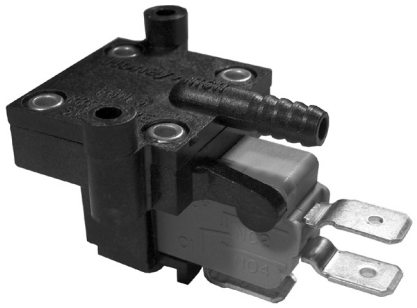
Honeywell

# PBN Series

## Pressure Switches and Sensors



### DESCRIPTION

The Honeywell PBN series is a range of versatile, low-cost, ultra-low pressure switches and sensors.

PBN products are compact, lightweight, feature high reliablity, and are designed to yield a repeatable response over millions of cycles. They can be mounted in virtually any orientation and their rugged construction allows use in the most rigorous environments.

Product specifications such as operating characteristics, termination type and contact materials can be customised for certain applications.

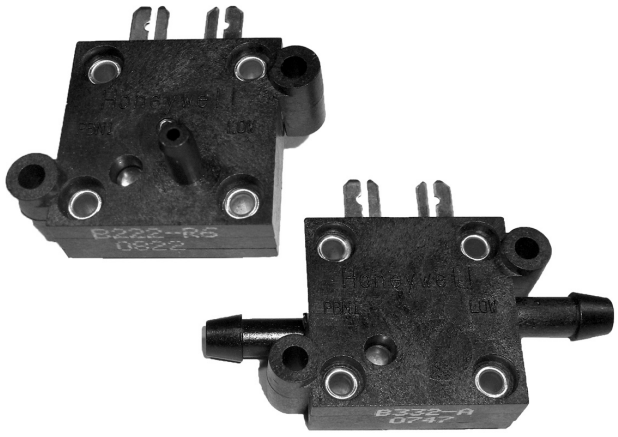
### FEATURES

- Sensitive to ultra-low pressures
- Gage, vacuum and differential measurement
- Miniature size
- Lightweight
- Fast response
- Rugged housings
- Shock and vibration resistant
- Low and high current versions

### POTENTIAL APPLICATIONS

- Arc fault detection
- Filter restriction
- Safety interlock
- HVAC
- Vacuum control
- Liquid level sensing
- Pick and place machinery
- Pump control
- Counters
- Edge detection
- Traffic counters
- Motor control

# PBN1



## DESCRIPTION

The PBN1 series is available in a wide range of actuation pressures. The required pressure can be supplied factory set or as an adjustable unit. Smooth 4 mm diameter ports perpendicular to the housing and 5 mm barbed radial ports are available. Nominal actuation pressure varies from 1 in-$H_2O$ to 50 in-$H_2O$ on factory set models. Adjustable models have actuation pressures which can be set up to 416 in-$H_2O$.

## FEATURES

- Sensitive to ultra-low pressure
- Gauge, vacuum and differential measurement
- Miniature size
- Lightweight
- Fast response
- Rugged housings
- High shock and vibration resistant versions available
- Adjustable and non-adjustable models

## POTENTIAL APPLICATIONS

- Arc fault detection
- Filter restriction
- Safety interlock
- HVAC
- Vacuum control
- Liquid level sensing
- Pick and place machinery
- Pump control
- Counters

## MECHANICAL SPECIFICATIONS

| Characteristic | Measure |
|---|---|
| Output | SPST normally open |
| Sensing medium | Air |
| Expected mechanical life | Up to 20 million cycles depending on load |
| Proof pressure | 8 psi for units where set point is 3.0 in-$H_2O$ or less; 15 psi for units where set point is greater than 3.0 in-$H_2O$ |
| Weight | Less than 10 grams |
| Operating temperature | 4 °C to 66 °C with Polyurethane (standard) diaphragm; -40 °C to 96 °C with Teflon (optional) diaphragm |
| Action pressure | Tolerance ±20 % for non-adjustable sensors except for PBN1XXXX-A which has a tolerance of +0 %/-100 % |

## PHYSICAL SPECIFICATIONS

| Characteristic | Measure |
|---|---|
| Mounting | 2,6 mm (No 4), thread size screws through mounting lugs or 2 mm (No 2) thread size screws through eyelets |
| Case material | Polycarbonate standard (other materials available upon request) |
| Contact material | Gold inlay 18 carat on phosphor bronze |
| Diaphragm material | Polyurethane (standard) Teflon (optional) |
| Electrical connections | Terminals: 4,8 x 0,5 mm tab-type (bifurcated) for use with female quick disconnects (ref. AMP 2-520182-2 or equivalent) |
| Pressure ports | Smooth perpendicular and barbed radial |
| Pressure settings | Factory set or field adjustable (see chart). Switching hysteresis = 0 % |

## ELECTRICAL SPECIFICATIONS

| Characteristic | Measure |
|---|---|
| Current rating | 40 mA resistive for life up to 20 million cycles |
| Operating voltage | ac/dc – 30 V or less with resistive load or 120 Vac neon lamp load |
| Contact resistance | 1 Ω or less at 150 % of actuation pressure |

## ORDERING INFORMATION

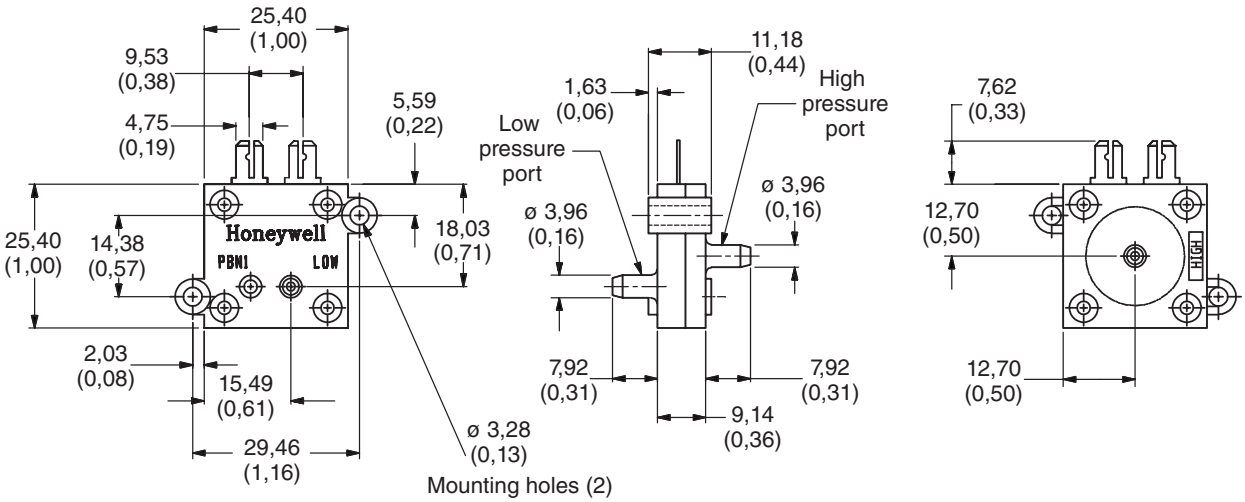
| Model Number | | Nominal Actuation Pressure | | | Proof Pressure |
|---|---|---|---|---|---|
| 4mm smooth perpendicular ports | 5mm barbed radial ports | in-$H_2O$ | mbar | psi | psi |
| PBN1B222-A | PBN1B332-A | 0.5 | 1,24 | 0.018 | 8 |
| PBN1B222-B | PBN1B332-B | 1.0 | 2,49 | 0.036 | 8 |
| PBN1B222-C | PBN1B332-C | 1.5 | 3,73 | 0.054 | 8 |
| PBN1B222-D | PBN1B332-D | 2.0 | 4,97 | 0.072 | 8 |
| PBN1B222-E | PBN1B332-E | 3.0 | 7,46 | 0.108 | 8 |
| PBN1B222-F | PBN1B332-F | 4.0 | 9,95 | 0.144 | 15 |
| PBN1B222-G | PBN1B332-G | 6.0 | 14,92 | 0.217 | 15 |
| PBN1B222-J | PBN1B332-J | 8.0 | 19,89 | 0.289 | 15 |
| PBN1B222-K | PBN1B332-K | 10.0 | 24,86 | 0.361 | 15 |
| PBN1B222-L | PBN1B332-L | 12.0 | 29,84 | 0.433 | 15 |
| PBN1B222-M | PBN1B332-M | 15.0 | 37,30 | 0.541 | 15 |
| PBN1B222-N | PBN1B332-N | 20.0 | 49,73 | 0.722 | 15 |
| PBN1B222-P | PBN1B332-P | 30.0 | 74,59 | 1.083 | 15 |
| PBN1B222-Q | PBN1B332-Q | 40.0 | 99,46 | 1.444 | 15 |
| PBN1B222-S | PBN1B332-S | 50.0 | 124,32 | 1.804 | 15 |
| **Adjustable models** | | | | | |
| PBN1B222-R6 | PBN1B332-R6 | 10.0 to 50.0 | 24,9 to 124,5 | 0.36 to 1.80 | 15 |
| PBN1B222-R7 | PBN1B332-R7 | 51.0 to 416.0 | 127.0 to 1036.0 | 1.84 to 15.01 | 15 |

Note: Electrical ratings – 40 mA. 30 V ac/dc. 120 Vac neon lamp load

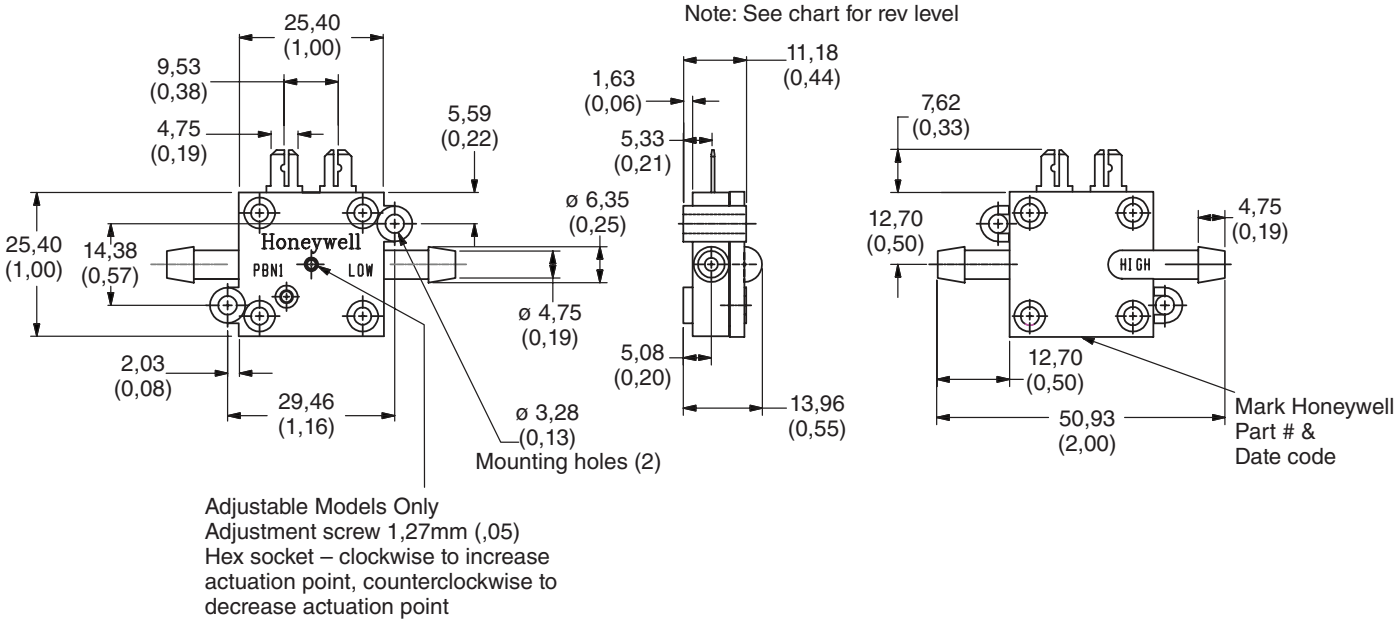
Note: Adjustable models – following adj.. set screw should be sealed using suitable RTV sealant

## DIMENSIONS

4 mm smooth perpendicular ports

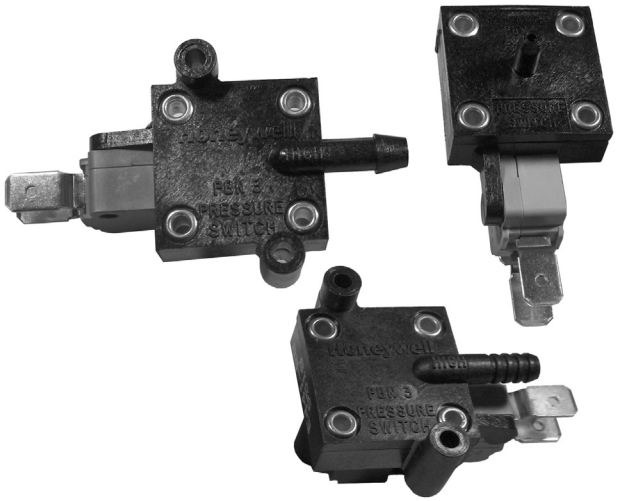



5 mm barbed radial ports



# PBN3

# High-Current, Low Pressure Sensors



## DESCRIPTION

The PBN3 series is a range of miniature, high-current, low-pressure devices which measure gauge pressure and can switch up to 16(4) A. Smooth 4 mm perpendicular ports and 5 mm barbed radial ports are available. Nominal actuation pressure varies from 1 in-$H_2O$ to 6,5 in-$H_2O$. Adjustable models have actuation pressures which can be set from 10 in-$H_2O$ to 1109 in-$H_2O$.

PBN3 devices comprise a snap-action SPDT pressure switch which contains an actuator assembly and miniature micro switch. The devices are designed to respond to positive air pressure but may also be activated by non-corrosive liquids at low pressures.

## FEATURES

- High current switching capacity
- Sensitive to low gauge pressures
- Miniature size
- Lightweight
- Fast response
- Rugged housings
- Adjustable and non-adjustable models

## POTENTIAL APPLICATIONS

- Counting
- Edge detection
- Liquid level sensing
- Traffic counters
- Motor control

## MECHANICAL SPECIFICATIONS

| Characteristic | Measure |
|---|---|
| Switch type | SPDT normally open or normally closed |
| Switching medium | Air or compatible fluids |
| Expected mechanical life | Up to five million cycles depending on load |
| Proof pressure | 15 psi for units where set point is 75 in-$H_2O$ or less; 80 psi for units where set point is greater than 75 in-$H_2O$ |
| Weight | Less than 20 grams |
| Operating temperature | 4 °C to 66 °C with Polyurethane (standard) diaphragm; -40 °C to 96 °C with Teflon (optional)diaphragm |

## PHYSICAL SPECIFICATIONS

| Characteristic | Measure |
|---|---|
| Mounting | 2,6 mm (No 4), thread size screws through mounting lugs or 2 mm (No 2) thread size screws through eyelets |
| Case material | Polycarbonate and Polyetherimide standard (other materials available upon request) (see chart) |
| Contact material | Silver (gold available on special order for “dry contact” applications) |
| Electrical connections | 6,3 mm x 0,8 mm quick connect terminals supplied on all listings except PBN3XXXX-B and -D which have 4,8 mm x 0,5 mm connections |
| Pressure ports | Smooth perpendicular and barbed radial |
| Pressure settings | Factory set or field adjustable (see chart)<br>Switching hysteresis = 25 % to 50 % of set point |

## ELECTRICAL SPECIFICATIONS

| Characteristic | Measure |
|---|---|
| Switch type | Single pole double throw |
| Switch rating | Dependent on actuation pressure (see chart) |
| Contact voltage | 250 Vac |

# PBN3

## ORDERING INFORMATION

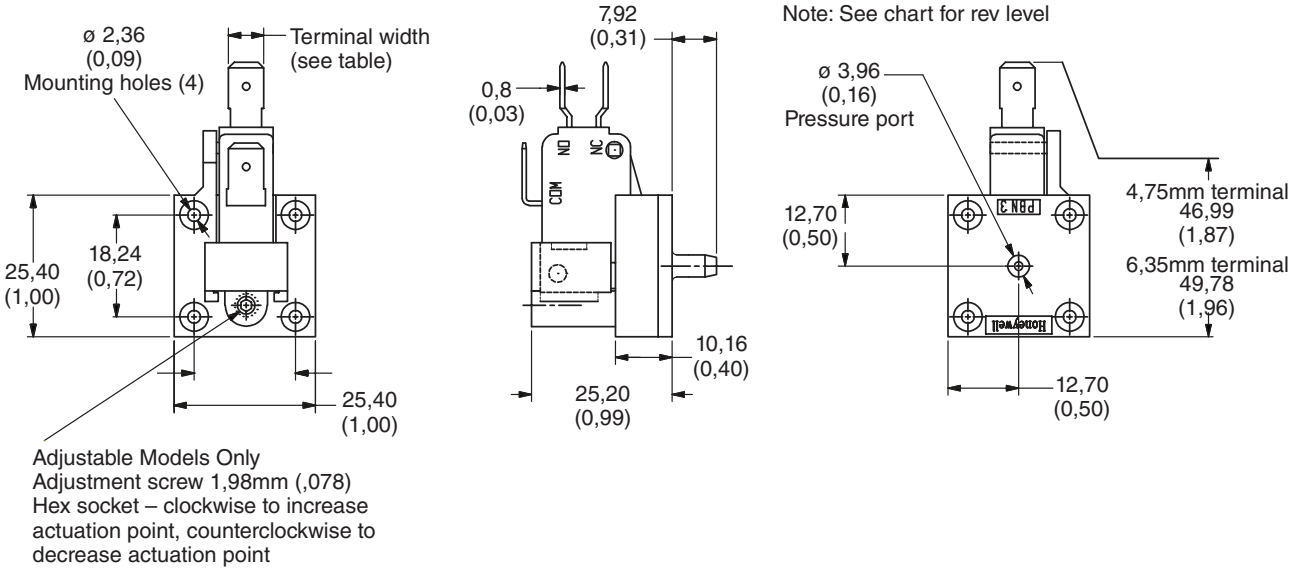
| Model Number | | | Actuation Pressure | | | | | |
|---|---|---|---|---|---|---|---|---|
| 4 mm smooth perpendicular ports | 5 mm barbed radial ports | | in-$H_2O$ | mbar | Tolerance from nominal | AMP rating | Terminal width mm | Proof pressure psi |
| | Same side as terminals | Opposite side from terminals | | | | | | |
| PBN3C421-B* | PBN3C441-B* | PBN3C451-B* | 1.0 | 2,49 | +100% -50% | 3 | 4,75 | 15 |
| PBN3C421-D* | PBN3C441-D* | PBN3C451-D* | 2.0 | 4,98 | ±20 % | 3 | 4,75 | 15 |
| PBN3C421-H | PBN3D441-H | PBN3D451-H | 6.5 | 16,19 | ±30 % | 5 | 6,35 | 15 |
| **Adjustable models** | | | | | | | | |
| PBN3D421-R1 | PBN3D441-R1 | PBN3D451-R1 | 10.0 to 28.0 | 24,9 to 69,8 | N/A | 5 | 6,35 | 15 |
| PBN3E421-R2 | PBN3E441-R2 | PBN3E451-R2 | 35.0 to 75.0 | 87,0 to 187,0 | N/A | 16 | 6,35 | 15 |
| **Listings with polyetherimide as case material** | | | | | | | | |
| PBN3E421-R8 | PBN3E441-R8 | PBN3E451-R8 | 83.0 to 416.0 | 207,0 to 1034,0 | N/A | 16 | 6,35 | 80 |
| PBN3E421-R9 | PBN3E441-R9 | PBN3E451-R9 | 416.0 to 1109.0 | 1034,0 to 2758,0 | N/A | 16 | 6,35 | 80 |

Note: Contact voltage 250 Vac max

*Supplied with terminals 4, 8mm x 0,5 mm instead of standard 6,3 mm x 0,8 mm

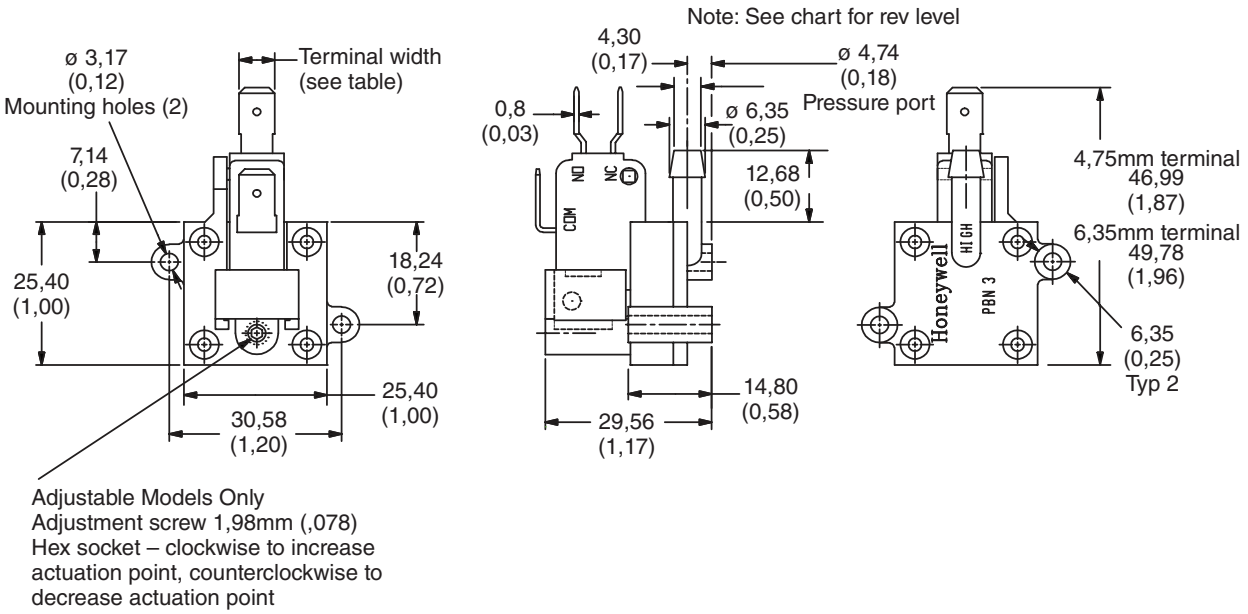
## DIMENSIONS

4mm smooth perpendicular ports

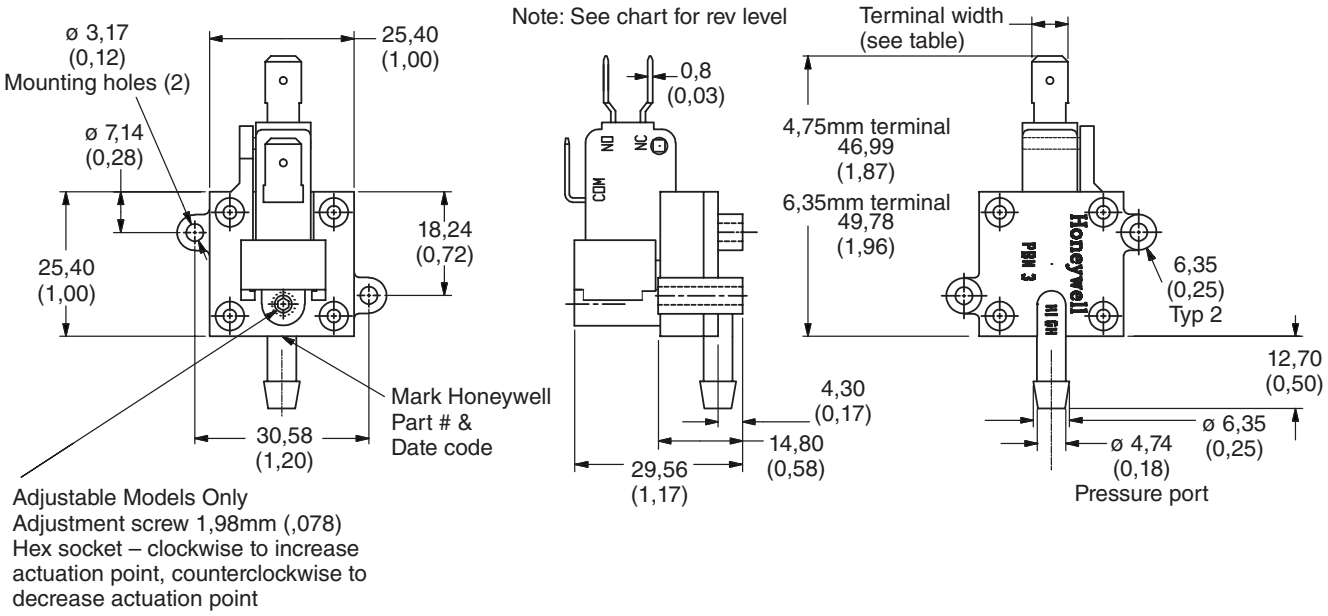


# High-Current, Low Pressure Sensors

5 mm barbed radial ports, opposite side from terminals




5 mm barbed radial ports, same side from terminals



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

**⚠ WARNING**

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- The information presented in this catalogue is for reference only. DO NOT USE this document as product installation information.
- Complete installation, operation and maintenance information is provided in the instructions supplied with each product.

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Sensing and Control
Honeywell
1985 Douglas Drive North
Golden Valley, MN 55422 USA
+1-815-235-6847
**www.honeywell.com/sensing**

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