

# Model 267/267MR

## Pressure Transducer



### 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

### Features

- Model 267MR Offers Multi-Range Capability 6 Field Selectable Ranges via Dip Switches and Field Selectable 0-5 or 0-10 VDC Output
- Model 267 Offers an Optional 3 1/2 Digit LCD Display
- Reliable Capacitance Technology
- Micro-tig Welded Stainless Steel Tension Sensor
- NEMA 4/IP65 Rated Housing
- UL94V-O Flammability Rating
- 1% Standard Accuracy
- 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)
- Meets CE Conformance Standards



# Model 267 and 267MR Specifications

## Performance Data

|                                   |  |
|-----------------------------------|--|
| Accuracy RSS* (at constant temp.) | ±1% FS                                   |
| Non-Linearity (BFSL)              | ±0.98% FS                                |
| Hysteresis                        | 0.20% FS                                 |
| Non-Repeatability                 | 0.10% FS                                 |
| <b>Thermal Effects**</b>          |  |
| 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 0.1" 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.

\*\*Units calibrated at nominal 70°F. Maximum thermal error computed from this datum.

## Physical Description

|                                |  |
|--------------------------------|--|
| Case                           | IP65/NEMA 4 Plastic Glass-Filled Polycarbonate UL94V-0 Case                |
| Mounting                       | 2 mounting tabs with 0.18" holes   |
| Electrical Connection          | Screw terminal strip inside of case  |
| Electrical Termination         | PG-9/PG13.5 Strain Relief, 1/2" Conduit Opening, or 9 pin D-sub Connector* |
| Zero and Span Adjustment       | Accessible inside of case  |
| Display (Optional on 267 only) | 3 1/2 Digit LCD 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)   |

\*9 pin D-sub Connector is not suitable for NEMA4/IP-65 environments.

*Specifications are subject to change without notice.*

*Application of some available options may impact standard specifications.*

## Electrical Data (Voltage)

|                                  |  |
|----------------------------------|--|
| Circuit                          | 3-Wire (Exc, Gnd, Sig)<br>Protected from miswiring |
| Excitation (for 0-5 VDC Output)  | 9 to 30 VAC/9 to 42 VDC                            |
| Excitation (for 0-10 VDC Output) | 11 to 30 VAC/13 to 42 VDC                          |
| Output* (Field Selectable)       | 0 to 5 VDC**<br>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 50 mV (±25 mV).

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

## Electrical Data (Current)

|  |  |
|--|--|
| Circuit  | 2-Wire<br>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 4 mA (±0.08 mA).

\*\*\*Span output factory set at 20 mA (±0.08 mA).

## Pressure Media

Typically air or similar non-conducting gases.

## 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.

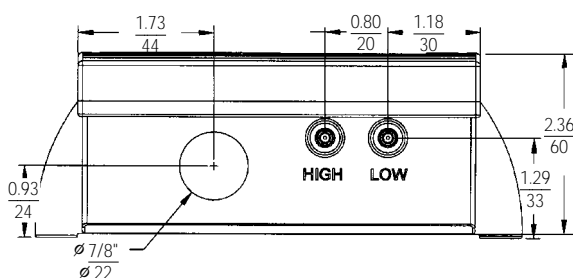
**S**ystems Model 267 and 267MR pressure transducers sense gauge (static) or differential pressures and convert this pressure difference to a proportional electrical output. The 267 series is offered with a high level DC output or 4-20 mA output. The 267MR offers multi-range capability and field configurable 0-5 VDC or 0-10 VDC output, as well as a 4-20 mA output. The 267 is a single range unit and offers an optional LCD display.

Used in Building Energy Management Systems, the 267 and 267MR pressure transducers are available for air pressure ranges as low as 0.1 in. W.C. (25 Pa) full scale to 30 in. W.C. (7500 Pa) full scale. Static accuracy is ±1% full scale in normal ambient temperature environments. The units are temperature compensated to less than ±0.06% FS/°C of thermal error over the temperature range of +5°C to +65°C. The 267 series has an IP65/NEMA 4 rated package to withstand environmental effects.

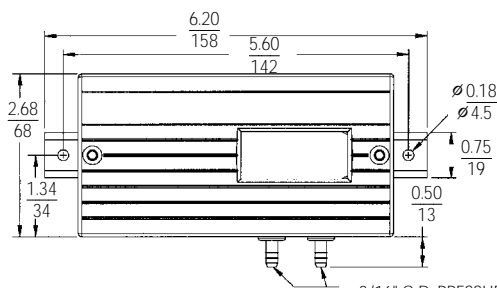
The 267 series utilizes an improved all stainless steel micro-tig welded sensor. The tensioned stainless steel diaphragm and insulated stainless steel electrode, positioned close to the diaphragm, form a variable capacitor. Positive pressure moves the diaphragm toward the electrode, increasing the capacitance. A decrease in pressure moves the diaphragm away from the electrode, decreasing the capacitance. The change in capacitance is detected and converted to a linear DC electrical signal by a 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.

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

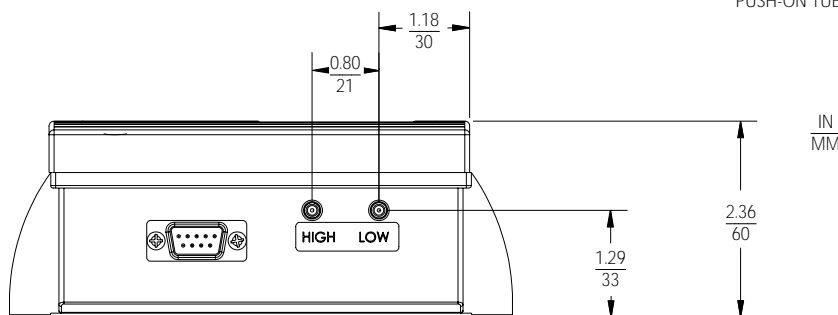


PG and Conduit Opening  
Electrical Termination



LCD available as an Option  
on Model 267 only.

3/16" O.D. PRESSURE  
FITTING FOR 1/4"  
PUSH-ON TUBING



9 pin D-sub Connector  
Electrical Termination

NOTE: The quality standards including ISO 9001 are based on ANSI-Z540-1. The calibration of this product is NIST traceable. U.S. Patent Nos. 4358814, 4434203, 4054833, 6019002, 6014800 and other patents pending.

# ORDERING INFORMATION

## Model 267 Pressure Transducer

Code all blocks in table.

Example: Part No. 2671R25WD11G2CD for a 0 to .25 in. WC Unidirectional Range, 4-20 mA Output, PG-9 Electrical Termination, 1% Accuracy with LCD Display

| Model      | Pressure Ranges  | Units                    | Type   | Output  | Elec. Termination  | Accuracy   | Display                           |
|------------|--|--------------------------|--|---|--|--|-----------------------------------|
| 2671 = 267 | <b>in. W.C.</b>  | W = in. WC<br>L = Pascal | <u>Differential</u><br>D = Unidirectional<br>B = Bidirectional | 11 = 4-20 mA<br>2D = 0-5 VDC<br>2E = 0-10 VDC | G1 = PG-13.5 Strain Relief<br>G2 = PG-9 Strain Relief<br>A1 = 1/2" Conduit Opening<br>D9 = 9 pin D-sub Connector | C = $\pm 1.0\%$ FS<br><br><u>Optional (w/Cal.Cert.)</u><br>E = $\pm 0.4\%$ FS<br>F = $\pm 0.25\%$ FS<br>G = $\pm 1\%$ FS<br>H = $\pm 0.5\%$ FS | D = LCD Display<br>N = No Display |
|            | <b>Pascals</b>   |                          |  |   |  |  |                                   |
|            | 0R1 = 0 to 0.1 $\pm 0.1$<br>R25 = 0 to 0.25 $\pm 0.25$<br>0R5 = 0 to 0.5 $\pm 0.5$<br>001 = 0 to 1 $\pm 1$<br>2R5 = 0 to 2.5 $\pm 2.5$<br>005 = 0 to 5 $\pm 5$<br>010 = 0 to 10 $\pm 10$<br>025 = 0 to 25 $\pm 25$<br>050 = 0 to 50 $\pm 50$<br>100 = 0 to 100 |                          |  |   |  |  |                                   |
|            | 025 = 0 to 25 $\pm 25$<br>050 = 0 to 50 $\pm 50$<br>100 = 0 to 100 $\pm 100$<br>250 = 0 to 250 $\pm 250$<br>500 = 0 to 500 $\pm 500$<br>10C = 0 to 1000 $\pm 1000$<br>25C = 0 to 2500 $\pm 2500$<br>40C = 0 to 4000<br>70C = 0 to 7000                         |                          |  |   |  |  |                                   |

## Model 267MR Pressure Transducer

| Model      | Pressure Ranges  | Units                    | Type             | Output  | Elec. Termination  | Accuracy  | Display        |
|------------|--|--------------------------|------------------|---|--|---|----------------|
| 2671 = 267 | <b>in. W.C.</b>  | W = in. WC<br>L = Pascal | D = Differential | 11 = 4-20 mA<br>2D = 0-5 VDC<br>2E = 0-10 VDC | G1 = PG-13.5 Strain Relief<br>G2 = PG-9 Strain Relief<br>A1 = 1/2" Conduit Opening<br>D9 = 9 pin D-sub Connector | C = $\pm 1.0\%$ FS<br><br><u>Optional (w/Cal.Cert.)</u><br>G = $\pm 1.0\%$ FS | N = No Display |
|            | <b>Pascals</b>   |                          |                  |   |  |   |                |
|            | MR1 = 0 to 0.1 $\pm 0.05$<br>MR2 = 0 to 0.25 $\pm 0.125$<br>0 to 0.5 $\pm 0.25$<br>0 to 1 $\pm 0.5$<br>MR3 = 0 to 1.25 $\pm 0.625$<br>0 to 2.5 $\pm 1.25$<br>0 to 5.0 $\pm 2.5$<br>MR4 = 0 to 7.5 $\pm 3.75$<br>0 to 15 $\pm 7.5$<br>0 to 30 $\pm 15$  |                          |                  |   |  |   |                |
|            | MR5 = 0 to 25 $\pm 12.5$<br>MR6 = 0 to 50 $\pm 25$<br>0 to 100 $\pm 50$<br>0 to 200 $\pm 100$<br>MR7 = 0 to 250 $\pm 125$<br>0 to 500 $\pm 250$<br>0 to 1000 $\pm 500$<br>MR8 = 0 to 625 $\pm 312$<br>0 to 1250 $\pm 625$<br>0 to 2500 $\pm 1250$<br>MR9 = 0 to 1875 $\pm 937$<br>0 to 3750 $\pm 1875$<br>0 to 7500 $\pm 3750$ |                          |                  |   |  |   |                |

Ranges are factory set for the highest range.  
Optional higher accuracies are not available on the 267MR.