Ten-X®

Miniature Pneumatic Solenoid Valve

10 mm Normally Open/Closed Solenoid Valve

The Ten-X® miniature pneumatic solenoid valve measures only 10 mm in width and consumes as little as 0.5 watts of power making it an ideal solution for applications with limited space and available power. The Ten-X® miniature pneumatic solenoid valve features repeatable "on and off" response times,stable performance and a universal body design that is suited for manifold or barbed-tube mounting. The Ten-X® miniature pneumatic solenoid valve is available in 2-way or 3-way normally open/normally closed configurations.

Typical Applications

- Portable medical equipment
- Patient monitors
- Wound therapy
- Blood Pressure Monitoring
- Dialysis

Features

- Quiet, lightweight design with small footprint providing up to 8 lpm of flow
- Compact, efficient side-to-side mounting to minimize system size
- Universal barb or manifold connections and PCB mount for added system design flexibility
- 20 million cycles (*worst case tested, no performance degradation*)
- RoHS compliant

Product Specifications

Mechanical

Valve Type:
3 Port, Direct acting poppet style
- Normally Open (NO)
- Normally Closed (NC)
- Distributor

*Reference ordering information for available configurations.

Media:
Non-Reactive Gases

Operating Environment:
32 to 122°F (0 to 50°C)

Storage Temperature:
-40 to 158°F (-40 to 70°C)

Dimensions:
- Length: 1.25 in (31.8 mm)
- Width: 0.39 in (9.9 mm)
- Height: 0.48 in (12.1 mm) to Manifold Face / 0.65 in (16.4 mm) to Barb End

Porting:
- Barbs for 5/64 in (2 mm) I. D. Tubing
- Manifold Mount (Gasket accessory required, see ordering info)

Weight:
0.39 oz (10.7 g)

Internal Volume:
0.0080 in^3 (0.131 cm^3)

Electrical

Power:
0.5 Watt & 1.0 Watt
Not all power options are available in all models, see ordering info.

Voltage:
5, 12 or 24 VDC
Further power reduction may be achieved through the use of spike and hold or PWM electrical control.

Electrical Connections:
- PC Pins, 6 mm centers (all models)
- Lead Wire/Connector Assembly, (Accessory, see ordering info)

Wetted Materials

Bobbin/Body:
PBT (Polybutylene terephthalate) Glass Filled

Pole & Plunger:
430 FR Series Stainless Steel

Seal (Options):
Silicone, EPDM, or FKM

Other:
302 Stainless Steel, Nickel Plated

Performance Characteristics

Leak Rate:
0.016 sccm - (Air)
- Valve Type #1 (Normally Open - Silicone/EPDM)
- Valve Type #7 (Normally Open - Silicone)

0.2 sccm - (Air)
- Valve Type #2 (Normally Closed - FKM)
- Valve Type #6 (Distributor - FKM/EPDM)

Response Time:
< 5 ms maximum cycling (Silicone)
< 20 ms maximum cycling (FKM, EPDM)
< 20 ms cycling (Viton & EPDM)

Pressure/Vacuum:
6 psid (0.4 bar differential)

Proof Pressure:
200 psig (13.7 bar)

Minimum Flow:
8 slpm @ 6 psid (0.4 bar differential)

Orifice Sizes/Equivalent Cv:
0.060" (1.52 mm) / 0.042

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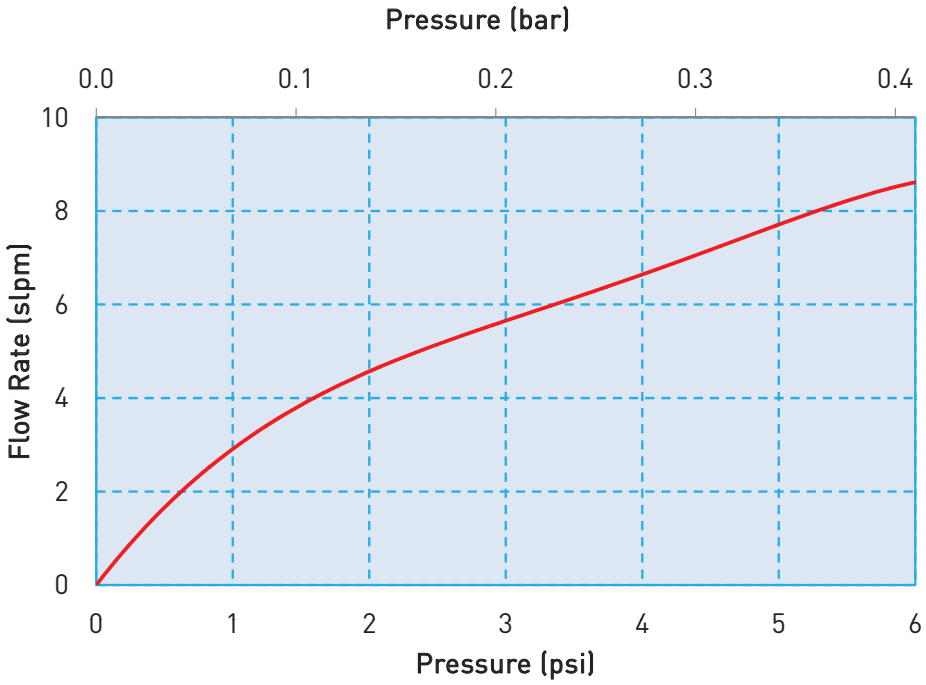
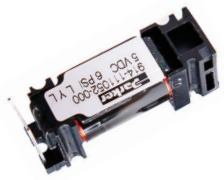
Typical Flow Curve

Model 1
0.060" (1.52 mm) Orifice
(Tested w/air 24° C)

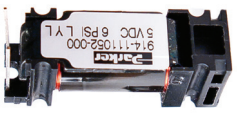


Pneumatic Interface / Electrical Interface

Short Pin
(For Pin/Wire Lead or PCB Terminal Housing Connection)
[Reference Accessories section]



Long Pin
(For Pin/PCB solder mount connection)



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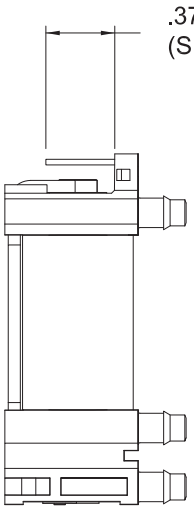
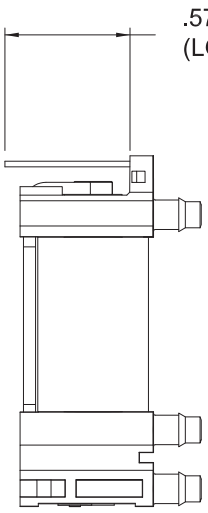
Pneumatic Interface / Electrical Interface

Coil Connections



Electrical Connection Options:
Electrical terminals compatible with Molex 51065 series connector or equivalent.

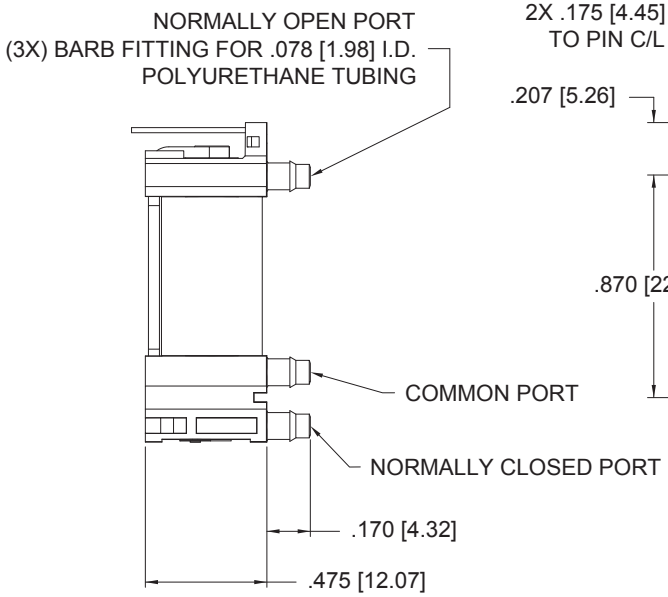


UNITS
IN [MM]

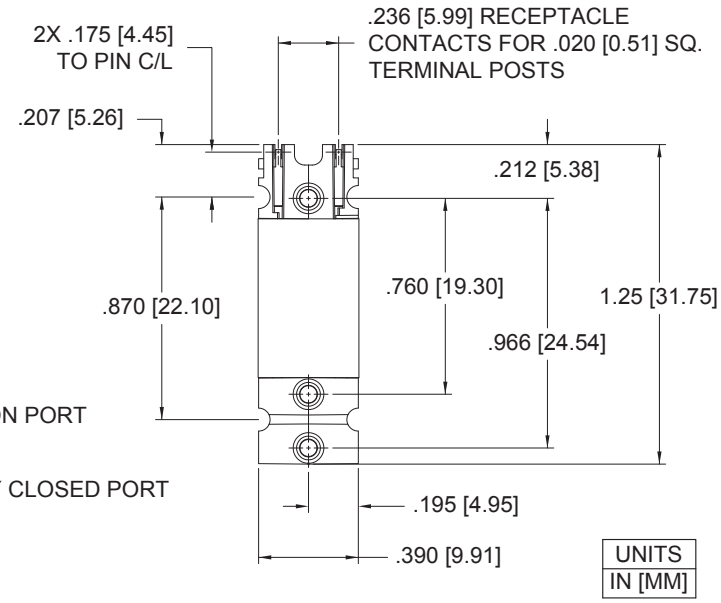
Mechanical Integration

Dimensions

SIDE VIEW



BOTTOM VIEW



UNITS
IN [MM]

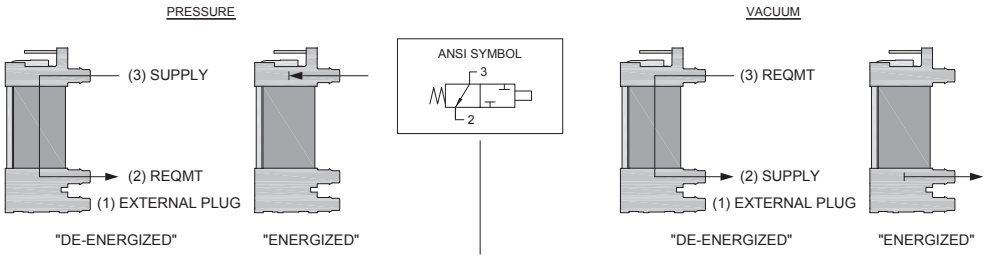
Ten-X® Miniature Pneumatic Solenoid Valve

LEGEND:	
SUPPLY:	Pneumatic Source or Supply Pressure
EXHAUST:	Exhaust to Atmospheric Pressure
REQMT:	Customer Requirement or Application
ATM:	Atmospheric Pressure
EXTERNAL PLUG:	External Port Plug (Customer Supplied)

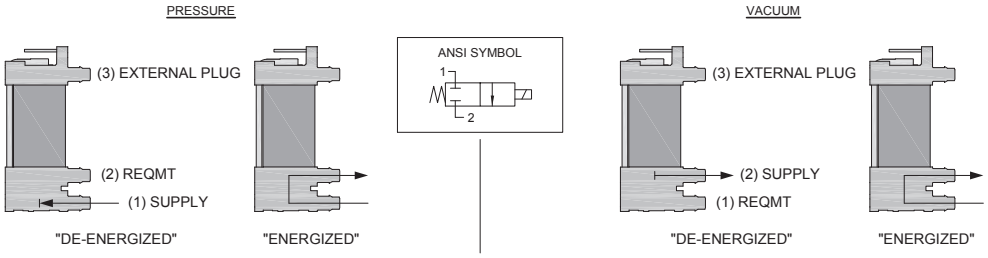
ANSI Symbols

Pneumatic Schematics by Valve Types

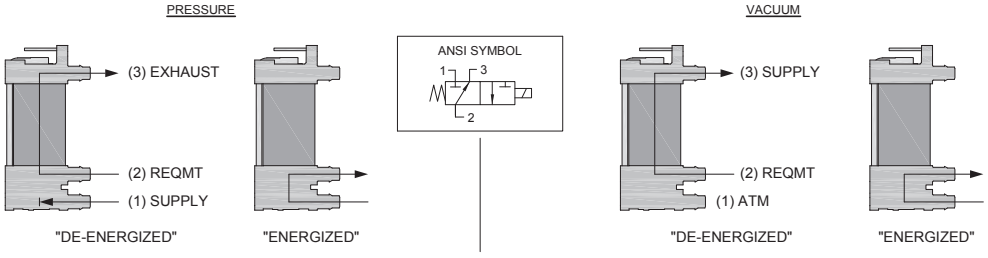
TYPE 1
(2-WAY NORMALLY OPEN)
(SILICONE AND EPDM ONLY)



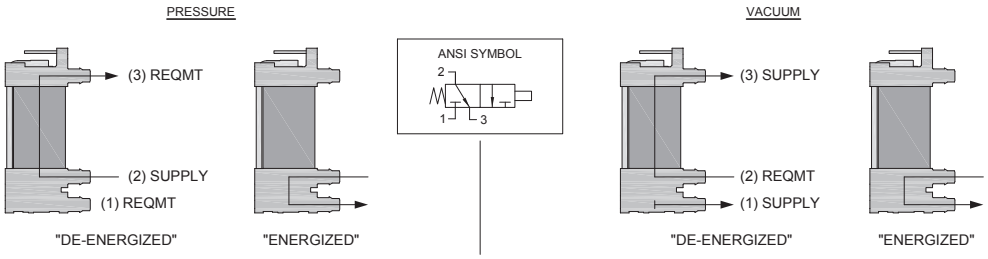
TYPE 2
(2-WAY NORMALLY CLOSED OPTION)
(FKM ONLY)



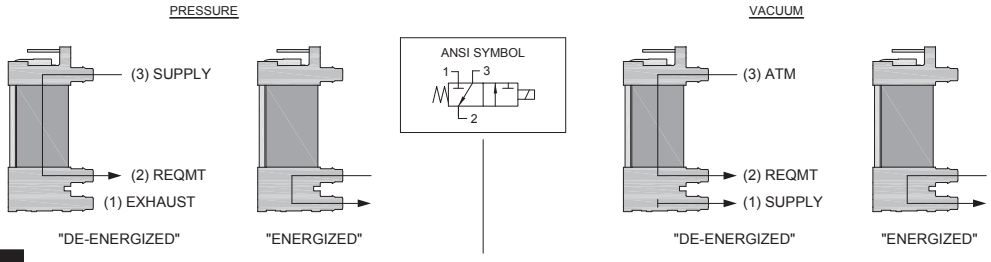
TYPE 2
(3-WAY NORMALLY CLOSED OPTION)
(FKM ONLY)



TYPE 6
(DISTRIBUTOR)
(FKM AND EPDM ONLY)



TYPE 7
(3-WAY NORMALLY OPEN)
(SILICONE ONLY)



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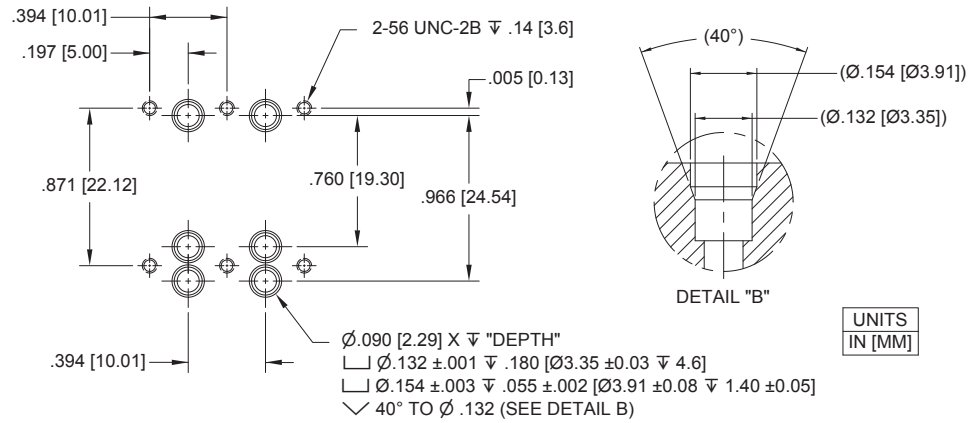
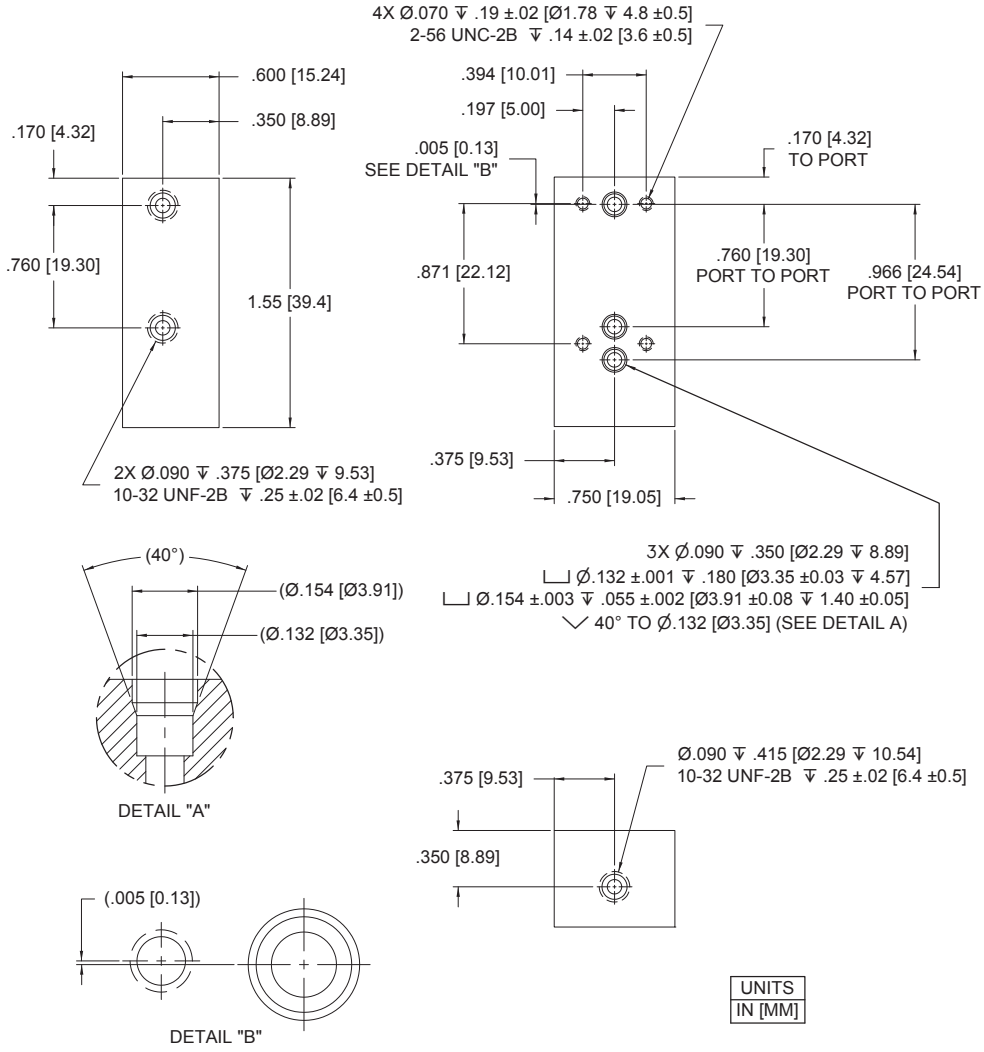
Installation and Use

Ten-X® Manifold Mount Diagram



Recommended Ten-X® Manifold Dimensions



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Accessories

Mounting Options

Manifold Rubber Gasket (FKM)
195-000211-001

Manifold Rubber Gasket (EPDM)
195-000242-001

18" Wire Lead with connector
590-000106-001
(For use with Short Pin valve configuration)

Screw #2-56 x 5/8" Pan Head
191-000112-010
(2 required for each valve)

Ordering Information

Sample Part ID	914	1	1	1	05	1
Description	**Series**	**Elastomer**	**Valve Type / Elastomer / Power**	**Model**	**Voltage**	**Electrical Coil Connection**
Options	914	1: Silicone 2: FKM (viton) 3: EPDM	1: 2-Way Normally Open* 6 PSIG Silicone / EPDM Elastomer / 0.5 Watt 2: 2/3 Way Normally Closed 6 PSIG FKM Elastomer Only / 1 Watt 6: Distributor 6 PSIG 7: 3-Way Normally Open 6 PSIG Silicone Elastomer / 1 Watt * Port 1 requires an external plug	1: Standard	05: 5 VDC 12: 12 VDC 24: 24 VDC	1: Pins (6 mm) 2: PC Mount

Accessories
195-000211-001: Manifold Rubber Gasket (FKM)
195-000242-001: Manifold Rubber Gasket (EPDM)
590-000106-001: 18" Wire Leads with connector
191-000112-010: Screw 2-56 x 5/8" Pan Head (2 required for each valve)

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/tenx) to configure your Ten-X Miniature Pneumatic Solenoid Valve. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002213-001 and Drawing #890-003150-003.

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