# MicroCal™

## Advanced Modular Pressure Calibrator

The MicroCal™ automated pressure calibrator is used as a stand-alone calibration standard for differential and gauge pressure sensors found in critical environments. Setra partnered with NASA to develop the industry's quickest and most stable pressure control for low range applications. The MicroCal™ combines precise pressure control with high accuracy modular pressure references providing the quickest and most accurate calibration solution available on the market today. The MicroCal™ is an easy-to-use solution that significantly improves labor productivity and efficiency when compared to the leading competitors, providing immediate ROI.

### Modular Design to Cover Many Applications

The MicroCal™ utilizes modular pressure references, enabling the user to select the most accurate reference for calibrating the unit under test. Competitive calibrators often use fixed higher range reference sensors that do not allow for proper calibration ratios at the low end of the pressure range. The modular rechargeable battery offers further flexibility to extend available calibration time beyond the standard 8 hours.

### NASA Patented Technology

The MicroCal™ is designed to perform calibration checks on installed sensors, pressure switches and gauges that monitor critical applications. The on-board pressure generation system allows for stable & accurate pressure to be applied to the unit under test during calibration, while providing isolation from process background disturbances. This NASA patented technology achieves 0.0002 "W.C./step resolution; when combined with the high accuracy MCPM pressure module the MicroCal™ is the ultimate low-pressure calibration device.

### Reduce Calibration Time

When the fast and stable pressure control is combined with high accuracy reference modules and easy to use interface, the MicroCal™ can reduce overall calibration time up to 80%. This time savings provides almost immediate ROI based on the number of calibrations performed annually.

### 7" Touchscreen With Intuitive User Interface

The easy to use 7" touchscreen interface, combined with an intuitive menu structure, provides the user with all the features needed for verification and calibration of differential pressure instrumentation. The MicroCal™ offers the Expert System feature, which detects and automatically calibrates Setra's Model 269 digital pressure transducer.


- **Best-in-Class Pressure Generation**
- **Immediate ROI**
- **Increased Calibration Ratios**

### MicroCal™ Features:

- Modular Pressure References
- Up to 8 Hours of Battery Life
- Easy Step-by-Step User Interface Process
- Built-In Leak Test Function
- Provides Accuracy & Stability Graphs
- Pressure Generation & Monitoring Modes to Verify System Performance
- True Low Range Dual Reference Pressure Sensors With NIST Traceability

### Calibration Capabilities:

- Analog Pressure Transducers
- Pressure Switches
- Analog Dial Gauges

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## Advanced Modular Pressure Calibrator

## ORDERING INFORMATION

M C A L – ☐ – ☐ – ☐

| Model | Pressure Control Range | | Electro-Pneumatic Interface | | Options | |
|---|---|---|---|---|---|---|
| MCAL = MicroCal™ | L | Low- up to 0-30"W.C | N | Std. user interface with 6' tubing | N | None |
| | | | M | Std. user interface with 12' tubing | L | LEMO Connector for Remote Digital Sensor |
| | | | E | Expert system interface with 6' cable and tubing | | |
| | | | L | Expert system interface with 12' cable and tubing | | |

Ordering Example: MCALLMN = MicroCal™, Range 30"W.C., Std. user interface with 12' tubing.

## REFERENCE MODULES

M C P M – ☐☐☐☐☐

| Model | Range | | | |
|---|---|---|---|---|
| MCPM = MicroCal™ Pressure Modules | "W.C | | Pascal | |
| | Unidirectional | | | |
| | 0R5WD[1] | 0 to 0.5 | 100LD[1] | 0 to 100 |
| | 001WD[2] | 0 to 1 | 250LD[2] | 0 to 250 |
| | 005WD[2] | 0 to 5 | 500LD[2] | 0 to 500 |
| | 2R5WD[2] | 0 to 2.5 | 10CLD[2] | 0 to 1000 |
| | 015WD[2] | 0 to 15 | 35CLD[2] | 0 to 3500 |
| | Bidirectional | | | |
| | R25WB[1] | ±0.25 | 050LB[1] | ±50 |
| | 0R5WB[1] | ±0.5 | 100LB[1] | ±100 |
| | 001WB[2] | ±1 | 250LB[2] | ±250 |
| | 2R5WB[2] | ±2.5 | 500LB[2] | ±500 |
| | 005WB[2] | ±5 | 10CLB[2] | ±1000 |
| | 015WB[2] | ±15 | 35CLB[2] | ±3500 |


Ordering Example: MCPMR25WB=MicroCal™ Pressure Module, Range ±0.25"W.C.
[1]Low Range
[2]High Range

## ACCESSORIES

| | |
|---|---|
| 869783-G | Spare Battery |
| 869974-G | Desktop Charger |
| 869923 | Accessory Kit (Screwdriver, Silicon Tube, Misc. Fittings) |
| 869920 | Harness Cable End Ass'y, 2-Wire |
| 869904-10 | 2-Wire Electro-Pneumatic Harness: 10 ft. |
| 869921 | Harness Cable End Ass'y, 4-Wire |
| 869905-10 | 4-Wire Electro-pneumatic Harness: 10 ft. |

## GENERAL SPECIFICATIONS

| | |
|---|---|
| **Measurement Uncertainty (1 YR)[1]** | |
| Pressure | High Range: Max Range ≥ 1"W.C.: ±0.1% Reading ±0.016% FS<br>Low Range: Max Range < 1"W.C.: ±0.12% Reading ±0.028% FS |
| Voltage | ±0.015% Reading ±0.002V |
| Current | ±0.015% Reading ±0.002 mA |
| **Physical** | |
| Operating Temperature | 50° to 95°F (10° to 35°C) |
| Storage Temperature | 32° to 160°F (0° to 71°C) |
| Power Requirements | 24 VDC (110/220V Power Adapter Included) |
| Battery (included) | Li-ion, 6.75 AH, Recharge Time < 3 hours |
| Case Dimensions | 18.6" x 14.7" x 7.1" |
| Weight | 18-22 lbs. |
| **Control** | |
| Controlled Pressure Stability | 0.02% FS (Typ) |
| Minimum Controlled Pressure | 0.00005"W.C. |
| **Temperature Effect (Outside Operating Temperature)** | |
| Zero | None, Zero Tare |
| Span | Additional ±0.005% FS/°F |
| **General** | |
| Engineering Units | Field Selectable (20 Options) |
| Warm up | 20 Minutes (Typ) |
| Communications | RS232 |
| Display | 7" Touchscreen |
| Pressure Connections | Plug-In O-Ring Quick Connects |
| Electrical Connections | Banana Plug Jacks |

Specifications subject to change.
[1] 1 year specification is instrumental uncertainty that includes linearity, hysteresis, repeatability, resolution reference uncertainty, 1 year stability and span error. The uncertainties are provided at 95% confidence, k=2, normally distributed.