eurotron

"Excellence in measurements"

MicroCal 20 DPC

Multifunction Documenting Process Calibrator

MULTIFUNCTION CALIBRATORS

- Accuracy up to ±0.006% rdg
- Light, Rugged, and Ergonomic for Field Use
- Push & Lock, TC and 4 mm Industrial Plug Connection
- Dual Channels High Accuracy Thermometer
- Internal / External Pressure Modules
- Programmable Tasks
- In-Line Digit Setting
- Large Graphic Backlighted Display
- Simultaneous Measure and Simulation for TRX Calibration
- Real-Time Clock with Memory for In-Field Calibration Procedures ("as found" + "as left")
- Built-in Environmental Condition Module for Ambient T, rH% and Barometric Pressure
- ATEX Compliant Model ATEX Ex II 1G EEx ia IIC T4 (-20°C Tamb +50°C) X
- **CalpMan 2007** Software for Automatic Calibration and Documenting in Compliance with ISO9001

Eurotron Instruments ISO 9001 Certified Quality System

CE

www.eurotron.com

All descriptions are related to full options instrument. See latest page for the different configurations.

Bulletin 08-40.3 E - ed. 04-2007

Introduction

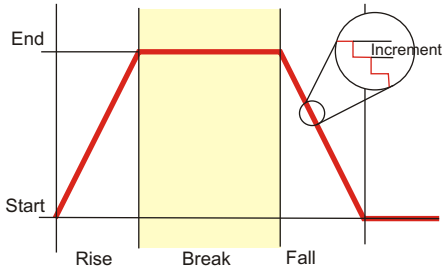
The **MicroCal 20 DPC** (**D**ocumenting **P**rocess **C**alibrator) Series are rugged hand tools for calibration maintenance and trouble shooting of virtually all the control process instrumentation.

The MicroCal 20 DPC series features:

- Calibrate temperature, pressure, current dc, voltage dc, frequency and resistance
- Dual channel display for simultaneous measure/source
- Measure and source 14 type of thermocouple and 10 RTD's
- 24 Vdc loop power supply (12 Vdc on **IS** models)
- Connection for internal and external pressure module up to 700 bar
- Pressure switch test and leak test
- Hold, zero, scale, Minimun, Maximum and Average
- Automatic Ramp/Step with programmable Time, Step and Soak
- HART ability for Smart Transmitters
- Dual channel input and extended accuracy on **XP** models
- Supports customized PRT's curve for enhanced temperature measurement
- Documenting capabilities using CalPMan 2007 software Package
- Scalable 4-20 mA measure/source into effective engineering unit

Built-in environmental module
To compliant the ISO9000, ambient temperature, Relative Humidity, and Barometric pressure sensors can measure environmental condition (EC) parameters to be included in calibration report.
The module is not available on **IS** models.

Programmable generator
- Autoramp and Autostep capability with Start, End, and Step programmable parameters
- Single and continuous cycle with Start, End, Rises, Soaks, and Falls programmable parameters
- the signal value setting uses a unique in-line single-digit setting mode or a direct numeric entry
- direct keypad access to n.10 programmable memory stored values



Transmitter simulation program
The instrument can be used as a temporary signal converter replacement. Any input signal (electric or pressure) can be converted into a 4-20 mA output. The galvanic insulation between the input and output channels allow also to use of this feature on the process.

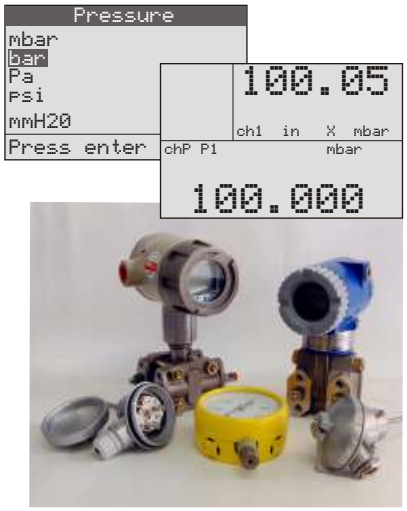
Built-in calculator
A special calculator function is integrated in MicroCal 20 DPC. You can read the value from the input channel, operate on it, and then write the result on the output channel. All standard math functions are included.

Multichannel Data logging
The calibrator can be used as a multichannel datalogger for electrical and pressure signals. The graphic mode allows you to display the trend; the Replay function allows you to generate the electrical signal using the data stored. The LogMan PC software allows the data storage in the hard-disk.

TASK
The **MicroCal 20 DPC** can store and recall up to 10 complete instrument configurations. By pressing 2 keys only you can store or recall the configuration of both the channels and the display (including input and output values too). In this way the work on field is simpler and quicker.

Pressure modules (INT & EXT)
Single or dual range internal pressure modules can be configured to provide a lot of combinations for gauge, absolute and differential pressure measurements. External interchangeable pressure module can be connected to extend the pressure range up to 700 bar. The calibrator includes 23 selectable pressure units.

Transmitter Calibration
The MicroCal 20 DPC can be configured to easily manage the check and the calibration of any pressure and temperature transmitter. The wide display lets you simultaneously display the input and output values and to select the right units for the transmitter under test.
The current or voltage reading can be scaled/converted in % of span or in the engenieristic unit to simplify the verification operations. The measuring circuit is also able to power the loop for a direct connection with the transmitter under test.
With the optional communication HART module it is also possible to verify and calibrate smart transmitters.
All the MicroCal 20 capabilities let the calibrator useful for all the checks and calibration activities.



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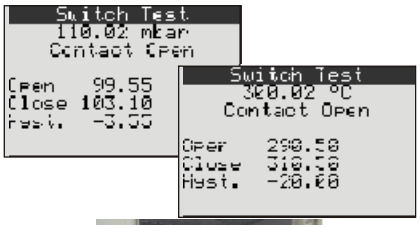
Advanced Features

Switch test

Temperature, signal and pressure switches can be tested using this advanced procedure. The calibrator will hold the display reading when the contact changes status.



Leak Test

This procedure allows you to measure the pressure fall in a programmable time interval.

Module for MicroCal T Series

The MicroCal 20 is able to directly control a MicroCal T Series calibrator with this module. It is also possible execute fully automatic "off-line" procedures.

Software

CalpMan 2007

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;
- 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.

LogMan

Windows™ software to download logged data from internal memory to PC. Data can be saved on disks, loaded from disks, exported in Excel format file.

LinMan

Windows™ software to setup the instrument with TC, RTD special linearization. The program allows highly accurate temperature measurement with a calibrated Pt100/TC loading the coefficients of the Calibration Report.

FIVE STEPS FOR IN-FIELD DOCUMENTING CALIBRATION

1 Prepare the procedure using the CalPMan Software

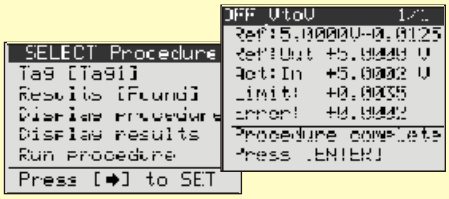
2 Transfer the procedure into the calibrator

3 Select the instrument (TAG) and run the procedure

4 Transfer the results on a PC

5 Print the report

The MicroCal 20 is a documenting calibrator able to load test strategies using the CalPMan 2007 software. It can run them and store the results automatically, calculate the errors, highlight the out of range points, and download data on a PC to store them and to generate different reports. The calibrator internal memory can store a whole week procedures.



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External Interchangeable Pressure Modules

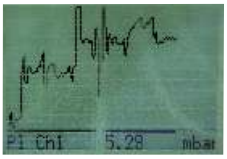
Connection for remote "SMART" pressure modules. Calibration matrix and range are stored on the sensor.
Gauge, Absolute and Differential models available.
Accuracy ±0.025% F.S.

Keypad

19 key sealed rubber keypad, for direct access to the main functions of the instrument.

LCD Graphic Display

Large display with text and graphic capabilities.
The rugged LCD is protected by a polycarbonate window from scratches and impacts.

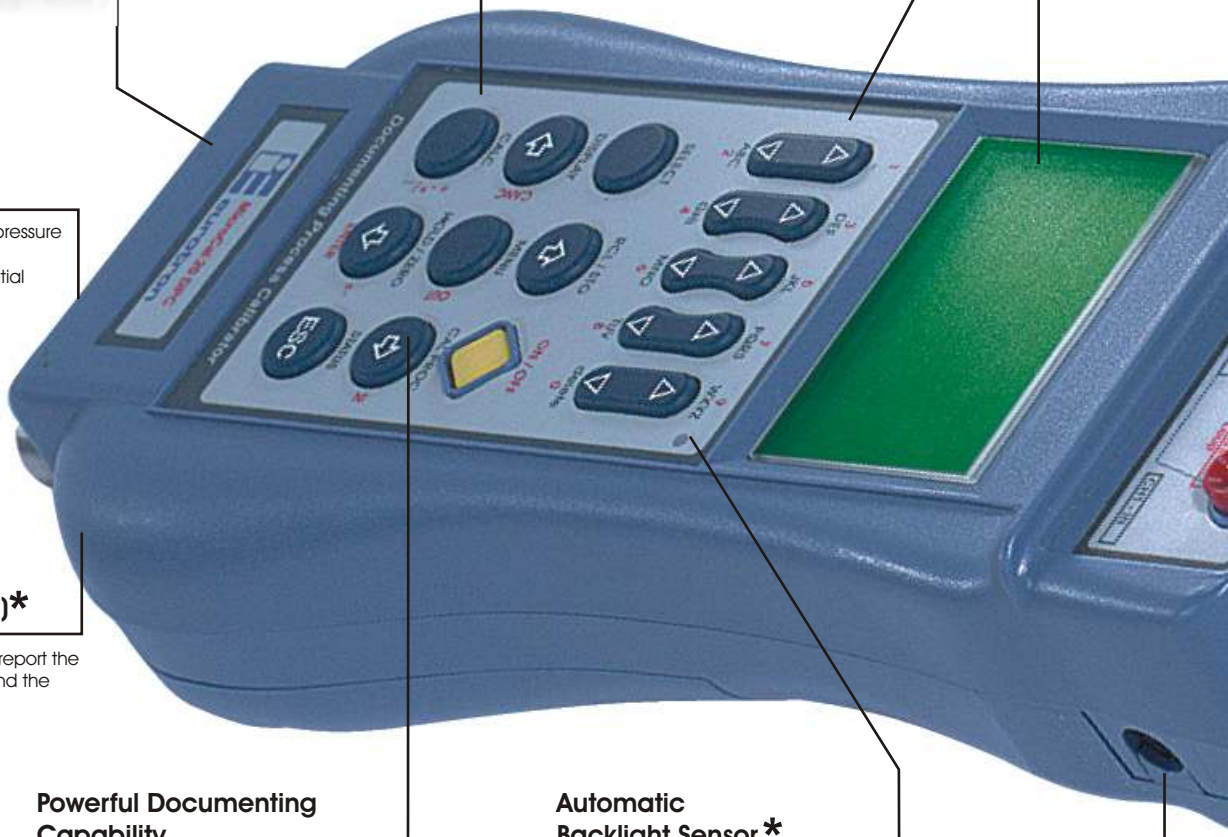


Direct Up/Down Keys

5 dedicated keys for directly increase/decrease the value of the output signal.

Two Internal Pressure Sensors

Single or Dual AISI316 built-in pressure sensors (up to 20bar).
Gauge, Absolute and Differential models available. Barometric reference sensor capability.
Accuracy ±0.025% F.S.



Environmental Conditions Module (EC)*

You can include in documenting report the ambient temperature, pressure and the relative humidity.

Powerful Documenting Capability

Only ONE KEY to enter in Calibration Procedure Mode.
Select the TAG and run the calibration procedure. All procedure data are loaded from the PC and the Calibration report can be downloaded to the PC with the CalpMan software.

Automatic Backlight Sensor*

The photoelectric sensor will detect dark condition switching on backlight when necessary. Manual operation is also available.

Battery Charger

2 Channels

Dual simultaneous IN/OUT channels. mV, V, mA (active and passive loop), TCs, 3/4w RTDs, Frequency, Pulse. High accuracy, high repeatability and low drift.

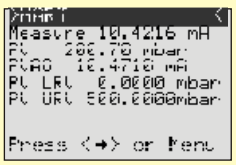
Four operative mode: measure, simulate, measure/simulate and measure/measure. (XP model only)

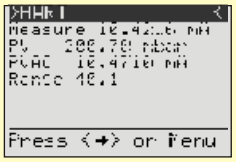
Mini-DIN TC Connector

Isothermic binding post for TC's with Rj compensation.

RS232 interface
Remote Rj input*
Digital HART remote input*
Switch test external contact input*

Integrated HART© Ability





The MicroCal 20 DPC has a built-in option for HART calibration and maintenance. No external adapter is required. It supports a wide instruction set:

Universal Commands available for all process instruments like the model and the manufacturer reading, the primary variable (PV) and the output current reading.

Advanced Commands available on many (but not for all) instruments like the multiple variables and the damping reading, and the run of the Loop Test.

Specific Commands available on few instruments (verify the updated list on the website) like the sensor trim. The transmitter upgrade can be run in a simple and quick way using the PC software and the RS232/USB serial cable.

Capabilities	Basic	Plus	XP
mA, V, T/C's, RTDs, Hz,	●	●	●
Measure / Source	●	●	●
Basic Accuracy (rdg)	±0.02%	±0.01%	±0.006%
Dual Channel Display	●	●	●
Dual Input			●
INT pressure module		●	●
EXT pressure module	●	●	●
Loop P.S.	●	●	●
HART ability	●	●	●
Documenting capability	●	●	●
EC Module	●	●	●

Intrinsecally Safe

The Intrinsecally Safe for zone 0 with ATEX certification, class **II 1G EEx ia IIC T4 (-20°C TAmb + 50°C) X** is available for IS model.

* Not available on IS model

All descriptions are related to full options instrument. See latest page for the different configurations.

Specifications

Report of Calibration

Each MicroCal is factory calibrated and certified against Eurotron Standards, which are periodically certified by an Internationally recognised Laboratory to ensure traceability, and shipped with a Report of Calibration stating the nominal and actual values and the deviation errors.

Firmware

The firmware is stored on a flash memory and allows a fast and easy upgrade of the instrument using the USB cable and the STFlash software.

Over-Voltage protection

The unit is equipped with an advanced system including thermal fuse (auto repair, do not need replacement), high voltage suppressor and resistor-diode voltage limiter.

EMC Conformity

The instrument fulfils the prevision of the directive 89/336/CEE Electromagnetic Compatibility.

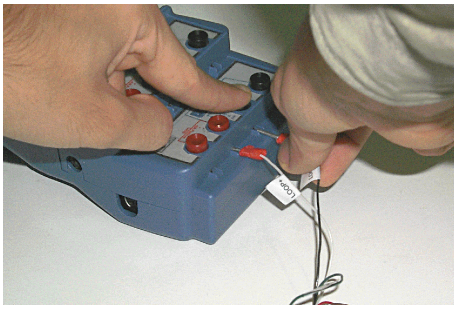
Quality system

Research, development, production, inspection and certification activities are defined by methods and procedures of the Eurotron Quality System inspected for compliance and certified ISO9001 by GASTEC, a Dutch notified body.

"Push & Lock" binding posts

The multi-connection binding posts is an exclusive project designed to connect the calibrator in a simpler and faster way. The 3 different connection system available are:

- **Standard 4 mm industrial plugs**
- **Mini isothermic TC's connectors**
- **Push & Lock system for wires**



Measure or Source Voltage

Input impedance:
>10 M for ranges up to 2000 mV f.s.
>500 k for ranges up to 20 V f.s.
Output impedance (emf output):
less than 0.5 with a maximum current of 0.5 mA
Output noise (at 300 Hz):
<2 µVpp for ranges up to 200 mV f.s.,
<10 µVpp for ranges up to 2000 mV f.s.
<80 µVpp for ranges up to 20 V f.s.

Measure or Source Current

Input impedance: <20 at 1 mA
Maximum load resistance:
1000 at 20 mA
600 at 21 mA (IS model)
Loop Supply: 24V ± 5 %
12V ± 5 % (IS model)

Measure or Source Resistance and RTDs

Connections: 2, 3 and 4 wires
Source resistance effects: ±1 µV error for 1000 source resistance
Rtd and simulation excitation current: from 0.100 to 4 mA without incremental error
Rtd and measurement excitation current: 0.2 mA
Rtd cable compensation: up to 100 m (for each wire)
Rtd cable compensation error (Pt100): ±0.005°C/ of total wire
Maximum load resistance: 1000 at 20 mA
600 at 20 mA (IS model only)

Measure or Source Thermocouples

Engineering unit: °C/°F/K selectable
Resolution: 0.01°C / 0.01°F
Temperature scale: ITS90 and IPTS68 selectables
Reference junction compensation:
internal automatic from -10 °C to +55 °C
external adjustable from -50 °C to +100 °C
remote with external Pt100 from -10°C to +100 °C (only on XP model)
Rj compensation drift: ± 0.002°C/°C (from -10 °C to +45 °C) - Class A Pt100
Input impedance (Tc ranges): >10 M

Frequency

Input impedance:>500K

Pressure

Pressure media: AISI 316 SS compatible fluids (water, gas, and oil)
Temperature compensation: Automatic with built-in calibration matrix.
Engineering units: mbar, bar, Pa, hPa, kPa, MPa, kg/cm^2, kg/m^2, psi, mmH_2O, cmH_2O, mH_2O, Torr, atm, lb/ft^2, inH_2O, ftH_2O, mmHg, cmHg, mHg, inHg, programmable.

Accuracy: the above accuracies are stated for 365 days and includes non linearity, histeresis, and repeatability. The average temperature coefficient, inside the temperature compensated range, is ±0.002% of rdg/°C (w.t.r. +23°C/+73°F).

Compensation temperature range:
+0 to +45°C (+32°F +113°F)

Internal sensors
Accuracy: ±0.025% F.S.
Ranges: see table on ordering code
Resolution: see table on ordering code
Overpressure: 125% F.S.
Port: (female) 1/8" BSP

External modules
Accuracy: ±0.025% F.S.
Ranges: see table on ordering code
Resolution: see table on ordering code
Overpressure: 125% F.S.
Port: (male) 1/4" BSP
Connection wire lenght: 2 meters

Advanced Functions

Calculation functions: hold, max, min, offset, zero, average
In/Out data memory: 10 data with manual or automatic recall
Convert function: displays the electrical equivalent of the engineering unit
Scale factor: setting with zero and span programmable within -399999 and +999999
Square root: in combination with scale factor

General Specifications

Calibration: self learning technique with automatic procedure
Channel 1-Channel 2 insulation: 250 Vdc
Common mode rejection: 140 dB at ac operation
Normal mode rejection:60 dB at 50/60 Hz
Display: graphic LCD display with automatic and manual backlight device (not available on IS model)
Measurement sampling time: 250 ms
Digital interface: full bidirectional RS232
Power supply: external charger and rechargeable Ni-MH battery
Battery life (typical)**:**
10 h (8 h on IS model) on Tc and mV input/output (backlight Off)
4 h (3 h on IS model) with 20 mA simulation (backlight Off)
Recharging time (typical)**:** 5 h (8 h on IS model) at 90% and 6 h (10 h on IS model) at 99% with instrument switched off.
Battery charge indication: bar graph on the LCD display (flashing on charge) - not available on IS model
Line operation: 100V - 120 V - 230V - 240 Vac with the external battery charger
Line transformer insulation: 2500 Vac
Operating environment temperature range: from -10 °C to +55 °C (from -10°C to +50°C on IS model)
Storage temperature range: from 0 °C to +60 °C (excluding batteries)
Humidity: max 95%RH non condensing
Case: Injection moulded policarbonate case (injection molded ATEX approved material on IS model)
Sealing: IP54
Weights: nett 1.4 Kg gross 2.5 Kg
Dimensions: 290x98x57 m

All descriptions are related to full options instrument. See latest page for the different configurations.

Ranges and Accuracy

Measure or Source	Range	Resolution	Accuracy		
			MicroCal 20 DPC basic	MicroCal 20 DPC plus	MicroCal 20 DPC XP
Tc J	-210 to 1200°C	0.01 °C*	±(0.02% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)
	-350 to 2200°F	0.01 °F	±(0.02% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)
Tc K	-270 to 1370°C	0.01 °C*	±(0.02% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)
	-454 to 2500°F	0.01 °F	±(0.02% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)
Tc T	-270 to 400°C	0.01°C*	±(0.02% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)
	-454 to 760°F	0.01 °F	±(0.02% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)
Tc R	-50 to 1760°C	0.1°C	±(0.02% rdg. + 0.2°C)	±(0.01% rdg. + 0.2°C)	±(0.01% rdg. + 0.2°C)
	-60 to 3200°F	0.1°F	±(0.02% rdg. + 0.4°F)	±(0.01% rdg. + 0.4°F)	±(0.01% rdg. + 0.4°F)
Tc S	-50 to 1760°C	0.1°C	±(0.02% rdg. + 0.2°C)	±(0.01% rdg. + 0.2°C)	±(0.01% rdg. + 0.2°C)
	-60 to 3200°F	0.1°F	±(0.02% rdg. + 0.4°F)	±(0.01% rdg. + 0.4°F)	±(0.01% rdg. + 0.4°F)
Tc B	50 to 1820°C	0.1°C	±(0.02% rdg. + 0.3°C)	±(0.01% rdg. + 0.3°C)	±(0.01% rdg. + 0.3°C)
	140 to 3310°F	0.1°F	±(0.02% rdg. + 0.6°F)	±(0.01% rdg. + 0.6°F)	±(0.01% rdg. + 0.6°F)
Tc C	0 to 2300°C	0.1°C	±(0.02% rdg. + 0.2°C)	±(0.01% rdg. + 0.2°C)	±(0.01% rdg. + 0.2°C)
	32 to 4170°F	0.1°F	±(0.02% rdg. + 0.4°F)	±(0.01% rdg. + 0.4°F)	±(0.01% rdg. + 0.4°F)
Tc G	0 to 2300°C	0.1°C	±(0.02% rdg. + 0.3°C)	±(0.01% rdg. + 0.3°C)	±(0.01% rdg. + 0.3°C)
	32 to 4170°F	0.1°F	±(0.02% rdg. + 0.6°F)	±(0.01% rdg. + 0.6°F)	±(0.01% rdg. + 0.6°F)
Tc D	0 to 2300°C	0.1°C	±(0.02% rdg. + 0.3°C)	±(0.01% rdg. + 0.3°C)	±(0.01% rdg. + 0.3°C)
	32 to 4170°F	0.1°F	±(0.02% rdg. + 0.6°F)	±(0.01% rdg. + 0.6°F)	±(0.01% rdg. + 0.6°F)
Tc U	-200 to 400°C	0.01°C	±(0.02% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)
	-330 to 760°F	0.01°F	±(0.02% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)
Tc L	-200 to 760°C	0.01°C	±(0.02% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)
	-330 to 1400°F	0.01°F	±(0.02% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)
Tc N	-270 to 1300°C	0.01°C	±(0.02% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)
	-450 to 2380°F	0.01°F	±(0.02% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)
Tc E	-270 to 1000°C	0.1°C	±(0.02% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)
	-450 to 1840°F	0.1°F	±(0.02% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)
Tc F	0 to 1400°C	0.1°C	±(0.02% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)
	32 to 2560°F	0.1°F	±(0.02% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)
Pt100 IEC	-200 to 850°C	0.01°C	±(0.02% rdg. + 0.05°C)	±(0.01% rdg. + 0.05°C)	±(0.01% rdg. + 0.05°C)
OIML, =.3926	-330 to 1570°F	0.01 °F	±(0.02% rdg. + 0.09°F)	±(0.01% rdg. + 0.09°F)	±(0.01% rdg. + 0.09°F)
Pt100	-200 to 650°C	0.01°C	±(0.02% rdg. + 0.05°C)	±(0.01% rdg. + 0.05°C)	±(0.01% rdg. + 0.05°C)
=.3902	-330 to 1210°F	0.01 °F	±(0.02% rdg. + 0.09°F)	±(0.01% rdg. + 0.09°F)	±(0.01% rdg. + 0.09°F)
Pt100	-200 to 600°C	0.01°C	±(0.02% rdg. + 0.05°C)	±(0.01% rdg. + 0.05°C)	±(0.01% rdg. + 0.05°C)
JIS SAMA	-330 to 1120°F	0.01 °F	±(0.02% rdg. + 0.09°F)	±(0.01% rdg. + 0.09°F)	±(0.01% rdg. + 0.09°F)
Pt200	-200 to 850°C	0.1°C	±(0.02% rdg. + 0.15°C)	±(0.01% rdg. + 0.15°C)	±(0.01% rdg. + 0.15°C)
	-330 to 1570°F	0.1°F	±(0.02% rdg. + 0.27°F)	±(0.01% rdg. + 0.27°F)	±(0.01% rdg. + 0.27°F)
Pt500	-200 to 850°C	0.1°C	±(0.02% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)
	-330 to 1570°F	0.1°F	±(0.02% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)
Pt1000	-200 to 850°C	0.01°C	±(0.02% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)	±(0.01% rdg. + 0.1°C)
IEC OIML	-330 to 1570°F	0.01°F	±(0.02% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)	±(0.01% rdg. + 0.2°F)
Cu10	-70 to 150°C	0.1°C	±(0.02% rdg. + 0.4°C)	±(0.01% rdg. + 0.4°C)	±(0.01% rdg. + 0.4°C)
	-100 to 310°F	0.1°F	±(0.02% rdg. + 0.7°F)	±(0.01% rdg. + 0.7°F)	±(0.01% rdg. + 0.7°F)
Cu100	-180 to 150°C	0.1°C	±(0.02% rdg. + 0.05°C)	±(0.01% rdg. + 0.05°C)	±(0.01% rdg. + 0.05°C)
	-300 to 310°F	0.1°F	±(0.02% rdg. + 0.09°F)	±(0.01% rdg. + 0.09°F)	±(0.01% rdg. + 0.09°F)
Ni100	-60 to 180°C	0.1°C	±(0.02% rdg. + 0.05°C)	±(0.01% rdg. + 0.05°C)	±(0.01% rdg. + 0.05°C)
	-80 to 360°F	0.1°F	±(0.02% rdg. + 0.09°F)	±(0.01% rdg. + 0.09°F)	±(0.01% rdg. + 0.09°F)
Ni120	0 to 150°C	0.1°C	±(0.02% rdg. + 0.05°C)	±(0.01% rdg. + 0.05°C)	±(0.01% rdg. + 0.05°C)
	32 to 310°F	0.1°F	±(0.02% rdg. + 0.09°F)	±(0.01% rdg. + 0.09°F)	±(0.01% rdg. + 0.09°F)
mV	-20 to 200mV	1µV	±(0.02% rdg. + 3 µV)	±(0.01% rdg. + 3 µV)	±(0.006% rdg. + 3 µV)
V	-0.2 to 2V	10µV	±(0.02% rdg. + 10 µV)	±(0.01% rdg. + 10 µV)	±(0.006% rdg. + 10 mV)
	-2 to 20V***	100µV	±(0.02% rdg. + 100 µV)	±(0.01% rdg. + 100 µV)	±(0.006% rdg. + 100 µV)
mA	0 to 50mA**	0.1µA	±(0.02% rdg. + 0.4µA)	±(0.01% rdg. + 0.4µA)	±(0.01% rdg. + 0.4µA)
mA (IN CH1)	-5 to 50mA	0.1µA	±(0.02% rdg. + 0.4µA)	±(0.01% rdg. + 0.4µA)	±(0.01% rdg. + 0.4µA)
(IN)	0 to 500	10m	±(0.02% rdg. + 12m)	±(0.01% rdg. + 12m)	±(0.008% rdg. + 12m)
	0 to 5000	100m	±(0.02% rdg. + 120m)	±(0.01% rdg. + 120m)	±(0.008% rdg. + 120m)
(OUT)****	0 to 500	10m	±(0.02% rdg. + 20m)	±(0.01% rdg. + 20m)	±(0.008% rdg. + 20m)
	0 to 5000	100m	±(0.02% rdg. + 200m)	±(0.01% rdg. + 200m)	±(0.008% rdg. + 200m)
Frequency	1 to 200 Hz	0.001Hz	±(0.005% rdg.+0.001Hz)	±(0.005% rdg.+0.001Hz)	±(0.005% rdg.+0.001Hz)
	1 to 2 kHz	0.01Hz	±(0.005% rdg.+0.01Hz)	±(0.005% rdg.+0.01Hz)	±(0.005% rdg.+0.01Hz)
	1 to 20 kHz	0.1Hz	±(0.005% rdg.+0.1Hz)	±(0.005% rdg.+0.1Hz)	±(0.005% rdg.+0.1Hz)
Pulse	0 to 10^6	1 count			

NOTES:
The relative accuracies shown above are stated for 360 days and the operative conditions are from 18 to 28°C
Typical 2 year relative accuracy can be estimated by multiplying the "% of reading" specifications by 1.4.
All input ranges: additional error ±1 digit.

Eurotron traceability chart and uncertainty can be supplied on request.
* Resolution is 0.1°C with temperature lower than -200°C.
** 21mA max. on passive current loop, and for the IS model.
*** IS model channel 2 source Max 11 V.
**** IS model ohm generation: additional error: ±20 m on 500 range
±200 m on 5 k range

All descriptions are related to full options instrument. See latest page for the different configurations.

MicroCal 20 DPC
4 Models for the Process
and for the Laboratory

Ordering Codes

Standard packing includes: calibrator, rubber holster, charger, instruction manual and report of calibration.

3925 basic - A - 00 - C - D
MicroCal 20 DPC basic: ±0.02% rdg
2 channel (IN - OUT) multifunction calibrator

3925 plus - A - BB - C - D
MicroCal 20 DPC plus: ±0.01% rdg
2 channel (IN - OUT) multifunction calibrator

3925 XP - A - BB - C - D
MicroCal 20 DPC XP: ±0.006% rdg
2 channel (IN - IN/OUT) multifunction calibrator

Intrinsically Safe Models

3926 basic - A - 00 - C - D
MicroCal 20 DPC IS basic: ±0.02% rdg
2 channel (IN - OUT) multifunction calibrator

3926 plus - A - BB - C - D
MicroCal 20 DPC IS plus: ±0.01% rdg
2 channel (IN - OUT) multifunction calibrator

3926 XP - A - BB - C - D
MicroCal 20 DPC IS XP: ±0.006% rdg
2 channel (IN - IN/OUT) multifunction calibrator

Table A — **Line charger**

Basic	plus XP		
1	1	120V 50/60 Hz with USA plug	
2	2	230V 50/60 Hz with Schuko plug	
3	3	230V 50/60 Hz with UK plug	
4	4	230V 50/60 Hz with European plug	
5	5	100V 50/60 Hz with USA/Japan plug	

Table B — **Internal pressure** - AISI316SS - ±0.025% FS

Basic	plus XP		
0	0	None	
--	2	-100 to 100 mbar Gauge	res. 0.001mbar
--	3	-500 to 500 mbar Gauge	res. 0.01mbar
--	5	-0.95 to 2 bar Gauge	res. 0.01mbar
--	5A	2 bar Absolute	res. 0.01mbar
--	6	-0.95 to 7 bar Gauge	res. 0.1mbar
--	7	-0.95 to 20 bar Gauge	res. 0.1mbar
--	7A	20 bar Absolute - res. 0.1mbar	

IMPORTANT:
Basic *model cannot install internal pressure sensors.*
plus *and* ***XP*** *models can install up to 2 internal pressure sensors*

Table C — **Options**

Basic	plus XP	
0	0	none
1	1	HART protocol
2	2	EC module (T + RH% + barometric measurements) - not available on IS model
3	3	Extended memory - not available on IS models

Table D — **Report of calibration**

Basic	plus XP	
1	1	Eurotron Certificate

Accessories

EXTERNAL PRESSURE MODULES - ***AISI 316SS*** - ±0.025% F.S.

GAUGE

EE812009	from -100 to 100 mbar (1.5 PSI)	res. 0.001mbar
EE812010	from -500 to 500 mbar (7 PSI)	res. 0.01mbar
EE812011	from -0.95 to 1 bar (15 PSI)	res. 0.01mbar
EE812012	from -0.95 to 2 bar (30 PSI)	res. 0.01mbar
EE812013	from -0.95 to 7bar (100 PSI)	res. 0.1mbar
EE812014	from -0.95 to 20 bar (300 PSI)	res. 0.1mbar
EE812015	from -0.95 to 35 bar (500 PSI)	res. 1mbar
EE812016	from 0 to 70 bar (1000 PSI)	res. 1mbar
EE812017	from 0 to 150 bar (2000 PSI)	res. 1mbar
EE812018	from 0 to 350 bar (5000 PSI)	res. 10mbar
EE812019	from 0 to 700 bar (10000 PSI)	res. 10mbar

ABSOLUTE

EE812020	from 0 to 2 bar (30 PSI)	res. 0.01mbar
EE812021	from 0 to 20 bar (300 PSI)	res. 0.1mbar

SOFTWARE

BB530203	RS232 cable
BB530212	USB cable
BB260198	LogMan-Data Logging software
BB260199	LinMan-Linearization software
BB260215	CalpMan 2007 - Calibration Procedure Manager
BB530204	MicroCal T series communication module

EE300040	Test leads kit for electric signal
BB300122	TC, J, K, T, S compensated cables Kit
EE300204	Mini DIN TC, J, K, T, S female connector set
EE300205	Mini DIN TC, J, K, T, S male connector set
BB880056	Rubber holster
EE300284	Pedestral for rubber holster
EE480054	1/4" BSP pressure adapter kit (1/2" M, 1/2" F, 3/8" F, 1/8" F)
EE480055	1/4" NPT pressure adapter kit (1/8" F, 1/4" F, 3/8" F, 1/2" F)

BB880033
Aluminium carrying case

BB880048
Vinyl case with shoulder strap

BB880043
Compact vinyl carrying case with shoulder strap.

F3280013 Manual pump for vacuum and pressure up to 2 bar

EE300280 Adapter Kit for internal pressure module

F3280019 Manual pump for vacuum and pressure up to 40 bar

EE300281 Adapter Kit for internal pressure module

EE170049 Adapter Kit for external pressure module

F3280015 Manual pump for vacuum and pressure up to 700 bar

EE372008 High Pressure tube for pump F3280015

EE170049 Adapter Kit for external pressure module

Specifications may change without notice.

All descriptions are related to full options instrument. See latest page for the different configurations.