eurotron
"Excellence in measurements"

MicroCal T Series

Dry Block & Liquid Bath Temperature Calibrator

TEMPERATURE CALIBRATORS

▶ Reliable, Rugged and Stable

▶ Ranges from -50°C to +1100°C

▶ Resolution 0.01°C

▶ Two high accuracy input channels (3/4 wires Pt100 and TCs)

▶ RS232/USB serial interface

▶ Temperature switch input

▶ **CalPMan 2008**
Calibration Procedure
Manager Software Package

ISO 9001
Certified Quality System
Eurotron Instruments

C E

www.eurotron.com

MicroCal T Series
Dry Block and Liquid Bath
Temperature Calibrators

Introduction

The MicroCal T Series works with an equaliser block fitted with holes into which the sensors to be calibrated are inserted. A heater element heats the block and an electronic controller with static relay output checks and regulates the temperature. A fan is fitted inside the regulating container, which prevents the metal structure from heating. The MicroCal T200 Fluid is a portable thermostatic bath specially designed as the best solution for laboratory and in-field RTDs and TCs tests and calibration.

The temperature parameter represents the most important factor to fulfill quality, operational safety and reliability of industrial processes.

Thermocouples, RTDs and any other temperature sensors, when installed in an industrial process, they are subjected to mechanical, thermal and chemical stresses which accelerate their aging.
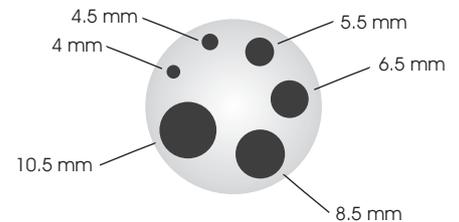
Therefore it is a recommended procedure to inspect, check and calibrate each sensor during the commissioning phase and at regular and programmed time intervals.

MicroCal T100

The **MicroCal T100** is a portable and rugged dry block calibrator.
The temperature range is from -50°C from ambient to 150°C with a resolution up to 0.01°C. The standard configuration includes 6-hole, 130 mm depth standard insert

The **MicroCal T100** can be connected to a PC by the standard RS232 serial interface in order to use the Eurotron Calibration Procedure Software for automatic calibration and documenting in compliance with ISO9001.

Standard insert

4.5 mm
4 mm
5.5 mm
6.5 mm
10.5 mm
8.5 mm

Specifications

	MicroCal T100	MicroCal T200 Fluid LOW	MicroCal T200 Fluid HI	MicroCal T500	MicroCal T1100
Temperature Range	-50 Tamb. to 150°C	-30 Tamb. to 125°	Tamb. to 200°C	Tamb. to 550°C up to 600°C opt.	+200°C to +1100°C
Stability	±0.03°C	±0.02°C@-5°C	±0.02°C@150°C	±0.05°C	±0.3°C
Radial Uniformity	0.1°C@100°C			0.2°C@450°C	0.4°C
Axial Uniformity	0.2°C@80mm			0.8°C@80mm	0.4°C@100mm
Resolution	0.01 / 0.1°C	0.01 / 0.1°C	0.01 / 0.1°C	0.01 / 0.1°C	0.01 / 0.1°C
Reading Accuracy	±0.15°C	±0.15°C@100°C	±0.15°C@200°C	±0.3°C	±0.3% rdg
Regulation	4 wire Pt100	Pt100 class A	Pt100 class A	4 wire Pt100	Tc S
Units	°C / °F	°C / °F	°C / °F	°C / °F	°C / °F
Test wells	Ø35-135 mm			Ø50mm**	Ø44 mm
Standard insert	Ø4-4.5-5.5-6.5-8.5-10.5 mm			Ø4.5-6.5-9.5-17* mm	Ø7-9-11-13.5 mm
Wells depth	130 mm	150 mm	150 mm	185 mm	155 mm
Serial interface	RS232	RS232	RS232	RS232	RS232
Heating time (MAX)	20°C / min	12°C / min	10°C / min	20°C / min	18°C / min
Cooling time (MAX)	25°C / min	9°C / min	3°C / min	25°C / min	6°C / min
Dimensions	160x340x330 mm	160x370x330	160x360x330	160x340x330 mm	170x330x450 mm
Weight (nett)	10Kg	10Kg	8 Kg	10Kg	12Kg

*On request removable inserts for the 17 mm hole.
**On request Ø65 mm test well.

Auxiliary TCs & Pt100 inputs
You can connect the working standard and the test probe (Pt100 3/4 wires; thermocouples J, K, N, R, S) for the complete calibration system. The optional internal data acquisition board has gold contact binding posts and automatic cold joint compensation.

Input	Range	Accuracy
Pt 100 IEC 3, 4 wires	-100 to +700 °C	±0.3 °C
Thermocouple J	0 to 1000 °C	±1 °C
Thermocouples K, N, R, S	0 to 1300 °C	±1 °C

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MicroCal T200 Fluid

The **MicroCal T200 Fluid** is a portable and rugged thermostatic bath. It is the best solution for laboratory and in-field RTDs and Tcs tests and calibrations. It consists of an aluminium vessel, its capacity is about 400cc and it is constantly kept homogeneous by a magnetic mixer as speed is adjustable according to the viscosity of the fluid used. Silicon oil 47V20 for temperature below than 120°C and Silicon oil 47V100 for temperature up to 200°C can be used according to the operating range.
You can connect the working standard and the test probe (Pt100 3/4 wire; Thermocouples J, K, N, R, S) to the optional dual channels high accuracy input to complete the calibration system.

The **MicroCal T200 Fluid** can be connected to a PC by the standard RS232 serial interface in order to use the Eurotron Calibration Procedure Software for automatic calibration and documenting in compliance with ISO9001.
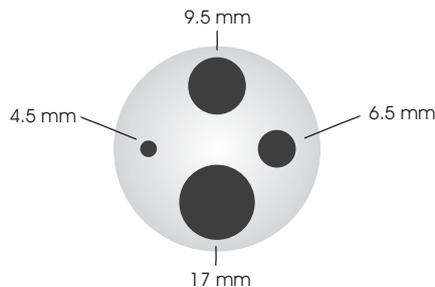
MicroCal T500

The **MicroCal T500** is a portable and rugged dry block calibrator.
The temperature range is from T ambient to 500°C and optionally up to 600°C, with a resolution up to 0.01°C. The standard configuration includes 4 holes standard insert

The **MicroCal T500** can be connected to a PC by the standard RS232 serial interface in order to use the Eurotron Calibration Procedure Software for automatic calibration and documenting in compliance with ISO9001.

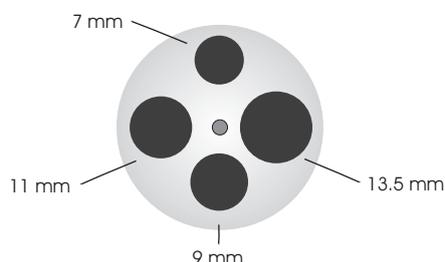### Standard insert

9.5 mm
4.5 mm
6.5 mm
17 mm

MicroCal T1100

The **MicroCal T1100** is a portable and rugged dry block calibrator.
The temperature range is from 200°C to 1100°C and optionally up to 600°C, with a resolution up to 0.01°C. The standard configuration includes 4 holes standard insert.

The **MicroCal T1100** can be connected to a PC by the standard RS232 serial interface in order to use the Eurotron Calibration Procedure Software for automatic calibration and documenting in compliance with ISO9001.

Standard insert

7 mm
11 mm
13.5 mm
9 mm

CalPMan 2008 Software

For over 20 years, Eurotron Instruments has combined its own ISO 9001, electric, thermoelectric and pressure measurements, and development of software application experiences. CalpMan 2008 has been designed to be used in industries, where there are both laboratory and maintenance on field needs. The CalPMan 2008 is a Windows™ 2000/XP software designed to plan, manage and document all the calibrations and the certifications of the process instrumentation. The software can manage the automatic procedures of the Eurotron calibrators.

Two software versions are available: the **CalpMan 2008** and the **CalpMan 2008 Advanced.**
The main features are:
- Easy to use;
- Compliant with ISO9001 requirements;
- Standards and instruments expired date management;
- Automatic procedure run
- Built-in communication with documenting calibrators
- Traceable and editable calibration documents
- Database backup/Restore ability

CalpMan 2008 Advanced
This software is designed for multiple temperature sensors certification. You can connect up to 16 TCs or 8 RTDs and certify them simultaneously. An analogue multiplexer (scanner) have to be used together the MicroCal T temperature calibrator.

The advanced features are
- Up to 3 instruments of simultaneous management;
- Advanced control of the test point;
- Multi-parameter procedures run;
- Simultaneous certification of more than one temperature sensors;
- Password manager and advanced data security ability.

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Ordering Codes

Code	Model
8172	**MicroCal T100**, EE460101 insert, extraction tool, instruction manual and report of calibration.
8174	**MicroCal T500,** instruction manual and report of calibration.

	Table A	Options
	0	None
	1	Aluminium carrying case (EE880063)
	2	Extended temperature ranage to 600°C (MicroCal T500 only)
	3	Two channels TCs & Pt100 auxiliary input
	4	Vinyl carrying case (BB880047)
	9	Special drilling insert

		Table B	Power Supply	
		1	120V 50/60 Hz with USA plug	▥
		2	230V 50/60 Hz with Schuko plug	◯
		3	230V 50/60 Hz with UK plug	▥
		4	230V 50/60 Hz with European plug	◇
		5	100V 50/60 Hz with USA/Japan plug	▥

			Table C	Calibration Certificate
			1	Eurotron certificate

8172 - 2 - 4 - 1 *Typical ordering code*

Code	Model
8152-0	**MicroCal T200 Fluid HI**, range from Tamb to 200°C, bottle (500cc) containing Silicon Oil, closing top using for transport, fluid emptying system, support for glass thermometer, electric power cable, fuses kit, thermostat testing connection cables, instructions manual, traceable Calibration certificate.
8152-4	**MicroCal T200 Fluid LOW**, range from -10°C from Tamb to 125°C, bottle (500cc) containing Silicon Oil, closing top using for transport, fluid emptying system, support for glass thermometer, electric power cable, fuses kit, thermostat testing connection cables, instructions manual, traceable Calibration certificate.

	Table A	Options
	0	None
	1	Vinyl carrying case
	2	Two channels TCs & Pt100 auxiliary input

		Table B	Power Supply	
		1	120V 50/60 Hz with USA plug	▥
		2	230V 50/60 Hz with Schuko plug	◯
		3	230V 50/60 Hz with UK plug	▥
		4	230V 50/60 Hz with European plug	◇
		5	100V 50/60 Hz with USA/Japan plug	▥

			Table C	Calibration Certificate
			1	Eurotron certificate

8152-0 - 2 - 4 - 1 *Typical ordering code*

Code	Model
8176	**MicroCal T1100**, extraction tool, no.4 holes insert (φ 7/9/11/13.5 mm), ceramic no.4 holes insulator, user manual, Eurotron calibration certificate.

	Table A	Options
	0	None
	2	Two channels TCs & Pt100 auxiliary input
	9	Special drilling insert

		Table B	Power Supply	
		1	120V 50/60 Hz with USA plug	▥
		2	230V 50/60 Hz with Schuko plug	◯
		3	230V 50/60 Hz with UK plug	▥
		4	230V 50/60 Hz with European plug	◇
		5	100V 50/60 Hz with USA/Japan plug	▥

			Table C	Calibration Certificate
			1	Eurotron certificate

8176 - 2 - 4 - 1 *Typical ordering code*

Accessories

MicroCal T500 inserts φ17mm:

EE460016	without drillings
EE460017	(1 / 9.5 mm)
EE460018	(1 / 8.0 mm)
EE460019	(1 / 10.0 mm)
EE460020	(1 / 11.0 mm)
EE460021	(1 / 12.0 mm)
Special drilling on request	

MicroCal T100 inserts φ35mm:

EE460100	without drillings
EE460102	(2 / 6.5 - 12.5 mm)
Special drilling on request	

Low temperature applications

Medium temperature applications

High temperature applications

Specifications may change without notice.