

ENERGY AND COMFORT

Ventilation Testing

DP-CALC™ Micromanometer

Model 5815

Operation and Service Manual



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Chapter 1

Unpacking and Parts Identification

Carefully unpack the instrument and accessories from the shipping container. Check the individual parts against the list of components below. If anything is missing or damaged, notify TSI immediately.

1. Carrying case
2. Instrument

Chapter 2

Setting-up

Supplying Power to the Model 5815 DP-CALC Micromanometer

The Model 5815 is powered with four size AA batteries.

Installing the Batteries

Insert four AA batteries as indicated by the diagram located on the inside of the battery compartment. The Model 5815 is designed to operate with either alkaline or NiMH rechargeable batteries, although it will not recharge NiMH batteries. Battery life will be shorter if NiMH batteries are used. Carbon-zinc batteries are not recommended because of the danger of battery acid leakage.

Chapter 3

Operation

Keypad Functions

ON/OFF Key	Press to turn the Model 5815 on and off. During the power up sequence the display will show the following: Model Number, Serial Number, Software Revision and Last Date Calibrated.
ft/min / m/s Key	Pressing this key changes the display to read air velocity, converted from.
in H₂O / Pa / hPa / kPa / mm HG Key	Pressing this key changes the display to read differential pressure.
0 Key	Pressing the 0 key zeroes the pressure measurement.
Changing Units	To change units, first put the desired measurement (air velocity or temperature) on the display. Then press and hold the left, unlabelled key for five seconds. Finally, use the ▲▼ and ENTER key to select the units.

Chapter 5

Troubleshooting

Table 5-1 lists the symptoms, possible causes, and recommended solutions for common problems encountered with the Model 5815. If your symptom is not listed, or if none of the solutions solves your problem, please contact TSI.

Table 5-1: Troubleshooting the Model 5815

Symptom	Possible Causes	Corrective Action
No Display	Unit not turned on	Switch unit on.
	Low or dead batteries	Replace batteries.
	Dirty battery contacts	Clean the battery contacts.
Velocity reading fluctuates unstable	Fluctuating flow	Reposition probe in less-turbulent flow.
Instrument Error message appears	Fault in instrument	Factory service required on instrument.

WARNING!

The pressure sensor is protected from damage up to 7 psi (48 kPa or 360 mmHg). At higher pressure it can burst!

Appendix A

Specifications

Specifications are subject to change without notice.

Static/Differential Pressure:

Range¹: -15 to +15 in. H₂O (-28.0 to +28.0 mm Hg, -3735 to +3735 Pa)

Accuracy: ±1% of reading ±0.005 in. H₂O (±0.01 mm Hg, ±1 Pa)

Resolution: 0.001 in. H₂O (1 Pa, 0.01 mm Hg)

Velocity From a Pitot Tube:

Range²: 250 to 15500 ft/min (1.27 to 78.7 m/s)

Accuracy³: ±1.5% at 2000 ft/min (10.16 m/s)

Resolution: 1 ft/min (0.1 m/s)

Instrument Temperature Range:

Operating (Electronics): 40 to 113°F (5 to 45°C)

Storage: -4 to 140°F (-20 to 60°C)

Instrument Operating Conditions:

Altitude up to 4000 meters

Relative humidity up to 80% RH, non-condensing

Pollution degree 1 in accordance with IEC 664

Transient over voltage category II

External Meter Dimensions:

3.3 in. × 7.0 in. × 1.8 in. (8.4 cm × 17.8 cm × 4.4 cm)

Meter Weight:

Weight with batteries: 0.6 lbs (0.27 kg)

Power Requirements:

Four AA-size batteries (included)

¹ Overpressure range = 7 psi (190 in. H₂O, 360 mmHg, 48 kPa).

² Pressure velocity measurements are not recommended below 1,000 ft/min (5 m/s) and are best suited to velocities over 2000 ft/min. Range can vary depending on barometric pressure.

³ Accuracy is a function of converting pressure to velocity. Conversion accuracy improves when actual pressure values increase.