

Series 11 Miniature Pneumatic Solenoid Valve

15 mm Solenoid Valve




The Series 11 miniature pneumatic solenoid valve is a robust and proven product with a reputation for reliable and consistent performance. The Series 11 miniature solenoid valve is the preferred choice of major OEM's in the medical and analytical market. With valve bodies made from brass or stainless steel, the Series 11 miniature solenoid valve is an ideal solution for general purpose applications and those applications requiring low out-gassing and a bubble-tight seal.

Typical Applications

- Oxygen Conservers
- Oxygen Concentrators
- Compression Therapy
- Gas Chromatography
- Insufflators
- Medical & Analytical Gas Control

Features

- Proven performance tested to 260 million life cycles
- Wide range of available electrical connections to simplify valve integration and control
- Manifold mount or barbed tube pneumatic configurations available for added system design flexibility
- Available Analytical and Oxygen Service Clean to minimize contamination
- RoHS compliant 

Product Specifications

Mechanical

| |
|--------------------------------------------------------------------------------------|
| Valve Type: |
| Solenoid-actuated poppet style |
| - 2/3 Port, Normally Closed (NC) |
| - 2/3 Port, Normally Open (NO) |
| - 3 Port, Distributor |
| - 2 Port, Normally Closed (NC) - Universal |
| Media: |
| Air, argon, helium, hydrogen, methane, nitrogen, oxygen, & other non-reacting gasses |
| Operating Environment: |
| 32 to 158°F (0 to 70°C) |
| Storage Temperature: |
| -40 to 158°F (-40 to 70°C) |
| Dimensions: |
| - Length: 1.73 in (43.9 mm) |
| - Width: 0.63 in (15.8 mm) |
| - Height: 0.67 in (17.0 mm) |
| Weight: |
| 2.1 oz (60 g) |
| Internal Volume: |
| 0.026 in ³ (0.426 cm ³) |
| Filtration: |
| 40 micron (recommended) |
| Oxygen Clean: |
| Call For Details |

Electrical

| |
|------------------------------------------------------------------------------------------------------|
| Power Options: |
| 0.5, 1.0, or 2.0 Watts |
| Voltage Options: |
| 5, 12 or 24 VDC |
| Further power reduction may be achieved through the use of spike and hold or PWM electrical control. |
| Electrical Connections: |
| Wire Leads, PC Pins, Solder Tabs, Quick Disconnect Spade |

Wetted Materials

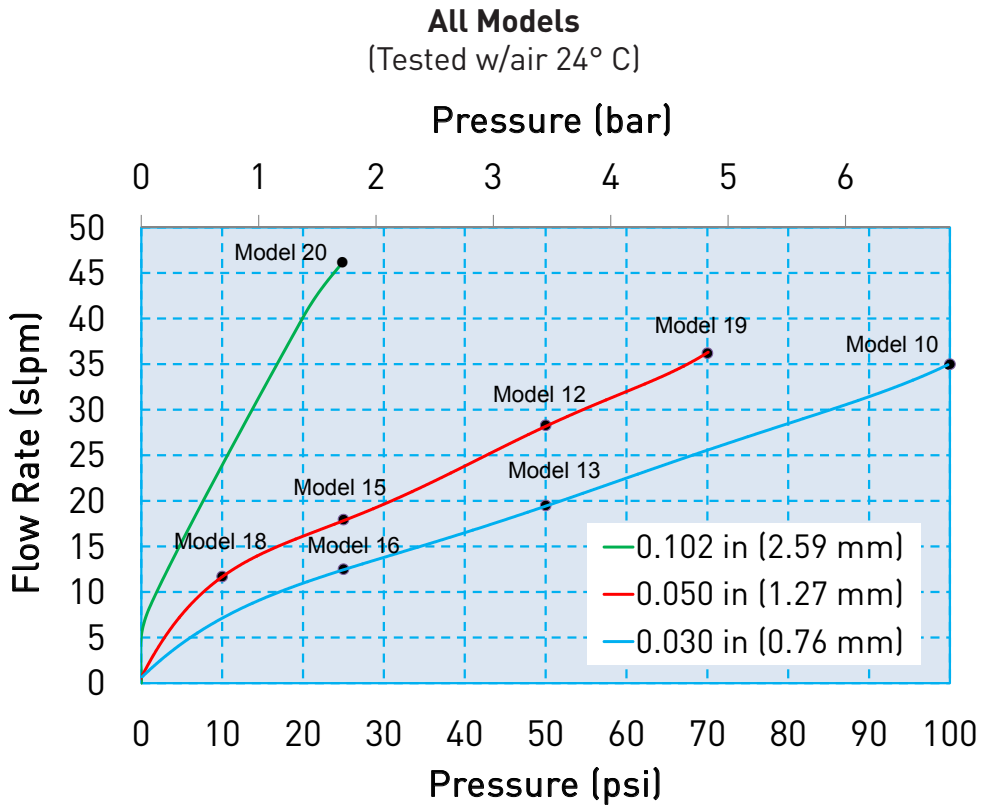
| |
|-------------------------------|
| Body: |
| 36000 HO2 Brass; |
| 303 Series Stainless Steel |
| Stem Base: |
| 36000 HO2 Brass; |
| 303 Series Stainless Steel |
| Poppet Options: |
| FKM |
| All Others: |
| 430 FR Series Stainless Steel |
| 302 Series Stainless Steel |

Performance Characteristics

| |
|----------------------------------|
| Leak Rate: |
| <0.016 sccm of air |
| <0.1 sccm of air (Model 20 only) |
| Response: |
| <30 ms cycling |
| Pressure: |
| 0 to 100 psig (6.9 bar) |
| Vacuum: |
| 0-27 in Hg (686 mm Hg) |
| Orifice Sizes: |
| 0.030" (0.76 mm) |
| 0.050" (1.27 mm) |
| 0.102" (2.59 mm) |

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Typical Flow Curve



All models reflect typical flow output capability based on rated pressure

Pressure and Flow Capabilities/Life Requirements

| Model No. | Orifice Size | Nominal Cv | Maximum Supply Pressure | Leak Rate (Air) | Power Consumption | Elastomer | Life Requirements (millions of cycles)* |
|-----------|--------------------|------------|-------------------------|-----------------|-------------------|-----------|-----------------------------------------|
| 10 | 0.030 in (0.76 mm) | 0.017 | 100 psi (6.89 bar) | <0.016 sccm | 2 Watts | FKM | 100 |
| 12 | 0.050 in (1.27 mm) | 0.031 | 50 psi (3.45 bar) | <0.016 sccm | 2 Watts | FKM | 100 |
| 13 | 0.030 in (0.76 mm) | 0.017 | 50 psi (3.45 bar) | <0.016 sccm | 1 Watt | FKM | 200 |
| 15 | 0.050 in (1.27 mm) | 0.025 | 25 psi (1.72 bar) | <0.016 sccm | 1 Watt | FKM | 200 |
| 16 | 0.030 in (0.76 mm) | 0.017 | 25 psi (1.72 bar) | <0.016 sccm | 0.5 Watt | FKM | 260 |
| 18 | 0.050 in (1.27 mm) | 0.021 | 10 psi (0.69 bar) | <0.016 sccm | 0.5 Watt | FKM | 260 |
| 19 | 0.050 in (1.27 mm) | 0.025 | 70 psi (4.83 bar) | <0.016 sccm | 2 Watts | FKM | 20 |
| 20 | 0.102 in (2.59 mm) | 0.069 | 25 psi (1.72 bar) | <0.1 sccm | 1 Watt | FKM | 25 |

*Life is dependent upon elastomeric material, duty cycle and pressures

For custom requirements please contact Applications Engineering at 603-595-1500 or ppfinfo@parker.com



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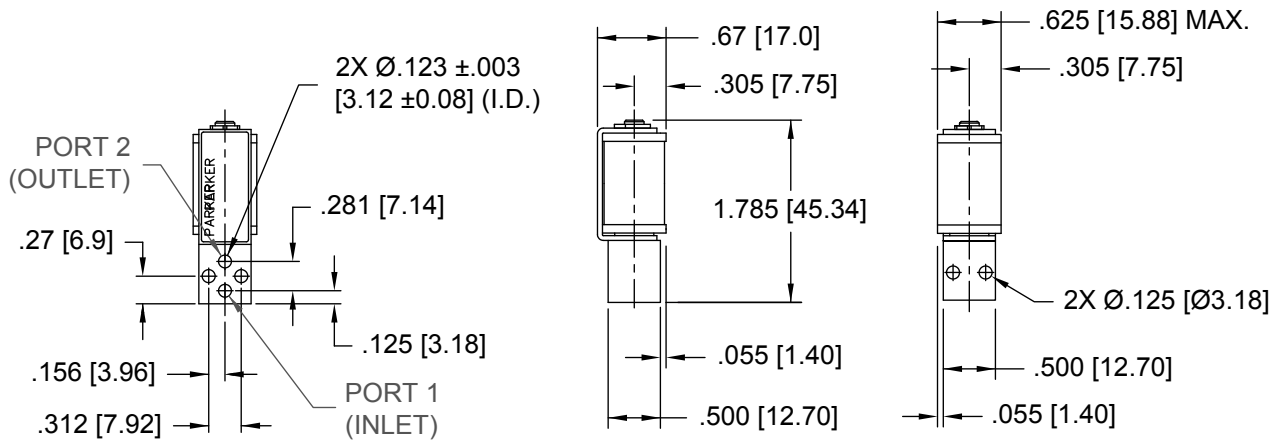
Pneumatic Interface

Manifold Mount



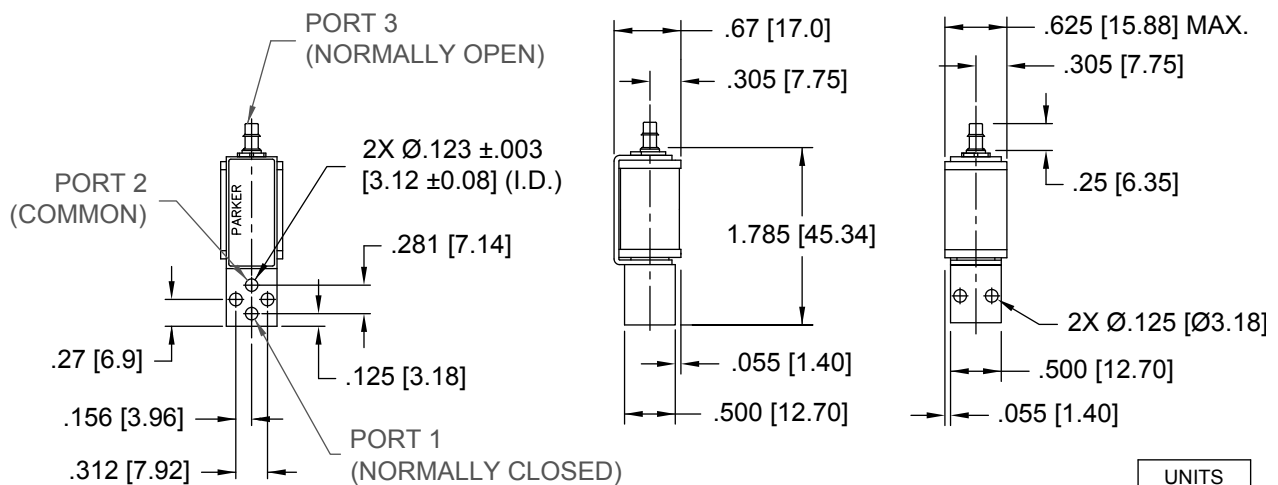
Mechanical Integration Dimensions

Basic Dimensions, 2-Way Valve Configuration



| |
|-----------|
| UNITS |
| IN. [mm.] |

Basic Dimensions, 3-Way Valve Configuration



| |
|-----------|
| UNITS |
| IN. [mm.] |



Series 11 Miniature Pneumatic Solenoid Valve

Pneumatic Interface

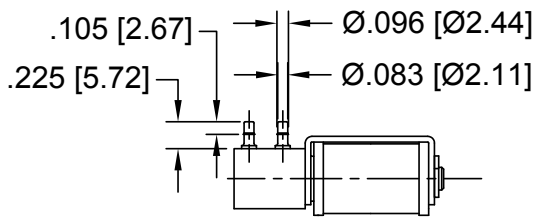
Barbed



Barb Options

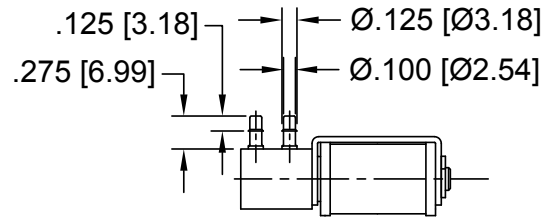
1/16" (1.5 mm) Barbs

(For 1/16" (1.5 mm) I.D. Tubing)



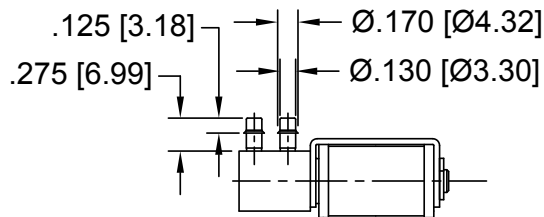
5/64" (2 mm) Barbs

(For 5/64" (2 mm) I.D. Tubing)



1/8" (3 mm) Barbs

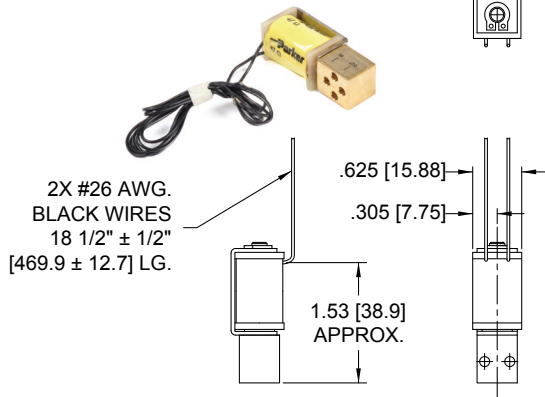
(For 1/8" (3 mm) I.D. Tubing)



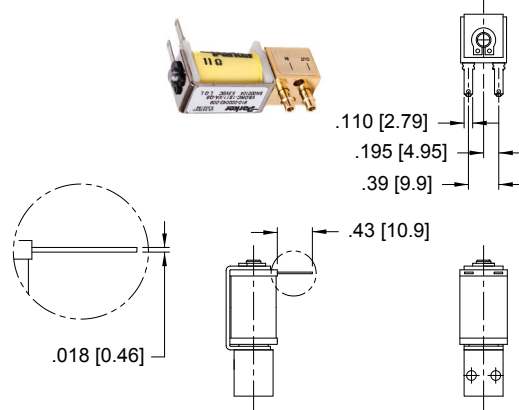
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Electrical Interface

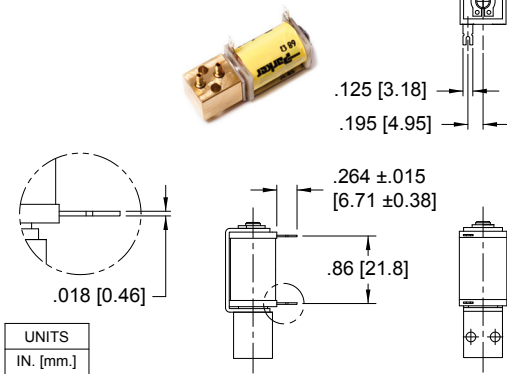
Coil Type: Wire Leads
(See Order Info "F")



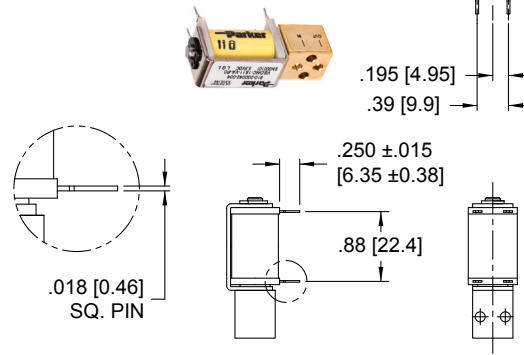
Coil Type: Quick Connect Spade
(See Order Info "Q")



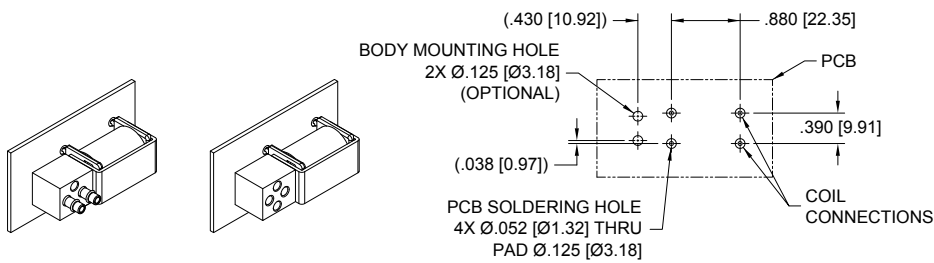
Coil Type: Solder Tab
(See Order Info "S")



Coil Type: 4 PC Pins*
(See Order Info "P")
*See Isometric Drawing below



*4 PC PIN PCB Interface

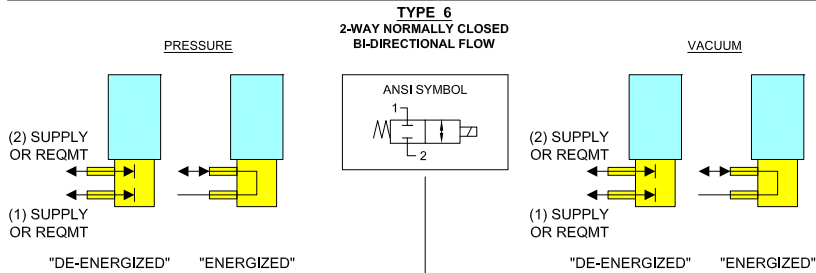
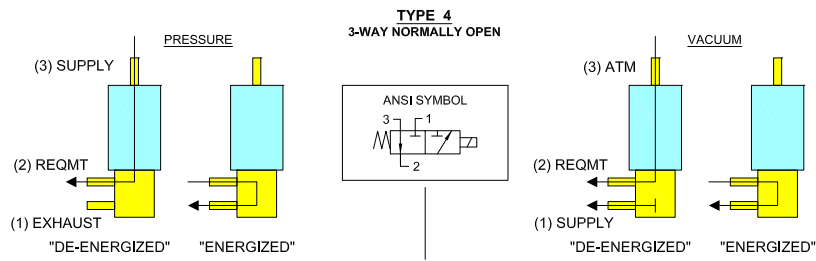
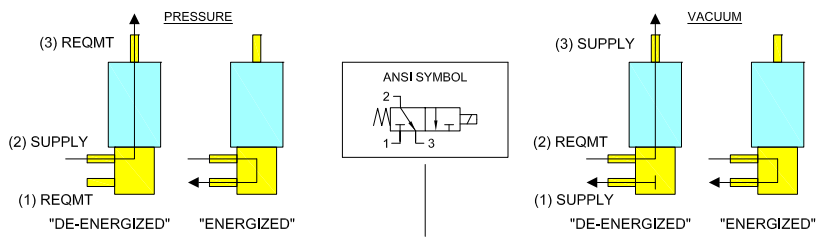
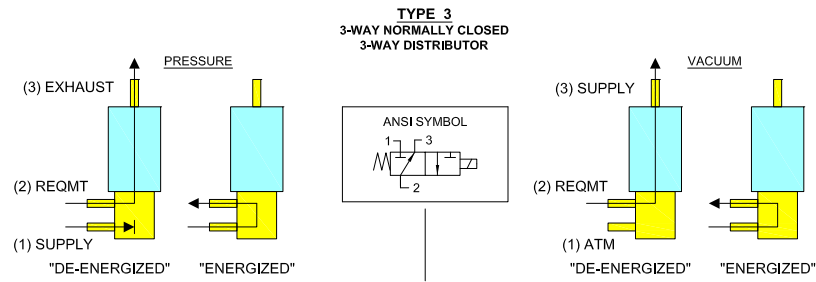
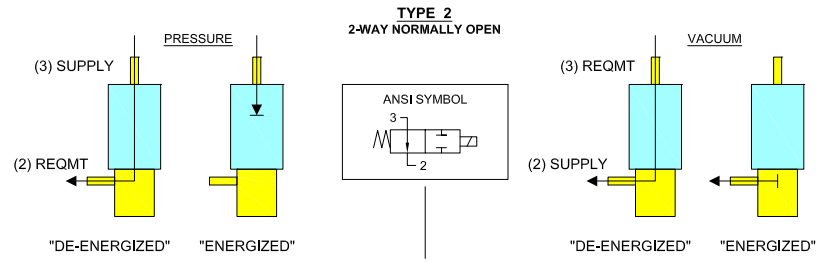
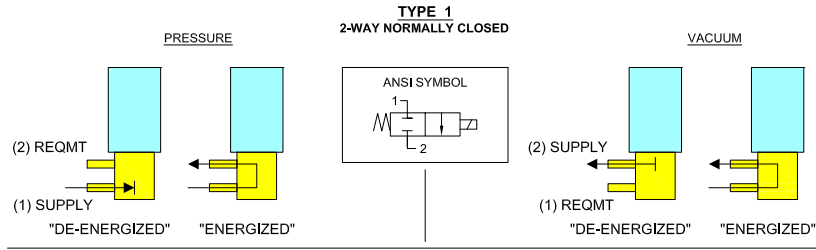


Series 11 Miniature Pneumatic Solenoid Valve

ANSI Symbols

| LEGEND: | |
|----------|-------------------------------------|
| SUPPLY: | Pneumatic Source or Supply Pressure |
| EXHAUST: | Exhaust to Atmospheric Pressure |
| REQMT: | Customer Requirement or Application |
| ATM: | Atmospheric Pressure |

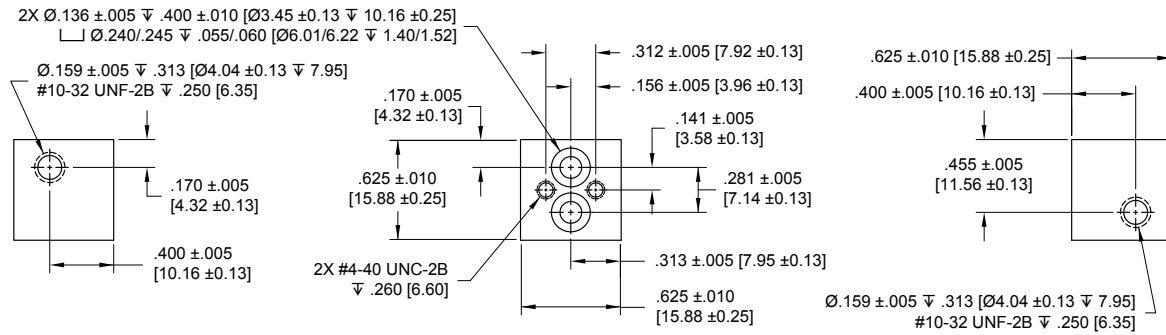
Pneumatic Schematics by Valve Types



Series 11 Miniature Pneumatic Solenoid Valve

Installation and Use

Manifold & O-Ring Dimensions & Design

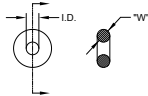


Accessories

O-Ring (Manifold Seal) Dimensions

(see Accessories table below for part numbers)

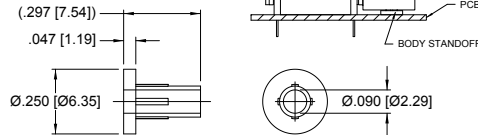
I.D. = $\varnothing .114 \pm .005$ [$\varnothing 2.90 \pm 0.13$]
 W = $.070 \pm .003$ [1.78 ± 0.08]
 O.D. = $\varnothing .254$ [$\varnothing 6.45$] REFERENCE



Body Standoff

890-000027-001

(2 required for each valve
 S or 2 Solder Tab Coil Type Only)



Screw 4-40 x 1/2" Pan Head

191-000100-208



Ordering Information

| Sample Part ID | 11 | 10 | 3 | BV | 12 | P | 7 | 7 |
|----------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|
| Description | Series | Model Number Pressure / Orifice / Power | Type | Material XX: Body / Poppet & Seal | Voltage | Electrical Coil Connection | Pneumatic Connection Body | Pneumatic Connection Stem |
| Options | 11 | 10: 0-100 psi / 0.030" / 2 Watts 12: 0-50 psi / 0.050" / 2 Watts 13: 0-50 psi / 0.030" / 1 Watt 15: 0-25 psi / 0.050" / 1 Watt 16: 0-25 psi / 0.030" / 0.5 Watt 18: 0-10 psi / 0.050" / 0.5 Watt 19: 0-70 psi / 0.050" / 2 Watts 20: 0-25 psi / 0.102" / 1 Watt | 1: 2-Way NC 2: 2-Way NO 3: 3-Way NC or Distributor 4: 3-Way NO 6: 2-Way NC Universal ⁽¹⁾ | BV: Brass / FKM ⁽²⁾ SV: Stainless Steel / FKM | 5: 5 VDC 12: 12 VDC 24: 24 VDC | F: Wire Leads, 18", No Termination P: PC Mount, 4 PC Pins S: PC Mount, 2 Solder Tabs Q: Quick Connect Spade | 0: Manifold Mount ⁽³⁾ 6: 1/16" (1.5 mm) Barbs 7: 5/64" (2 mm) Barbs 8: 1/8" (3 mm) Barbs | 0: Manifold Mount ⁽⁴⁾ 6: 1/16" (1.5 mm) Barbs ⁽⁵⁾ 7: 5/64" (2 mm) Barbs 8: 1/8" (3 mm) Barbs |
| | | | ⁽¹⁾ Model 20 (0.102" orifice) only available in 2-Way NC Universal configuration | ⁽²⁾ Model 20 (0.102" orifice) only available in Brass/FKM configuration | | | ⁽³⁾ Model 20 (0.102" orifice) only available in manifold mount body | ⁽⁴⁾ Type 1 and 6 configurations only ⁽⁵⁾ Not available on Models 12, 15, 18 and 19 (0.050" orifice) |

| Accessories | |
|-------------------------------------------------------|-----------------------------------------------------------------|
| 190-007024-001: O-ring, Buna-N | * Used as a seal between the manifold and valve body |
| 190-007024-002: O-ring, FKM * | ** Used to create a flush mount between the coil and valve body |
| 890-000027-001: Body Standoff ** | |
| 191-000115-010: Screw, 4-40 x 5/8" Pan Head, Phillips | |



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/s11) to configure your Series 11 Miniature Pneumatic Solenoid Valve. For more detailed information, visit us on the Web, or call and refer to Performance Spec. #790-002075-001 and #790-002407-001 (Model 20 only) and Drawing #890-003016-001.