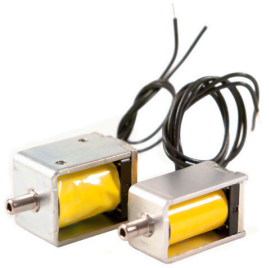
PND Series Miniature Pneumatic Solenoid Valve

10 mm Normally Open Exhaust Valve



The PND Series miniature pneumatic solenoid valve is an economical 2-way normally open exhaust valve designed for rapid pressure relief. The PND Series miniature pneumatic solenoid valve is the perfect solution for safety oriented applications that require pressure relief to atmosphere upon power loss.

Typical Applications

- Non-Invasive Blood Pressure Devices
- Normally Open Fail-Safe Exhaust

Features

- Compact, economical design to reduce size and cost of integration
- Normally Open configuration to ensure rapid deflation upon power loss
- Low power design reduces heat generation and power consumption
- Proven performance tested to 250,000 life cycles
- RoHS compliant

Product Specifications

Mechanical

Valve Type:
2 Port, Direct-acting poppet style
- Normally Open (NO)

Media:
Air, Nitrogen, Argon, Carbon Dioxide, & other non-reacting gasses

Operating Environment:
32 to 131°F (0 to 55°C)

Storage Temperature:
-13 to 158°F (-25 to 70°C)

Dimensions:
PND-05D:
- Length: 1.01 in (25.7 mm)
- Width: 0.39 (10.0 mm)
- Height: 0.47 in (12.0 mm)

Porting:
Single Barb for 0.078” (2.0 mm) I.D. Tubing

Weight (Typical):
PND-05A: 0.60 oz (17.0 g)
PND-05D: 0.40 oz (11.4 g)

Internal Volume:
PND-05A: 0.0035 in^3 (0.056 cm^3)
PND-05D: 0.0025 in^3 (0.041 cm^3)

Filtration:
40 micron (recommended)

Electrical

Power:
PND-05A: 0.36 Watt
PND-05D: 0.50 Watt

Voltage:
3, 6 or 12 VDC
Further power reduction can be achieved with the use of PWM control.

Wetted Materials

Bobbin:
PBT (Polybutylene terephthalate)

Plunger/Barb:
SUM24L Steel

Seal:
Silicone

Frame:
SPCC Steel (Treatment: MFZn-c)

Other:
304 Stainless Steel

Performance Characteristics

Leak Rate:
< 0.016 sccm of air

Response:
< 100 ms cycling

Pressure:
0 to 6 psig (0.4 bar)

Orifice Sizes/Equivalent Cv:
PND-05A:
0.050” (1.27 mm) / 0.035
PND-05D:
0.030” (0.75 mm) / 0.017

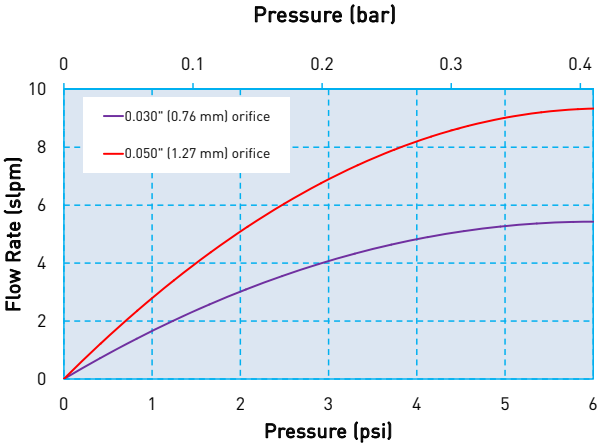
Reliability:
Life cycle rating of 250,000 cycles (worst case tested, no performance degradation)

PND Series Miniature Pneumatic Solenoid Valves

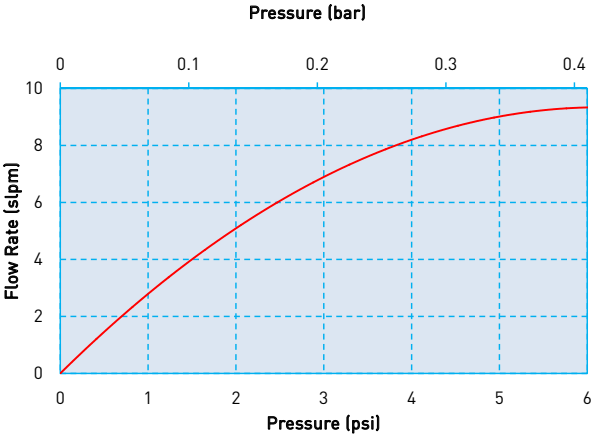
Typical Flow Curve

All Models

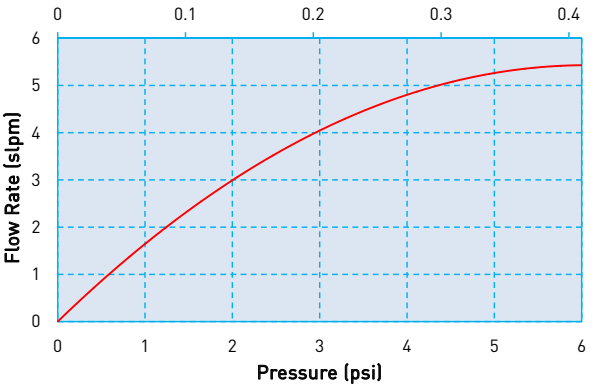
(Tested w/air 24° C)



Model PND-05A – 0.050" (1.27 mm) Orifice



Model PND-05D – 0.030" (0.76 mm)



PND Series Miniature Pneumatic Solenoid Valves

Pressure and Flow Capabilities/Power

Model No.	Orifice Size	Nominal Cv	Maximum Supply Pressure	Power Consumption
PND-05A	0.050 in (1.27 mm)	0.035	6 psig (0.4 bar)	0.36 Watt
PND-05D	0.030 in (0.76 mm)	0.017	6 psig (0.4 bar)	0.50 Watt

Pneumatic Interface

PND Series 05D



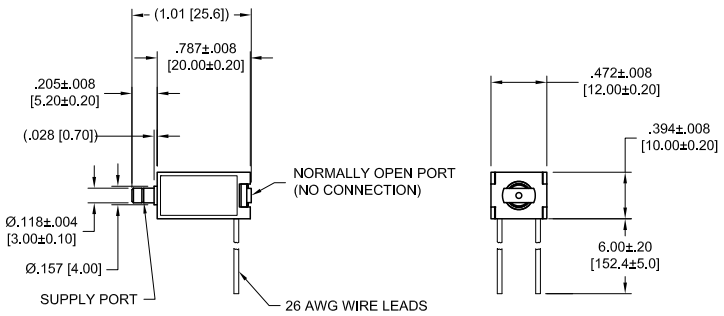
PDN Series 05A



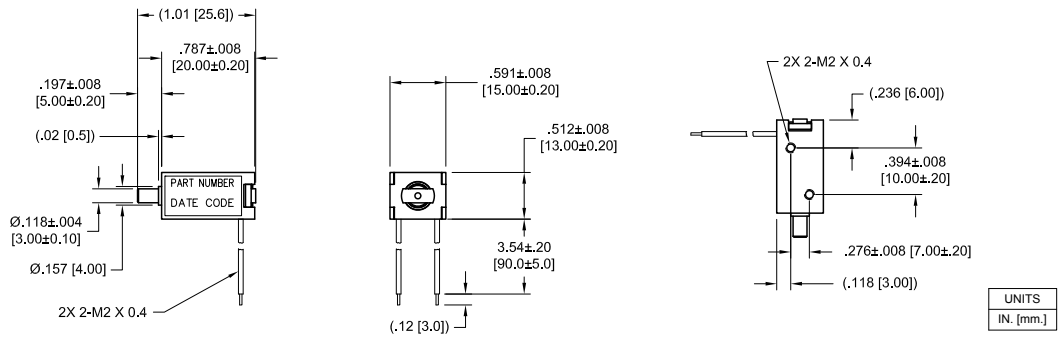
Mechanical Integration

Dimensions

Basic Dimensions, PND-05D



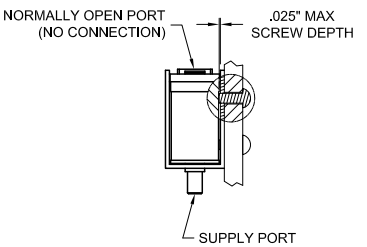
Basic Dimensions, PND-05A



PND Series Miniature Pneumatic Solenoid Valves

Installation and Use

Mounting Guidelines (PND-05A Only)



Ordering Information

Sample Part ID	PND	-	05D	-	12
Description	**Series**	**-**	**Model: Orifice / Power**	**-**	**Voltage**
Options	PND		05A: 0.050" / 0.36 Watt 05D: 0.030" / 0.50 Watt		03: 3 VDC 06: 6 VDC 12:12 VDC

ORDER ON-LINE

NOTE: In order to provide the best possible solution for your application, please provide the following requirements when contacting Applications Engineering:

- Media, Inlet & Outlet Pressures
- Minimum Required Flow Rate
- System Supply Voltage
- Media
- Ambient Temperature Range

Please click on the Order On-line button (or go to www.parker.com/precisionfluidics/pndvalve) to configure your PND Miniature Pneumatic Solenoid Valve. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002198-001 and Drawing #s: PND-05A-DWG and PND-05D-DWG.

PPF-MSV-002/US July 2016

For more information call +1 603 595 1500 or email ppfinfo@parker.com
Visit www.parker.com/precisionfluidics