

Portable metal dry block temperature calibrator LR-Cal LTC-DB-0550-60 with extra large insertion depth

- Temperature range: ambient temperature to +550°C
- Metal block outer diameter 80 x 300 mm,
**Inner diameter 60 x 275 mm suitable
for appropriate block inserts.**
- Insertion depth of the holes in the block insert: 275 mm.
- For checking and calibrating of temperature sensors
and thermostats with long bulbs.
- Block inserts available with holes to customers
request.

The dry block temperature calibrator LR-Cal LTC-DB-0550-60 consists of a metal block diameter 80 mm x length 300 mm, heated by a resistance with winds around the outer surface of the block. A hole with diameter 60 mm and depth 275 mm is made in the block for the appropriate block inserts.



The LR-Cal LTC-DB-0550-60 is equipped with a counter-current forced air cooling system, which keeps the temperature in the upper part of the well low. This system enables to check even very short probes, without heating the connection head or the handgrip. The calibrator is equipped with a PID microprocessor controller with a resolution up to 0.01°C, setting of the standard of measurement in °C, °F and K, programming of ascent/descent ramps and storage of a thermostats' operative temperature.

The version LR-Cal LTC-DB-0550-60-2I is equipped with an acquisition card, having two adjustable inputs, able to read Pt 100 3-/4-wires and thermocouples J, E, K, N, R and S with automatic compensation of the cold junction. The values of up to two connected probes can be displayed on instruments' display simultaneously with the values of temperature set point and measured temperature of the internal reference temperature probe.

Furthermore, the LR-Cal LTC-DB-0550-60 is equipped with a RS232 serial interface (USB converter as option). It can operate in automatic mode connected to a PC by means of the optional LR-Cal AQ2sp software which enables to carry out probe calibrations and cyclical life tests. Test results can be stored and printed, so they are easily traceable in compliance with ISO 9001 standards.

Scope of standard delivery:

- Dry block temperature calibrator LR-Cal LTC-DB-0550-60 or LR-Cal LTC-DB-0550-60-2I
- Power cable, set of spare fuses
- Cable for connecting thermostats, for thermostat tests and calibrations
- Tool for removing block inserts
- Test acceptance certificate 3.1 according to DIN EN 10204
- Operating manual
- Only for version LTC-DB-0550-2I with 2 configurable measuring inputs:
1 set of wires + plugs (red/black) for the two measuring inputs

A block insert is NOT included and must be ordered separately.

Technical data:**Temperature range:** ambient temperature to +550°C**Stability:** $\pm 0.05^\circ\text{C}$ (at 450°C); $\pm 0.09^\circ\text{F}$ (at 842°F)**Radial temperature uniformity:** $\pm 0.1^\circ\text{C}$ (at 100 mm depth); $\pm 0.1^\circ\text{F}$ (at 100 mm depth)**Axial temperature uniformity:** $\pm 0.3^\circ\text{C}$ (at 120 mm from the bottom);
 $\pm 0.5^\circ\text{F}$ (at 120 mm from the bottom)**Maximum heating time:** 9°C/min. (48°F/min.)**Maximum cooling time:** 1.6°C/min. (35°F/min.)**Display resolution:** 0.1°C (0.01° F)**Display accuracy:** $\pm 0.3^\circ\text{C}$ ($\pm 0.5^\circ\text{F}$)**Temperature units:** °C, °F, K**Interface:** RS232 serial interface**Well diameter:** 60 mm (2.3 in.)**Insert hole depth:** 275 mm (10.8 in.)**Supply:** 230 VAC - 50/60 Hz**Power consumption:** 1700 W**Dimensions:** 170 x 450 x 330 mm (6.6 x 17.7 x 12.9 in.)**Weight:** 23 kg (50 lb)**Shipping size:** 240 x 410 x 515 mm (9.4 x 16 x 20.2 in.)**Shipping weight incl. optional carrying case:** 30 kg (60 lb)**Version LTC-DB-0550-60-2I:****Order-Code:** [LTC-DB-0550-60-2I](#)

Instrument version with 2 measuring inputs, both suitable for resistance thermometers Pt 100 (2-, 3- or 4-wire) or Pt 100 as well as thermocouples (incl. cold junction compensation) types B, E, J, K, N, R, S and T.



The signals of up to two external temperature sensors can be displayed additionally.

Order-Code of this calibrator version: [LTC-DB-0550-60-2I](#)

Accuracy of the two measuring inputs at version LR-Cal LTC-DB-0550-60-2I:

(maximal deviation)

Resistance thermometer:

Pt 100 + Pt 1000	at -40°C: $\pm 0.09^\circ\text{C}$	at 0°C: $\pm 0.08^\circ\text{C}$	at +150°C: $\pm 0.11^\circ\text{C}$
	at +300°C: $\pm 0.14^\circ\text{C}$	at +450°C: $\pm 0.30^\circ\text{C}$	at +600°C: $\pm 0.40^\circ\text{C}$

Thermocouples:

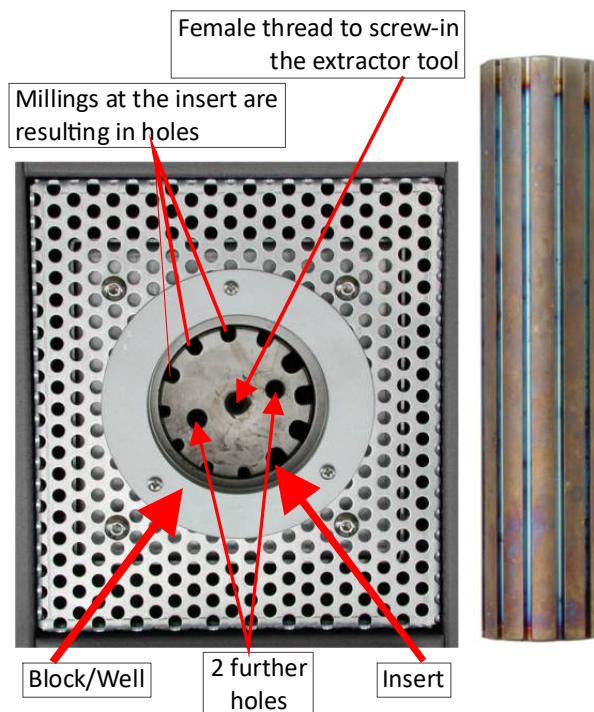
Type B	at +950°C: $\pm 0.97^\circ\text{C}$	at 1050°C: $\pm 1.03^\circ\text{C}$	at +1200°C: $\pm 1.12^\circ\text{C}$
Type E	at -40°C: $\pm 0.42^\circ\text{C}$	at 0°C: $\pm 0.40^\circ\text{C}$	at +350°C: $\pm 0.61^\circ\text{C}$
Type J	at +200°C: $\pm 0.52^\circ\text{C}$	at +450°C: $\pm 0.67^\circ\text{C}$	at +700°C: $\pm 0.82^\circ\text{C}$
Types K + N + R + S	at +400°C: $\pm 0.64^\circ\text{C}$	at +700°C: $\pm 0.82^\circ\text{C}$	at +1000°C: $\pm 1.00^\circ\text{C}$
Type T	at -40°C: $\pm 0.42^\circ\text{C}$	at 0°C: $\pm 0.40^\circ\text{C}$	at +350°C: $\pm 0.61^\circ\text{C}$

Available block inserts:

Order-Code:	Number of drillings	Standard drillings
LTC-BI-60-275-0	0	no (blank, for self-drilling), with M8 female thread
LTC-BI-60-275-4	4	for probes with 4 + 6 + 9 + 12 mm diameter
Order-Code:	Number of drillings	customer-specific drillings (specify at ordering)
LTC-BI-60-275-C12	12	As per customers request, for probes with 3.0...6.5 mm diam.

At least 1 block insert must be ordered together with the calibrator.

Representation of the above listed block insert with Order-Code LTC-BI-60-275-C12:



Inner diameter of the metal dry block: 60 mm diameter x 275 mm depth.
 Block insert 59.5 x 275 mm available, which can be equipped with customer-specific holes (millings):

- maximal 12 drillings (resulting in holes, when inserted)
- Holes for probes with diameter 3.5 mm to 6.0 mm (please state your requirements in your order)
- Female thread M8 in the center of the insert to screw-in the extractor-tool (and additional two drillings/holes).



Further accessories:

- Trolley aluminum case, Order-Code LTC-DB-TROLLEY
- AQ2sp sSoftware (Windows-PC) incl. RS232 cable, Order-Code 599.0.000.0003.0
- Interface converter RS232-USB, Order-Code RS232-USB-KONV
- DAkkS calibration certificate (6 temperature points), traceable and accredited according to ISO 17025 for measuring chain consisting of device display and internal reference sensor, or, for version LTC-DB-0550-60-2l, measuring chain consisting of display and external reference sensor. (External reference sensors LR-Cal LRT-F see datasheet „LRT-F“).