

*Ultra-Low Pressure Generating and Documenting Calibrator*

# Micro-Cal™ Model 869 & Expert System



*The Ultimate Low Pressure Solution*

## **Immediate ROI**

Reduces labor by 75%

## **Fast and Easy Calibration**

Menu driven operator interface

## **Superior Performance**

Control stability and precision to 0.0002" W.C.

## **NASA Patented Technology**

Lowest pressure generating capability

## **In-Situ Calibration**

Calibrate installed transducers



# **NEW 869 Expert System**

**setra**

# Accuracy

- Highest accuracy to support certification of all low DP critical process pressure sensors
- True low range dual reference pressure sensors with NIST traceability
- Dual reference design provides maximum accuracy, repeatability and resolution

# Pressure Generation

- User selectable automated pressure generation profiles with up to 101 calibration points
- NASA patented low pressure generating technology achieves  $\pm 0.0002$  in. W.C. low pressure regulation - micro in. of W.C. per step resolution
- True differential pressure generation - both high and low pressure ports connect to the unit under test, providing isolation from process background disturbances
- True zero pressure generation - high and low pressure ports shorted to produce stable, noise-free zero pressure input - outperforms competitive active zero pressure systems

# Calibration Capabilities

- Analog Pressure Transducers
- Pressure Switches
- Analog Dial Gauges
- Setra Digital Auto-Cal™ Products 269 & RPM



## Measurement

Accuracy.....  $\pm 0.04\%$  FS  
 Precision.....  $0.0002''$  W.C.  
 Calibration Stability (Pressure Span).....  $0.2\%$  Rdg./yr  
 Calibration Stability (mA and Voltage).....  $0.01\%$  FS/yr  
 Calibration Adjustment..... zero tare  
 Compensated Temperature Range.....  $40^{\circ}\text{F}$  to  $120^{\circ}\text{F}$   
 Storage Temperature Range.....  $40^{\circ}\text{F}$  to  $160^{\circ}\text{F}$   
 Temperature Effect (Zero)..... none, zero tare  
 Temperature Effect (Span).....  $0.01\%/^{\circ}\text{F}$   
 Certification..... NIST traceable certification for reference pressure sensors and voltage/current meters

## Control

Controlled Pressure Stability.....  $0.0002''$  W.C., typical  
 Minimum Controlled Pressure.....  $0.00005''$  W.C.  
 Dual Reference Pressure Ranges..... see order info.  
 Pressure Types..... gauge and differential  
 Overpressure Limit..... 5 psid  
 Control Time..... user selectable

## General Specifications

Pressure Units (Selectable)..... in. W.C., Pa, kPa, mbar, cm W.C.  
 Warmup..... 1 Hour  
 Reading Rate..... 20 readings/second, typical  
 Gravity/Orientation..... negligible  
 Shock and Vibration..... 5g, maximum  
 Communications..... RS 232  
 Display..... 3.5" transfective type TFT color, QVGA, 64-k color  
 Keypad..... pocket PC touch pad  
 Size..... 11" x 14" x 6" (27.9 cm x 35.6cm x 15.2 cm)  
 Weight..... 16 lbs. (8.2kg)  
 Pressure Media..... clean, dry, non-corrosive gases  
 Power..... 120/240 AC, 50/60Hz, battery Li Ion - 8 hours operation, integrated charger

### Pressure Transducer Interface

Pressure Fittings..... barbed, plug-in o-ring quick connects  
 Electrical ..... banana plug jacks  
 Voltage Meter .....  $\pm 0.005\%$  FSO at  $\pm 10.5$  VDC  
 Current Meter .....  $\pm 0.005\%$  FSO at 4-20mA  
 Excitation ..... 24VDC nominal for 4-20 mA output, adjustable 5 to 24 VDC for voltage output

# Key Features

- Easy step-by-step user interface process
- Designed with built-in leak test function
- Provides accuracy and stability plots
- Handles multiple engineering units
- Both pressure generation and monitoring modes to verify system performance

## Simple Pocket PC User Interface

### Calibration management database

- Store and retrieve transducer profiles
- Generate as found and as left calibration data
- Print calibration certificates

#### Step 1

##### UUT (Unit Under Test) Setup

- Select transducer profile
- Select accuracy specification
- Select output (VDC or mA)



#### Step 2

##### Real Time

- View current pressure and output for testing and calibration
- Apply selected pressure to perform adjustment (zero, span or linearity)



#### Step 3

##### Test Unit

- Return to screen to perform calibration test sequence
- Review and record results
- Copy and save data into your calibration database

The screenshot shows the 'Test Unit' results screen with a table of test results:

TR#	%FS	Tag Pres	Tag Out
1	0.000	-2.500	0.000
2	50.000	0.000	2.500
3	100.000	2.500	5.000

## Portability & Versatility

- AC or battery operation - eight hours of operation on full battery
- Rugged, compact carrying case - great for cramped and remote locations
- Calibrate difficult-to-reach devices in-situ (ceilings, ducts, etc.) with electro-pneumatic harness assembly - for analog transducers, 2, 3 and 4-wire, configurable length



# 869 Expert System

For even greater savings and security, upgrade to the 869 'Expert' Automatic Calibration System\*

## Features

- **Fully Automated, Hands-Off Calibration** reduces calibration times by 2/3 or more. No tube cutting or wire removal is required.
- **Easy-to-Use, Smart Communication Software** provides transducer detection and automated calibration with Setra's digital transducers and room pressure monitors.
- **Electropneumatic Interface Cable (EPIC)** allows the 869 to simultaneously pressurize a 269 or SRPM under test and automatically transmit ID and calibration data between the two units.
- **Two EPIC Cable Lengths Offered:** 6ft (standard) & 12ft (optional), providing easy access to units located in remote, difficult to access areas.
- **Easily Upgrade Original 869** - simply send in your unit and it will be returned with the installed Expert System. *This is especially convenient if performed when your 869 is in the factory for it's annual recertification.*



Expert System: EPIC, SRPM, 269 & 869

## Calibration Time

Time Needed (in minutes)

5 10 15 20 25 30 35 40 45 50

869 E.S.  
w/ 269

869 w/ analog  
transducer

Competitive calibrator  
w/ analog transducer

## Smart, Secure, Cost Effective Calibration

\* Expert System can only be used with Setra 269 and SRPM products.

## Ordering Information

Code all blocks in table

Example: Part No. 86910R5WD015WDPN for a 869 Calibrator, 0 to 0.5 in. WC (Range One) to 0 to 15 in. WC (Range Two), PDA Included, with a Standard Pharmaceutical User Interface.

8	6	9	1	—					—					—		—	
Model					Range - One					Range - Two					PDA		User Interface
8691 = 869															P = Includes PDA		N = Standard User Interface
					Inches W.C.					Pascal							E = Expert System
					0R5WD = 0 to 0.5 in. WC					050LB = ±50 Pa							
					001WD = 0 to 1 in. WC					100LD = 0 to 100 Pa							
					005WD = 0 to 5 in. WC					100LB = ±100 Pa							
					2R5WD = 0 to 2.5 in. WC					250LD = 0 to 250 Pa							
					015WD = 0 to 15 in. WC					250LB = ±250 Pa							
					R25WB = ±0.25 in. WC					500LD = 0 to 500 Pa							
					0R5WB = ±0.5 in. WC					500LB = ±500 Pa							
					001WB = ±1 in. WC					10CLD = 0 to 1000 Pa							
					2R5WB = ±2.5 in. WC					10CLB = ±1000 Pa							
					005WB = ±5 in. WC					35CLD = 0 to 3500 Pa							
					015WB = ±15 in. WC					35CLB = ±3500 Pa							
<p>For calibrating hard-to-reach analog transducers, a 2-wire and 4-wire configurable length, electropneumatic assembly is available from 6 to 15 feet.</p>																	

While we provide application assistance on all Setra products, both personally and through our literature, it is the customer's responsibility to determine the suitability of the product in the application.