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-H₂O to 50 in-H₂O on factory set models. Adjustable models have actuation pressures which can be set up to 416 in-H₂O.

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 ₂ O or less; 15 psi for units where set point is greater than 3.0 in-H ₂ O			
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

Honeywell

Ultra-Low Pressure Sensors

ORDERING INFORMATION

Model Number		Nominal Actuation Pressure			Proof Pressure	
4mm smooth perpendicular ports	5mm barbed radial ports	in-H ₂ O	mbar	psi	psi	
PBN1B222-A	N1B222-A PBN1B332-A		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		15	

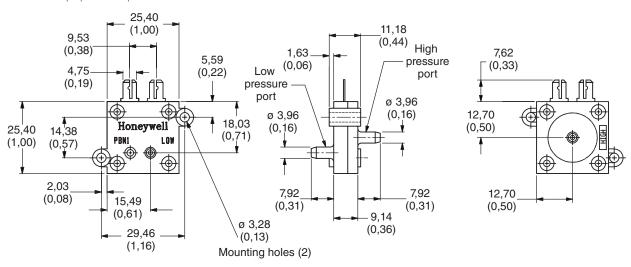
Note: Electrical ratings – 40 mA. 30 V ac/dc. 120 Vac neon lamp load

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

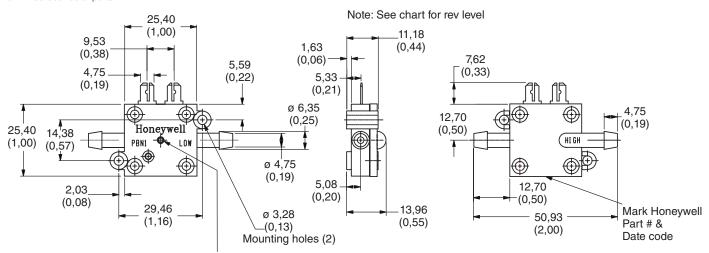
Ultra-Low Pressure Sensors

DIMENSIONS

4 mm smooth perpendicular ports



5 mm barbed radial ports



Adjustable Models Only Adjustment screw 1,27mm (,05) Hex socket – clockwise to increase actuation point, counterclockwise to decrease actuation point

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-H₂O to 6,5 in-H₂O. Adjustable models have actuation pressures which can be set from 10 in-H₂O to 1109 in-H₂O.

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 ₂ O or less; 80 psi for units where set point is greater than 75 in-H ₂ O			
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) 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

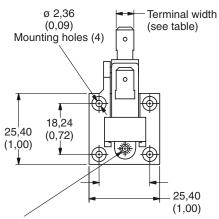
ORDERING INFORMATION

Model Number			Actuation Pressure			1	1	,
4 mm smooth	5 mm barbed radial ports		in-H ₂ O	mbar	Tolerance	AMP	Terminal	Proof pressure
perpendicular ports	Same side Opposite side as terminals from terminals from nominal	1	rating	width mm	psi			
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 mode	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

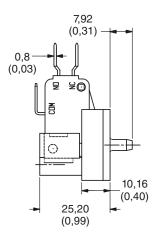
Note: Contact voltage 250 Vac max

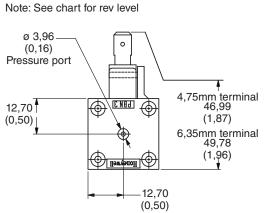
DIMENSIONS

4mm smooth perpendicular ports



Adjustable Models Only Adjustment screw 1,98mm (,078) Hex socket – clockwise to increase actuation point, counterclockwise to decrease actuation point

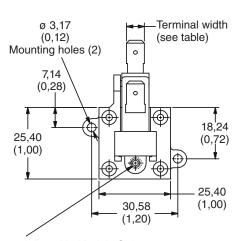




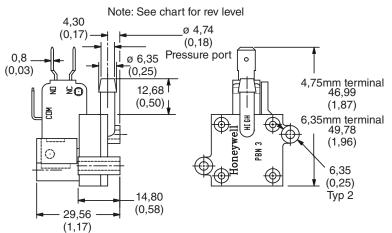
^{*}Supplied with terminals 4, 8mm x 0,5 mm instead of standard 6,3 mm x 0,8 mm

High-Current, Low Pressure Sensors

5 mm barbed radial ports, opposite side from terminals



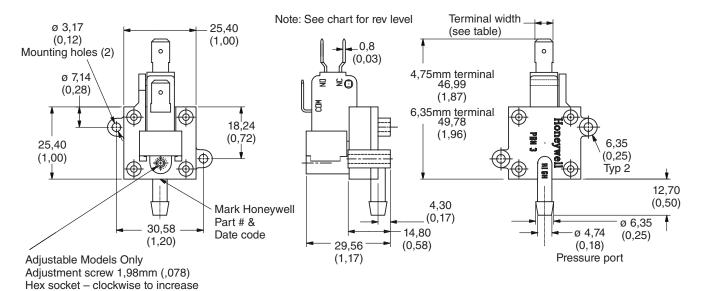
Adjustable Models Only Adjustment screw 1,98mm (,078) Hex socket – clockwise to increase actuation point, counterclockwise to decrease actuation point



5 mm barbed radial ports, same side from terminals

actuation point, counterclockwise to

decrease actuation point



PBN Series

Pressure Switches and Sensors

Warranty. Honeywell warrants goods of its manufacture as being free of defective materials and faulty workmanship. Honeywell's standard product warranty applies unless agreed to otherwise by Honeywell in writing; please refer to your order acknowledgement or consult your local sales office for specific warranty details. If warranted goods are returned to Honeywell during the period of coverage, Honeywell will repair or replace, at its option, without charge those items it finds defective. The foregoing is buyer's sole remedy and is in lieu of all warranties, expressed or implied, including those of merchantability and fitness for a particular purpose. In no event shall Honeywell be liable for consequential, special, or indirect damages.

While we provide application assistance personally, through our literature and the Honeywell web site, it is up to the customer to determine the suitability of the product in the application.

Specifications may change without notice. The information we supply is believed to be accurate and reliable as of this printing. However, we assume no responsibility for its use.

For more information about Sensing and Control products, visit www.honeywell.com/sensing or call +1-815-235-6847 Email inquiries to info.sc@honeywell.com



• DO NOT USE these products as safety or emergency stop devices or in any other application where failure of the product could result in personal injury.

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

A WARNING

MISUSE OF DOCUMENTATION

- 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.

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

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