



# MicroCal P20



## Hand-held Pressure Documenting Calibrator

Bulletin 08-75.1 E

### TEST & MEASUREMENTS

- ▶ Up to 2 internal pressure sensors
- ▶ External pressure modules
- ▶  $\pm 0.025\%$  FS accuracy
- ▶ Large Graphic Backlighted Display
- ▶ mV, V & mA (active and passive loop) measuring and simulating for TRX calibration
- ▶ Temperature with RTD for flow transmitters
- ▶ Pressure switch test
- ▶ Rechargeable batteries
- ▶ RS232 for instrumentation management with CalpMan software
- ▶ Real-time clock with memory for in-field calibration procedures ("as found" + "as left")



Available soon

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

**MicroCal P20 Pressure Calibrator** is a versatile calibration instrument that combines advanced sensor technology with latest developments in pressure instrumentation. It allows calibration and accurate testing procedures of the pressure process instrumentation as: pressure transducers and transmitters, switches, relief valves, analogue pressure gauges. Combined with Eurotron hand pressure pump, and related fittings, it

becomes a complete calibration system to be used on field.

Between several functions, **MicroCal P20** allows you to use the calibrator as a TRX using the scalable output option.

#### Internal pressure sensors

Optional one or two built-in pressure sensors are available to cover main pressure application including gauge, differential, absolute, and vacuum. The calibration matrix pressure/temperature is stored in internal non volatile

memory.

#### External pressure modules

Each unit is equipped with a connector for external pressure "smart" modules. A wide selection of modules are available as accessories for ranges up to 700bar. The calibration matrix pressure/temperature is stored in internal non volatile memory.



# MicroCal P20 Documenting Pressure Calibrator

## Specifications

### 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<sup>2</sup>, kg/m<sup>2</sup>, psi, mmH<sub>2</sub>O, cmH<sub>2</sub>O, mH<sub>2</sub>O, Torr, atm, lb/ft<sup>2</sup>, inH<sub>2</sub>O, ftH<sub>2</sub>O, mmHg, cmHg, mHg, inHg, programmable.

**Accuracy:** the above accuracies are stated for 365 days and includes non linearity, hysteresis, and repeatability. The average temperature coefficient, inside the temperature compensated range, is  $\pm 0.002\%$  of rdg/°C (w.t.r. +23°C/+73°F).  
**Compensation temperature range:** +0 to +45°C (+32°F +113°F)

### Internal sensors

**Accuracy:**  $\pm 0.025\%$  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:**  $\pm 0.025\%$  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 length:** 2 meters

### General

**Calibration:** self learning technique with automatic procedure

**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

**Measurement sampling time:** 250 ms  
**Digital interface:** full bidirectional RS232

**Power supply:** external charger and rechargeable Ni-MH battery

**Battery life (typical):** 10 h on Tc and mV input/output (backlight Off)

4 h with 20 mA simulation (backlight Off)

**Recharging time (typical):** 5 h at 90% and 6 h at 99% with instrument switched off.

**Battery charge indication:** bar graph on the LCD display (flashing on charge)

**Line operation:** 100V - 120V - 230V - 240 Vac with the external battery charger

**Line transformer insulation:** 2500 Vac

**Operating environment temperature range:** from -10 °C to +55 °C

**Storage temperature range:** from 0 °C to +60 °C (excluding batteries)

**Humidity:** max 95%RH non condensing case

**Case:** Injection moulded polycarbonate case

**Sealing:** IP54

**Weights:** nett 1.4 Kg gross 2.5 Kg

**Dimensions:** 290x98x57 mm

**Warranty:** 2 Years.

Parameter	Range	Resolution	Accuracy (% of reading)
mV	-20 to 200mV	1µV	$\pm(0.02\% \text{ rdg.} + 3 \mu\text{V})$
V	-0.2 to 2V	10µV	$\pm(0.02\% \text{ rdg.} + 10 \mu\text{V})$
	-2 to 20V	100µV	$\pm(0.02\% \text{ rdg.} + 100 \mu\text{V})$
mA	-5 to 22mA	0.1µA	$\pm(0.02\% \text{ rdg.} + 0.4\mu\text{A})$
Pt100 IEC	-200 to 850°C	0.01°C	$\pm(0.02\% \text{ rdg.} + 0.05^\circ\text{C})$
OIML, =.3926	-330 to 1570°F	0.01 °F	$\pm(0.02\% \text{ rdg.} + 0.09^\circ\text{F})$

## PNEUMATIC & HYDRAULIC PUMPS AND ACCESSORIES AVAILABLE ON SEPARATE BULLETIN

### SOFTWARE

BB530203 RS232 PC cable  
BB260167 CalpMan 2000 - Calibration procedure manager software

### MISCELLANEOUS

EE300040 Electrical signal test lead kit  
BB880043 Vinyl protection carrying case with shoulder strap  
BB880048 Vinyl carrying case with shoulder strap  
BB880033 Aluminum carrying case  
BB880049 Rubber holster

## Ordering code

### 3240 basic - AA - B - C - D

**MicroCal P20 Basic:** 2 internal sensor + external sensors pressure connector

### 3240 plus - AA - B - C - D

**MicroCal P20 plus:** 2 internal sensor + external sensors pressure connector + mA/V/Pt100 input/output

*Standard package includes: Unit, Charger, Instruction Manual, Report of calibration.*

#### Table A Internal sensors - AISI316SS - $\pm 0.025\%$ F.S.

0	None
2	-100 to 100 mbar Gauge - res. 0.001mbar
3	-500 to 500 mbar Gauge - res. 0.01mbar
4	-0.95 to 1 bar 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

#### Table B Line charger

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 Options

0	None
1	HART protocol (plus model only)
2	EC module (T + RH% + barometric measurements)

#### Table D Report of Calibration

1	Eurotron certificate
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### EXTERNAL PRESSURE MODULES - AISI 316SS - $\pm 0.025\%$ F.S. GAUGE

BB480009	from -100 to 100 mbar (1.5 PSI)	res. 0.001mbar
BB480010	from -500 to 500 mbar (7 PSI)	res. 0.01mbar
BB480011	from -0.95 to 1 bar (15 PSI)	res. 0.01mbar
BB480012	from -0.95 to 2 bar (30 PSI)	res. 0.01mbar
BB480013	from -0.95 to 7bar (100 PSI)	res. 0.1mbar
BB480014	from -0.95 to 20 bar (300 PSI)	res. 0.1mbar
BB480015	from -0.95 to 35 bar (500 PSI)	res. 1mbar
BB480016	from 0 to 70 bar (1000 PSI)	res. 1mbar
BB480017	from 0 to 150 bar (2000 PSI)	res. 1mbar
BB480018	from 0 to 350 bar (5000 PSI)	res. 10mbar
BB480019	from 0 to 700 bar (10000 PSI)	res. 10mbar

### ABSOLUTE

BB480020	from 0 to 2 bar (30 PSI)	res. 0.01mbar
BB480021	from 0 to 20 bar (300 PSI)	res. 0.1mbar

Specifications may change without notice.



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