

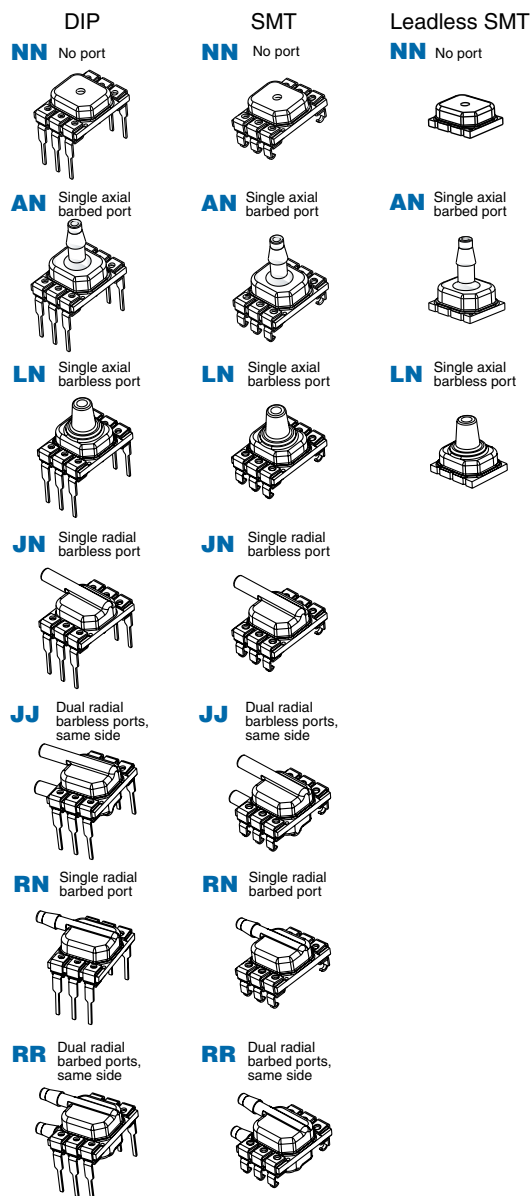
Technical Note

Pneumatic Interface Recommendations for Honeywell Basic Board Mount Pressure Sensors: ABP Series, Compensated/Amplified

1.0 INTRODUCTION

There are several methods to pneumatically connect Honeywell's Basic Board Mount Pressure Sensors: ABP Series, to the end user's system, depending on the porting selected for the sensor (see Figure 1).

Figure 1. ABP Series Pressure Ports



2.0 TUBING

Tubing is a common method of pneumatically connecting to the sensors, and, depending on the working pressure range and operating temperature, the corresponding type of tubing can be selected (i.e., Superthane®, silicone, and vinyl).

Silicone tubing, for instance, tends to be the easiest to connect to but its working pressure is not as high as the other materials.

The lower the shore for the tubing, the easier it is to insert the tubing onto the sensor's port. However, the lower shore tubing also has lower working pressures. For working pressures of 20 psi and below, silicone or vinyl tubing tends to be used; for pressures above 20 psi, Superthane® or low-density polyethylene tubing can be considered.

The tubing used needs to be matched to the application to provide the required operating temperature range and working pressure. Table 1 shows some recommended tubing for Honeywell's Basic Board Mount Pressure Sensors.

Table 1. Recommended Tubing for ABP Series

Port	Manufacturer	Type	Part Number	ID (in)	OD (in)	Pressure at 25 °C (psi)
AN	Frelin-Wade	Fre-Thane (polyurethane)	1A-156-11	0.093	0.156	210
AN	Frelin-Wade	nylon	1A-200-01	0.093	0.125	270
AN	NewAGE Industries	PVC	1100225	0.094	0.156	42
AN	NewAGE Industries	silicone	2800315	0.094	0.156	20
JN, JJ, RN, RR	Frelin-Wade	Fre-Thane	95a-157	0.066	0.125	255
JN, JJ, RN, RR	NewAGE Industries	Superthane (ether)	2110535	0.066	0.125	135
JN, RN	NewAGE Industries	silicone	2800161	0.063	0.188	20
JN, JJ, RN, RR	DU-Bro	silicone	196 1/16 ID	0.063	0.125	20
JN, JJ, RN, RR	Us Plastics	Excelthane polyurethane	77901710	0.063	0.125	70

Technical Note

Pneumatic Interface Recommendations for Honeywell Basic Board Mount Pressure Sensors: ABP Series, Compensated/Amplified

NOTICE

A technique sometimes used to apply a more rigid tubing-to-port connection is to use a low power heat gun to slightly heat the tubing. Once cooled, the tubing tends to grip the port better.

3.0 O-RINGS

O-rings may also be used to connect pneumatically to the sensor. This method is generally used for devices with the **JN**, **JJ**, **LN**, and **NN** port options (see Figure 1).

- For the **JN**, **JJ**, and **NN** port options, a 2-004 size 70 shore O-ring is recommended.
- For the **LN** port option, a 2-006 size O-ring 70 shore is recommended.
- Most O-ring manufacturers recommend a compression of 20% to 25% to provide the proper O-ring compression over the temperature range.
- Silicone or fluorosilicone O-rings are commonly used as they tend to take less of a set over temperature verses other O-ring materials.

4.0 CLAMPING

Generally, when the working pressure is 15 psi or less, clamps are typically not required. As each application is different, the end use must be taken into account before determining whether clamps are necessary to ensure that the tubing remains in place and doesn't leak. Such considerations include vibration, pressure spikes, and the tubing being used. A common method of clamping is to use a plastic cable tie such as can be found in most hardware stores. Ties are available in a variety of sizes. They are relatively easy to install and stay in place over time.

NOTICE

A small drop of epoxy can be either applied to the port prior to the tubing being placed onto the port or applied at the end of the tubing once the tubing is in place instead of a clamp. This holds the tubing in place and can further act as a sealing agent to help ensure a leak-tight connection between the port and tubing. A room temperature sealant is generally used for this purpose. Ensure that the epoxy doesn't block the hole in the port as it needs to remain open.

Find out more

To learn more about Honeywell's sensing and control products, call **1-800-537-6945**, visit **sensing.honeywell.com**, or e-mail inquiries to **info.sc@honeywell.com**

Sensing and Control
Honeywell
1985 Douglas Drive North
Golden Valley, MN 55422
honeywell.com

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.