

MTC 650 A

Marine Temperature Calibrator



With wide temperature ranges from 28 to 650° C / 82 to 1202° F, the MTC-650 A portable temperature calibrator facilitates correct readings on all of your temperature monitoring devices.

- **Temperature range: 28°C to 650°C**
- **high accuracy**
- **Automatical control via PC (RS 232)**
- **Stability: $\pm 0,1^{\circ}\text{C}$**
- **High homogeneity $\pm 0.1^{\circ}\text{C}$**
- **Easy to use**

By DAkkS accredited laboratory according to DIN EN ISO / IEC 17025: 2018. The accreditation is valid only for the quantities listed in the accreditation scope. (Our Laboratory number is D-K-15055-01-00).

© 31.03.2021 Pressure • Temperature • Flow • Humidity • Electric Quantities • Masses and Scales

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Maintain and Calibrate monitoring devices for:

- Fuel oil inlet
- Exhaust gas
- Crankcase protection
- Turbine & gear bearings
- Steam
- Servo oil propeller pitch
- Purifiers
- Starting air
- Hydraulic systems
- Oil burner
- Generators
- Safety Valves
- Turbo-charger lubrication
- Cylinder/piston/fuel valve cooling media
- Thrust/shaft/plane/stern tube bearings
- Lubricating oil systems
- Scavenge air
- Sea water cooling
- Charge air
- Uptake gas
- Feed water
- Cooling water outlet
- Cylinder/piston/fuel valve cooling media
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Informative color display and intuitive operation

The MTC-650 A is designed with an easy to read and very informative color display that gives you a full overview of the calibration task you currently are performing

Standard Delivery


- MTC dry-block calibrator
- Mains power cable (user specified)
- Traceable certificate - temperature performance
- Tool for insertion tubes
- Test cables (1 x red, 1 x black)
- USB cable
- USB key with JOFRACAL calibration software and manuals
- Thermal protection shield

Useful Features

The MTC-650 A is a very versatile calibrator with many integrated functions - you can run the calibration in four different ways.

Set function

13:45 2018-11-26
 True: Internal ref.
 Stability: 5 min.

 **67.9** °C


Set: °C

Set | Preset | Auto step | Switch

The fastest and simplest way of starting the calibrator. Simply press SET and type in the wanted temperature and off you go.



Auto Switch Test

14:13 2018-11-26
 True: Internal ref.
 Stability: 5 min.



Temp.
 T1 250.0 °C
 T2 300.0 °C
 Rate: 5.00 °C / min.
 Test runs: 3 Dead Band: Yes


Set: ---.- °C Int.ref.: 107.4 °C

Main |  | 

Switch test calibration is a perfect time saver. Start the switch calibration and come back to note the results after the test. You decide if you want the deadband or not - and the test can be repeated automatically in up to three subsequent runs.

Preset mode

16:07 2018-11-26
 True: Internal ref.
 Stability: 5 min.

 **541.4** °C

Set: **650.0** °C

90.0°C | **75.0°C** | **200.0°C** | **650.0°C**



In Preset mode you just activate one of the preset temperatures. Naturally the presets are programmable for your specific needs.

Auto Stepping

Memory1 09:47 2018-12-11
 True: Internal ref.
 Stability: 5 min.
 Steps: 12 Hold: 10 min.

Step Temp. Step Temp. Step Temp.
 1 300.0°C 5 400.0°C 9 500.0°C
 2 325.0°C 6 425.0°C 10 600.0°C
 3 350.0°C 7 450.0°C 11 625.0°C
 4 375.0°C 8 475.0°C 12 650.0°C

Set: ---.- °C Int.ref.: 75.9 °C

Main |  | 

In AUTOSTEP mode you can program as much as 12 temperature steps and at the same time set the dwell time. Even the stability criteria can be programmed. Just start the sequence and the calibrator will run through the steps.

Specifications	
Temperature:	
Temperature Range	28 to 650°C / 82 to 1202°F
Lowest calibration temperature	ambient +5°C / 9°F
Accuracy:	
MTC-650 A 1 year	±0.9°C / ±1.62°F
MTC-650 A 3 years	±1.8°C / ±3.24°F
Stability	
MTC-650 A	±0.1°C / ±0.18°F
Measured after the stability indicator has been on for 10 minutes. Measuring time is 30 minutes.	
Radial Homogeneity (difference between holes)	
MTC-650 A	0.1°C / 0.18°F
Settings	
Resolution	1 or 0.1
Units	°C or °F or K
Heating Time	
MTC-650 A	23 to 650°C / 73 to 1202°F. 18 minutes
All specifications are given with an ambient temperature 23° C/73.4° F ± 3° C/5.9° F. Specified at 115 V/230 V.	
Cooling Time	
MTC-650 A	650 to 100°C / 1202 to 212°F. 39 minutes
MTC-650 A	100 to 50°C / 212 to 122°F. 18 minutes
Time to Stability (typical)	
MTC-650 A	8 minutes
Mains Power	
Voltage	115 V (90-127) / 230 V (180-254)
Max Power Consumption	1150 VA
Frequency, non US deliveries.	50 Hz ±3, 60 Hz ±3
Physical Specifications	
Dimension	L x W x H. 248x148x305 mm
Weight	6.1 kg / 13.4 lb
Immersion Depth	115 mm / 4.53 in
Well diameter	26 mm / 1.02 in
Insert Dimensions (diameter x length)	25,7 mm x 120 mm
Electrical	
Switch Input (dry contact)	
Test Voltage	Maximum 14 VDC
Test Current	Maximum 1 mA
Digital Interface	USB 2.0
Environmental	
Operating Temperature	0 to 50°C / 32 to 122°F
Storage Temperature	-20 to 50°C / -4 to 122°F
Humidity	5 to 90% Rh, non-condensing
Protection Class	IP-10

Specifications	
Certificates	
CE	2014/30/EU : EN61326-1: 2013 2014/35/EU : EN61010-1:2010 • EN61010-2-030 : 2010
DNV	Marine type approval from Det Norske Veritas.
See the certificate at ametekcalibration.com	
Shipping Weight	
With Standard Accessories	
MTC-650 A	9.5 kg / 21 lb
Size:	L x W x H. 410 x 250 x 370 mm
With Standard Accessories and Rugged Carrying Case	
MTC-650 A	12.5 kg / 27.6 lb
Size:	L x W x H. 515 x 200 x 390 mm

Inserts, heat shields, and cleaning brushes



Always use the original inserts where material and physical dimensions have been optimized. A drilling guide is included if you buy undrilled inserts.

The head shield protects the sensor/transmitter under test from the heated air.

Use the cleaning brushes to clean the borings in your inserts when necessary.

Inserts for MTC-650 A are made of brass. All specifications on hole sizes refer to the outer diameter of the sensor-under-test. The correct clearance size is applied in all predrilled inserts.

Predrilled Inserts—metric

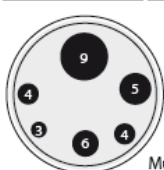
Probe Diameter in mm: 3 mm; 4 mm ; 5 mm; 6 mm; 7 mm; 8 mm; 9 mm; 10 mm; 11 mm; 12 mm; 13 mm; 14 mm; 15 mm; 16 mm; 18 mm; 20 mm

Predrilled Inserts—imperial (in)

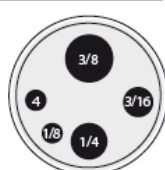
Probe Diameter in in: 1/8 in; 3/16 in; 1/4 in; 5/16 in; 3/8 in; 7/16 in; 1/2 in; 9/16 in; 5/8 in; 11/16 in; 3/4 in; 13/16 in

Undrilled Inserts

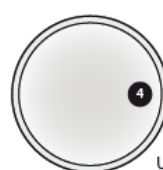
Use of other inserts may reduce performance of the calibrator. To get the best results out of the calibrator, the insert dimensions, tolerance and material is critical. We highly advise using Jofra inserts, as they guarantee trouble free operation.



Multi-hole M01



Multi-hole M02



Undrilled with ref. hole



Undrilled

