

MicroCal P20

Hand-Held Documenting
Pressure Calibrator



**PRESSURE
CALIBRATORS**

- ▶ Up to 2 Internal Pressure Sensors
- ▶ External Pressure Modules
- ▶ $\pm 0.025\%$ FS Accuracy
- ▶ Large Graphic Backlit Display
- ▶ mV, V & mA (Active and Passive loop) Measuring and Simulating for TRX Calibration
- ▶ Temperature with RTDs for Flow Transmitters
- ▶ Pressure Switch Test
- ▶ Rechargeable Batteries
- ▶ RS232/USB for Instrumentation Management with CalPMan 2007 Software
- ▶ Real-time Clock with Memory for In-Field Calibration Procedures ("as found" + "as left")
- ▶ ATEX Compliant Model
ATEX Ex II 1G EEx ia IIC T4 (-20°C Tamb +50°C) X



General

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.

Intrinsic Safety

The Intrinsic Safety for zone 0 with ATEX certification, class II 1G EEx ia IIC T4 (-20°C T_{Amb} + 50°C) X is available.

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.

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/cm², kg/m, ²psi, mmH₂O, cmH₂O, mH₂O, Torr, atm, lb/ft, inH₂O, ftH₂O, mmHg, cmHg, mHg, inHg, programmable.

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 length : 2 meters

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 ±0.002% of rdg/°C (w.t.r. +23°C/+73°F).
Compensation temperature range: +0 to +45°C (+32°F +113°F)

General
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 inter face: 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)-(8h on IS model)
4 h with 20 mA simulation (backlight Off) - (3h on IS model)
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
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: Injection moulded polycarbonate case
Sealing: IP54
Weights: nett 1.4 Kg gross 2.5 Kg
Dimensions: 290x98x57 mm

Measure/Generate	Range	Resolution	Accuracy (% of reading)
mV	-20 to 200mV	1µV	±(0.02% rdg. + 3 µV)
V	-0.2 to 2V	10µV	±(0.02% rdg. + 10 µV)
	-2 to 20V	100µV	±(0.02% rdg. + 100 µV)
mA**	-5 to 22mA	0.1µA	±(0.02% rdg. + 0.4 µA)
Pt100**	-200 to 850°C	0.01°C	±(0.02% rdg. + 0.05°C)
	-330 to 1570°F	0.01 °F	±(0.02% rdg. + 0.09°F)

*Loop supply: 24 Vdc ±5% - 12 Vdc ±5% on IS model

**Pt100 measure only

Ordering codes

3240 basic - AA - B - C - D

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

3240 plus - AA - B - C - D

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






Intrinsically Safe Model

3241 IS plus - AA - B - C - D

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

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

0	None	
2	-100 to 100 mbar Gauge	res. 0.001 mbar
3	-500 to 500 mbar Gauge	res. 0.01 mbar
4	-0.95 to 1 bar Gauge	res. 0.01 mbar
5	-0.95 to 2 bar Gauge	res. 0.01 mbar
5A	2 bar Absolute	res. 0.01 mbar
6	-0.95 to 7 bar Gauge	res. 0.1 mbar
7	-0.95 to 20 bar Gauge	res. 0.1 mbar
7A	20 bar Absolute	res. 0.1 mbar

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	

0	None
1	HART protocol (plus model only), <u>not available on IS model</u>
2	EC module (T + RH% + barometric measurements), <u>not available on IS model</u>

1	Eurotron certificate

ACCESSORIES

BB530203	RS232 PC cable
BB530212	USB PC cable
BB260215	CalpMan 2007 - 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

EXTERNAL PRESSURE MODULES - AISI 316SS - ±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. 0.01 mbar
BB480011	from -0.95 to 1 bar (15 PSI)	res. 0.01 mbar
BB480012	from -0.95 to 2 bar (30 PSI)	res. 0.01 mbar
BB480013	from -0.95 to 7bar (100 PSI)	res. 0.1 mbar
BB480014	from -0.95 to 20 bar (300 PSI)	res. 0.1 mbar
BB480015	from -0.95 to 35 bar (500 PSI)	res. 1 mbar
BB480016	from 0 to 70 bar (1000 PSI)	res. 1 mbar
BB480017	from 0 to 150 bar (2000 PSI)	res. 1 mbar
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. 0.01 mbar
BB480021	from 0 to 20 bar (300 PSI)	res. 0.1 mbar