INTRODUCTION

Indirect-Acting Solenoid Valves utilize a small Humphrey Direct-Acting Solenoid Valve to pneumatically operate a larger Air-Pilot Valve, thus achieving high-flow capacity in smaller overall sizes and low power consumption. Indirect-Acting Solenoid Valves are the popular choice for operating pneumatic cylinders and actuators where the pneumatic pressures are typically set to 30-100 PSIG. High internal shifting forces can be achieved resulting in reliable operation and long, trouble-free service.

Although, INDIRECT-ACTING SOLENOID VALVES are essentially two pneumatic valves in one package. Their advantages over Direct-Acting Valves are:

- Greater shifting forces.
- Smaller overall size, relative to flow.
- Lower power consumption, relative to flow and size.
- Greater variety. 2-, 3-, or 4-way; 2- or 3-position.
- Several valve manifold variations available, when many cylinders and actuators need to be operated.

Available in sub-miniature M3x0.5 porting through large 3/4 PIPE in 2-, 3- and 4-way models, they are the ideal choice for factory automation applications.

SQUARE TYPE: Features a low friction, lip-seal, spool design offered as inline or manifold mount. Square types are a compact, modern design with power consumptions as low as 0.1 Watt and flow capacities as great as 1.0 Cv. The line up includes single or double solenoid, 2- or 3-position valves.

ROUND TYPE: Features the classic Humphrey diaphragm-poppet valve principle known for its reliability in clean, lubrication free environments, as well as a workhorse in poor air quality conditions.

INDIRECT-ACTING SOLENOID VALVE FEATURES:

- Compact Size.
- Low power consumption.
- High flow.
- No lubrication required.
- 2- or 3-position.
- Variety of options.
# INDIRECT-ACTING SOLENOID VALVES

## SECTION INDEX

### 2-, 3-WAY VALVES

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### 4-WAY VALVES

<table>
<thead>
<tr>
<th>Series</th>
<th>Ports</th>
<th>CFM*</th>
<th>Valves</th>
<th>Page</th>
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<tbody>
<tr>
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<tr>
<td>HEA Series</td>
<td>10-32, M3x0.5</td>
<td>5</td>
<td>HEA10F, HEA10A</td>
<td>22-23</td>
</tr>
<tr>
<td>HJA Series</td>
<td>1/4</td>
<td>11</td>
<td>HJA10A</td>
<td>26-27</td>
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<tr>
<td>HJC Series</td>
<td>10-32</td>
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</tr>
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<td>HJE Series</td>
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</tr>
<tr>
<td>F10 Series</td>
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<td>F10T(0,1,2,3,4,5)</td>
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<tr>
<td>F15 Series</td>
<td>1/8</td>
<td>33</td>
<td>F15T(0,1,2,3,4,5)</td>
<td>28-29</td>
</tr>
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<td>H110 Series</td>
<td>10-32</td>
<td>14</td>
<td>H(A)110-4E1(2), H(A)113-4E2</td>
<td>32-33</td>
</tr>
<tr>
<td>H180 Series</td>
<td>1/8</td>
<td>33</td>
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<td>32-33</td>
</tr>
<tr>
<td>F18 Series</td>
<td>1/4, 1/8</td>
<td>60</td>
<td>F18T(0,1,2,3,4,5)</td>
<td>30-31</td>
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<tr>
<td><strong>LARGE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>250-4 Series</td>
<td>1/4</td>
<td>50</td>
<td>250-4E1, 250-4E2</td>
<td>37</td>
</tr>
<tr>
<td>TAC3 Series</td>
<td>1/4</td>
<td>31</td>
<td>(M)42E1, (M)42E2, (M)42AE1, (M)42AE2</td>
<td>40-41</td>
</tr>
<tr>
<td>501-4 Series</td>
<td>1/2</td>
<td>170</td>
<td>501-4E1, 501-4E2</td>
<td>39</td>
</tr>
</tbody>
</table>

*Nominal flow @100 psi

![Image of solenoid valves](image)
The HEA/HEB Series Indirect-Acting Solenoid, directional control valves feature a miniature 10mm size, high flow 0.07 Cv, and low 0.55 Watt power consumption. The next generation of H040/H041 Series are interchangeable. These inline or manifold mount valves are a popular choice for operating small bore cylinders. Fast response or ultra low current consumption solenoids are optional.

**HEB Series:** Family of 2- or 3-way valves.

**HEA Series:** Family of 2-, 3- and 4-way valves.

### Features and Benefits
- Small, compact 10mm size.
- Low power consumption.
- High flow.
- DC voltages.
- Electrical connection options include lead wires or plug-in.
- Grommet type, lead wire valves offer moisture resistant specification – standard.
- Clean appearance.
- Options: Fast response solenoid (6 ms), low current solenoid (0.15 W)

### Specifications

| Design Principle | HEA: Pressure Balanced – Air Return
| Porting Type     | 2-, 3-, 4-Way
| Port Size        | 10-32 UNF, M3x0.5
| Media            | Air
| Pressure Range   | 29–102 PSIG
| Temperature Range| 41°F to 122°F
| Flow @100 PSIG   | 5 CFM, 141 LPM (Cv=0.08)
| Power            | 0.55 W
| Available Voltages| 5VDC, 6VDC, 12VDC, 24VDC

### Indirect-Acting Solenoid Valves

<table>
<thead>
<tr>
<th>Base Model</th>
<th>Nominal Dimensions (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HEB10A__ single solenoid only</td>
<td>L</td>
</tr>
<tr>
<td>HEA10A__ single solenoid</td>
<td>2.09</td>
</tr>
<tr>
<td>HEA10A__ double solenoid</td>
<td>3.36</td>
</tr>
<tr>
<td>HEA10A__ double solenoid</td>
<td>3.36</td>
</tr>
</tbody>
</table>

---

**HEA**

**HEB**

**HEA Double Solenoid**
HEA Series

**For Direct Piping, or F Type Manifold:**
- 2-position, single solenoid, 4-way
- 2-position, double solenoid, 4-way

**For Base Piping, or A-Type Manifolds:**
- Normally closed, single solenoid, 2-way
- Normally open, single solenoid, 2-way
- Normally closed, single solenoid, 3-way
- Normally open, single solenoid, 3-way
- 2-position, single solenoid, 4-way
- 2-position, double solenoid, 4-way

HEB Series

**For Direct Piping, or F Type Manifold:**
- Normally closed, single solenoid, 2-way
- Normally open, single solenoid, 2-way
- Normally closed, single solenoid, 3-way
- Normally open, single solenoid, 3-way

**For Base Piping, or A-Type Manifolds:**
- Normally closed, single solenoid, 2-way
- Normally open, single solenoid, 2-way
- Normally closed, single solenoid, 3-way
- Normally open, single solenoid, 3-way

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**AVAILABLE VALVE TYPES – HEB AND HEA SERIES ... CONSULT WEBSITE FOR MODEL NUMBERS**

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**HOW TO OBTAIN SPECIFICATIONS FOR A PARTICULAR VALVE(S)**
- Go directly to www.humphrey-products.com/dynamic/products
- Or, visit www.humphrey-products.com and select “Online Product Guide.”
- Once you have followed the steps to get the valve you need, select “Download Spec Sheet.” Doing this will create a personalized PDF of the valve, which you may save to your computer and print at your convenience. These spec sheets are helpful when placing your order(s).

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- Or, visit www.humphrey-products.com, select “Find A Distributor,” and input your information to locate a distributor nearest you.
- Or, call Customer Service at 1-800-477-8707 for the name and phone number of your local distributor.

HUMPHREY PRODUCTS ARE SOLD WORLD-WIDE THROUGH AUTHORIZED DISTRIBUTORS
## INDIRECT-ACTING SOLENOID VALVES

**HJC Series Indirect-Acting Solenoid, directional control valves** achieve large 0.17 Cv flow in a 10mm width. These valves are a popular choice for operating small bore cylinders, up to 1.5” bore.

**HJE Series Indirect-Acting Solenoid, directional control valves** achieve unprecedented 0.53 Cv flow capacity in a 12mm width. These valves are sized for operating medium size cylinders, up to 2.5” bore.

Fast (6ms) response or ultra low (0.15 Watt) current consumption solenoids optional.

2-, 3- or 4-way models available as inline valves or manifold mount on two manifold configurations, A or F type.

### Features and Benefits
- Small, compact 10mm and 12mm size.
- Low power consumption.
- High flow.
- Quiet operation.
- DC voltages.
- Electrical connection options include lead wires or plug-in.
- Grommet type, lead wire valves offer moisture proof specification – standard.
- Clean appearance.
- Options: Fast response solenoid (6 ms), low current solenoid (0.15 W)

### Base Model

<table>
<thead>
<tr>
<th>Base Model</th>
<th>Nominal Dimensions (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
</tr>
<tr>
<td>HJC10__ single solenoid</td>
<td>2.58</td>
</tr>
<tr>
<td>HJC10__ double solenoid</td>
<td>3.77</td>
</tr>
<tr>
<td>HJC10__ three position</td>
<td>4.16</td>
</tr>
<tr>
<td>HJE12__ single solenoid</td>
<td>3.15</td>
</tr>
<tr>
<td>HJE12__ double solenoid</td>
<td>4.37</td>
</tr>
<tr>
<td>HJE12__ three position</td>
<td>4.73</td>
</tr>
</tbody>
</table>

### Specifications

- **Design Principle:** Pressure Balanced – Air Return
- **Porting Type:** 2, 3- or 4-Way
- **Port Size:** M3x0.5 (HJC), 10-32 UNF (HJE only)
- **Media:** Air
- **Pressure Range:** 29–102 PSIG
- **Temperature Range:** 41°F to 122°F
- **Flow @100 PSIG:** HJC: 12 CFM, 339 LPM (Cv=0.2) HJE: 32 CFM, 906 LPM (Cv=0.5)
- **Power:** 0.55 W
- **Available Voltages:** 5VDC, 6VDC, 12VDC, 24VDC
AVAILABLE VALVE TYPES – HJC AND HJE SERIES ... CONSULT WEBSITE FOR MODEL NUMBERS

For Direct Piping, or F Type Manifold:
- 2-position, single solenoid, 4-way
- 2-position, double solenoid, 4-way
- 3-position, 4-way, closed center
- 3-position, 4-way, exhaust center
- 3-position, 4-way, pressure center

For Base Piping, or A-Type Manifolds:
- Normally closed, single solenoid, 2-way
- Normally open, single solenoid, 2-way
- Normally closed, single solenoid, 3-way
- Normally open, single solenoid, 3-way
- 2-position, single solenoid, 4-way
- 2-position, double solenoid, 4-way
- 3-position, 4-way, closed center
- 3-position, 4-way, exhaust center
- 3-position, 4-way, pressure center

How to Obtain Specifications for a Particular Valve(s)
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- Or, call Customer Service at 1-800-477-8707 for the name and phone number of your local distributor.

Humphrey Products are sold worldwide through authorized distributors.

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<tr>
<th>Manifold Types Available</th>
<th>Overall Size (valves not mounted)</th>
<th>Nominal Dimensions (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
<td>H</td>
</tr>
<tr>
<td>A Type (HJCM_A, HJEM_A):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extruded Aluminum. Delivery ports 2 and 4 located on MANIFOLD. Accepts base piping HJC10A_ (HJE12A_) valve models.</td>
<td>Two Station (___M2A)</td>
<td>1.59 (1.75)</td>
</tr>
<tr>
<td>Each Additional station</td>
<td>0.41 (0.49)</td>
<td></td>
</tr>
<tr>
<td>Max # of stations</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>F Type (HJCM_F, HJEM_F):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extruded Aluminum. Delivery ports 2 and 4 located on VALVE. Accepts direct piping HJC10F_ (HJE12F_) valve models.</td>
<td>Two Station (___M2F)</td>
<td>1.52 (1.67)</td>
</tr>
<tr>
<td>Each Additional station</td>
<td>0.41 (0.49)</td>
<td></td>
</tr>
<tr>
<td>Max # of stations</td>
<td></td>
<td>20</td>
</tr>
</tbody>
</table>

Consult website for exact dimensions and additional manifold configurations.
The 10mm HJA Series manifold mount, directional control solenoid valves offer unprecedented compact size versus equivalent competitive models. Din-Rail mounted, HJA valves are low 0.5 Watt power consumption, with excellent 0.19 Cv flow capacity within a thin 50mm overall manifold height. Valves are available as subbase mount, or as manifold mount in 3 different configurations, monoblock, non plug-in, or pre-wired plug-in. Consult factory representative for serial transmission manifolds.

Space saving, tandem 3-port valves (two valves in one body) occupy one slice on a manifold.

**Features and Benefits**
- Pre-wired, pre-assembled manifold configurations.
- Extreme miniaturization achieved for high flow, 0.19 Cv valve platform. Length and height, optimized.
- Quiet operation.
- DC voltages.
- Electrical connection options include plug-in or plug-in manifold.
- Tandem 3-port, 4-position valve optional.
- 0.5 W low power consumption standard, and 0.25 W optional.

### Base Model

<table>
<thead>
<tr>
<th>Base Model</th>
<th>Nominal Dim. (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HJA10__ single solenoid replacement</td>
<td>L 3.87</td>
</tr>
<tr>
<td>HJA10__ double solenoid replacement</td>
<td>H 0.98</td>
</tr>
<tr>
<td>HJA10__ three position replacement</td>
<td>W 0.39</td>
</tr>
<tr>
<td>HJA10__ on single subbase</td>
<td>see above</td>
</tr>
</tbody>
</table>

### Specifications

- **Design Principle:** Pressure Balanced – Air Return
- **Porting Type:** 2-, 3- or 4-Way
- **Port Size:** 1/8 PIPE (5/32 and 1/4 tube size)
- **Media:** Air
- **Pressure Range:** 29–102 PSIG
- **Temperature Range:** 41°F to 122°F
- **Flow @100 PSIG:** 11 CFM, 311 LPM (Cv=0.19)
- **Power:** 0.5 W
- **Available Voltages:** 12VDC, 24VDC
AVAILABLE VALVE TYPES – HJA SERIES

For Base Piping, or Manifold Mount:
- Normally closed, single solenoid, 2-way
- Normally open, single solenoid, 2-way
- Normally closed, single solenoid, 3-way
- Normally open, single solenoid, 3-way
- 2-position, single solenoid, 4-way
- 2-position, double solenoid, 4-way

For Base Piping, or Manifold Mount:
- 3-position, 4-way, closed center
- 3-position, 4-way, exhaust center
- 3-position, 4-way, pressure center
- 4-position, tandem 3-ports, NC/NC
- 4-position, tandem 3-ports, NO/NO
- 4-position, tandem 3-ports, NC/NO

Manifold Types Available

<table>
<thead>
<tr>
<th>Manifold Types Available</th>
<th>Overall Size (valves not mounted)</th>
<th>Nominal Dimensions (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AJ Type (HJAM_AJ):</td>
<td>Two Station (___M2AJ)</td>
<td>L: 1.91 H: 1.02 D: 2.08</td>
</tr>
<tr>
<td></td>
<td>Each Additional station</td>
<td>L: 0.41 H: 1.02 D: 2.08</td>
</tr>
<tr>
<td></td>
<td>Max # of stations</td>
<td>20</td>
</tr>
<tr>
<td>NJ Type (HJAM_NJ):</td>
<td>Two Station (___M2NJ)</td>
<td>L: 2.95 H: 1.97 D: 3.74</td>
</tr>
<tr>
<td></td>
<td>Each Additional station</td>
<td>L: 0.41 H: 1.97 D: 3.74</td>
</tr>
<tr>
<td></td>
<td>Max # of stations</td>
<td>20</td>
</tr>
<tr>
<td>PJ Type (HJAM_PJ):</td>
<td>Two Station (___M2PJ)</td>
<td>L: 3.74 H: 1.97 D: 3.74</td>
</tr>
<tr>
<td></td>
<td>Each Additional station</td>
<td>L: 0.41 H: 1.97 D: 3.74</td>
</tr>
<tr>
<td></td>
<td>Max # of stations</td>
<td>16</td>
</tr>
</tbody>
</table>

Consult website for exact dimensions and additional manifold configurations.

HOW TO OBTAIN SPECIFICATIONS FOR A PARTICULAR VALVE(S)
- Go directly to www.humphrey-products.com/dynamic/products
- Or, visit www.humphrey-products.com and select “Online Product Guide.”
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- Or, call Customer Service at 1-800-477-8707 for the name and phone number of your local distributor.

Consult website for exact dimensions and additional manifold configurations.
**F10, F15 Valves**

**F10T (0,1,2,3,4,5); F15T (0,1,2,3,4,5)**

*F10 and F15 Series Indirect-Acting Solenoid, directional control valves achieve 0.28 and 0.56 Cv flow capacity in a 10mm and 15mm width. These valves are a popular choice for operating small to medium size cylinders, up to 2.5” bore. Ultra low (0.1 Watt) current consumption solenoids and IP65 protection are optional. Available as inline, subbase mount, or as manifold mount in several configurations, including monoblock, non plug-in, or pre-wired plug-in. Consult factory representative for serial transmission manifolds.

4-way models available as inline valves or manifold mount on two manifold configurations, A or F type.*

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**Features and Benefits**

- Small, compact 10 and 15mm size.
- Low power consumption, as low as 0.1 W.
- High flow.
- Quiet operation. No AC hum.
- DC voltages.
- Electrical connection options include plug-in or plug-in manifold.
- Two-position, double solenoids can be converted to single solenoid function.
- Valves with IP65 offer moisture proof specification – optional.
- Clean appearance.

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**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Base Model</th>
<th>Nominal Dimensions (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
</tr>
<tr>
<td>F10T-F4H-___</td>
<td>4.02</td>
</tr>
<tr>
<td>F10T-F4H-___(two solenoids)</td>
<td>4.33</td>
</tr>
<tr>
<td>F10T-F4H-___(three position)</td>
<td></td>
</tr>
<tr>
<td>F15T-F4H-___</td>
<td>4.75</td>
</tr>
<tr>
<td>F15T-F4H-___(two solenoid)</td>
<td>5.14</td>
</tr>
<tr>
<td>F15T-F4H-___(three position)</td>
<td></td>
</tr>
</tbody>
</table>

- **Design Principle:** Pressure Balanced – Air Return
- **Porting Type:** 4-Way
- **Port Size:** F10: 10–32 UNF; F15: 1/8 PIPE
- **Media:** Air
- **Pressure Range:** 29–102 PSIG
- **Temperature Range:** 41°F to 122°F
- **Flow @100 PSIG:** F10: 16 CFM, 453 LPM (Cv=0.3)
  F15: 33 CFM, 934 LPM (Cv=0.6)
- **Power:** 0.4 W (0.1 W optional)
- **Available Voltages:** 12VDC, 24VDC, 100VAC
AVAILABLE VALVE TYPES – F10 AND F15 SERIES ... CONSULT WEBSITE FOR MODEL NUMBERS

Operation Types:
- Internal pilot type
- External pilot type, low positive pressure
- External pilot type, vacuum pressure

For Base Piping, or Manifold Mount:
- 2-position, single solenoid only, 4-way
- 2-position, two coil, single solenoid, 4-way
- 2-position, two coil, double solenoid, 4-way

For Base Piping, or Manifold Mount:
- 3-position, 4-way, closed center
- 3-position, 4-way, exhaust center
- 3-position, 4-way, pressure center
- 4-position, tandem 3-ports, NC/NC
- 4-position, tandem 3-ports, NO/NO

Manifold Types Available

<table>
<thead>
<tr>
<th>Manifold Type</th>
<th>Overall Size (valves not mounted)</th>
<th>Nominal Dimensions (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>L</td>
</tr>
<tr>
<td>A Type (F10M_A, F15M_A): Extruded Aluminum. Delivery ports 2 and 4 located in manifold, but transferable to valves. Accepts F10 (F15) valve models.</td>
<td>Two Station (___M2A)</td>
<td>1.52 (1.89)</td>
</tr>
<tr>
<td></td>
<td>Each Additional station</td>
<td>0.41 (0.63)</td>
</tr>
<tr>
<td></td>
<td>Max # of stations</td>
<td></td>
</tr>
<tr>
<td>F Type (F10M_F, F15M_F): Extruded Aluminum. Delivery ports 2 and 4 located on VALVE. Accepts F10 (F15) valve models.</td>
<td>Two Station (___M2F)</td>
<td>1.91 (2.44)</td>
</tr>
<tr>
<td></td>
<td>Each Additional station</td>
<td>0.41 (0.63)</td>
</tr>
<tr>
<td></td>
<td>Max # of stations</td>
<td></td>
</tr>
<tr>
<td>NH Type (F10M_NH, F15M_NH): Split, DIN-Rail Mount, for Non-Plug-in Valves. Delivery ports 2 and 4 located in manifold, but transferable to valves. Accepts F10 (F15) valve models.</td>
<td>Two Station (___M2NH)</td>
<td>3.07 (3.98)</td>
</tr>
<tr>
<td></td>
<td>Each Additional station</td>
<td>0.41 (0.63)</td>
</tr>
<tr>
<td></td>
<td>Max # of stations</td>
<td></td>
</tr>
<tr>
<td>PH Type (F10M_PH, F15M_PH): Split, DIN-Rail Mount, for Plug-in Valves. Delivery ports 2 and 4 located in manifold, but transferable to valves. Accepts F10 (F15) valve models.</td>
<td>Two Station (___M2PH)</td>
<td>3.90 (4.81)</td>
</tr>
<tr>
<td></td>
<td>Each Additional station</td>
<td>0.41 (0.63)</td>
</tr>
<tr>
<td></td>
<td>Max # of stations</td>
<td></td>
</tr>
</tbody>
</table>

Consult website for exact dimensions and additional manifold configurations, including serial transmission.

HOW TO OBTAIN SPECIFICATIONS FOR A PARTICULAR VALVE(S)
- Go directly to www.humphrey-products.com/dynamic/products
- Or, visit www.humphrey-products.com and select “Online Product Guide.”
- Once you have followed the steps to get the valve you need, select “Download Spec Sheet.” Doing this will create a personalized PDF of the valve, which you may save to your computer and print at your convenience. These spec sheets are helpful when placing your order(s).

HOW TO ORDER HUMPHREY VALVES AND ACCESSORIES
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- Or, visit www.humphrey-products.com, select “Find A Distributor,” and input your information to locate a distributor nearest you.
- Or, call Customer Service at 1-800-477-8707 for the name and phone number of your local distributor.
**F18 Series Indirect-Acting Solenoid, directional control valves** achieve 1.0 Cv flow capacity in a 18mm width. These valves are a popular choice for operating medium-size cylinders, up to 4” bore. Low (0.9 W) current consumption solenoids are standard. Valves are available as inline, subbase mount, or as manifold mount in several configurations, including monoblock, non plug-in, or pre-wired plug-in. Consult factory representative for serial transmission manifolds.

4-way models available as inline valves or manifold mount on two manifold configurations, A or F type.

### Features and Benefits
- Small, compact 18mm size.
- Low power consumption.
- High flow.
- Quiet operation. No AC hum.
- DC voltages.
- Electrical connection options include plug-in or plug-in manifold.
- Two-position, double solenoids can be converted to single solenoid function.
- Clean appearance.

### Base Model

<table>
<thead>
<tr>
<th>Base Model</th>
<th>Nominal Dimensions (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F18T0-F4H-__</td>
<td>L: 5.18</td>
</tr>
<tr>
<td>F18T__F4H-__ (two solenoids)</td>
<td>H: 2.19</td>
</tr>
<tr>
<td>F18T__F4H-__ (three position)</td>
<td>W: 0.71</td>
</tr>
</tbody>
</table>

### Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Principle</td>
<td>Pressure Balanced – Air Return</td>
</tr>
<tr>
<td>Porting Type</td>
<td>4-Way</td>
</tr>
<tr>
<td>Port Size</td>
<td>1/4 PIPE</td>
</tr>
<tr>
<td>Media</td>
<td>Air</td>
</tr>
<tr>
<td>Pressure Range</td>
<td>29–102 PSIG</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>41°F to 122°F</td>
</tr>
<tr>
<td>Flow @100 PSIG</td>
<td>60 CFM, 1699 LPM (Cv=1.0)</td>
</tr>
<tr>
<td>Power</td>
<td>0.9 W</td>
</tr>
<tr>
<td>Available Voltages</td>
<td>12VDC, 24VDC, 100VAC</td>
</tr>
</tbody>
</table>
AVAILABLE VALVE TYPES – F18 SERIES ... CONSULT WEBSITE FOR MODEL NUMBERS

Operation Types
• Internal pilot type
• External pilot type, low positive pressure
• External pilot type, vacuum pressure

For Base Piping, or Manifold Mount:
• 2-position, single solenoid only, 4-way
• 2-position, two coil, single solenoid, 4-way
• 2-position, two coil, double solenoid, 4-way
• 3-position, 4-way, closed center
• 3-position, 4-way, exhaust center
• 3-position, 4-way, pressure center

Indirect-Acting Solenoid Valves
F18 Valves
F18T (0,1,2,3,4,5)

F18T Series on F18M4PH Manifold
F18T Series on Monoblock F18M4A Manifold

Manifold Types Available

<table>
<thead>
<tr>
<th>Manifold Type</th>
<th>Overall Size (valves not mounted)</th>
<th>Nominal Dimensions (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Type (F18M_A): Extruded Aluminum. Delivery ports 2 and 4 located in manifold, but transferable to valves. Accepts F18 valve models.</td>
<td>Two Station (F18M2A)</td>
<td>L: 2.24, H: 2.09, D: 3.51</td>
</tr>
<tr>
<td></td>
<td>Each Additional station</td>
<td>L: 0.75, H: 2.09, D: 3.51</td>
</tr>
<tr>
<td></td>
<td>Max # of stations</td>
<td></td>
</tr>
<tr>
<td>F Type (F18M_F): Extruded Aluminum. Delivery ports 2 and 4 located on VALVE. Accepts F18 valve models.</td>
<td>Two Station (F18M2F)</td>
<td>L: 2.24, H: 1.34, D: 2.96</td>
</tr>
<tr>
<td></td>
<td>Each Additional station</td>
<td>L: 0.75, H: 1.34, D: 2.96</td>
</tr>
<tr>
<td></td>
<td>Max # of stations</td>
<td></td>
</tr>
<tr>
<td>NH Type (F18M_NH): Split, DIN-Rail Mount, for Non-Plug-in Valves. Delivery ports 2 and 4 located in manifold, but transferable to valves. Accepts F18 valve models.</td>
<td>Two Station (F18M2NH)</td>
<td>L: 3.58, H: 2.99, D: 3.55</td>
</tr>
<tr>
<td></td>
<td>Each Additional station</td>
<td>L: 0.75, H: 2.99, D: 3.55</td>
</tr>
<tr>
<td></td>
<td>Max # of stations</td>
<td></td>
</tr>
<tr>
<td>PH Type (F18M_PH): Split, DIN-Rail Mount, for Plug-in Valves. Delivery ports 2 and 4 located in manifold, but transferable to valves. Accepts F18 valve models.</td>
<td>Two Station (F18M2PH)</td>
<td>L: 4.41, H: 2.99, D: 3.55</td>
</tr>
<tr>
<td></td>
<td>Each Additional station</td>
<td>L: 0.75, H: 2.99, D: 3.55</td>
</tr>
<tr>
<td></td>
<td>Max # of stations</td>
<td></td>
</tr>
</tbody>
</table>

Consult website for exact dimensions and additional manifold configurations, including serial transmission.

HOW TO OBTAIN SPECIFICATIONS FOR A PARTICULAR VALVE(S)

1. Go directly to www.humphrey-products.com/dynamic/products
2. Or, visit www.humphrey-products.com and select “Online Product Guide.”
3. Once you have followed the steps to get the valve you need, select “Download Spec Sheet.” Doing this will create a personalized PDF of the valve, which you may save to your computer and print at your convenience. These spec sheets are helpful when placing your order(s).

HOW TO ORDER HUMPHREY VALVES AND ACCESSORIES

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2. Or, visit www.humphrey-products.com, select “Find A Distributor,” and input your information to locate a distributor nearest you.
3. Or, call Customer Service at 1-800-477-8707 for the name and phone number of your local distributor.

Humphrey Products Company, Kalamazoo, MI USA  ... www.humphrey-products.com  ... 1-800-477-8707 | 31
H110 and H180 Series Indirect-Acting Solenoid, directional control valves achieve 0.23 and 0.57 Cv flow capacity in a 15mm and 18mm width. These valves are a popular choice for operating medium size cylinders, up to 2.5” bore. Low (1.6 Watt) current consumption solenoids are standard. Valves are available as inline, subbase mount, or as manifold mount.

2-, 3- or 4-way models available as inline valves or manifold mount on two manifold configurations, A or F type.

**Features and Benefits**
- Compact 15mm and 18mm size.
- Low power consumption.
- High flow.
- Quiet operation. No AC hum.
- AC and DC voltages.
- Grommet, plug-in and DIN type electrical connector – standard.
- Clean appearance.

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Principle</td>
<td>Pressure Balanced – Air Return</td>
</tr>
<tr>
<td>Porting Type</td>
<td>2-, 3-, or 4-Way</td>
</tr>
<tr>
<td>Port Size</td>
<td>H110: 10-32 UNF; H180: 1/8 PIPE</td>
</tr>
<tr>
<td>Media</td>
<td>Air</td>
</tr>
<tr>
<td>Pressure Range</td>
<td>22–102 PSIG</td>
</tr>
<tr>
<td>Temperature Range</td>
<td>41°F to 122°F</td>
</tr>
<tr>
<td>Flow @100 PSIG</td>
<td>H110: 14 CFM, 396 LPM (Cv=0.2)</td>
</tr>
<tr>
<td>H180: 33 CFM, 934 LPM (Cv=0.6)</td>
<td></td>
</tr>
<tr>
<td>Power</td>
<td>1.6 W</td>
</tr>
<tr>
<td>Available Voltages</td>
<td>12VDC, 24VDC, 24VAC, 120VAC, 240VAC</td>
</tr>
</tbody>
</table>

**Base Model**

<table>
<thead>
<tr>
<th>Base Model</th>
<th>Nominal Dimensions (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
</tr>
<tr>
<td>H(A)110 single</td>
<td>3.18</td>
</tr>
<tr>
<td>H(A)110 double</td>
<td>4.66</td>
</tr>
<tr>
<td>H(A)113 three</td>
<td>5.14</td>
</tr>
<tr>
<td>H(A)180 single</td>
<td>3.81</td>
</tr>
<tr>
<td>H(A)180 double</td>
<td>5.31</td>
</tr>
<tr>
<td>H(A)183 three</td>
<td>5.93</td>
</tr>
</tbody>
</table>
AVAILABLE VALVE TYPES – H110 AND H180 SERIES ... CONSULT WEBSITE FOR MODEL NUMBERS

For Direct Piping, or F Type Manifold:
- Normally closed, single solenoid, 2-way
- Normally open, single solenoid, 2-way
- Normally closed, single solenoid, 3-way
- Normally open, single solenoid, 3-way
- 2-position, single solenoid, 4-way
- 2-position, double solenoid, 4-way
- 3-position, 4-way, closed center
- 3-position, 4-way, exhaust center
- 3-position, 4-way, pressure center

For Base Piping, or A-Type Manifolds:
- Normally closed, single solenoid, 2-way
- Normally open, single solenoid, 2-way
- Normally closed, single solenoid, 3-way
- Normally open, single solenoid, 3-way
- 2-position, single solenoid, 4-way
- 2-position, double solenoid, 4-way
- 3-position, 4-way, closed center
- 3-position, 4-way, exhaust center
- 3-position, 4-way, pressure center

<table>
<thead>
<tr>
<th>Manifold Types Available</th>
<th>Overall Size (valves not mounted)</th>
<th>Nominal Dimensions (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Type (H110M_A, H180M_A): Extruded Aluminum. Delivery ports 2 and 4 located on MANIFOLD. Accepts HA110 (HA180) valve models.</td>
<td>Two Station ( ___M2A )</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>Each Additional station</td>
<td>1.89 (2.25)</td>
</tr>
<tr>
<td></td>
<td>Max # of stations</td>
<td>0.63 (0.75)</td>
</tr>
<tr>
<td>F Type (H110M_F, H180M_F): Extruded Aluminum. Delivery ports 2 and 4 located on VALVE. Accepts H110 (H180) valve models.</td>
<td>Two Station ( ___M2F )</td>
<td>L</td>
</tr>
<tr>
<td></td>
<td>Each Additional station</td>
<td>1.89 (2.25)</td>
</tr>
<tr>
<td></td>
<td>Max # of stations</td>
<td>0.63 (0.75)</td>
</tr>
</tbody>
</table>

Consult website for exact dimensions and additional manifold configurations.

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HUMPHREY PRODUCTS ARE SOLD WORLD-WIDE THROUGH AUTHORIZED DISTRIBUTORS
H240 Series Indirect-Acting Solenoid, directional control valves achieve 0.88 Cv flow capacity in a 24mm width. These pressure balanced spool/air spring return valves are suitable for operating medium size cylinders, up to 3” bore. Low (1.6 Watt) current consumption solenoids are standard. Two or three position, 4-way models available as inline valves or manifold mount F-Type, stacking manifold A-Type or plug-in Type AW.

Features and Benefits

- Compact 24mm size.
- Low power consumption.
- High flow.
- Quiet operation. No AC hum.
- AC and DC voltages.
- Grommet, plug-in and DIN type electrical connector – standard.
- Clean appearance.

Base Model  | Nominal Dimensions (inch)  
--- | --- | --- 
H(A)240__ single solenoid  | 4.07  | 1.38  | 0.91  
H(A)240__ double solenoid  | 5.33  |  |  
H(A)243__ three position  | 6.52  |  |  

**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Design Principle:</th>
<th>Pressure Balanced – Air Return, Spring Assist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porting Type:</td>
<td>4-Way</td>
</tr>
<tr>
<td>Port Size:</td>
<td>1/4</td>
</tr>
<tr>
<td>Media:</td>
<td>Air</td>
</tr>
<tr>
<td>Pressure Range:</td>
<td>25–100 PSIG</td>
</tr>
<tr>
<td>Temperature Range:</td>
<td>41°F to 122°F</td>
</tr>
<tr>
<td>Flow @100 PSIG:</td>
<td>53 CFM, 1500 LPM (Cv=0.9)</td>
</tr>
<tr>
<td>Power:</td>
<td>1.6 W</td>
</tr>
<tr>
<td>Available Voltages:</td>
<td>12VDC, 24VDC, 120VAC, 240VAC, 24VAC</td>
</tr>
</tbody>
</table>
INDIRECT-ACTING SOLENOID VALVES

HUMPHREY PRODUCTS ARE SOLD WORLD-WIDE THROUGH AUTHORIZED DISTRIBUTORS

H240 Valves
H240-4E, HA240-4E, HW240-4E, H243-4E, HA243-4E, HW243-4E

AVAILABLE VALVE TYPES – H240 SERIES … CONSULT WEBSITE FOR MODEL NUMBERS

For Direct Piping, or F Type Manifold:
• 2-position, single solenoid, 4-way
• 2-position, double solenoid, 4-way
• 3-position, 4-way, closed center
• 3-position, 4-way, exhaust center

For Base Piping, or A(AW)-Type Manifolds:
• 2-position, single solenoid, 4-way
• 2-position, double solenoid, 4-way
• 3-position, 4-way, closed center
• 3-position, 4-way, exhaust center

Consult website for exact dimensions and additional manifold configurations.

Manifold Types Available

<table>
<thead>
<tr>
<th>Overall Size (valves not mounted)</th>
<th>Nominal Dimensions (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L</td>
</tr>
</tbody>
</table>

**A Type (H240M_A):** Stacking diecast manifold (assembled). Delivery ports 2 and 4 located on MANIFOLD. Accepts HA240 valve models.

| Two Station (H240M2A) | 4.6 | 1.87 | 3.35 |
| Each Additional station | 1.1 |       |      |
| Max # of stations | 10 |

**AW Type (H240M_AW):** Stacking diecast, plug-in manifold (assembled). Delivery ports 2 and 4 located on MANIFOLD. Accepts HW240 plug-in type valve models.

| Two Station (H240M2AW) | 4.6 | 1.87 | 5.06 |
| Each Additional station | 1.1 |       |      |
| Max # of stations | 10 |

**F Type (H240M_F):** Extruded Aluminum. Delivery ports 2 and 4 located on VALVE. Accepts H240 valve models.

| Two Station (H240M2F) | 2.84 | 1.1 | 2.44 |
| Each Additional station | 0.95 |       |      |
| Max # of stations | 10 |

HOW TO OBTAIN SPECIFICATIONS FOR A PARTICULAR VALVE(S)

- Go directly to www.humphrey-products.com/dynamic/products
- Or, visit www.humphrey-products.com and select “Online Product Guide.”
- Once you have followed the steps to get the valve you need, select “Download Spec Sheet.” Doing this will create a personalized PDF of the valve, which you may save to your computer and print at your convenience. These spec sheets are helpful when placing your order(s).

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- Or, call Customer Service at 1-800-477-8707 for the name and phone number of your local distributor.

Consult website for exact dimensions and additional manifold configurations.
The classic Humphrey diaphragm poppet, 1/4 PIPE port solenoid valve 250 series, is a workhorse, whether the media and ambient conditions are clean or harsh. The pressure unbalanced diaphragm-poppet design has no metal-to-metal contact or sliding seals, thus millions of trouble-free cycling are expected, whether air is dirty, lubricated or not.

Available as 2- or 3-way models, normally open or normally closed, single or double solenoid.

**SPECIFICATIONS**

- **Design Principle:** Pressure Unbalanced – Air Return, Spring Assist
- **Porting Type:** 2- or 3-Way
- **Port Size:** 1/4 PIPE
- **Media:** Air, Inert Gas, Liquid (brass body including AE1 and AE2)
- **Pressure Range:** 30–125 PSIG; AE 0–125 PSIG
- **Temperature Range:** 0°F to 125°F
- **Flow @100 PSIG:** 50 CFM, 1415 LPM (Cv=0.8)
- **Power:** 6.7/8.2 W
- **Available Voltages:** 12 VDC, 24VDC, 24/50/60, 120/50/60, 240/50/60

**Features and Benefits**

- Low leak rate.
- Full ported 1/4” orifice, 1/4 PIPE ports.
- Impervious to air quality, lubricated or not lubricated.
- Quiet operation. No AC hum.
- Short stroke and quick exhaust permits fast cycling.
- Class B-rated, continuous duty coils.
- Electrical connections include grommet cover, conduit or DIN type connector.
- For low pressure or alternate media, select external piloted “AE” type.
- Optional brass body available.
- Design characteristics translate to excellent vacuum valve, see Vacuum, p. 78.

**HOW TO OBTAIN SPECIFICATIONS FOR A PARTICULAR VALVE(S)**

- Go directly to www.humphrey-products.com/dynamic/products
- Or, visit www.humphrey-products.com and select “Online Product Guide.”
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- Or, call Customer Service at 1-800-477-8707 for the name and phone number of your local distributor.
The classic Humphrey diaphragm poppet, 1/4 PIPE port solenoid valve 250-4 series, is a workhorse, whether the media and ambient conditions are clean or harsh. The pressure unbalanced diaphragm-poppet design has no metal-to-metal contact or sliding seals, thus millions of trouble-free cycling are expected, whether air is dirty, lubricated or not.

Available as 4-way models, single or double solenoid, 2- or 3-position.

Features and Benefits
- Low leak rate.
- Full ported 1/4” orifice, 1/4 PIPE ports.
- Impervious to air quality, lubricated or not lubricated.
- Quiet operation. No AC hum.
- Electrical connections include grommet cover, conduit or DIN type connector.
- Short stroke and quick exhaust permits fast cycling.
- Class B-rated, continuous duty coils.

HOW TO OBTAIN SPECIFICATIONS FOR A PARTICULAR VALVE(S)
- Go directly to www.humphrey-products.com/dynamic/products
- Or, visit www.humphrey-products.com and select “Online Product Guide.”
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- Or, call Customer Service at 1-800-477-8707 for the name and phone number of your local distributor.

Humphrey Products are sold worldwide through authorized distributors.

SPECIFICATIONS

<table>
<thead>
<tr>
<th>Design Principle:</th>
<th>Pressure Unbalanced – Air Return, Spring Assist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porting Type:</td>
<td>4-Way</td>
</tr>
<tr>
<td>Port Size:</td>
<td>1/4 PIPE</td>
</tr>
<tr>
<td>Media:</td>
<td>Air</td>
</tr>
<tr>
<td>Pressure Range:</td>
<td>30–125 PSIG</td>
</tr>
<tr>
<td>Temperature Range:</td>
<td>0°F to 125°F</td>
</tr>
<tr>
<td>Flow @100 PSIG:</td>
<td>50 CFM, 1415 LPM (Cv=0.8)</td>
</tr>
<tr>
<td>Power:</td>
<td>6.7/8.2 W</td>
</tr>
<tr>
<td>Available Voltages:</td>
<td>12 VDC, 24VDC, 24/50/60, 120/50/60, 240/50/60</td>
</tr>
</tbody>
</table>
**500, 590 Valves**

**500E1, 500AE1, 500E2, 500AE2, 590E1, 590AE1, 590E2, 590AE2**

Large 1/2 PIPE port and 3/4 PIPE port sizes of the classic Humphrey diaphragm-poppet, solenoid valve series, the 500E and 590E are proven workhorses, whether the media and ambient conditions are clean or harsh. The pressure unbalanced diaphragm-poppet design has no metal-to-metal contact or sliding seals, thus millions of trouble-free cycling are expected, whether air is lubricated or not.

Available as 2- or 3-way models, normally open or normally closed, single or double solenoid.

**Features and Benefits**

- Low leak rate.
- 1/2” orifice, 1/2 PIPE, or 5/8” orifice, 3/4 PIPE.
- Impervious to air quality, lubricated or not lubricated.
- Quiet operation. No AC hum.
- Short stroke and quick exhaust permits fast cycling.
- Class B-rated, continuous duty coils.
- Electrical connections include grommet cover, conduit or DIN type connector.
- For low pressure or alternate media, select external piloted “AE” type.
- Brass or aluminum body available.
- Design characteristics translate to excellent vacuum valve, see Vacuum, p. 79.

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**SPECIFICATIONS FOR 500E AND 590E**

- **Design Principle:** Pressure Unbalanced – Air Return, Spring Assist
- **Porting Type:** 2-, 3-Way
- **Port Size:** 1/2, 3/4 PIPE
- **Media:** Air, Inert Gas, Liquid (brass body including AE1 and AE2)
- **Pressure Range:** 30–125 PSIG; 0–125 PSIG (AE)
- **Temperature Range:** 0°F to 125°F
- **Flow @100 PSIG:**
  - 500E: 160 CFM, 4530 LPM (Cv=2.7)
  - 590E: 260 CFM, 7362 LPM (Cv=3.7)
- **Power:** 4.5/6.7/8.2 W
- **Available Voltages:** 12 VDC, 24VDC, 24/50/60, 120/50/60, 240/50/60

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**HOW TO OBTAIN SPECIFICATIONS FOR A PARTICULAR VALVE(S)**

- Go directly to www.humphrey-products.com/dynamic/products
- Or, visit www.humphrey-products.com and select “Online Product Guide.”
- Once you have followed the steps to get the valve you need, select “Download Spec Sheet.” Doing this will create a personalized PDF of the valve, which you may save to your computer and print at your convenience. These spec sheets are helpful when placing your order(s).

**HOW TO ORDER HUMPHREY VALVES AND ACCESSORIES**

- Go directly to: www.humphrey-products.com/?qt=content/find-distributor
- Or, visit www.humphrey-products.com, select “Find A Distributor,” and input your information to locate a distributor nearest you.
- Or, call Customer Service at 1-800-477-8707 for the name and phone number of your local distributor.
**INDIRECT-ACTING SOLENOID VALVES**

**501, 501-4 Valves**

**Humphrey piston-poppet, 501E and 501-4E, 1/2 PIPE port solenoid valve series, achieves fully ported, high flow relative to overall size. Hard coated, cast aluminum body permits resistance to wear and easy mounting/plumbing. The pressure unbalanced piston-poppet design achieves greater flow than comparable 1/2” orifice valves and millions of trouble-free cycles.**

Available as 2- or 3-way models, normally open or normally closed, single or double solenoid, and 4-way models, single or double solenoid.

**Features and Benefits**
- Low leak rate.
- Full ported 1/2” orifice, 1/2 PIPE ports.
- “Flow through” construction achieves greater flow than competition.
- Quiet operation. No AC hum.
- Short stroke and quick exhaust permits fast cycling.
- Class B-rated, continuous duty coils.
- Electrical connections include grommet cover, conduit or DIN type connector.
- Mount in any position via body mounting holes or base (3-way), or body mounting lugs (4-way).
- Plug exhaust for 2-way service.

**Design Principle:**
- Pressure Unbalanced – Air Return, Spring Assist

**Porting Type:**
- 2-, 3- or 4-Way

**Port Size:**
- 1/2 PIPE

**Media:**
- Air, Inert Gas

**Pressure Range:**
- 30–125 PSIG

**Temperature Range:**
- -30°F to 125°F

**Flow @100 PSIG:**
- 501: 220 CFM, 6229 LPM (Cv=3.5)
- 501-4: 170 CFM, 4814 LPM (Cv=2.5)

**Power:**
- 6.7/8.2 W

**Available Voltages:**
- 12 VDC, 24 VDC, 24/50/60, 120/50/60, 240/50/60

**How to Obtain Specifications for a Particular Valve(s)**
- Go directly to www.humphrey-products.com/dynamic/products
- Or, visit www.humphrey-products.com and select "Online Product Guide."
- Once you have followed the steps to get the valve you need, select “Download Spec Sheet.” Doing this will create a personalized PDF of the valve, which you may save to your computer and print at your convenience. These spec sheets are helpful when placing your order(s).

**How to Order Humphrey Valves and Accessories**
- Go directly to: www.humphrey-products.com/?q=content/find-distributor
- Or, visit www.humphrey-products.com, select “Find A Distributor,” and input your information to locate a distributor nearest you.
- Or, call Customer Service at 1-800-477-8707 for the name and phone number of your local distributor.

**Humphrey Products are Sold World-Wide Through Authorized Distributors**
### TAC3 Valves

**42E1, M42E1, 42E2, M42E2, 42AE1, M42AE1, 42AE2, M42AE2**

**TAC3 Electric 42E Series Indirect-Acting Solenoid**, directional control valves achieve 0.5 Cv flow capacity. These pressure unbalanced spool/air-spring return valves are suitable for operating medium size cylinders, up to 2” bore. Low current consumption solenoids are standard. Two position, 4-way models available as inline valves or manifold mount and internal or external pilot.

#### Features and Benefits
- Low leak rate.
- Small size.
- Low power consumption.
- High flow.
- Quiet operation. No AC hum.
- AC and DC voltages.
- Grommet – standard or DIN type electrical connector – optional.
- Clean appearance.

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**SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Design Principle:</th>
<th>Pressure Unbalanced – Air Return, Spring Assist</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porting Type:</td>
<td>4-Way</td>
</tr>
<tr>
<td>Port Size:</td>
<td>1/4 PIPE</td>
</tr>
<tr>
<td>Media:</td>
<td>Air, Inert Gas</td>
</tr>
<tr>
<td>Pressure Range:</td>
<td>30–125 PSIG (AE: 0–125 PSIG)</td>
</tr>
<tr>
<td>Temperature Range:</td>
<td>-20°F to 150°F</td>
</tr>
<tr>
<td>Flow @100 PSIG:</td>
<td>31 CFM, 877 LPM (Cv=0.5)</td>
</tr>
<tr>
<td>Power:</td>
<td>7.1/8.2 W</td>
</tr>
<tr>
<td>Available Voltages:</td>
<td>12 VDC, 24VDC, 24/50/60, 120/50/60, 240/50/60</td>
</tr>
</tbody>
</table>
**INDIRECT-ACTING SOLENOID VALVES**

**TAC3 Valves**

42E1, M42E1, 42E2, M42E2, 42AE1, M42AE1, 42AE2, M42AE2

**Manifold Types Available**

MC Type: Extruded Aluminum. Delivery ports C1 and C2 located on MANIFOLD. Accepts M42(A)E1 and M42(A)E2 valve models.

<table>
<thead>
<tr>
<th>Overall Size (valves not mounted)</th>
<th>Nominal Dimensions (inch)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two Station (MC2)</td>
<td>L</td>
</tr>
<tr>
<td>Each Additional station</td>
<td>3.63</td>
</tr>
<tr>
<td>Max # of stations</td>
<td>1.88</td>
</tr>
</tbody>
</table>

Consult website for exact dimensions and additional manifold configurations.

**HOW TO OBTAIN SPECIFICATIONS FOR A PARTICULAR VALVE(S)**

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- Or, visit www.humphrey-products.com and select "Online Product Guide."
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**HUMPHREY PRODUCTS ARE SOLD WORLD-WIDE THROUGH AUTHORIZED DISTRIBUTORS**