The Porter Instrument Models 001, 002, and 003A Mass Flow Control Valves are normally closed, proportional solenoid control valves. When coupled with a Porter Instrument Mass Flowmeter, a closed-loop control system is achieved which permits separate component (flowmeter and control valve) configuration. Models 001 and 002 consist of a valve body, valve sleeve, D.C. coil, internal valve assembly complete with an elastomeric valve seat and an orifice. Flow is regulated by varying the valve drive voltage to the D.C. coil, which creates a magnetic field lifting the internal valve assembly from the orifice to allow gas flow control. While similar to Models 001 and 002, additionally the Model 003A Mass Flow Control Valve, designed for high flows, incorporates a pilot-operated valve design. The pilot valve, consisting of a spring-loaded diaphragm assembly and orifice system, controls the pressure differential across the diaphragm assembly, which lifts the main plunger off the orifice permitting gas flow.

**SPECIFICATIONS:**

**Flow Capacity:**
- Model 001: 0-5 SCCM to 0-10 SLPM
- Model 002: 0-10 SLPM to 0-100 SLPM
- Model 003A: 0-100 SLPM to 0-500 SLPM

**Ambient and Operating Temperature:**
- Range:
  - -10 to 70 °C (±14 to 158 °F)

**Maximum Operating Pressure:**
- Model 001 & 002: 1000 PSIG
- Model 003A: 200 PSIG

**Mounting Orientation:**
- Attitude Insensitive

**Dimensions:**
- Refer to Dimensional Data Section

**Weight (Approx):**
- Model 001: 0.6 lbs
- Model 002: 2.1 lbs
- Model 003A: 3.4 lbs

**Valve Coil:**
- Model 001 & Model 003A: 80 (±) Ohms
- Model 002: 63 (± 3) Ohms

**Operating Voltage (nominal):**
- 4-11 Vdc (24 Vdc maximum)

**Operating Current (nominal):**
- 150 mAdc (275 mAdc maximum)
MATERIALS OF CONSTRUCTION

Body: 316 Stainless Steel
Orifice: 316 Stainless Steel
Valve Components (Wetted): 302 Stainless Steel, 316 Stainless Steel, 430F Stainless Steel and Sandvik® 1802
Elastomers (O-rings and Valve Seat): Buna N, EPDM, Kalrez®, Neoprene or Viton®
Process Connections: 316 Stainless Steel

Sandvik® - AB Sandvik Materials Technology
Kalrez®, Viton® - DuPont Dow Elastomers L.L.C.

Specifications subject to change

ORDERING INFORMATION

To order, please specify:
• Model number
• Elastomer material
• Process connection size and type
• Flow capacity
• Gas type
• Operating temperature
• Inlet (supply) pressure
• Outlet pressure
• Additional accessories required

DIMENSIONAL DATA

MODEL 001

Process Connection
Size & Type | ‘X’ Dimension
--- | ---
1/4” Compression | 3.770”
3/8” Compression | 3.890”
1/4 CPI® | 3.770”
3/8 CPI | 3.890”
1/4” A-Lok® | 3.770”
3/8” A-Lok | 3.890”
1/4” MMGFS | 3.560”

Dimensions shown in inches
DIMENSIONAL DATA (Continued)

MODEL 002

Process Connection | 'X' Dimension
--- | ---
1/4'' Compression | 3.770''
3/8'' Compression | 3.890''
1/4 CPI® | 3.770''
3/8 CPI | 3.890''
1/4'' A-Lok® | 3.770''
3/8'' A-Lok | 3.890''
1/4'' MMGFS | 3.630''

MODEL 003A

Process Connection | 'X' Dimension
--- | ---
1/4'' Compression | 3.770''
3/8'' Compression | 3.890''
1/4 CPI® | 3.770''
3/8 CPI | 3.890''
1/4'' A-Lok® | 3.770''
3/8'' A-Lok | 3.890''
1/4'' MMGFS | 3.630''
MODEL NUMBER AND DESCRIPTION

Example:

Model
001- 002- 003A

Model Revision Level
Factory- Assigned

PC Board Electrical Connector
X: Not Applicable

Setpoint Signal/Output Signal
X: Not Applicable

Body Material
S: 316 Stainless Steel

Assembly/Calibration Features
AA: Factory Standard

Process Connection Size and Type

<table>
<thead>
<tr>
<th>A</th>
<th>3/8&quot; CPI</th>
<th>M</th>
<th>1/4&quot; UltraSeal®</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>1/8&quot; Compression</td>
<td>P</td>
<td>1/4&quot; MMGFS(2)</td>
</tr>
<tr>
<td>C</td>
<td>1/4&quot; Compression</td>
<td>Q</td>
<td>3/8&quot; MMGFS(2)</td>
</tr>
<tr>
<td>D</td>
<td>3/8&quot; Compression</td>
<td>R</td>
<td>3/8&quot; UltraSeal®</td>
</tr>
<tr>
<td>E</td>
<td>1/2&quot; Compression</td>
<td>S</td>
<td>1/2&quot; MMGFS(2)</td>
</tr>
<tr>
<td>F</td>
<td>1/2&quot; CPI</td>
<td>T</td>
<td>1/2&quot; UltraSeal®</td>
</tr>
<tr>
<td>G</td>
<td>3/4&quot; Compression</td>
<td>U</td>
<td>3/8&quot; A-Lok</td>
</tr>
<tr>
<td>H</td>
<td>10 mm Compression</td>
<td>V</td>
<td>1/2&quot; A-Lok</td>
</tr>
<tr>
<td>I</td>
<td>1/4&quot; CPI</td>
<td>W</td>
<td>6 mm Compression</td>
</tr>
<tr>
<td>J</td>
<td>1/4&quot; MORFS(1)</td>
<td>X</td>
<td>No Process Conn.</td>
</tr>
<tr>
<td>K</td>
<td>3/8&quot; MORFS(1)</td>
<td>Y</td>
<td>1/4&quot; A-Lok</td>
</tr>
<tr>
<td>L</td>
<td>1/2&quot; MORFS(1)</td>
<td>Z</td>
<td>Special Process Conn.</td>
</tr>
</tbody>
</table>

Elastomers (Valve Seat/O-Rings)

B: Buna N/Buna N
E: EPDM/EPDM™
K: Kalrez/Kalrez™
N: Neoprene/Neoprene™
V: Viton/Viton

**Available on Models 001 and 002 only.

Note: The flow ranges listed are the minimum and maximum nitrogen (N2) flow ranges available for each given model. Intermediate flow ranges are available. For correct sizing when operating parameters are questionable, please consult the factory.

A-LOK®, CPI™, UltraSeal™, VacuSeal™ - Parker Hannifin Corp.

(1) MORFS = Male O-Ring Face Seal
(2) MMGFS = Male Metal Gasket Face Seal

Parker Hannifin Corporation
Porter Instrument Division
245 Township Line Road
Hatfield, PA 19440 USA
(215) 723-4000/ fax (215) 723-2199

ENGINEERING YOUR SUCCESS.