

MODELS / Temperature Ranges:

- **FLUID 100:** from -12°C to +125°C (at 20°C ambient temperature)
- **FLUID 200:** from ambient temperature to +200°C
- **FLUID 200-H:** from ambient temperature to +220°C
- **Mobile and stationary, ramp function, Thermostat tests**
- **Recommended for the calibration of glass thermometers**
- **OPTIONAL conversion kit to Dry Block temp. calibrator**

Typical applications:

- Test and calibration of all kind of thermometers
- Test and calibration of thermostats
- Computer aided calibration via RS232-interface

Technical Data:	FLUID 100 / 100-2I	FLUID 200 / 200-2I
Temperature range:	-12°C...+125°C (at ambient temperature +20°C)	Ambient temperature to +200°C FLUID 200-H: to 220°C
Temp. indication:	Accuracy: ±0.15°C; Resolution 0.01°/0.1° (°C or °F)	
Stability of the regulated temperature:	±0.02°C at -5°C	±0.02°C at 150°C
Mean heating time:	12°C per minute	10°C per minute
Mean cooling time:	5°C per minute	5°C per minute
Uniformity:	temperature uniformity: ±0.05°C (radial and vertical)	
Fluid:	Silicone oil 200C5	< 80°C: water < 125°C: silicone 200C5 < 220°C: silicone 47V100
Bath reservoir:	54 mm diam. depth 150 mm	54 mm diam. depth 150 mm
Power supply:	230 VAC / 50 Hz (optional 115 VAC / 60 Hz)	
Power consumption:	300 VA	500 VA
RS232 interface:	yes, included in standard supply	



Fluid bath: aluminum, volume appr. 400 cm³, homogeny temperature via magnet-mixer, adjustable. Housing: metal; dimensions: 160 x 340 x 330 mm; weight appr. 8 kg. Note: the stated accuracy is valid at ambient temperature +23°C and is guaranteed for 1 year.

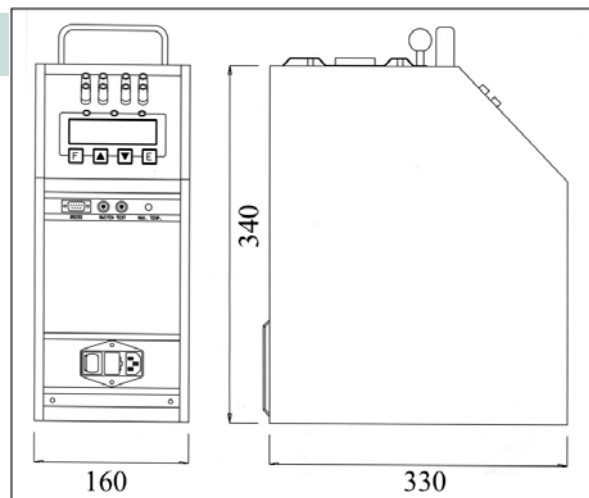
Scope of Supply:

- Calibrator Fluid 100 / 200 / 200-H
- Spare fuses kit
- Connection cables for thermostat-tests
- Certificate of Calibration, traceable
- Bottle 500 cm³ with silicone oil
- Support for glass thermometer
- Cables and kit of clamp connections (only "...-2I"-versions)
- Operating manual
- Closing top used for transport
- soft bag

Types FLUID 100-2I , FLUID 200-2I and FLUID-200-H-2I:

Two inputs for Pt100 and thermocouples, programmable:

- Pt 100 IEC 3-/4-wire, range -100/+700°C, accuracy ±0.3°C
- Thermocouple type J, range 0-1000°C, accuracy ±1°C
- Thermocouple type K/N/R/S, range 0-1300°C, accuracy ±1°C



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Order-Codes:

FLUID 100:	Order-Code FLUID 100	FLUID 100-2I:	Order-Code FLUID 100-2I
FLUID 200:	Order-Code 508.0.000.0200.0	FLUID 200-2I:	Order-Code 508.0.111.0200.0
FLUID 200-H:	Order-Code FLUID-H	FLUID 200-H-2I:	Order-Code FLUID200-H-2I

Optional Accessories:

- External reference probe: Pt 100 Sensor, optional with DKD certification
- PC-Windows-Software **AQ2sp** with RS232 RS232 interface cable.
With the AQ2sp software the FLUID can operate in automatic mode. The software enables to carry out probe calibrations, thermostat tests, and cyclical life tests. Test results can be stored and printed, so they are easily traceable in compliance with ISO 9000 standards.
Order code: [599.0.000.0003.0](#)



- **Extension tube** to increase the dept of the liquid tank of **FLUID 100** and **FLUID 100-2I**:
Usable diameter: 60 mm; usable dept: 230 mm
Minimum temperature: -9°C at 20°C ambient temperature.
If used with silicone oil 200C5:
Temperature range -9...+130°C at ambient temperature +20°C.
Horizontal temperature uniformity: ±0.10°C (measured at 50 mm from the bottom).
Vertical temperature uniformity: ±0.10°C (±0.15°C at temperatures below 0°C), over the dept of 150 mm from the bottom.
Order code: [FLUID 100-ER](#)



- **Extension tube** to increase the dept of the liquid tank of **FLUID 200** and **FLUID 200-2I**:
Usable diameter: 60 mm; usable dept: 230 mm
If used with silicone oil 47V20:
Temperature range 90...200°C at ambient temperature +20°C.
Horizontal temperature uniformity: ±0.20°C (measured at 50 mm from the bottom).
Vertical temperature uniformity: ±0.10°C, over the dept of 150 mm from the bottom.
Order code: [FLUID200-ER](#)



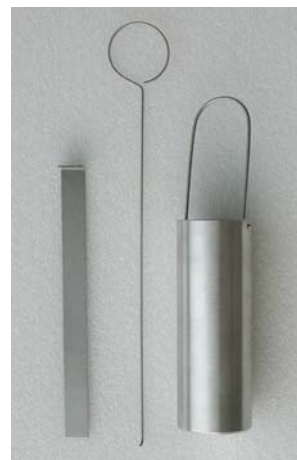
- **Cooling coil** in stainless steel for **FLUID 200**, **FLUID 200-2I**, **FLUID 200-H** and **FLUID 200-H-2I**:
The cooling coil shortens the cooling time, also the minimum calibration temperature can be decreased.
Order code: [FLUID200-KS](#)



- **Conversion kit** for fluid bath **FLUID** (all models) to get a **Dry Block Calibrator**
Temperature range for models FLUID 100 and FLUID 100-2I: -10...+125°C
Temperature range for models FLUID 200 and FLUID 200-2I: ambient temp. to +160°C
Block in aluminum, diameter 60 mm, usable dept 170 mm.
Heating time from -10 to +110°C: 45 minutes
Cooling time from 20°C to -10°C: 47 minutes
Stability: ±0.04°C
Vertical temperature uniformity at 0°C ±0.03°C; at 80°C ±0.06°C.

Order code: [FLUID-INS-9](#): Block with 9 holes / drilling
4.0 - 4.0 - 4.5 - 5.5 - 6.5 - 6.5 - 8.5 - 10.5 - 12.5 mm

Order code: [FLUID-INS-0](#): Block without holes (to be drilled by customer)



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LR-Cal

BK 40 M

CRYOSTATIC BATH



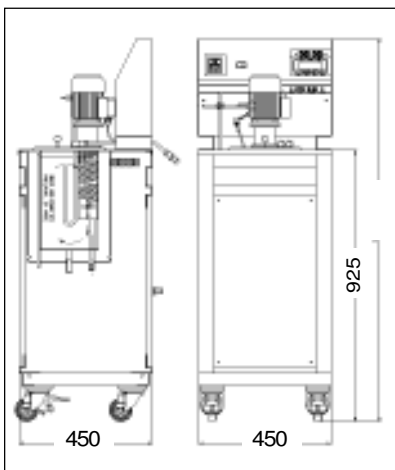
Operating range: -40/+125 °C

Applications: Control calibration of temperature sensors in laboratory, in conformity with ISO 9000 standards; Control of thermostats; Automatic computer-controlled calibrations



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The BK40M bath is an instrument used to calibrate transducers, RTD and temperature-measuring sensors in the field and in the laboratory. The possibility to generate positive and negative temperature ramps makes it suitable for use in calibrating and testing thermostats.

TECHNICAL CHARACTERISTICS

The BK40M bath consists of a stainless tank with capacity of 10 litres, useful height 340 mm and diameter 85 mm. The bath is equipped with a stainless steel mixer with electrical motor power, a safety thermostat, drain cock and overflow drain pipe.

BK40M is equipped with a new PID microprocessor controller with a resolution up to 0.01 °C, setting of the standard of measurement in °C/°F, programming of ascent/descent ramps and storage of the thermostats' operative temperature.

The instrument is also equipped with an acquisition card having two adjustable inputs (Pt100 3/4 wires; thermocouples: J, K, N, R, S) with bushes fitted with gold-plated contacts and automatic compensation of the cold junction.

The first input is provided for the reference sample probe, thus obtaining a complete calibration system which can be certified by SIT centres, in compliance with ISO 9000 regulations.

The second input is provided for probes that are being tested; hence, the instrument can display the temperatures of the furnaces, the temperature of the sensor to be checked and of the reference sample probe, at the same time.

Furthermore, BK40M is equipped with the RS232 serial interface; it can operate in automatic mode connected to the PC by means of the 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 9000 standards.

The BK40 M with the software AQ2sp for Windows can carry out:

- complete control of the bath from the PC,
- manual or automatic calibration of one or more probes,
- cyclic life or stress tests on temperature sensors,
- automatic threshold thermostat test,
- filing and printing of the results obtained, guaranteeing ISO 9000 standards

FLUID LEVEL ADAPTER (by request)

The fluid level adapter slides directly into the test wells of the BK40 M bath is designed for customers that needing to calibrate glass thermometers.

The fluid level adapter creates a positive bath fluid surface. The bath fluid is pumped up through the test well to the surface of the bath and kept there. In relation to the liquid viscosity the operator can regulate the level rotating the adapter tube.

The clear adapter cover protects the bath fluid from ambient temperature effects for better bath stability. The cover can be drilled for any size probe.

STANDARD EQUIPMENT

- BK40 M : base version
- BK40 M/TR : version with fluid level adapter

ACCESSORIES BY REQUEST

- 9 Kg tan of glycol
- 9 Kg tan of Silicon Oil 47 V20

TECHNICAL DATA (with mix of glycol / water)	
Operative range	-40/+125°C
Stability	±0.05°C
Display resolution	0.01/0.1°C
Reading accuracy	±0.2°C a 120°C
Ascent rate	2°C min (-40/+50°C)
Descent rate	0.5°C min (30/-20°C)
Power supply	230 V - 50Hz.
Power	2500 W
Weight	60 Kg
Size mm	450 x 450 x 1300
Shipping weight	74 Kg

Operative range	Recommended fluid	Stability	Uniformity	Descent time
-40 ÷ 80 °C	Ethylene Glycol	±0.05 °C (a-20 °C)	±0.05 °C	0.4 °C/1'
-40 ÷ 125 °C	Silicone oil 47V20	±0.05 °C (a-20 °C)	±0.1 °C	1 °C/1'



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CERTIFICATION

All the instrument are supplied with final testing, stability and accuracy certification traceable to standards

LR-Cal

TB 300 M

THERMOSTATIC BATH



Operating range: Amb./+300 °C

Applications: Control calibration of temperature sensors in laboratory, in conformity with ISO 9000 standards; Control of thermostats; Automatic computer-controlled calibrations



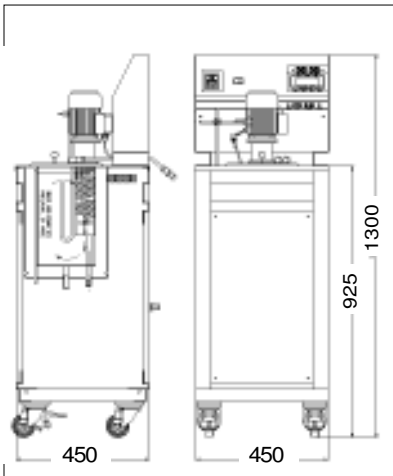
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THERMOST



Fluid level adapter



The TB300M bath is an instrument used to calibrate transducers, RTD and temperature-measuring sensors in the field and in the laboratory. The possibility to generate positive and negative temperature ramps makes it suitable for use in calibrating and testing thermostats.

TECHNICAL CHARACTERISTICS

The TB300 M bath consists of a stainless tank with capacity of 10 litres, useful height 340 mm and diameter 85 mm. The bath is equipped with a stainless steel mixer with electrical motor power, a safety thermostat, drain cock and overflow drain pipe.

TB300M is equipped with a new PID microprocessor controller with a resolution up to 0.01 °C, setting of the standard of measurement in °C/°F, programming of ascent/descent ramps and storage of the thermostats' operative temperature.

The instrument is also equipped with an acquisition card having two adjustable inputs (Pt100 3/4 wires; thermocouples: J, K, N, R, S) with bushes fitted with gold-plated contacts and automatic compensation of the cold junction.

The first input is provided for the reference sample probe, thus obtaining a complete calibration system which can be certified by SIT centres, in compliance with ISO 9000 regulations.

The second input is provided for probes that are being tested; hence, the instrument can display the temperatures of the furnaces, the temperature of the sensor to be checked and of the reference sample probe, at the same time.

Furthermore, TB300M is equipped with the RS232 serial interface; it can operate in automatic mode connected to the PC by means of the 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 9000 standards.

The TB300 M with the software AQ2sp for Windows can carry out:

- complete control of the bath from the PC,
- manual or automatic calibration of one or more probes,
- cyclic life or stress tests on temperature sensors,
- automatic threshold thermostat test,
- filing and printing of the results obtained, guaranteeing ISO 9000 standards

FLUID LEVEL ADAPTER (by request)

The fluid level adapter slides directly into the test wells of the TB300 M bath is designed for customers that needing to calibrate glass thermometers.

The fluid level adapter creates a positive bath fluid surface. The bath fluid is pumped up through the test well to the surface of the bath and kept there. In relation to the liquid viscosity the operator can regulate the level rotating the adapter tube.

The clear adapter cover protects the bath fluid from ambient temperature effects for better bath stability. The cover can be drilled for any size probe.

STANDARD EQUIPMENT

- TB300 M : base version
- TB300 M/TR : version with fluid level adapter

TECHNICAL DATA

Operating range	Amb./+300°C
Stability	±0.05°C
Resolution	0.01/0.1°C
Reading precision	±0.2°C @ 150°C
Power supply	230 V - 50Hz.
Power	1600 W
Weight	26 Kg
Dimensions	325 x 360 x 860
Overall size	400 x 500 x 950
Shipping weight	35 Kg

Operative range	Recommended fluid	Stability	Uniformity	Descent time
Amb. ÷ 80°C	Water	±0.03°C (@ 80°C)	±0.04°C	2°C/1'
Amb. ÷ 125°C	Silicon Oil 47V20	±0.04°C (@ 100°C)	±0.05°C	5°C/1'
50 ÷ 180°C	Silicon Oil 47V100	±0.05°C (@ 200°C)	±0.05°C	6°C/1'
80 ÷ 280°C	Silicon Oil 47V710	±0.05°C (@ 200°C)	±0.05°C	6°C/1'

ACCESSORIES BY REQUEST

- 9 Kg tan of Silicon Oil 47V20
- 9 Kg tan of Silicon Oil 47V100
- 9 Kg tan of Silicon Oil 47V710



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