

Model DPT 267LCD and DPT 267MR Pressure Transducer

Very Low Differential Pressure
Air or Non-Conducting Gas



Shown with optional LCD display. LCD Option only available on single range units.

Setra Systems Model 267LCD and 267MR pressure transducers sense gauge (static) or differential pressure and convert this pressure and convert this pressure to a proportional electrical output. The 267 series is offered with a high level DC output or 4-20 mA output. The 267MR offers multi-range capability and field configurable 0-5 VDC or 0-10 VDC output, as well as a 4-20 mA output. The 267LCD is a single range unit with a standard accuracy of $\pm 0.5\%$ at no additional charge, and an integral LCD display. (Optional accuracies are available for the Model 267LCD.)

Used in Building Energy Management Systems, the 267LCD and 267MR pressure transducers are available for air pressure ranges as low as 0.1 in. W.C. Full Scale up to 100 in. W.C. Full Scale. Static accuracy is $\pm 1\%$ Full Scale for the Model 267MR, and $\pm 0.5\%$ Full Scale for the Model 267LCD in normal ambient temperature environments. These units are temperature-compensated to less than $\pm 0.06\%$ FS/ $^{\circ}\text{C}$ of thermal error over a temperature range of $+5^{\circ}\text{C}$ to $+65^{\circ}\text{C}$, and have an IP65/NEMA4 rated package to withstand environmental effects.

The 267LCD and 267MR utilize an improved all stainless steel micro-tig welded sensor. The tensioned stainless steel diaphragm and insulated stainless steel electrode, positioned close to the diaphragm, form a variable capacitor. Positive pressure moves the diaphragm toward the electrode, increasing the capacitance. The change in capacitance is detected and converted to a linear DC electrical signal by Setra's unique electronic circuit. The sensor is enclosed in a welded stainless steel body.

The micro-tig welded tension sensor allows up to 10 psi overpressure, in either direction, with no damage to the unit. In addition, sensor parts have thermally matched coefficients, which promote improved temperature performance and excellent long-term stability.

This improved sensor design allows the Model 267MR version to have up to 6 field-selectable ranges (bidirectional and unidirectional) in one unit. The simple flip of a dipswitch enables the user to easily field calibrate the unit with minimal effort.

Note: Setra quality standards are based on ANSI-Z540-1. The calibration of this product is NIST traceable.

U.S. Patent Nos: Patents pending.

Applications

- Heating, Ventilating and Air Conditioning (HVAC)
- Energy Management Systems
- Static Duct Pressure
- Clean Room Pressure
- Environmental Pollution Control
- Oven Pressurization and Furnace Draft Controls
- Medical Instrumentation

Features

- Model 267MR Offers Multi-Range Capability Including 6 Field Selectable Ranges via Dip Switches and Field Selectable 0-5 or 0-10 VDC Output
- Model 267 Offers an Optional LCD Display
- Setra's Reliable Capacitance Technology
- Stainless Steel Micro-Tig Welded Sensor
- NEMA 4/IP65 Rated Housing
- UL94V-0 Flammability Rating
- 1% Accuracy (267 MR)
- $\pm 0.5\%$ Accuracy (267 LCD)
- Optional Accuracies as High as 0.25% FS
- 24 VAC or 24 VDC Excitation
- PG-9, PG13.5 or Conduit Electrical Termination
- Integral Mounting Tabs
- Ranges as low as 0.1 in. W.C. (25 Pa)



Model DPT 267LCD and DPT 267MR Specifications

Performance Data

	267MR	267LCD
Accuracy RSS* (at constant temp.)	±1.0% FS	±0.5% FS
Non-Linearity (BFSL)	±0.98% FS	±0.4% FS
Hysteresis	0.2% FS	0.1% FS
Non-Repeatability	0.1% FS	0.1% FS

Thermal Effects

Compensated Range °F(°C)	+40 to +150 (+5 to +65)
Zero/Span Shift %FS/°F(°C)	0.033 (0.06)
Maximum Line Pressure	10 psi
Overpressure	10 psi in positive or negative direction
Warm-up Shift	±0.1% FS total

Position Effects

(Unit is factory calibrated at 0g effect in the vertical position)

Range	Zero Offset (%FS/G)
0 to .1" WC	.21
0 to 1" WC	.22
0 to 5" WC	.14
0 to 30" WC	.06

*RSS of Non-Linearity, Non-Repeatability and Hysteresis.

Notice: Our pressure sensor products are not necessarily designed or manufactured for use as a "critical component" in a "critical device" as those terms are defined in the Medical Devices Subchapter contained in the Food and Drug Administration Rules, 21CFR800.

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

Electrical Data (Voltage)

Circuit	3-Wire (Exc, Gnd, Sig) Protected from miswiring
Excitation	9 to 30 VAC / 12 to 40 VDC
Output* (Field Selectable)	0 to 5 VDC** / 0 to 10 VDC**
Bidirectional output at zero	Mid-range of specified output.
Output Impedance	100 ohms
Re-Ranging (267MR only)	5 position dip switches located inside case

*Calibrated into a 50K ohm load, operable into a 5000 ohm load or greater.

**Zero output factory set at 50mV (±25mV). Span output factory set at 5.0 VDC (±25mV) or 10.0 VDC (±50mV).

Physical Description

Case	IP65/NEMA 4 Plastic Glass-Filled Polycarbonate UL94V-0 Case
Mounting	2 mounting tabs with .18" holes
Electrical Connection	Screw terminal strip inside of case
Electrical Termination	PG-9/PG13.5 Strain Relief or 1/2" Conduit Opening
Zero and Span Adjustment	Accessible inside of case
Display (Optional on 267 only)	3 1/2-Digit Integral Display
Pressure Fittings	3/16" O.D. barbed brass pressure fitting for 1/4" push-on tubing
Weight (approx.)	9.0 ounces (255 grams)

Electrical Data (Current)

Circuit	2-Wire Protected from miswiring
Output*	4 to 20 mA**
Bidirectional output at zero	12 mA
External Load	0 to 800 ohms
Minimum loop supply voltage (VDC) = 9 + 0.02 x (Resistance of receiver plus line).	
Maximum loop supply voltage (VDC) = 30 + 0.004 x (Resistance of receiver plus line).	
Re-Ranging (267MR only)	4 position dip switches located inside case

*Calibrated with a 24 VDC loop supply voltage and a 250 ohm load.

**Zero output factory set at 4mA (±.08mA).

**Span output factory set at 20mA (±.08mA).

Environmental Data

Temperature	
Operating °F (°C)	0 to +150 (-18 to +65)
Storage °F (°C)	-65 to +180 (-54 to +82)

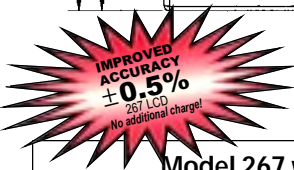
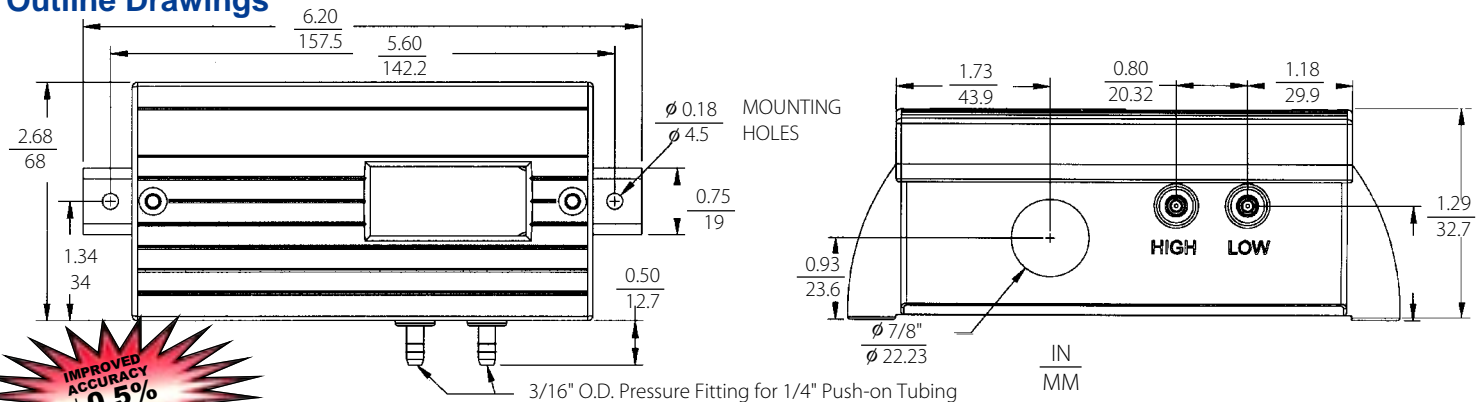
*Operating temperature limits of the electronics only.

Pressure media temperature may be considerably higher or lower.

Pressure Media

Typically air or similar non-conducting gases.

Outline Drawings



Ordering Information

Model 267 with Optional LCD Display		
Input Range (Inches of WC)	Product Codes	
	0 to 5 VDC Output	4 to 20 MA
0 to 0.1	DPT2670-0R1D-D	DPT2671-0R1D-D
0 to 0.5	DPT2670-0R5D-D	DPT2671-0R5D-D
0 to 1	DPT2670-001D-D	DPT2671-001D-D
0 to 2.5	DPT2670-2R5D-D	DPT2671-2R5D-D
0 to 5	DPT2670-005D-D	DPT2671-005D-D
0 to 10	DPT2670-010D-D	DPT2671-010D-D
0 to 25	DPT2670-025D-D	DPT2671-025D-D
0 to 50	DPT2670-050D-D	DPT2671-050D-D
0 to 100	DPT2670-100D-D	DPT2671-100D-D
-0.1 to 0.1	DPT2670-0R1B-D	DPT2671-0R1B-D
-0.25 to 0.25	DPT2670-R25B-D	DPT2671-R25B-D
-0.5 to 0.5	DPT2670-0R5B-D	DPT2671-0R5B-D
-1 to 1	DPT2670-001B-D	DPT2671-001B-D
-2.5 to 2.5	DPT2670-2R5B-D	DPT2671-2R5B-D
-5 to 5	DPT2670-005B-D	DPT2671-005B-D
-10 to 10	DPT2670-010B-D	DPT2671-010B-D
-25 to 25	DPT2670-025B-D	DPT2671-025B-D
-50 to 50	DPT2670-050B-D	DPT2671-050B-D
Add DPT-CAL-CERT for Calibration Certificate		

Model 267 Multi Range Unit		
Input Range (Inches of WC)	Product Codes	
	0 to 5 VDC Output	4 to 20 MA Output
0 to 0.1/-0.05 to 0.05	DPT2670-MR1	DPT2671-MR1
0 to 0.25/-0.125 to 0.125	DPT2670-MR2	DPT2671-MR2
0 to 0.5/-0.25 to 0.25		
0 to 1/-0.5 to 0.5		
0 to 1.25/-0.625 to 0.625	DPT2670-MR3	DPT2671-MR3
0 to 2.5/-1.25 to 1.25		
0 to 5/-2.5 to 2.5		
0 to 7.5/-3.75 to 3.75	DPT2670-MR4	DPT2671-MR4
0 to 15/-7.5 to 7.5		
0 to 30/-15 to 15		
Add DPT-CAL-REPORT for Calibration Certificate		

SSP267JCI Rev.F 03/28/01

