7872-IMPP..Pack of 8 Imperial Inserts for 7872 - 1/8,3/16,1/4,5/16,3/8,7/16,1/2,9/16 ".

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 350 mm (13.8 in), cable length 2 m (3.3 ft), with ISO 17025 calibration certificate.

TERS650/4/250.....................................Pt100 reference sensor, solid (-150 to 650°C / -238 to 1207 °F,), diameter 4mm (0.16 in), straight, length 250 mm (9.84 in), cable length 2 m (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-7870/72..EasyCal software driver for dry block calibrators 7870 and 7872.
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, carry cases, blank and pre-drilled inserts, cleaning brushes, thermal protection shields.

Ordering Information

7870 ....Dry Block Calibrator (-90 to 125 °C) with metric multi hole insert, blank insert, traceable certificate
7870-METP...Pack of 14 Metric Inserts for 7870 - 3,4,5,6,7,8,9,10,11,12,13,14,15,16 mm.
7870-I...Dry Block Calibrator (-90 to 125 °C) with imperial multi hole insert, blank insert, traceable certificate
7870-IMPP...Pack of 9 Imperial Inserts for 7870 - 1/8,3/16,1/4,5/16,3/8,7/16,1/2,9/16,5/8 ".

7872 ....Dry Block Calibrator (33 to 660 °C) with metric multi hole insert, blank insert, traceable certificate
7872-METP...Pack of 13 Metric Inserts for 7872 - 3,4,5,6,7,8,9,10,11,12,13,14,15 mm.

7872-I...Dry Block Calibrator (33 to 660 °C) with imperial multi hole insert, blank insert, traceable certificate
7872-IMPP...Pack of 8 Imperial Inserts for 7872 - 1/8,3/16,1/4,5/16,3/8,7/16,1/2,9/16 ".

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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