



**PETER
PAUL**

electronics co., inc.

Large Orifice Solenoid Valves

for Chemical, Petrochemical,
Pharmaceutical, Food, Beverage
and Other Wet Process Industries

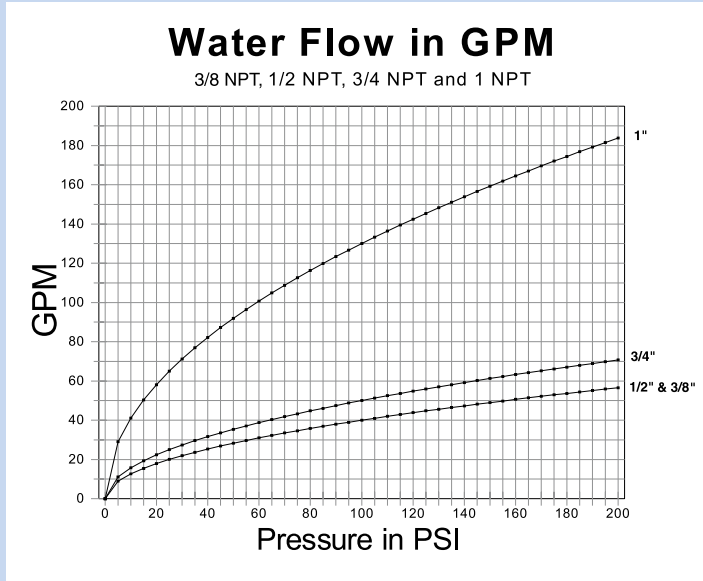
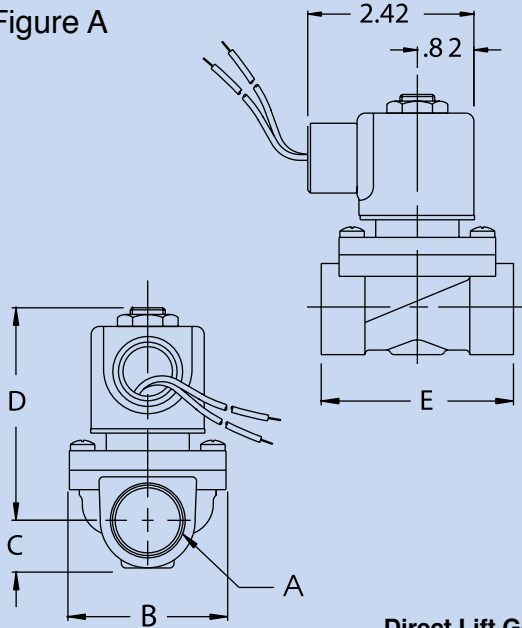


Excellence by Control

Series 80 *High Flow Valves for Your Processes*

Peter Paul offers a line of large orifice solenoid valves to address process industry requirements for high flow rate or quick dump and fill capacity. These AC or DC powered valves are also suited for low pressure gas and liquid applications. Port sizes range from 3/8" to 3" NPT, with pressure ratings from 0 to 200 PSI. Direct-Lift or Internal Pilot models are available in Normally Closed, Normally Open and Explosion Proof versions.

Figure A



Direct Lift General Dimensions

| A | B | C | D | E |
|------|-------------|------------|-------------|-------------|
| 3/8" | 2.01 (51.1) | .61 (15.5) | 3.02 (76.7) | 2.36 (59.9) |
| 1/2" | 2.01 (51.1) | .61 (15.5) | 3.02 (76.7) | 2.36 (59.9) |
| 3/4" | 2.28 (57.9) | .69 (17.5) | 3.10 (78.7) | 2.83 (71.9) |

Metric sizes in parenthesis

| Valve Type | Valve Number | Figure | Orifice Size | Pipe Size | Max. Oper. Pressure AC | Max. Oper. Pressure DC | Min. Oper. Pressure | CV Factor |
|---------------------------------------|--------------|--------|--------------|-----------|------------------------|------------------------|---------------------|-----------|
| NC - Direct Lift | 827T20DCV | A | 0.50 | 3/8 NPT | 100 | 40 | 0 PSI | 4 |
| NC - Direct Lift - Explosion Proof | E827T20DCCM | A | 0.50 | 3/8 NPT | 100 | 40 | 0 PSI | 4 |
| NC - Direct Lift | 827B12DCV | A | 0.50 | 1/2 NPT | 100 | 40 | 0 PSI | 4 |
| NO - Internal Pilot | 818B12DCV | A | 0.50 | 1/2 NPT | 150 | 150 | 3 PSI | 4 |
| NC - Internal Pilot | 828B12DCV | A | 0.50 | 1/2 NPT | 200 | 200 | 3 PSI | 4 |
| NC - Direct Lift - Explosion Proof | E827B12DCCM | A | 0.50 | 1/2 NPT | 100 | 40 | 0 PSI | 4 |
| NC - Internal Pilot - Explosion Proof | E828B12DCCM | A | 0.50 | 1/2 NPT | 200 | 200 | 3 PSI | 4 |
| NC - Direct Lift | 827Y19DCV | A | 0.75 | 3/4 NPT | 100 | 30 (75) | 0 PSI | 5 |
| NO - Internal Pilot | 818Y19DCV | A | 0.75 | 3/4 NPT | 200 | 200 | 3 PSI | 5.8 |
| NC - Direct Lift - Explosion Proof | E827Y19DCCM | A | 0.75 | 3/4 NPT | 100 | 30 | 0 PSI | 5 |
| NC - Internal Pilot | 828Y19DCV | B | 0.75 | 3/4 NPT | 200 | 200 | 3 PSI | 5.8 |
| NC - Internal Pilot - Explosion Proof | E828Y19DCCM | B | 0.75 | 3/4 NPT | 200 | 200 | 3 PSI | 5.8 |
| NO - Internal Pilot | 818D13DCV | B | 1 | 1 NPT | 200 | 200 | 3 PSI | 13 |
| NC - Internal Pilot | 828D13DCV | B | 1 | 1 NPT | 200 | 200 | 3 PSI | 13 |

Model 827 is a solenoid operated diaphragm valve that can operate at low pressures without any differential pressure across the diaphragm (Direct Lift).

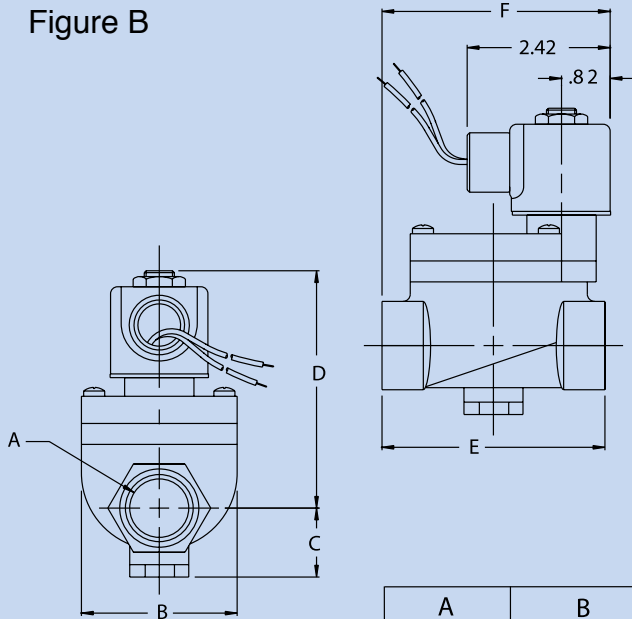
Main Characteristics

- Forged brass or 316 stainless steel body
- NPT threaded connections
- Normally Closed and Normally Open
- Buna, EPDM, FKM, Teflon, Neoprene Seals

Options (see page 4)

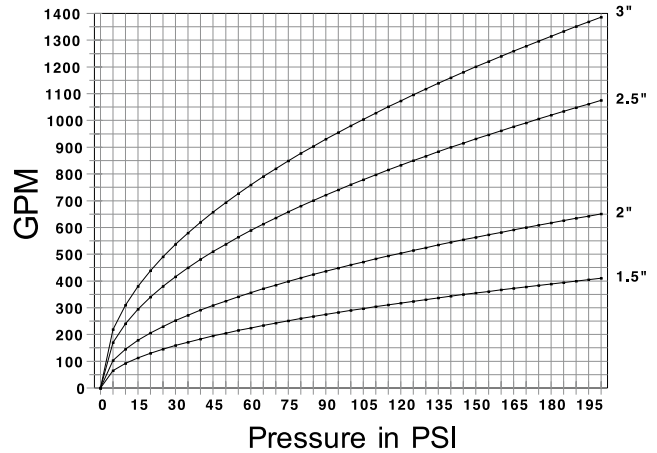
- Explosion-Proof
- Multiple housing options
- Multiple coil options
- Solid state timer

Figure B



Water Flow in GPM

1.5 NPT, 2 NPT, 2.5 NPT and 3 NPT



| A | B | C | D | E | F |
|----------|--------------|-------------|--------------|--------------|--------------|
| 1/2" | 1.75 (44.4) | .67 (17.2) | 3.97 (100.1) | 2.56 (65.0) | 2.80 (71.1) |
| 3/4" | 2.05 (52.1) | 1.02 (25.9) | 3.91 (99.3) | 2.80 (71.1) | 2.88 (73.2) |
| 1" | 2.64 (67.1) | 1.18 (30.0) | 4.06 (103.1) | 3.78 (96.0) | 3.87 (98.3) |
| 1-1/2" | 3.19 (81.0) | 1.42 (36.1) | 4.50 (114.3) | 4.49 (114.0) | 4.58 (116.3) |
| 2" | 3.82 (97.0) | 1.73 (43.9) | 4.73 (120.1) | 5.04 (128.0) | 5.13 (130.3) |
| 2-1/2-3" | 6.42 (163.1) | 3.50 (88.9) | 8.24 (209.3) | 8.82 (224.0) | 8.91 (226.3) |

| Valve Type | Valve Number | Figure | Orifice Size | Pipe Size | Max. Oper. Pressure AC | DC | Min. Oper. Pressure | CV Factor |
|---------------------------------------|--------------|--------|--------------|-----------|------------------------|-----|---------------------|-----------|
| NO - Internal Pilot | 818E14DCV | B | 1.5 | 1-1/2 NPT | 200 | 200 | 3 PSI | 29 |
| NC - Internal Pilot | 828E14DCV | B | 1.5 | 1-1/2 NPT | 200 | 200 | 3 PSI | 29 |
| NO - Internal Pilot | 818F16DCV | B | 2 | 2 NPT | 200 | 200 | 3 PSI | 46 |
| NC - Internal Pilot | 828F16DCV | B | 3 | 2-1/2 NPT | 200 | 200 | 3 PSI | 76 |
| NC - Internal Pilot | 828W17DCV | B | 3 | 2-1/2 NPT | 200 | 200 | 3 PSI | 76 |
| NO - Internal Pilot | 818W18DCV | B | 3 | 3 NPT | 200 | 200 | 3 PSI | 98 |
| NC - Internal Pilot | 828W18DCV | B | 3 | 3 NPT | 200 | 200 | 3 PSI | 98 |
| NC - Internal Pilot - Explosion Proof | E828D13DCCM | B | 1 | 1 NPT | 200 | 200 | 3 PSI | 13 |
| NC - Internal Pilot - Explosion Proof | E828E14DCCM | B | 1.5 | 1-1/2 NPT | 200 | 200 | 3 PSI | 29 |
| NC - Internal Pilot - Explosion Proof | E828F16DCCM | B | 2 | 2 NPT | 200 | 200 | 3 PSI | 46 |
| NC - Internal Pilot - Explosion Proof | E828W17DCCM | B | 3 | 2-1/2 NPT | 200 | 200 | 3 PSI | 76 |
| NC - Internal Pilot - Explosion Proof | E828W18DCCM | B | 3 | 3 NPT | 200 | 200 | 3 PSI | 98 |

Models 818 and 828 are solenoid operated diaphragm and piston valves that use a differential pressure principal (Internal Pilot).

Series 80 Specifications

Operating Conditions

| | |
|--------------------------|---|
| Media | Air, water, and other fluids compatible with standard Buna seals. Hot water, steam gasoline, and many oils require special seal materials. Consult representative or factory. |
| Valve Temp. Range | Standard Valves: 0°F (-18°C) to 104°F (40°C) ambient; 0°F (-18°C) to 150°F (65°C) media. Optional Valves: can tolerate much higher or much lower ambient and media temperatures. Consult factory for specifics. |
| Burst Pressure | 5000 PSI |
| Leakage | Bubble tight for standard valves |

Electrical Characteristics

| | |
|-------------------------------------|---|
| Coil Voltage | 5 to 825 VAC 50-60 Hz. - 1.8 to 265V DC |
| Nominal Power | 9.5 DC, 7.7 watts AC |
| Coil Construction | Class A, Class F, Class H |
| Typical Response Time on Air | 8-50 Milliseconds |

Mechanical Characteristics

| | |
|----------------------------|---|
| Housing | Grommet & 1/2" NPT conduit - many options available |
| Hazardous Locations | Class I; Group C and D - Class II; Group E, F, & G |

Options

Housing

- Strain Relief Connector
- Double Automotive
- Splice Box Housing
- Single Automotive
- "AN" Connector
- Yoke

Coil

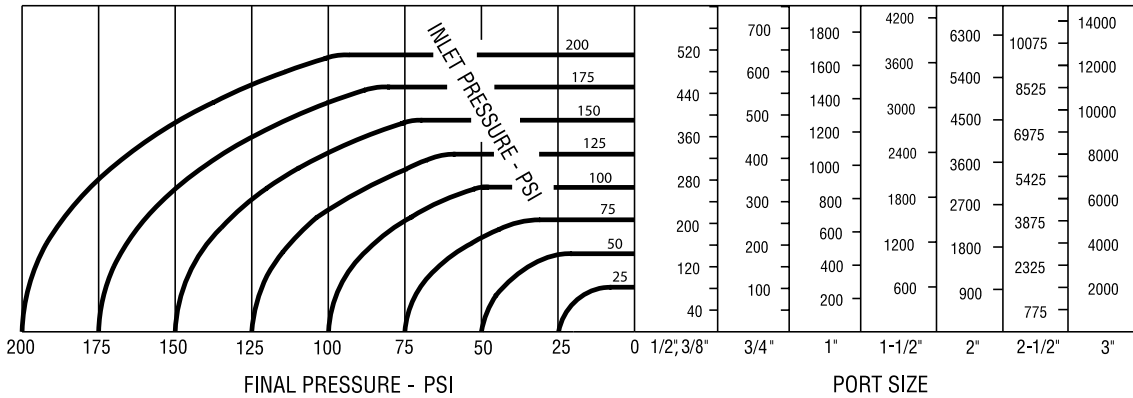
- Molded Coil
- Potted Coil & Housing
- High Temperature Molded Coil
- Third Wire Ground
- Spade Terminal - Coil - Molded

Solid State Timer (see photo below)

Specifications

| | |
|------------------------------------|--|
| Voltage | 120 AC to 240 AC |
| Nominal Power Consumption | 9.5 watts |
| Line Cord | 6 ft. w/ three prong plug |
| Timer Adjustment | Off Time 1 to 45 min. On Time .25 sec. to 25 sec. |
| Push Button Manual Override | |
| Status Lights | to show power and operation. Timer and coil may be rotated 360° |

AIR FLOW RATE IN CFM AT 70 DEG. F



Solid State Timer

Valve Order Numbering System

| 1st Digit | 2nd Digit | 3rd Digit | 4th Digit | 5th Digit | 6th Digit | 7th Digit | 8th Digit | 9th Digit |
|--------------------|--|--|--|--|---|---|--------------------------------------|--|
| Series Designation | Type | Orifice | Port Size & Body Mat. BR SS | Body Port & Function Options | Housing Options | Coil Options | Voltage | Frequency |
| 8 Series 80 | 18 Internal Pilot 2WNO 27 Direct Lift 2WNC 28 Internal Pilot 2WNC | T 3/8" B 1/2" C 3/8" Y 3/4" D 1" E 1-1/2" F 2" W 3" | 3/8" NPT 20 1/2" NPT 12 3/4" NPT 19 29 1" NPT 13 23 1-1/2" NPT 14 24 2" NPT 16 26 2-1/2" NPT 17 27 3" NPT 18 28 | D No Option Y Manual Override | C Conduit G Grommet CC Conduit with 3rd wire ground EM European Din Coil | V Non-Molded M Molded H High Temp. 180°C P Potted Coil & Housing | Full Description Required 120v, 240v | Full AC Description Required 50 Hz, 60Hz or DC |

EXAMPLE

| | | | | | | | | |
|-----------------|----------------|------------|--------------|-----------|-----------------|-------------|------------|-----------|
| 8 | 28 | D | 13 | D | C | M | 120 | 60 |
| Series 80 Valve | Internal Pilot | 1" Orifice | 1" NPT Brass | No option | Conduit Housing | Molded Coil | 120 Volt | AC 60 Hz |

NOTE: "E" Marked prior to the valve number denotes Explosion Proof.

WARRANTY

Peter Paul Electronics Co., Inc. (seller) warrants its products to be free from defects in workmanship and material. Under normal use and service, Peter Paul products will perform very satisfactorily. The seller's obligation under this warranty shall be limited to the repairing, free of charge, any part or valve which, after his examination, shows it to be defective. Of course, normal wear and tear must be considered and exempted. No representative or person is authorized to assume for the seller any other obligation or liability in connection with the sale of its sale of its products.

All engineering and technical advice are offered free of charge, in a spirit of helpfulness to the buyer. This assistance is based on data which Peter Paul considers reliable and is intended to be used by knowledgeable and skillful personnel at their own risk.

The seller shall not be liable for consequential damages in case of failure to meet conditions of any guarantee or shipping schedule, nor claims for labor, loss of profits, repairs or other expenses incidental to replacement.



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