



The Award-Winning "Half-Shell" Design

The heart of the Isonic® concept is its patented "half-shell" design. Composed of two mirror-image halves, Isonic® allows its flow channels and internal component compartments to be designed directly into these molded body sections. Valve bodies are molded of high-strength, glass-impregnated Ultem thermoplastic.

Assembly is achieved by simply inserting the various valve elements into their corresponding "half-shell" pockets. Internal components are easily positioned to make optimal use of space.

The valve is completed by ultrasonically welding the two valve segments, creating a strong bond and hermetic seal. This design totally eliminates the need for fasteners, adhesives, gaskets and inserts.

Revolutionary Valve Production

Isonic® technology eliminates all machining operations associated with valve manufacturing. Requiring only simple assembly, Isonic® can be produced quickly and easily with significant cost reduction.

Design Optimizes Valve Performance

Isonic® 2, 3 and 4-way valves feature a unique, multi-patented design that significantly shrinks valve size while boosting flow capacity. With its design and a state-of-the-art manufacturing process, Isonic® breaks through the restriction and limitations of conventional valve manufacturing.

Loaded with Standard Features

Along with its size and price advantages, Isonic® offers numerous user features, many of them standard. Most models feature an integral electronic board with surge suppression and LED. A variety of voltages and wiring options are available. This combination of price and versatility make Isonic® the perfect control choice for pneumatic systems.

New Patents

| Patent # | Patented Property |
|-----------|---------------------------------|
| 5,222,715 | "Half-Shell" Valve Construction |
| 5,341,846 | Plug-In Valve Stack Assembly |

Additional Patents Pending

Faster Manifold Connections

The Isonic® manifold system has been designed to virtually eliminate downtime, eliminating all end plates, screws, o-rings and gaskets customarily found in manifold systems. Connecting any valve to the manifold base is as easy as plugging in an electrical cord. With this patented "plug-in" design, replacing an individual valve can be accomplished in seconds, without the aid of any tools!

Available in two, three, four or five station segments, the Isonic® manifold's unique modular design creates a versatile, expandable control base. For larger manifolds, two or more segments can be easily combined to fulfill any needs. Further, manifold segments are easily isolated for applications with differential pressures.

Quick-Connect Collets - No Fittings Needed

With its unique design Isonic® eliminates the need for tube fittings. Built-in, push-to-connect collets allow for fast and easy tube and manifold connections.

Resistant To Harsh Conditions

Molded from a high performance thermoplastic, Isonic® achieves superior heat, impact and chemical resistance. It is listed with both UL and CSA.

Maximum Air Flow

Instead of the angular passages of most conventional valves, Isonic's internal channels are aerodynamically shaped for maximum air flow and minimal internal friction. Eliminating sharp corners and abrupt changes in direction reduces air turbulence and energy loss. Normally round air passages are replaced by thin, deep, tape-like channels that conserve space and optimize air flow.

Isonic® V1 and V4 have earned UL recognition and have been tested to the standards of CSA and conforms to the applicable directives of the European Union.



Specifications

| | |
|---------------------------|--|
| Design : | Poppet |
| Media: | Air or Inert Gas |
| Lubrication: | None Required |
| Filtration: | 40 micron |
| Cycle Life: | 50,000,000 cycles |
| Orifice Size: | A: 0.025" / 0.65mm B: 0.035" / 0.90mm C: 0.055" / 1.4mm |
| Flow: | A: 0.01 C _v B: 0.02 C _v C: 0.05 C _v |
| Maximum Pressure: | A: 120 PSI / 8.3 Bar B: 120 PSI / 8.3 Bar C: 30 PSI / 2.1 Bar |
| Vacuum: | to 28 in .Hg |
| Temperature Range: | 0° - 120°F / 49°C |
| Tubing: | 5/32" or 4mm |
| Mounting Holes: | 0.156 diameter (1 hole, 1 slot) |
| Seals: | Viton® and Nitrile |
| Weight: | 1.5 oz. (per valve) |

Solenoid Data

| Voltage | 12DC | 24DC | 24AC | 120 AC |
|----------------------|-------|-------|-------|--------|
| Amps | 0.133 | 0.058 | 0.058 | 0.014 |
| Resistance | 92Ω | 406Ω | 406Ω | 8350Ω |
| Initial Power | 1.6 | 1.4 | 1.4 | 1.7 |
| Continuous On | 1.3 | 1.2 | 1.2 | 1.5 |

Response Time: 10 milliseconds

Molex Connector: UL and CSA Listed

Din Connector: Protection Class- IP 65 according to DIN 40 050
Insulation Class- Group C according to VDE 0110
Conform to DIN 43650 Form C Specifications

Manifold

Common Air Inlet: Built-in, push-in fittings for 1/4" OD or 6mm tubing both ends

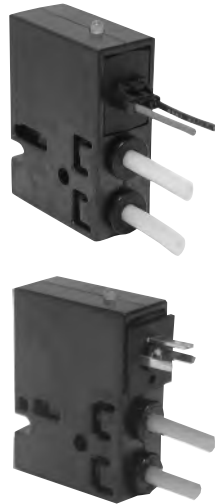
Foot Mounting: 4 slots, 11/64" diameter

DIN Rail Mounting: Attaches to 15mm DIN rail

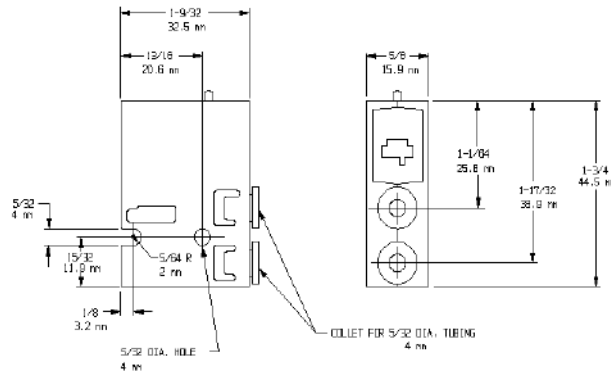
Valve Symbols:



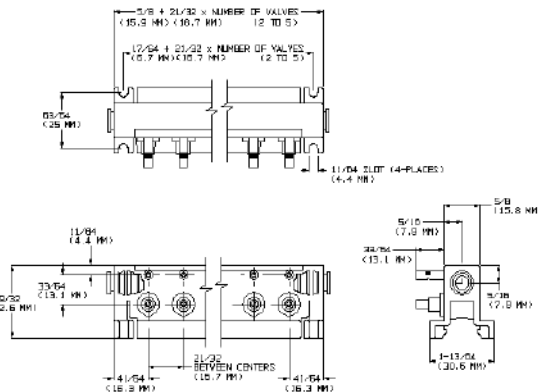
Dimensions



Valves:



Manifolds



Accessories



P1SA1



P1SA2



P1Q1

NOTE: (1) pc. is included with each "W" type valve. 24 AWG wire.



MM-019

Muffer shown here on V1 Valve with T1 option

How To Order

V 1 B 04 - A W 1 - ()**

Product Category

V = Valve

Family

1 = Isonic® 1000 (2-way; 3-way)

Orifice Size

A = 0.025" (0.6mm)
 B = 0.035" (0.9mm)
 C = 0.055" (1.2mm)

Flow Pattern

02 = 2-Way Normally Closed
 04 = 3-Way Normally Closed
 05 = Vacuum (3-Way) Normally Closed
 06 = Vacuum (2-Way) Normally Closed

Options

T1 = Tapped Exhaust (10-32)
 T2 = Tapped Exhaust (M5x0.80)

LED

0 = No LED
 1 = LED (not available with connector Z)

Connector

W = Mini Quick Connect
 (with electronic board)
 X = 8mm micro DIN (with board)
 connector not included
 Y = Flying Lead (with board)
 Z = Flying Lead
 (no board - DC only)

Solenoid Voltage

A = 12 DC
 B = 24 DC
 D = 24 50/60 Hz AC
 F = 120 50/60 Hz AC

Manifolds:

M 1 04 - J 0 - ()**

Product Category

M = Manifold

Family

1 = Isonic® 1000 (2-Way; 3-Way)

Number of Stations

02 = 2 Stations
 03 = 3 Stations
 04 = 4 Stations
 05 = 5 Stations
 N = N Stations (modular segments are combined for manifolds over 5 stations)

Options

A = Aluminum Manifold

Manifold Assembly

0 = Manifold Only
 2 = Assembled Manifold on DIN rail

Common Air Inlet (Both Ends)

J = Push in fitting for 1/4" O.D. tubing
 K = Push in fitting for 6mm tubing

Accessories:

Electrical Connectors

8mm Micro DIN Connector P1D1
 8mm Micro DIN Connector (molded, pre-wired) . P1D2 (Includes 39"/ 1m leads)
 Mini Quick-Connect P1Q1 (includes 18"/ 45cm leads; contact factory for longer lengths)

Manifold Accessories

15mm DIN Mounting Rail P1M1-x (where x = desired number of feet of DIN rail)
 15mm DIN Rail End Stops P1S1 (note: two required per manifold)
 4mm (5/32) Manifold Blocking Plug P1B1 (for blocking empty manifold stations)
 1/4" Manifold Inlet Port Plug P1P1 (one included with each manifold)
 6mm Manifold Inlet Port Plug P1P2 (one included with each manifold)

Miscellaneous

10-32 Muffler MM-019 (to silence exhaust in 10-32 exhaust port)
 Port Adapter P1SA1 (converts 5/32" port to 1/4" barb OD tube)
 Port Adapter P1SA2 (converts 5/32" port to 1/4" push-to-connect OD tube)

See additional accessories on page 17