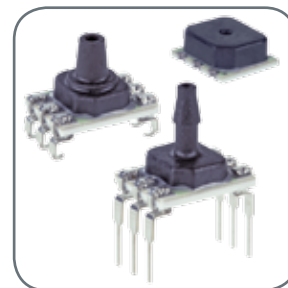




Basic Board Mount
Pressure Sensors
ABP Series—High Accuracy
Digital or Analog Output
Compensated/Amplified



60 mbar to 10 bar | 6 kPa to 1 MPa | 1 psi to 150 psi

Basic Amplified Board Mount Pressure Sensors

The Basic Amplified ABP Series is a piezoresistive silicon pressure sensor offering a ratiometric analog or digital output for reading pressure over the specified full scale pressure span and temperature range.

The ABP Series is fully calibrated and temperature compensated for sensor offset, sensitivity, temperature effects and accuracy errors (which include non-linearity, repeatability and hysteresis) using an on-board Application Specific Integrated Circuit (ASIC). Calibrated output values for pressure are updated at approximately 1 kHz for analog and 2 kHz for digital.

The ABP Series is calibrated over the temperature range of 0 °C to 50 °C [32 °F to 122 °F]. The sensor is characterized for operation from a single power supply of either 3.3 Vdc or 5.0 Vdc. These sensors measure gage and differential pressures.

The Basic Amplified pressure sensors are intended for use with non-corrosive, non-ionic gases, such as air and other dry gases. The following options extend the performance of these sensors to non-corrosive liquids.

- No silicone gel coating: The input port is limited to non-corrosive, non-ionic media such as dry air and gases and should not be exposed to condensation. The gases are limited to media that are compatible with high temperature polyamide, silicone, alumina ceramic, silicon, gold, and glass.
- Silicone gel coating: Uses the same materials in the wetted media path but is protected from condensation by a silicone-based gel coating; allows use in applications where condensation may occur.

All products are designed and manufactured according to ISO 9001 standards.

Features

- Proprietary Honeywell technology
- Protected by multiple global patents
- Industry-leading long-term stability: ± 0.25 %FSS
- Total Error Band (TEB): ± 1.5 %FSS
- Industry-leading accuracy: ± 0.25 %FSS BFSL
- High burst pressures
- Industry-leading flexibility
- Wide pressure range: 60 mbar to 10 bar | 6 kPa to 1 MPa | 1 psi to 150 psi
- Meets IPC/JEDEC J-STD-020D.1 Moisture Sensitivity Level 1 requirements
- Optional internal diagnostic functions
- Energy efficient
- Output: ratiometric analog; I²C- or SPI-compatible 14-bit digital output (min. 12-bit sensor resolution)
- Small size: As small as 8 mm x 7 mm
- REACH and RoHS compliant
- Sleep mode option (see [Technical Note](#))
- Temperature output option
- Liquid media option

Table of Contents

| | |
|---|-----------|
| General Specifications | 3 |
| Operating Specifications | 4 |
| Transfer Function Limits | 5 |
| Nomenclature and Order Guide | 6 |
| Pressure Range Specifications | 7-8 |
| PCB Layouts | 8 |
| Dimensional Drawings: | |
| DIP Packages | 9-10 |
| SMT Packages | 11-12 |
| Leadless SMT Packages | 13 |
| Additional Information | back page |

Potential Applications

MEDICAL

- CPAP
- Blood analysis
- Blood pressure monitoring
- Breast pumps
- Drug dosing
- Hospital beds
- Massage machines
- Oxygen concentrators
- Patient monitoring
- Sleep apnea equipment
- Urine analyzers
- Ventilators/portable ventilators
- Wound therapy

INDUSTRIAL

- Air brakes
- HVAC/transmitters
- Life sciences
- Material handling
- Pneumatic control
- Pneumatic regulator
- Process gas monitoring
- Valve positioning and positioners

COMMERCIAL

- Air beds
- Coffee makers
- Washing machines

STABILITY • ACCURACY • FLEXIBILITY • SMALL SIZE

General Specifications

Table 1. Absolute Maximum Ratings¹

| Characteristic | Min. | Max. | Unit |
|---|-----------|------------------------------|---------|
| Supply voltage (V_{supply}) | -0.3 | 6.0 | Vdc |
| Voltage on any pin | -0.3 | $V_{\text{supply}} + 0.3$ | V |
| Digital interface clock frequency: | | | |
| I ² C | 100 | 400 | kHz |
| SPI | 50 | 800 | |
| ESD susceptibility (human body model) | 2 | — | kV |
| Storage temperature | -40 [-40] | 85 [185] | °C [°F] |
| Soldering time and temperature: | | | |
| lead solder temperature (DIP) | | 4 s max. at 250 °C [482 °F] | |
| peak reflow temperature (Leadless SMT, SMT) | | 15 s max. at 250 °C [482 °F] | |

¹Absolute maximum ratings are the extreme limits the device will withstand without damage.

Table 2. Environmental Specifications

| Characteristic | Parameter |
|---|--|
| Humidity (Gases only; see “Options N and D” in Figure 2.) | 0% to 95% RH, non-condensing |
| Vibration | 15 g, 10 Hz to 2 kHz |
| Shock | 100 g, 6 ms duration |
| Life ¹ | 1 million pressure cycles minimum |
| Solder reflow | J-STD-020-D.1 Moisture Sensitivity Level 1 (unlimited shelf life when stored at ≤30 °C/85 % RH) |

¹Life may vary depending on specific application in which the sensor is used.

Table 3. Wetted Materials¹

| Component | Pressure Port | |
|-----------------------|---------------------------------------|--|
| | No Silicone Gel Coating Option | Silicone Gel Coating Option |
| Ports and covers | high temperature polyamide | |
| Substrate | alumina ceramic | not exposed; protected by silicone gel |
| Adhesives | epoxy, silicone | epoxy |
| Electronic components | ceramic, silicon, glass, solder, gold | not exposed; protected by silicone gel |

¹Contact Honeywell Customer Service for detailed material information.

Table 4. Sensor Pressure Types

| Pressure Type | Description |
|---------------|--|
| Gage | Output is proportional to the difference between applied pressure and atmospheric (ambient) pressure. |
| Differential | Output is proportional to the difference between the pressures applied to each port (Port 1 – Port 2). |

Operating Specifications

Table 5. Operating Specifications

| Characteristic | Analog | | | Digital | | | Unit |
|---|-----------|------|----------|-----------|------|----------|------------------------|
| | Min. | Typ. | Max. | Min. | Typ. | Max. | |
| Supply voltage (V_{supply}) ^{1, 2, 3} | | | | | | | |
| 3.3 Vdc | 3.0 | 3.3 | 3.6 | 3.0 | 3.3 | 3.6 | Vdc |
| 5.0 Vdc | 4.75 | 5.0 | 5.25 | 4.75 | 5.0 | 5.25 | |
| Supply current: | | | | | | | |
| 3.3 Vdc | — | 2.1 | 2.8 | — | 3.1 | 3.9 | mA |
| 5.0 Vdc | — | 2.7 | 3.8 | — | 3.7 | 4.6 | mA |
| sleep mode option | — | — | — | — | 1 | 10 | μA |
| Operating temperature range ⁴ | -40 [-40] | — | 85 [185] | -40 [-40] | — | 85 [185] | °C [°F] |
| Compensated temperature range ⁵ | 0 [-32] | — | 50 [122] | 0 [-32] | — | 50 [122] | °C [°F] |
| Temperature output option ⁶ | — | — | — | — | 1.5 | — | °C |
| Startup time (power up to data ready) | — | — | 5 | — | — | 3 | ms |
| Response time | — | 1 | — | — | 0.46 | — | ms |
| Clipping limit: | | | | | | | |
| upper | — | — | 97.5 | — | — | — | %Vsupply |
| lower | 2.5 | — | — | — | — | — | |
| SPI/I ² C voltage level: | | | | | | | |
| low | — | — | — | — | — | 20 | %Vsupply |
| high | — | — | — | 80 | — | — | |
| Pull up on SDA/MISO, SCL/SCLK, SS | — | — | — | 1 | — | — | kOhm |
| Accuracy ⁷ | — | — | ±0.25 | — | — | ±0.25 | %FSS BFSL ⁸ |
| Output resolution | 0.03 | — | — | — | — | — | %FSS bits |
| | — | — | — | 12 | — | — | |

¹Sensors are either 3.3 Vdc or 5.0 Vdc based on the catalog listing selected.

²Ratiometricity of the sensor (the ability of the device output to scale to the supply voltage) is achieved within the specified operating voltage.

³The sensor is not reverse polarity protected. Incorrect application of supply voltage or ground to the wrong pin may cause electrical failure.

⁴Operating temperature range: The temperature range over which the sensor will produce an output proportional to pressure.

⁵Compensated temperature range: The temperature range over which the sensor will produce an output proportional to pressure within the specified performance limits.

⁶Temperature Output Option: Continuous operation in Sleep Mode only may provide different results.

⁷Accuracy: The maximum deviation in output from a Best Fit Straight Line (BFSL) fitted to the output measured over the pressure range at 25 °C [77 °F]. Includes all errors due to pressure non-linearity, pressure hysteresis, and non-repeatability.

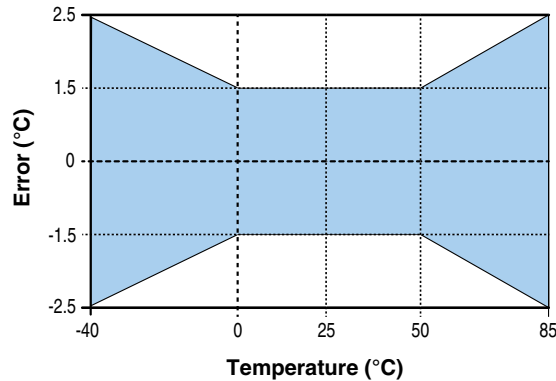
⁸Full Scale Span (FSS): The algebraic difference between the output signal measured at the maximum (Pmax.) and minimum (Pmin.) limits of the pressure range. (See Figure 3 for ranges.)

Table 6. Sensor Output at Significant Percentages (Digital Versions Only)

| % Output | Digital Counts | |
|----------|----------------|--------|
| | decimal | hex |
| 0 | 0 | 0x0000 |
| 10 | 1638 | 0x0666 |
| 50 | 8192 | 0x2000 |
| 90 | 14746 | 0x399A |
| 100 | 16383 | 0x3FFF |

Transfer Function Limits

Figure 1. Temperature Output Option Temperature Error^{1,2}

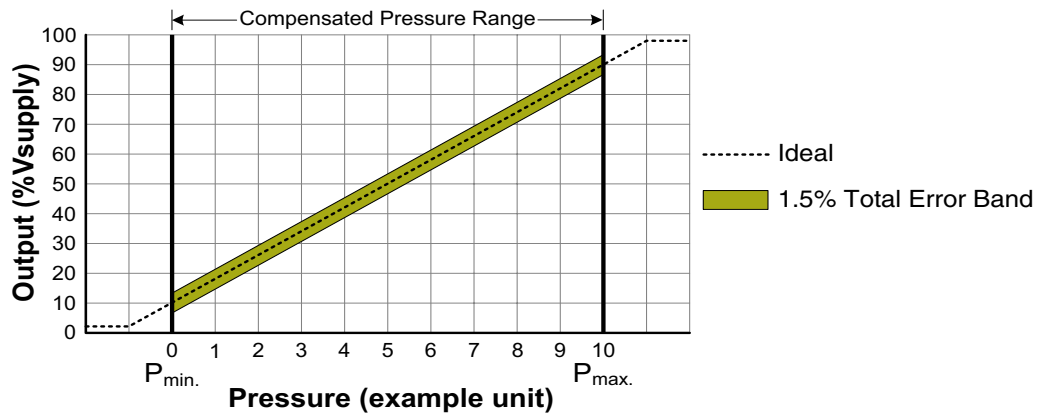


¹Operating temperature range: The temperature range over which the sensor will produce an output proportional to pressure.

²Compensated temperature range: The temperature range over which the sensor will produce an output proportional to pressure within the specified performance limits.

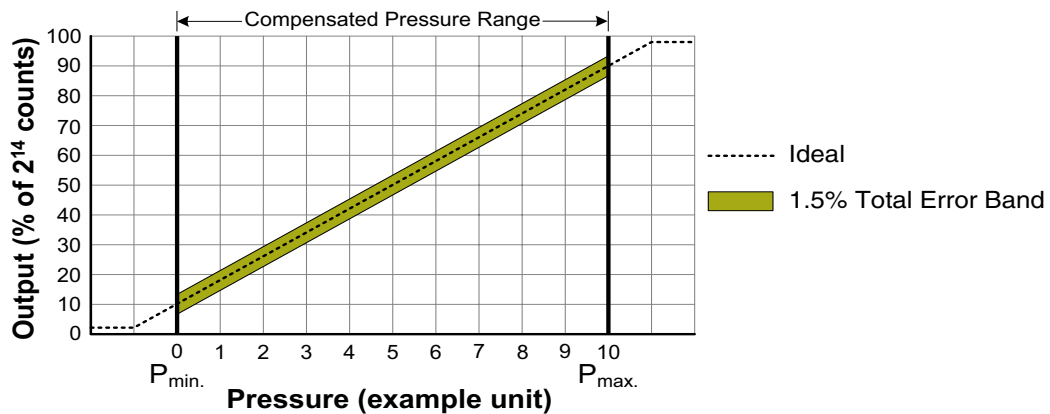
Figure 2. Transfer Function Limits¹

Analog Versions



$$\text{Output (V)} = \frac{0.8 \times V_{\text{supply}}}{P_{\text{max.}} - P_{\text{min.}}} \times (\text{Pressure}_{\text{applied}} - P_{\text{min.}}) + 0.10 \times V_{\text{supply}}$$

Digital Versions



$$\text{Output (\% of } 2^{14} \text{ counts)} = \frac{80\%}{P_{\text{max.}} - P_{\text{min.}}} \times (\text{Pressure}_{\text{applied}} - P_{\text{min.}}) + 10\%$$

¹Transfer Function "A" is shown. See Figure 3 for other available transfer function options.

Nomenclature and Order Guide

Figure 3. Nomenclature and Order Guide

For example, **ABPDNNN150PGAA3** defines an ABP Series Amplified Basic Pressure Sensor, DIP package, NN pressure port, dry gases only, no diagnostics, 150 psi gage pressure range, analog output type, 10% to 90% of Vsupply (analog), 2¹⁴ counts (digital) transfer function, no temperature output, no sleep mode, 3.3 Vdc supply voltage.

Product Series

ABP Amplified Basic

Package

D DIP (Dual Inline Pin)

M SMT (Surface Mount Technology)

L Leadless SMT

Pressure Port

| DIP | SMT | Leadless SMT |
|---|---|--|
| NN No port | NN No port | NN No port |
| AN Single axial barbed port | AN Single axial barbed port | AN Single axial barbed port |
| LN Single axial barbless port | LN Single axial barbless port | LN Single axial barbless port |
| JN Single radial barbless port | JN Single radial barbless port | — |
| JJ Dual radial barbless ports, same side | JJ Dual radial barbless ports, same side | — |
| RN Single radial barbed port | RN Single radial barbed port | — |
| RR Dual radial barbed ports, same side | RR Dual radial barbed ports, same side | — |

Option

N Dry gases only, no diagnostics

D Dry gases only, diagnostics on

T Silicone gel coating, no diagnostics

V Silicone gel coating, diagnostics on

ABP D N N N 1 5 0 P G A A 3

Supply Voltage

| | |
|----------|---------|
| 3 | 3.3 Vdc |
| 5 | 5.0 Vdc |

Transfer Function¹

| | |
|----------|---|
| A | 10% to 90% of Vsupply (analog), 2 ¹⁴ counts (digital) no temperature output, no sleep mode |
| D | 10% to 90% of 2 ¹⁴ counts (digital only) temperature output enabled, sleep mode enabled |
| S | 10% to 90% of 2 ¹⁴ counts (digital only) no temperature output, sleep mode enabled |
| T | 10% to 90% of 2 ¹⁴ counts (digital only) temperature output enabled, no sleep mode |

Output Type

| | | | |
|----------|--------------------------------|----------|--------------------------------|
| A | Analog | 4 | I ² C, Address 0x48 |
| S | SPI | 5 | I ² C, Address 0x58 |
| 0 | I ² C, Address 0x08 | 6 | I ² C, Address 0x68 |
| 1 | I ² C, Address 0x18 | 7 | I ² C, Address 0x78 |
| 2 | I ² C, Address 0x28 | 8 | I ² C, Address 0x88 |
| 3 | I ² C, Address 0x38 | 9 | I ² C, Address 0x98 |

Pressure Range^{2,3}

| 60 mbar to 10 bar <i>Differential</i> | | 6 kPa to 1 MPa <i>Differential</i> | | 1 psi to 150 psi <i>Differential</i> | |
|--|-----------|---------------------------------------|----------|---|---------|
| 060MD | ±60 mbar | 006KD | ±6 kPa | 001PD | ±1 psi |
| 100MD | ±100 mbar | 010KD | ±10 kPa | 005PD | ±5 psi |
| 160MD | ±160 mbar | 016KD | ±16 kPa | 015PD | ±15 psi |
| 250MD | ±250 mbar | 025KD | ±25 kPa | 030PD | ±30 psi |
| 400MD | ±400 mbar | 040KD | ±40 kPa | 060PD | ±60 psi |
| 600MD | ±600 mbar | 060KD | ±60 kPa | | |
| 001BD | ±1 bar | 100KD | ±100 kPa | | |
| 1.6BD | ±1.6 bar | 160KD | ±160 kPa | | |
| 2.5BD | ±2.5 bar | 250KD | ±250 kPa | | |
| 004BD | ±4 bar | 400KD | ±400 kPa | | |

| <i>Gage</i> | | <i>Gage</i> | | <i>Gage</i> | |
|--------------|--------------------|--------------|------------------|--------------|------------------|
| 060MG | 0 mbar to 60 mbar | 006KG | 0 kPa to 6 kPa | 001PG | 0 psi to 1 psi |
| 100MG | 0 mbar to 100 mbar | 010KG | 0 kPa to 10 kPa | 005PG | 0 psi to 5 psi |
| 160MG | 0 mbar to 160 mbar | 016KG | 0 kPa to 16 kPa | 015PG | 0 psi to 15 psi |
| 250MG | 0 mbar to 250 mbar | 025KG | 0 kPa to 25 kPa | 030PG | 0 psi to 30 psi |
| 400MG | 0 bar to 400 mbar | 040KG | 0 kPa to 40 kPa | 060PG | 0 psi to 60 psi |
| 600MG | 0 bar to 600 mbar | 060KG | 0 kPa to 60 kPa | 100PG | 0 psi to 100 psi |
| 001BG | 0 bar to 1 bar | 100KG | 0 kPa to 100 kPa | 150PG | 0 psi to 150 psi |
| 1.6BG | 0 bar to 1.6 bar | 160KG | 0 kPa to 160 kPa | | |
| 2.5BG | 0 bar to 2.5 bar | 250KG | 0 kPa to 250 kPa | | |
| 004BG | 0 bar to 4 bar | 400KG | 0 kPa to 400 kPa | | |
| 006BG | 0 bar to 6 bar | 600KG | 0 kPa to 600 kPa | | |
| 010BG | 0 bar to 10 bar | 001GG | 0 kPa to 1 MPa | | |

¹ The transfer function limits define the output of the sensor at a given pressure input. By specifying Pmin. and Pmax., the output at Pmin. and Pmax., the complete transfer function of the sensor is defined. See the graphical representations of the transfer function in Figure 2 of the product datasheet.

² Custom pressure ranges are available. Contact Honeywell Customer Service for more information.

³ See the explanation of sensor pressure types in Table 4 of the product datasheet.

COMMON CATALOG LISTINGS

| | |
|-----------------|-----------------|
| ABPLLND060MGAA3 | ABPMAND001PG2A3 |
| ABPLLNN600MGAA3 | ABPLANN001PG2A5 |
| ABPMANN005PGAA3 | ABPDANT005PGAA5 |
| ABPMANN004BGAA5 | ABPDANT015PGAA5 |
| ABPMLNN001PGAA3 | ABPLLNT010BGAA5 |
| ABPMANN030PG2A3 | ABPDJTT001PGAA5 |
| ABPDLNN100MG2A3 | ABPDRRT005PG2A5 |
| ABPDANN005PG2A3 | ABPMJTT015PGAA5 |

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Pressure Range Specifications

Table 7. Pressure Range Specifications

| Pressure Range (see Figure 3) | Pressure Range | | Unit | Overpressure ¹ | Burst Pressure ² | Common Mode Pressure ³ | Total Error Band ⁴ (%FSS) | Long-term Stability 1000 hr, 25 °C (%FSS) |
|----------------------------------|----------------|-------|------|---------------------------|-----------------------------|-----------------------------------|---|---|
| | Pmin. | Pmax. | | | | | | |
| 60 mbar to 10 bar | | | | | | | | |
| Differential | | | | | | | | |
| 060MD | -60 | 60 | mbar | 850 | 1000 | 10000 | ±1.5 | ±0.25 |
| 100MD | -100 | 100 | mbar | 1400 | 2500 | 10000 | ±1.5 | ±0.25 |
| 160MD | -160 | 160 | mbar | 1400 | 2500 | 10000 | ±1.5 | ±0.25 |
| 250MD | -250 | 250 | mbar | 1400 | 2500 | 10000 | ±1.5 | ±0.25 |
| 400MD | -400 | 400 | mbar | 2000 | 4000 | 10000 | ±1.5 | ±0.25 |
| 600MD | -600 | 600 | mbar | 2000 | 4000 | 10000 | ±1.5 | ±0.25 |
| 001BD | -1 | 1 | bar | 4 | 8 | 10 | ±1.5 | ±0.25 |
| 1.6BD | -1.6 | 1.6 | bar | 8 | 16 | 10 | ±1.5 | ±0.25 |
| 2.5BD | -2.5 | 2.5 | bar | 8 | 16 | 10 | ±1.5 | ±0.25 |
| 004BD | -4.0 | 4.0 | bar | 16 | 17 | 10 | ±1.5 | ±0.25 |
| Gage | | | | | | | | |
| 060MG | 0 | 60 | mbar | 850 | 1000 | 5450 | ±1.5 | ±0.25 |
| 100MG | 0 | 100 | mbar | 850 | 1000 | 10000 | ±1.5 | ±0.25 |
| 160MG | 0 | 160 | mbar | 850 | 1000 | 10000 | ±1.5 | ±0.25 |
| 250MG | 0 | 250 | mbar | 1400 | 2500 | 10000 | ±1.5 | ±0.25 |
| 400MG | 0 | 400 | mbar | 2000 | 4000 | 10000 | ±1.5 | ±0.25 |
| 600MG | 0 | 600 | mbar | 2000 | 4000 | 10000 | ±1.5 | ±0.25 |
| 001BG | 0 | 1 | bar | 2 | 4 | 10 | ±1.5 | ±0.25 |
| 1.6BG | 0 | 1.6 | bar | 4 | 8 | 10 | ±1.5 | ±0.25 |
| 2.5BG | 0 | 2.5 | bar | 8 | 16 | 10 | ±1.5 | ±0.25 |
| 004BG | 0 | 4 | bar | 8 | 16 | 16 | ±1.5 | ±0.25 |
| 006BG | 0 | 6 | bar | 17 | 17 | 17 | ±1.5 | ±0.25 |
| 010BG | 0 | 10 | bar | 17 | 17 | 17 | ±1.5 | ±0.25 |
| 6 kPa to 1 MPa | | | | | | | | |
| Differential | | | | | | | | |
| 006KD | -6 | 6 | kPa | 85 | 100 | 1000 | ±1.5 | ±0.25 |
| 010KD | -10 | 10 | kPa | 140 | 250 | 1000 | ±1.5 | ±0.25 |
| 016KD | -16 | 16 | kPa | 140 | 250 | 1000 | ±1.5 | ±0.25 |
| 025KD | -25 | 25 | kPa | 140 | 250 | 1000 | ±1.5 | ±0.25 |
| 040KD | -40 | 40 | kPa | 200 | 400 | 1000 | ±1.5 | ±0.25 |
| 060KD | -60 | 60 | kPa | 200 | 400 | 1000 | ±1.5 | ±0.25 |
| 100KD | -100 | 100 | kPa | 400 | 800 | 1000 | ±1.5 | ±0.25 |
| 160KD | -160 | 160 | kPa | 800 | 1600 | 1000 | ±1.5 | ±0.25 |
| 250KD | -250 | 250 | kPa | 800 | 1600 | 1000 | ±1.5 | ±0.25 |
| 400KD | -400 | 400 | kPa | 1600 | 1700 | 1000 | ±1.5 | ±0.25 |
| Gage | | | | | | | | |
| 006KG | 0 | 6 | kPa | 85 | 100 | 545 | ±1.5 | ±0.25 |
| 010KG | 0 | 10 | kPa | 85 | 100 | 1000 | ±1.5 | ±0.25 |
| 016KG | 0 | 16 | kPa | 85 | 100 | 1000 | ±1.5 | ±0.25 |
| 025KG | 0 | 25 | kPa | 140 | 250 | 1000 | ±1.5 | ±0.25 |
| 040KG | 0 | 40 | kPa | 200 | 400 | 1000 | ±1.5 | ±0.25 |
| 060KG | 0 | 60 | kPa | 200 | 400 | 1000 | ±1.5 | ±0.25 |
| 100KG | 0 | 100 | kPa | 200 | 400 | 1000 | ±1.5 | ±0.25 |
| 160KG | 0 | 160 | kPa | 400 | 800 | 1000 | ±1.5 | ±0.25 |
| 250KG | 0 | 250 | kPa | 800 | 1600 | 1000 | ±1.5 | ±0.25 |
| 400KG | 0 | 400 | kPa | 800 | 1600 | 1600 | ±1.5 | ±0.25 |
| 600KG | 0 | 600 | kPa | 1700 | 1700 | 1700 | ±1.5 | ±0.25 |
| 001GG | 0 | 1 | MPa | 1.7 | 1.7 | 1.7 | ±1.5 | ±0.25 |

¹Overpressure: The maximum pressure which may safely be applied to the product for it to remain in specification once pressure is returned to the operating pressure range. Exposure to higher pressures may cause permanent damage to the product. Unless otherwise specified this applies to all available pressure ports at any temperature with the operating temperature range.

²Burst pressure: The maximum pressure that may be applied to any port of the product without causing escape of pressure media. Product should not be expected to function after exposure to any pressure beyond the burst pressure.

³Common mode pressure: The maximum pressure that can be applied simultaneously to both ports of a differential pressure sensor without causing changes in specified performance.

⁴Total Error Band: The maximum deviation from the ideal transfer function over the entire compensated temperature and pressure range. Includes all errors due to offset, full scale span, pressure non-linearity, pressure hysteresis, repeatability, thermal effect on offset, thermal effect on span, and thermal hysteresis.

Pressure Range Specifications

PCB Pad Layouts

Table 7. Pressure Range Specifications (continued)

| Pressure Range (see Figure 3) | Pressure Range | | Unit | Overpressure ¹ | Burst Pressure ² | Common Mode Pressure ³ | Total Error Band ⁴ (%FSS) | Long-term Stability 1000 hr, 25 °C (%FSS) |
|----------------------------------|----------------|-------|------|---------------------------|-----------------------------|-----------------------------------|---|---|
| | Pmin. | Pmax. | | | | | | |
| 1 psi to 150 psi | | | | | | | | |
| Differential | | | | | | | | |
| 001PD | -1 | 1 | psi | 10 | 15 | 150 | ±1.5% | ±0.25% |
| 005PD | -5 | 5 | psi | 30 | 40 | 150 | ±1.5% | ±0.25% |
| 015PD | -15 | 15 | psi | 60 | 120 | 150 | ±1.5% | ±0.25% |
| 030PD | -30 | 30 | psi | 120 | 240 | 150 | ±1.5% | ±0.25% |
| 060PD | -60 | 60 | psi | 250 | 250 | 250 | ±1.5% | ±0.25% |
| Gage | | | | | | | | |
| 001PG | 0 | 1 | psi | 10 | 15 | 150 | ±1.5% | ±0.25% |
| 005PG | 0 | 5 | psi | 30 | 40 | 150 | ±1.5% | ±0.25% |
| 015PG | 0 | 15 | psi | 30 | 60 | 150 | ±1.5% | ±0.25% |
| 030PG | 0 | 30 | psi | 60 | 120 | 150 | ±1.5% | ±0.25% |
| 060PG | 0 | 60 | psi | 120 | 240 | 250 | ±1.5% | ±0.25% |
| 100PG | 0 | 100 | psi | 250 | 250 | 250 | ±1.5% | ±0.25% |
| 150PG | 0 | 150 | psi | 250 | 250 | 250 | ±1.5% | ±0.25% |

¹Overpressure: The maximum pressure which may safely be applied to the product for it to remain in specification once pressure is returned to the operating pressure range. Exposure to higher pressures may cause permanent damage to the product. Unless otherwise specified this applies to all available pressure ports at any temperature with the operating temperature range.

²Burst pressure: The maximum pressure that may be applied to any port of the product without causing escape of pressure media. Product should not be expected to function after exposure to any pressure beyond the burst pressure.

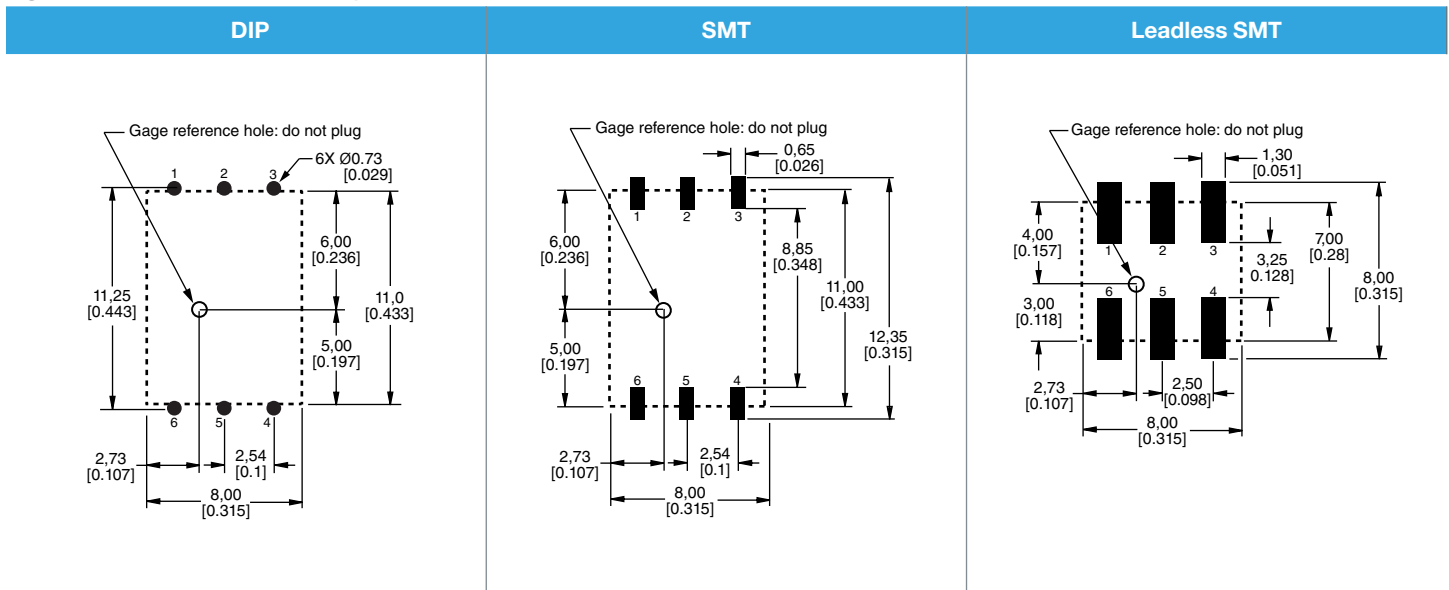
³Common mode pressure: The maximum pressure that can be applied simultaneously to both ports of a differential pressure sensor without causing changes in specified performance.

⁴Total Error Band: The maximum deviation from the ideal transfer function over the entire compensated temperature and pressure range. Includes all errors due to offset, full scale span, pressure non-linearity, pressure hysteresis, repeatability, thermal effect on offset, thermal effect on span, and thermal hysteresis.

Table 8. Pinouts

| Output Type | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 |
|---------------------------------|-------|-----------------|------------------|-------|-------|-----------------|
| Digital (I ² C, SPI) | GND | V _{DD} | SS/INT | NC | SDA | SCL |
| Analog | GND | NC | V _{out} | NC | NC | V _{DD} |

Figure 4. Recommended PCB Layouts

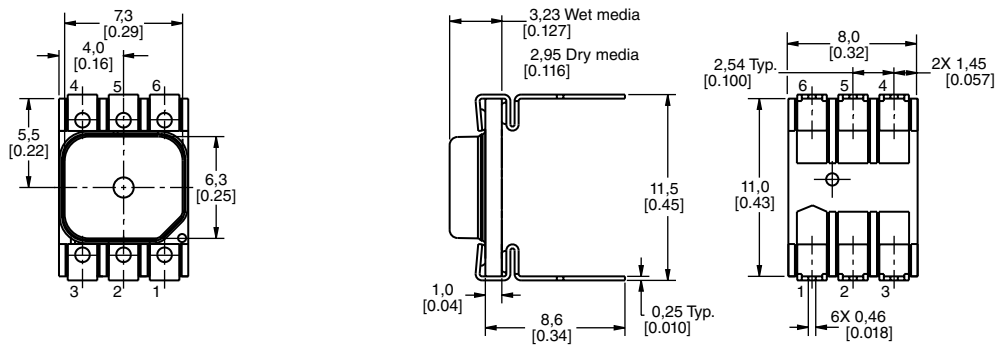


Dimensional Drawings

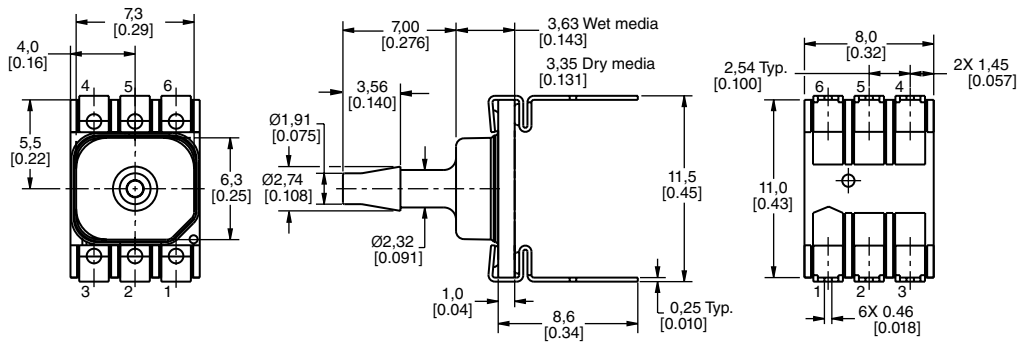
DIP Packages

Figure 5. DIP Package Dimensional Drawings (For reference only: mm [in.]

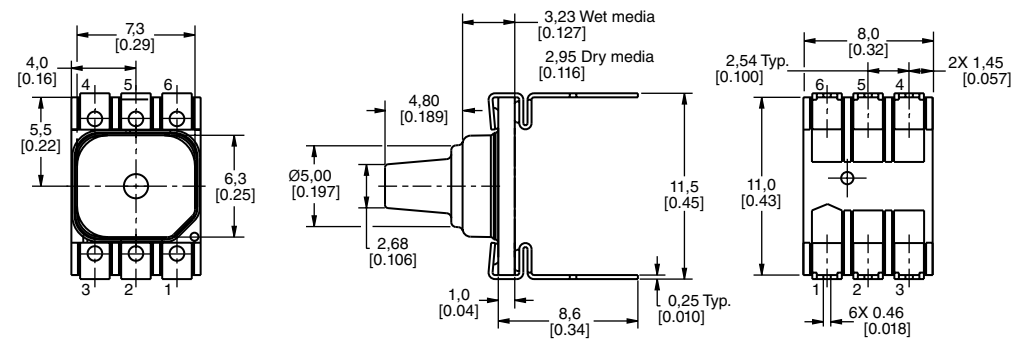
DIP NN: No port



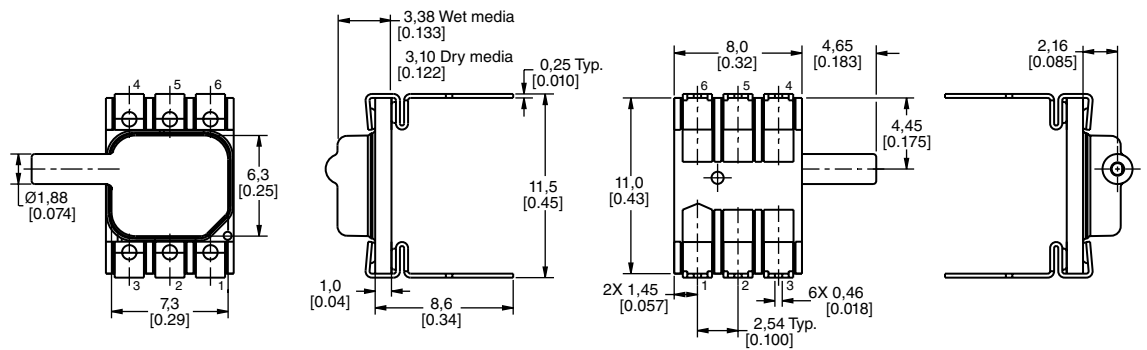
DIP AN: Single axial barbed port



DIP LN: Single axial barbless port



DIP JN: Single radial barbless port

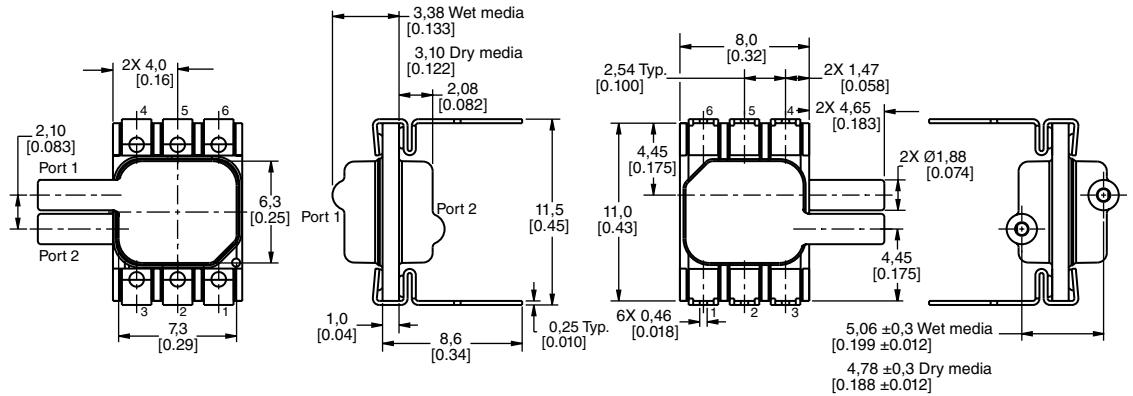


Dimensional Drawings

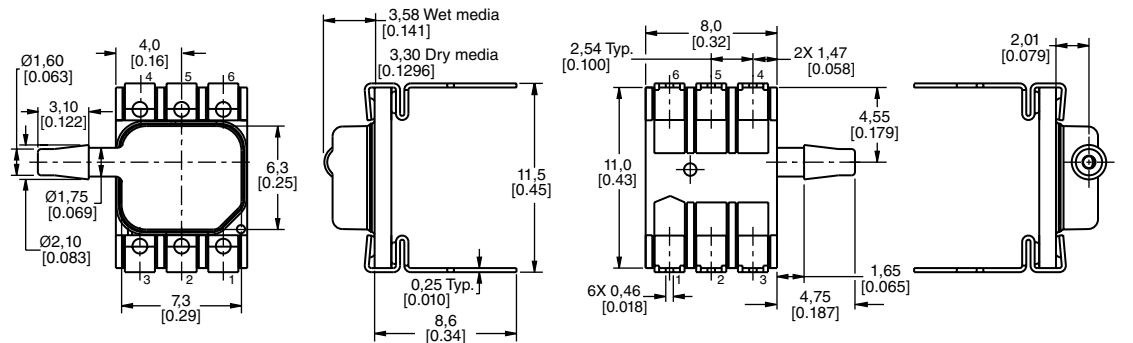
DIP Packages

Figure 5. DIP Package Dimensional Drawings (continued)

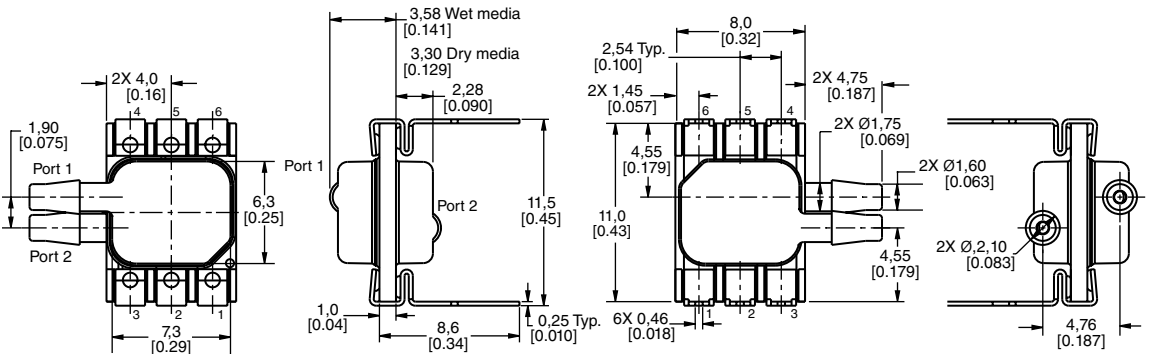
DIP JJ: Dual radial barless ports, same side



DIP RN: Single radial barbed port



DIP RR: Dual radial barbed ports, same side

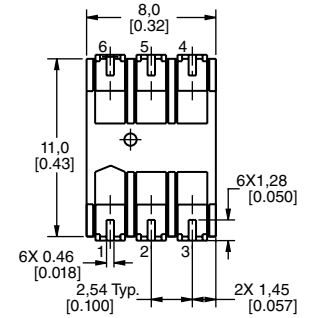
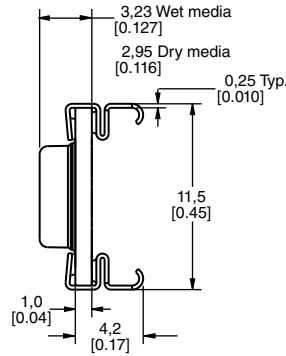
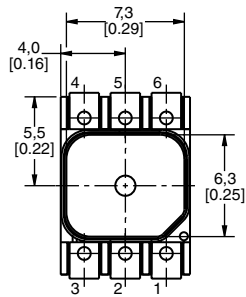


Dimensional Drawings

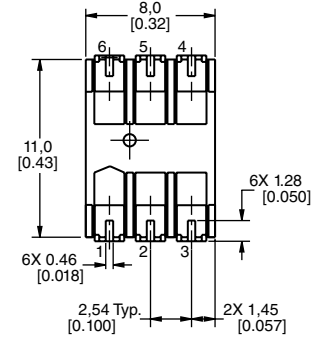
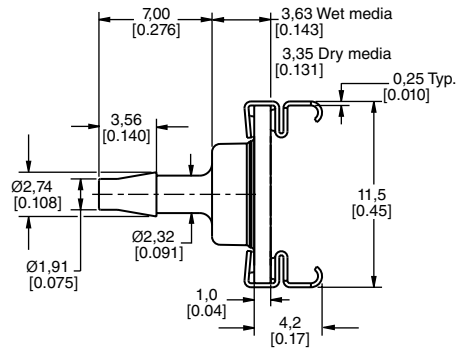
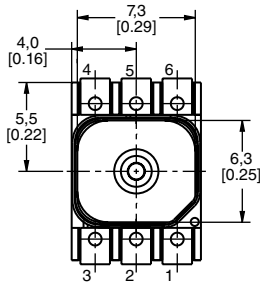
SMT Packages

Figure 6. SMT Package Dimensional Drawings (For reference only: mm [in.])

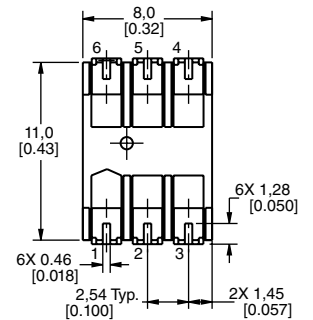
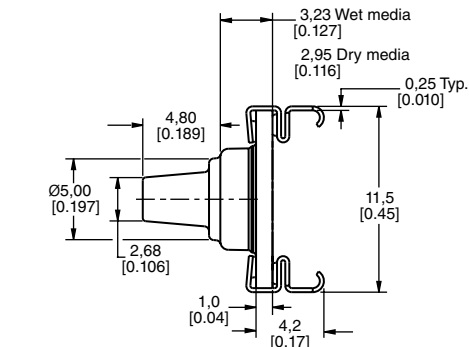
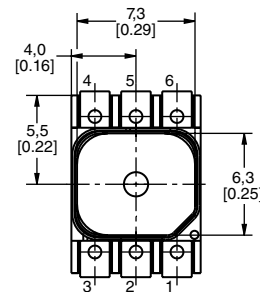
SMT NN: No port



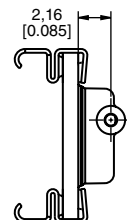
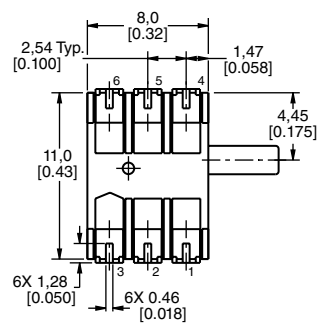
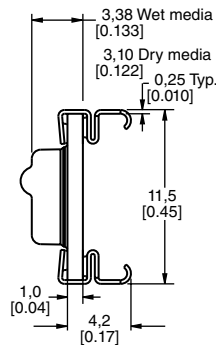
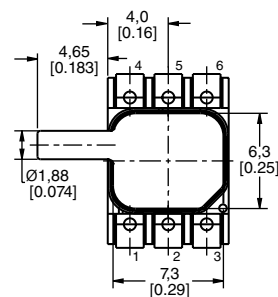
SMT AN: Single axial barbed port



SMT LN: Single axial barbless port



SMT JN: Single radial barbless port

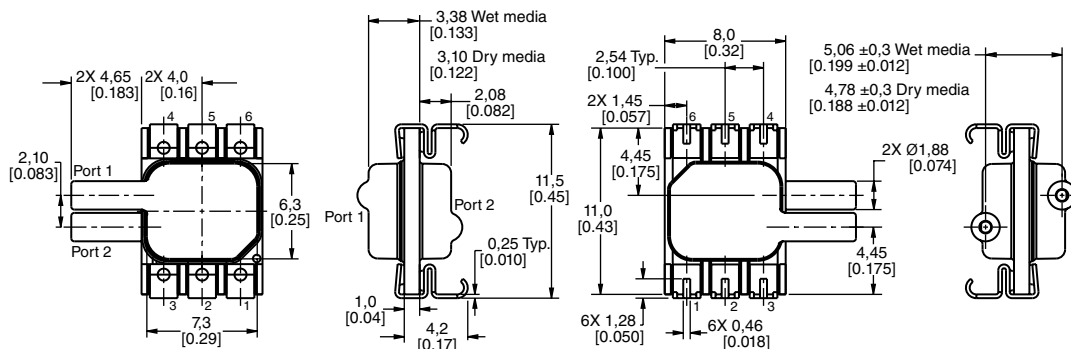


Dimensional Drawings

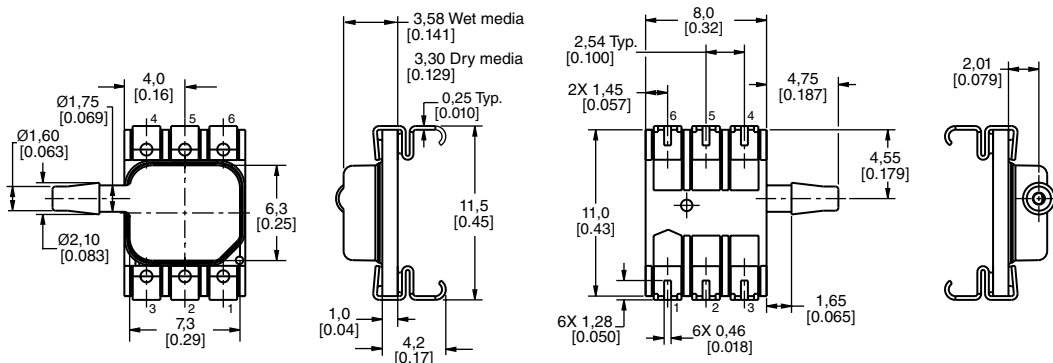
SMT Packages

Figure 6. SMT Package Dimensional Drawings (continued)

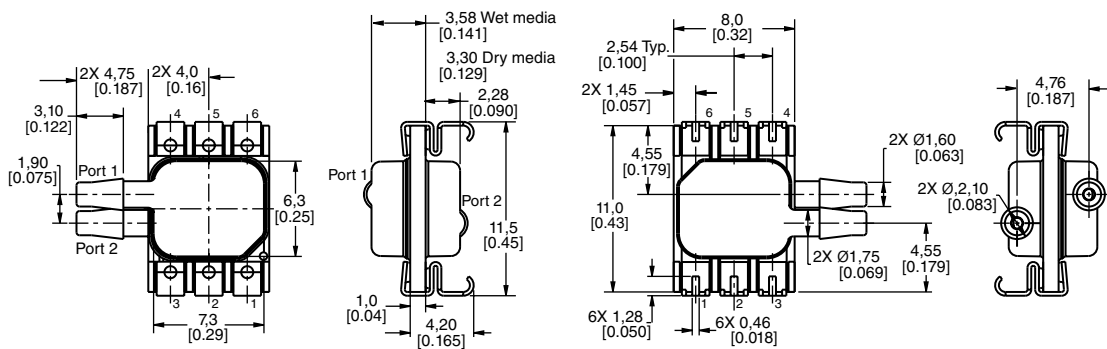
SMT JJ: Dual radial barbed ports, same side



SMT RN: Single radial barbed port



SMT RR: Dual radial barbed ports, both sides

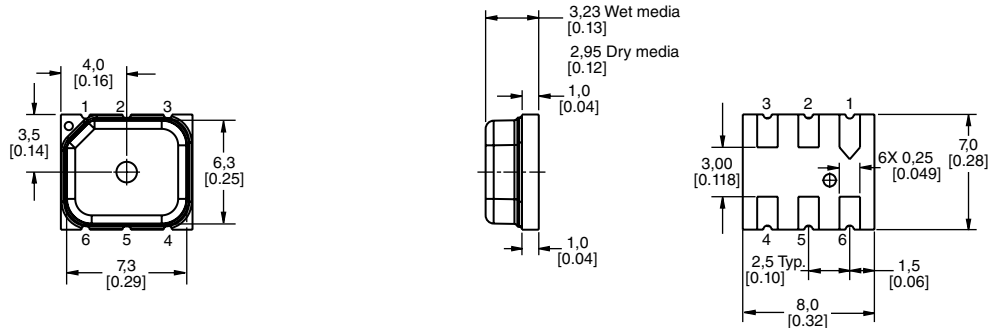


Dimensional Drawings

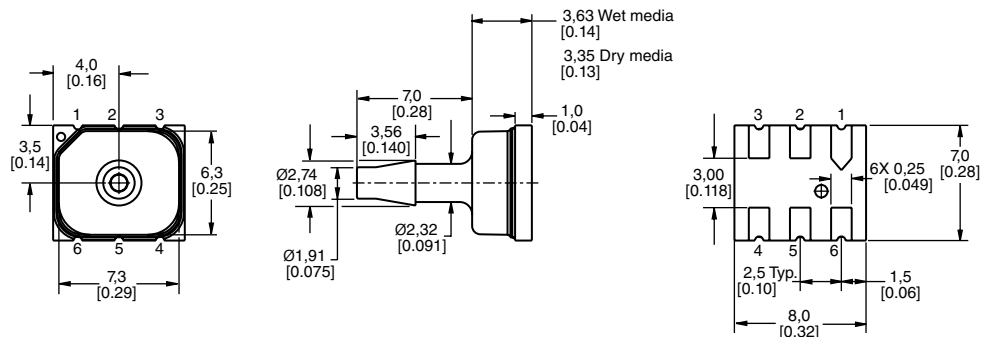
Leadless SMT Packages

Figure 7. Leadless SMT Package Dimensional Drawings (For reference only: mm [in.])

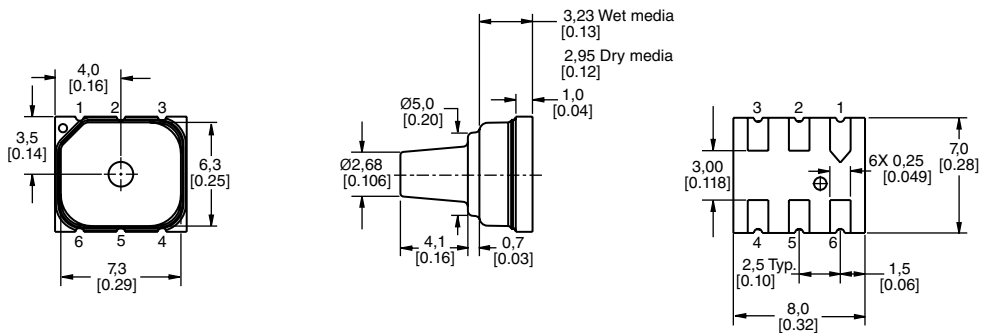
Leadless SMT AN: No port



Leadless SMT AN: Single axial barbed port



Leadless SMT AN: Single axial barbless port



ADDITIONAL INFORMATION

The following associated literature is available at sensing.honeywell.com:

- Product Line Guide
- Product Range Guide
- Product Nomenclature Tree
- Installation Instructions
- Application Information
- Technical Notes:
 - I²C Communications with Honeywell Digital Output Pressure Sensors
 - SPI Communications with Honeywell Digital Output Pressure Sensors
 - Sleep Mode with Honeywell Digital Output Pressure Sensors

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Failure to comply with these instructions could result in death or serious injury.

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- Complete installation, operation, and maintenance information is provided in the instructions supplied with each product.

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