

MicroCal TCS Series

Multifunction Temperature Calibrators





Introduction

The MicroCal TCS Series are designed to verify and calibrate temperature sensors, thermometers, and process transmitters both in laboratory and infield. All the three available models are fast, high stability and uniformity, easy to use temperature calibrators.

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 TCS temperature source find applications in checks and calibration of: Thermocouples, Resistance thermometers, Temperature transmitters, thermostats, glass thermometers, and NTC/PTC.

MicroCal TC\$140

Low Temperature Furnace

The MicroCal TCS140 portable source offers fast temperature calibration in an easy to use unit designed for low temperature (- 55° C Ta to +140°C) applications.

The calibrator can be used as a Dry Block, a Liquid Bath, and a Black body source for infrared thermometers.

The standard configuration includes both the 6 holes 157mm deep metal block insert and the liquid container.



9.5 mm

			, , , , , , , , , , , , , , , , , , , ,
	MicroCal TCS 140	MicroCal TCS 650	MicroCal TCS 1200
<mark>Ra</mark> nge	-55°C (-67°F) from	from 35°C (95°F)	from 150°C (300°F)
	Tamb to 140°C (285°F)	to 650°C (1200°F)	to 1200°C (2190 °F)
Absolute Stability			
(dry block)	±0.035°C@140°C	±0.03°C@650°C	±0.2°C@1100°C
(liquid bath)	±0.02°C@140°C		
Radial Uniformity			
(dry block)	±0.02°C@140°C	±0.08°C@650°C	±0.2°C@1100°C
<mark>(liquid bat</mark> h)	±0.004°C@140°C		
Measurements Units	°C or °F / ITS90	°C or °F / ITS90	°C or °F / ITS90
Heating speed	-30°C to 140°C	50°C to 600°C	100°C to 1100°C
	in 15 minutes	in 30 minutes	in 20 minutes
Cooling speed	140°C to 0°C	600°C to 150°C	1100°C to 800°C
	in 15 minutes	in 30 minutes	in 50 minutes
<mark>Stabilizatio</mark> n Time	10 min	10 min	15 min
<mark>Block diam</mark> eter	35 mm	35 mm	36 mm
Block depth	160 mm	148 mm	130 mm
Wells depth	157 mm	140 mm	80 mm
<mark>Standard in</mark> sert	2 x 4.5 mm (0.18")	2 x 4.5 mm (0.18")	4 x 8 mm (0.31")
	2 x 6.4 mm (0.25")	2 x 6.4 mm (0.25")	
	1 x 9.5 mm (0.37")	1 x 9.5 mm (0.37")	
	1 x 8 mm (0.31")	1 x 8 mm (0.31")	
Computer Interface	RS485	R\$485	R\$485
Dimensions (WxHxD)	340 x 300 x 170 mm	340 x 300 x 170 mm	340 x 300 x 170 mn
	13.4" x 11.8" x 6.7"	13.4" x 11.8" x 6.7"	13.4" x 11.8" x 6.7"
Weight (n <mark>ett)</mark>	13.6 Kg (30.0 lb)	9.6 Kg (20.7 lb)	9.0 Kg (19.8 lb)

Low temperature applications



Medium temperature applications



High temperature applications





MicroCal TC\$650

Medium Temperature Furnace

The MicroCal TCS650 portable medium temperature (35°C Ta to +650°C) source offers fast temperature calibration and high stability.

The temperature controlled allows very fast temperature stabilization and high stability.

The standard configuration includes the 6 holes 140mm deep metal block insert.





MicroCal TC\$1200

High Temperature Furnace

Automatic Calibration Procedure Manager

The MicroCal TC\$1200 portable very high temperature (150°C to 1200°C) calibration in an easy to use, portable and rugged unit.

The calibrator can be used as a Dry Block and a Black body source for infrared thermometers.

The temperature controlled allows very fast temperature stabilization and high stability. The standard configuration includes the 4-holes 80 mm deep metal block.





For over 20 years, Eurotron Instruments has combined its own ISO 9001, electric, thermoelectric and pressure measurements, and development of software application experiences. CalpMan 2007 has been designed to be used industries, where there are both laboratory and maintenance on field needs. The CalPMan 2007 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 2007 and the CalpMan 2007 Advanced.

The main features are:Easy to use;

8 mm

- 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

The CalpMan 2007 Advanced has

- the following advanced features: • 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.





MicroCal TCS Series Multifunction Temperature Calibrator

Inserts and Accessories

Surface Sensor Insert

for TCS 140 and TCS 650 models - EE180051 Stability: $\pm 0.5^{\circ}\mathrm{C}$



Black body insert

Convert your dry block in a black body reference hoven. The insert is extremely recommended for calibration of non-contact infrared thermometers.





Stirred Liquid Bath Insert

Convert your MicroCal TCS 140 dry block in a liquid bath with adjustable speed agitator.



The container standard included is extremely recommended for calibration of liquid in glass Thermometers and for short Termocouples and Thermoresistances (shorter than 160 mm).

EE180057 500cc Silicon oil for MicroCal TCS140 (operative range -35°C to 145°C)

Undrilled Cusomizable Inserts

- EE180045 Undrilled metal block insert for MicroCal TCS 140
- EE180047 Undrilled metal block insert for MicroCal TCS 650
- EE180048 Undrilled metal block insert for MicroCal TCS 1200

Ask to our technical office quotation and feasability of required drilling.

BB530219 USB serial interface cable.

Reference Temperature Sensors

To increase the performance of a dry block calibrator add a reference thermometer to the system. A wide range of working standard and high accuracy thermometers (e.g. MicroCal 20T) are available from Eurotron.

2184	Pt100 Class A working standard
2160	TC S 1400°C working standard
2168	TC K 1100°C working standard
EE180050	Probe support kit

MicroCal 20T 2-Channel High Accuracy Documenting Thermometer



- Accuracy: ±0.01% rdg.
- Resolution: ±0.01°C
 All normalized IEC, DIN, JIS
- thermocouples Pt, Ni, Cu resistance thermometers
- mV & mA (active and passive loop)
- Temperature switch test

Ordering Code

	-			
Code	Μ	Model		
8161		MicroCal TCS 140, standard 6 holes insert, liquid container, vinyl carrying case, instruction manual and report of calibration.		
8165		MicroCal TCS 650, standard 6 holes insert, vinyl carrying case, instruction manual and report of calibration.		
8167	MicroCal TCS 1200 , standard 4 holes insert, vinyl carrying case, instruction manual and report of calibration.			
	Table A	Line Charger		
	USA	120V 50/60 Hz with USA plug		
	SCK	230V 50/60 Hz with Schuko plug		
	UK	230V 50/60 Hz with UK plug		
	EUR	230V 50/60 Hz with European plug 🛛 🔂		
	JAP	100V 50/60 Hz with USA/Japan plug 🎞		

8161	-	EUR	Typical ordering code

66