Metal Seal/Rubber Seal
Series VQ

A variety of product groups meet all FA needs.

- Flip type demonstrates space-saving effect.
- Cassette type enables flexible, speedy station increasing/decreasing.

**Flip type**

- Model: VQ0000
- VQ1000
- VQ2000

**Cassette type**

- Model: VQ0000
- VQ1000
- VQ2000

**Unprecedented high speed response and long service life**

<table>
<thead>
<tr>
<th>Model</th>
<th>Manifold pitch (mm)</th>
<th>Flow characteristics</th>
<th>Cylinder size</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>10.5</td>
<td>Metal seal: 0.50</td>
<td>Up to ø40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal: 0.59</td>
<td></td>
</tr>
<tr>
<td>VQ1000</td>
<td>11</td>
<td>Metal seal: 0.84</td>
<td>Up to ø50</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal: 1.0</td>
<td></td>
</tr>
<tr>
<td>VQ2000</td>
<td>16</td>
<td>Metal seal: 2.3</td>
<td>Up to ø80</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal: 2.7</td>
<td></td>
</tr>
</tbody>
</table>

+ Flow characteristics: 4/2 → 5/3 (A/B → R1/R2)

**A variety of common wiring methods are standardized.**

- **F** kit (D-sub connector)
- **P** kit (Flat ribbon cable connector)
- **J** kit (Flat ribbon cable connector)
- **T** kit (Terminal block)
- **L** kit (Lead wire)
- **S** kit (Serial transmission unit)
<table>
<thead>
<tr>
<th>Body Ported</th>
<th>Cassette P. 2-4-10</th>
<th>Plug lead P. 2-4-30</th>
<th>Plug-in P. 2-4-36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single only</td>
<td>Plug lead</td>
<td>Metal seal</td>
<td>Rubber seal</td>
</tr>
<tr>
<td>Plug-in</td>
<td></td>
<td>Metal seal</td>
<td>Rubber seal</td>
</tr>
<tr>
<td>Metal seal</td>
<td>VQ1 71</td>
<td>0.80</td>
<td>0.60</td>
</tr>
<tr>
<td>Rubber seal</td>
<td>VO1 70</td>
<td>0.80</td>
<td>0.60</td>
</tr>
<tr>
<td>Metal seal</td>
<td>VO2 41</td>
<td>2.7</td>
<td>2.3</td>
</tr>
<tr>
<td>Rubber seal</td>
<td>VO2 40</td>
<td>1.0</td>
<td>0.84</td>
</tr>
<tr>
<td>Metal seal</td>
<td>VO1 41</td>
<td>0.59</td>
<td>0.42</td>
</tr>
<tr>
<td>Rubber seal</td>
<td>VO1 40</td>
<td>0.50</td>
<td>0.36</td>
</tr>
<tr>
<td>Metal seal</td>
<td>VO0 41</td>
<td>0.84</td>
<td>0.73</td>
</tr>
<tr>
<td>Rubber seal</td>
<td>VO0 40</td>
<td>1.0</td>
<td>0.84</td>
</tr>
<tr>
<td>Metal seal</td>
<td>VO1 31</td>
<td></td>
<td>0.84</td>
</tr>
<tr>
<td>Rubber seal</td>
<td>VO1 30</td>
<td></td>
<td>0.73</td>
</tr>
</tbody>
</table>

Sonic conductance: C [dm³/(s·bar)]

Series VQ1000

Type of actuation:
- Single
- Double
- Closed center
- Exhaust center
- Pressure center

Voltage:
- 12 V (10 V to 20 V)
- 24 V (10 V to 20 V)
- 50/60 Hz

Electrical entry:
- Grommet
- L plug connector
- M plug connector
- Push type, Tool required
- Locking type
- Locking type (Manual)

Manual override:
- Double
- Single

Valve Specifications
<table>
<thead>
<tr>
<th>Option</th>
<th>D-sub connector 15P</th>
<th>Flat ribbon cable 10P, 16P, 20P</th>
<th>Negative common specifications</th>
<th>One-touch fitting Inch size</th>
<th>For special wiring spec.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manifold Option</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P. 2-4-82</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>P. 2-4-83</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>P. 2-4-87</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>P. 2-4-23</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>P. 2-4-28</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>P. 2-4-68</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>P. 2-4-69</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>SUP/EXH passage spacer</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Elbow fitting for cylinder port</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Plug for cylinder port</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Double check block</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

- **Standard**
- **Except S kit**
- **Except L kit**
- **Negative common specifications**
- **Except S kit**
- **Except L kit**
- **For special wiring spec.**
## Series VQ/Body Ported: Variations

### Manifold Variations

<table>
<thead>
<tr>
<th></th>
<th>F kit</th>
<th>P kit</th>
<th>J kit</th>
<th>T kit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>D-sub connector</strong></td>
<td>Conforming to MIL D-sub connector</td>
<td>Flat ribbon cable connector (26, 20, 16, 10 pins)</td>
<td>Flat ribbon cable connector (20 pins)</td>
<td>Terminal block</td>
</tr>
<tr>
<td><strong>Series VQ1000</strong></td>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Series VQ0000</strong></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
<td><img src="image7.png" alt="Image" /></td>
<td><img src="image8.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Series VQ1000</strong></td>
<td><img src="image9.png" alt="Image" /></td>
<td><img src="image10.png" alt="Image" /></td>
<td><img src="image11.png" alt="Image" /></td>
<td><img src="image12.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Series VQ2000</strong></td>
<td><img src="image13.png" alt="Image" /></td>
<td><img src="image14.png" alt="Image" /></td>
<td><img src="image15.png" alt="Image" /></td>
<td><img src="image16.png" alt="Image" /></td>
</tr>
<tr>
<td><strong>Series VQ1000</strong></td>
<td><img src="image17.png" alt="Image" /></td>
<td><img src="image18.png" alt="Image" /></td>
<td><img src="image19.png" alt="Image" /></td>
<td><img src="image20.png" alt="Image" /></td>
</tr>
</tbody>
</table>
### Manifold Variations

#### L | C | S

**Lead wire**
Direct electrical entry type

**Serial transmission unit**
Enables single-wire solenoid valve-PLC operation

<table>
<thead>
<tr>
<th>Port size</th>
<th>SUP EXH port</th>
<th>Cylinder port</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>P, R</td>
<td>A, B</td>
</tr>
</tbody>
</table>

**L kit**

- C6 (ø6)
- C4 (ø4)
- C6 (ø6)
- M5 (M5 thread)
- N7 (ø1/4"
- N1 (ø1/8"
- N3 (ø5/32"
- Built-in silencer

**C kit**

- C6 (ø6)
- C3 (ø3.2)
- C4 (ø4)
- C6 (ø6)
- M5 (M5 thread)
- N7 (ø1/4"
- N1 (ø1/8"
- N3 (ø5/32"
- Built-in silencer

**C kit**

- C3 (ø3.2)
- C4 (ø4)
- C6 (ø6)
- M5 (M5 thread)
- N7 (ø1/4"
- N1 (ø1/8"
- N3 (ø5/32"
- Built-in silencer

**C kit**

- C8 (ø8)
- C6 (ø6)
- C9 (ø8)
- N7 (ø1/4"
- N9 (ø5/16"
- Built-in silencer

**C kit**

- C3 (ø3.2)
- C4 (ø4)
- C6 (ø6)
- M5 (M5 thread)
- N7 (ø1/4"
- N1 (ø1/8"
- N3 (ø5/32"
- Built-in silencer

**C kit**

- C6 (ø6)
- C3 (ø3.2)
- C4 (ø4)
- C6 (ø6)
- M5 (M5 thread)
- N7 (ø1/4"
- N1 (ø1/8"
- N3 (ø5/32"
- Built-in silencer
### Cylinder Speed Chart

Use as a guide for selection. Please confirm the actual conditions with SMC Sizing Program.

#### Conditions

<table>
<thead>
<tr>
<th>Body ported</th>
<th>Series CJ2</th>
<th>Series CM2</th>
<th>Series MB, CA1</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0149-C4</td>
<td>T0425 x 1 m</td>
<td>AS2001F-04</td>
<td>AN103-X233</td>
</tr>
<tr>
<td></td>
<td>Speed controller</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silencer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQ111_3_0-C6</td>
<td>T0604 x 1 m</td>
<td>AS3001F-06</td>
<td>AN103-X233</td>
</tr>
<tr>
<td></td>
<td>Speed controller</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silencer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQ2149-C8</td>
<td>T0806 x 1 m</td>
<td>AS3001F-08</td>
<td>AN200-KM8</td>
</tr>
<tr>
<td></td>
<td>Speed controller</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silencer</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- It is when the cylinder is extending that it is meter-out controlled by speed controller which is directly connected with cylinder, and its needle valve with being fully open.
- The average velocity of the cylinder is what the stroke is divided by the total stroke time.
- Load factor: ((Load weight x 9.8)/Theoretical force) x 100%
**Series VQ1000**

**Body Ported**

**Plug-in Unit: Flip Type**

### How to Order Manifold

**VV5Q1 3 -08 F S1 -N**

**Manifold**

- Series VQ1000
- 3: Plug-in unit/Flip

**Kit type**

- U0
- U1
- U2
- U3
- S0
- S1
- S2
- S3

**Option**

- Nil
- D: DIN rail mounting style
- K: Special wiring specifications (Except double wiring)
- N: With name plate
- S: Built-in silencer, direct exhaust

**Stations**

- D: 1 station
- U: The number of max. stations differs from kit to kit. (Refer to the table below.)

**Kit/Electrical entry/Cable length**

- **F kit** (D-sub connector)
  - Top entry
  - Side entry
  - P. 2-4-12

- **P kit** (Flat ribbon cable connector)
  - Top entry
  - Side entry
  - P. 2-4-14

- **J kit** (Flat ribbon cable connector)
  - Top entry
  - Side entry
  - P. 2-4-16

- **L kit** (Lead wire cable)

- **S kit** (Serial transmission unit)

The valve is equipped with an indicator light/surge voltage suppressor, and the voltage is 24 VDC.

The dust-protected type SI unit is applicable, too. For details, please contact SMC.

### Kit/Electrical entry/Cable length

<table>
<thead>
<tr>
<th>Kit</th>
<th>Lead wire entry direction</th>
<th>Cable length</th>
<th>Maximum number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>D: Entry on D side</td>
<td>0: With cable (0.6 m)</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td></td>
<td>U: Entry on U side</td>
<td>1: With cable (1.5 m)</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2: With cable (3.0 m)</td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>

### Note 1) Besides the above, F and P kits with different number of pins are available. For details, refer to page 2-4-28.

### Note 2) For details, refer to page 2-4-29.

### Note 3) Please consult with SMC for the following serial transmission kits: Matsushita Electric Works, Ltd.; Rockwell Automation, Inc.; SUNX Corporation; Fuji Electric Co., Ltd.; OMRON Corporation.
**How to Order Valves**

**Series VQ1000**

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>Manual override</th>
<th>Cylinder ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td>C3 With One-touch fitting for ø3.2</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td>C4 With One-touch fitting for ø4.2</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>C6 With One-touch fitting for ø6.2</td>
</tr>
<tr>
<td>3 position closed center</td>
<td></td>
<td>M5 MS thread (Tool required)</td>
</tr>
<tr>
<td>3 position exhaust center</td>
<td></td>
<td>Note: For inch-size One-touch fittings, refer to “Option” on page 2-4-29.</td>
</tr>
<tr>
<td>3 position pressure center</td>
<td></td>
<td>A manual override for pilot valve is provided to the standard model for double type. (Refer to page 2-4-26.)</td>
</tr>
</tbody>
</table>

- **Light/Surge voltage suppressor**
  - Nil: Non-locking push type (Tool required)
  - B: Locking type (Tool required)
  - C: Locking type (Manual)

- **Function**
  - Symbol: Nil
  - Specifications: DC/AC
  - Nil: Standard type
  - H: High pressure type (1.5 W)
  - Y: Low wattage type (0.5 W)

- **Coil voltage**
  - 1: 100 VAC (50/60 Hz)
  - 2: 200 VAC (50/60 Hz)
  - 3: 110 VAC (50/60 Hz)
  - 4: 220 VAC (50/60 Hz)
  - 5: 24 VDC
  - 6: 12 VDC

**Manifold Option**

- **Blanking plate assembly** VVQ1000-10A-3
- **Name plate [-N3]** VVQ1000-N3-Station (1 to Max. stations)
- **Built-in silencer, direct exhaust [-S]** VVQ10000-58A
- **Port plug** VVQ10000-58A

**Example**

- Single solenoid (24 VDC) VQ1130-C6 (4 sets)
- Double solenoid (24 VDC) VQ1230-C6 (4 sets)

- The asterisk denotes the symbol for assembly.
- Prefix it to the part nos. of the solenoid valve, etc.

- The coil voltage models are applicable to the F and L kits.

**Note**

- For power consumption of AC type, refer to page 2-4-10.
- Except double (latching).
- For negative common specifications, refer to “Option” on page 2-4-29.

- Refer to page 2-4-27 for cylinder port fitting.
- For replacement parts, refer to page 2-4-103.
**Series VQ1000**  
**Body Ported**  
**Plug-in Unit: Flip Type**

### Model

<table>
<thead>
<tr>
<th>Series</th>
<th>Number of solenoids</th>
<th>Model</th>
<th>Flow characteristics</th>
<th>Response time (ms)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>2 position Single</td>
<td>Metal seal</td>
<td>VQ1130</td>
<td>C (cm³/bar) b Cv C (cm³/bar) b Cv</td>
<td>12 or less</td>
</tr>
<tr>
<td></td>
<td>Double (Latching)</td>
<td>Rubber seal</td>
<td>VQ1131</td>
<td>0.91 0.19 0.21 1.0 0.21 0.25</td>
<td>15 or less</td>
</tr>
<tr>
<td></td>
<td>Metal seal</td>
<td>VQ1230</td>
<td>0.77 0.14 0.18 0.84 0.14 0.19</td>
<td>12 or less</td>
<td>29 or less</td>
</tr>
<tr>
<td></td>
<td>Rubber seal</td>
<td>VQ1231</td>
<td>0.91 0.19 0.21 1.0 0.21 0.25</td>
<td>15 or less</td>
<td>34 or less</td>
</tr>
<tr>
<td></td>
<td>Metal seal</td>
<td>VQ1330</td>
<td>0.67 0.13 0.16 0.73 0.13 0.17</td>
<td>20 or less</td>
<td>40 or less</td>
</tr>
<tr>
<td></td>
<td>Rubber seal</td>
<td>VQ1331</td>
<td>0.78 0.22 0.24 0.84 0.16 0.20</td>
<td>25 or less</td>
<td>47 or less</td>
</tr>
<tr>
<td></td>
<td>Metal seal</td>
<td>VQ1430</td>
<td>0.74 0.14 0.17 0.82 0.16 0.20</td>
<td>20 or less</td>
<td>40 or less</td>
</tr>
<tr>
<td></td>
<td>Rubber seal</td>
<td>VQ1431</td>
<td>0.78 0.28 0.28 1.0 0.21 0.24</td>
<td>25 or less</td>
<td>47 or less</td>
</tr>
<tr>
<td></td>
<td>Metal seal</td>
<td>VQ1530</td>
<td>0.74 0.14 0.17 0.82 0.16 0.20</td>
<td>20 or less</td>
<td>40 or less</td>
</tr>
<tr>
<td></td>
<td>Rubber seal</td>
<td>VQ1531</td>
<td>0.78 0.28 0.28 1.0 0.21 0.24</td>
<td>25 or less</td>
<td>47 or less</td>
</tr>
</tbody>
</table>

#### Standard Specifications

<table>
<thead>
<tr>
<th>Valve construction</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>JIS Symbol 2 position single</td>
<td>Air/Inert gas</td>
<td>Air/Inert gas</td>
</tr>
<tr>
<td>2 position double (Latching)</td>
<td>Metal seal</td>
<td>Rubber seal</td>
</tr>
<tr>
<td>3 position closed center</td>
<td>Push type/Locking type (Tool required, Manual) Option</td>
<td>Dust-protected</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Valve specifications</th>
<th>Flow characteristics</th>
<th>1 → 4/2 (P → A/B)</th>
<th>4/2 → 5/3 (A/B → 1/2/R)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C (cm³/bar)</td>
<td>b</td>
<td>Cv</td>
<td>C (cm³/bar)</td>
</tr>
<tr>
<td>0.77</td>
<td>0.14</td>
<td>0.18</td>
<td>0.84</td>
</tr>
<tr>
<td>0.91</td>
<td>0.19</td>
<td>0.21</td>
<td>1.0</td>
</tr>
<tr>
<td>0.77</td>
<td>0.14</td>
<td>0.18</td>
<td>0.84</td>
</tr>
<tr>
<td>0.91</td>
<td>0.19</td>
<td>0.21</td>
<td>1.0</td>
</tr>
<tr>
<td>0.67</td>
<td>0.13</td>
<td>0.16</td>
<td>0.73</td>
</tr>
<tr>
<td>0.78</td>
<td>0.22</td>
<td>0.24</td>
<td>0.84</td>
</tr>
<tr>
<td>0.74</td>
<td>0.14</td>
<td>0.17</td>
<td>0.82</td>
</tr>
<tr>
<td>0.78</td>
<td>0.28</td>
<td>0.28</td>
<td>1.0</td>
</tr>
<tr>
<td>0.74</td>
<td>0.14</td>
<td>0.17</td>
<td>0.82</td>
</tr>
<tr>
<td>0.78</td>
<td>0.28</td>
<td>0.28</td>
<td>1.0</td>
</tr>
</tbody>
</table>

### Solenoid

<table>
<thead>
<tr>
<th>Coefficient (Current)</th>
<th>Power consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 VDC</td>
<td>1 W DC (42 mA), 1.5 W DC (63 mA)[1], 0.5 W DC (21 mA)[1]</td>
</tr>
<tr>
<td>12 VDC</td>
<td>1 W DC (83 mA), 1.5 W DC (125 mA)[1], 0.5 W DC (42 mA)[1]</td>
</tr>
<tr>
<td>100 VAC</td>
<td>Inrush 0.75 VA (7.5 mA), Holding 0.75 VA (7.5 mA)</td>
</tr>
<tr>
<td>110 VAC</td>
<td>Inrush 0.83 VA (7.5 mA), Holding 0.83 VA (7.5 mA)</td>
</tr>
<tr>
<td>200 VAC</td>
<td>Inrush 1.0 VA (5 mA), Holding 1.0 VA (5 mA)</td>
</tr>
<tr>
<td>220 VAC</td>
<td>Inrush 1.1 VA (5 mA), Holding 1.1 VA (5 mA)</td>
</tr>
</tbody>
</table>

---

**Note 1)** Use dry air to prevent condensation when operating at low temperatures.

**Note 2)** Impact resistance...... No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

**Vibration resistance..... No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

**Note 3)** Values in the case of high pressure type (1.5 W).

**Note 4)** Values in the case of low wattage (0.5 W) specifications.
**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
<th>Applicable solenoid valve</th>
<th>5 station weight (g)</th>
</tr>
</thead>
</table>
| VQ1000 | VV5Q13-□□□ | • F kit—D-sub connector  
• P kit—Flat ribbon cable connector  
• J kit—Flat ribbon cable connector (20P)  
• L kit—Lead wire cable  
• S kit—Serial transmission unit | Side  
One-touch fitting/Port size (1)  
1(P), 3(R)  
4(A), 2(B)  
C6 (ø6)  
Option: Built-in silencer, Direct exhaust  
C3 (ø3.2)  
C4 (ø4)  
C6 (ø6)  
M5 (M5 thread) | 1 to 16 stations | VQ1□□30  
VQ1□□31 | 424 |

Note 1) Inch-size One-touch fittings are also available. For details, refer to page 2-4-29.

Note 2) For details, refer to page 2-4-29.
The D-sub connector reduces installation labor for electrical connections.

Using the D-sub connector (25P), (15P as an option) conforming to MIL standard permits the use of connectors put on the market and connections.

The D-sub connector cable assembly can be ordered conforming to MIL-C-24308. The min. bending radius of D-sub connector cable assembly is 20 mm.

The D-sub connector cable assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.

D-sub Connector (25 pins)

- Hirose Electric Co., Ltd.
- Japan Aviation Electronics Industry, Ltd.
- Fujitsu Limited
- AXT100-DS25-015

- Wire Color by Terminal No. of D-sub Connector Cable Assembly

- Electrical wiring specifications

- How to Order Manifold
**How to Order Valves**

**Series VQ1000**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard type</td>
<td>(1.0 W)</td>
<td>(1.0 W)</td>
</tr>
<tr>
<td>H</td>
<td>High pressure type</td>
<td>(1.9 W)</td>
<td>—</td>
</tr>
<tr>
<td>Y</td>
<td>Low wattage type</td>
<td>(0.5 W)</td>
<td>—</td>
</tr>
</tbody>
</table>

**Function**

- Seal: Metal seal or Rubber seal
- Note 1: For power consumption of AC type, refer to page 2-4-10.
- Note 2: Except double (latching).

**Cylinder port**
- C3: With One-touch fitting for ø3.2
- C4: With One-touch fitting for ø4
- C6: With One-touch fitting for ø6
- M5: M5 thread

**Manual override**
- Nil: Non-locking push type (Tool required)
- B: Locking type (Tool required)
- C: Locking type (Manual)

**Coil voltage**

- 1: 100 VAC (50/60 Hz)
- 2: 200 VAC (50/60 Hz)
- 3: 110 VAC (50/60 Hz)
- 4: 220 VAC (50/60 Hz)
- 5: 24 VDC
- 6: 12 VDC

**Light/Surge voltage suppressor**

- Nil: Yes
- E: None

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

Example:

- D-sub connector kit with 3 m cable
  VQ5Q13-08FU2—1 set — Manifold base no. 1
  VQ1130-5-C6—4 sets — Valve part no. (Stations 1 to 4)
  VQ1230-5B-C6—4 sets — Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Note) 3 position types need two stations.

Cylinder port is located at U side of body.

The broken lines indicate the DIN rail mounting style [-D] and the top entry connection [-FU].

Note) 3 position types need two stations.

Note) For negative common specifications, refer to "Option" on page 2-4-29.

Note 1) For power consumption of AC type, refer to page 2-4-10.

Note 2) Except double (latching).

For inch-size One-touch fittings, refer to "Option" on page 2-4-29.

A manual override for pilot valve is provided to the standard model for double type.

Specify the part numbers for valves and options together beneath the manifold base part number.

Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.
VQ1000
Kit (Flat ribbon cable connector)

- MIL flat ribbon cable connector reduces installation labor for electrical connection.
- Using the connector for flat ribbon cable (26P), (10P, 16P, 20P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 16.

Flat Ribbon Cable (26 pins)

**Connector manufacturers' example**
- Sumitomo 3M Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

**Note** Types with 10, 16, or 20 pin are also available. For details, refer to page 2-4-28.

**Electrical wiring specifications**

As the standard electrical wiring specifications, double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-29.

For 3 position type uses two stations. The A side solenoid of a 3 position valve is connected to SOL A at the station with the smaller number in the above figure and the B side solenoid to SOL. A at the next station.

**How to Order Manifold**

**Series VQ1000**

<table>
<thead>
<tr>
<th>Option</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>DIN rail mounting style</td>
</tr>
<tr>
<td>K(2)</td>
<td>Special wiring specifications (Except double wiring)</td>
</tr>
<tr>
<td>N</td>
<td>With name plate</td>
</tr>
<tr>
<td>S</td>
<td>Built-in silencer, direct exhaust (U side only)</td>
</tr>
</tbody>
</table>

**Note**
- When two or more symbols are specified, indicate them alphabetically.
- Example) -DNS

**Note 2** Specify the wiring specifications on the manifold specification sheet.
How to Order Valves

**Series VQ1000**

**Type of actuation**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Seal</th>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2 position single</td>
<td></td>
<td></td>
<td></td>
<td>1.0W</td>
<td>0.5W</td>
</tr>
<tr>
<td>2</td>
<td>2 position double (Latching)</td>
<td></td>
<td></td>
<td></td>
<td>1.2W</td>
<td>0.5W</td>
</tr>
<tr>
<td>3</td>
<td>3 position closed center</td>
<td></td>
<td></td>
<td></td>
<td>1.2W</td>
<td>0.5W</td>
</tr>
<tr>
<td>4</td>
<td>3 position closed center</td>
<td></td>
<td></td>
<td></td>
<td>1.2W</td>
<td>0.5W</td>
</tr>
<tr>
<td>5+</td>
<td>3 position pressure center</td>
<td></td>
<td></td>
<td></td>
<td>1.2W</td>
<td>0.5W</td>
</tr>
</tbody>
</table>

Note) 3 position types need two stations.

**Function**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard type</td>
<td>1.0W</td>
<td>0.5W</td>
</tr>
<tr>
<td>H</td>
<td>High pressure type</td>
<td>1.2W</td>
<td>0.5W</td>
</tr>
<tr>
<td>L</td>
<td>Low wattage type</td>
<td>0.5W</td>
<td>0.5W</td>
</tr>
</tbody>
</table>

Note 1) For power consumption of AC type, refer to page 2-4-10.

Note 2) Except double (latching).

**Coil voltage**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Nil</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100 VAC (50/60 Hz)</td>
<td>Yes</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>110 VAC (50/60 Hz)</td>
<td>Yes</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>24 VDC</td>
<td>Yes</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>12 VDC</td>
<td>Yes</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td></td>
</tr>
</tbody>
</table>

**Light/Surge voltage suppressor**

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Nil</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>None</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td>Nil</td>
<td></td>
</tr>
</tbody>
</table>

**Note)** A manual override for pilot valve is provided to the standard model for double type.

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

*Example*

Flat ribbon cable kit with 3 m cable

VQ5013-DBPU2...: 1 set — Manifold base no.
+VQ1130-5-C6...: 4 sets — Valve part no. (Stations 1 to 4)
+VQ1230-5B-C6...: 4 sets — Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.

**Dimensions**

Formula L1 = 11n + 15.5, L2 = 11n + 55

<table>
<thead>
<tr>
<th>n</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>26.5</td>
<td>37.5</td>
<td>48.5</td>
<td>59.5</td>
<td>70.5</td>
<td>81.5</td>
<td>92.5</td>
<td>103.5</td>
<td>114.5</td>
<td>125.5</td>
<td>136.5</td>
<td>147.5</td>
<td>158.5</td>
<td>169.5</td>
<td>180.5</td>
<td>191.5</td>
</tr>
<tr>
<td>L1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L2</td>
<td>66</td>
<td>77</td>
<td>88</td>
<td>99</td>
<td>110</td>
<td>121</td>
<td>132</td>
<td>143</td>
<td>154</td>
<td>165</td>
<td>176</td>
<td>187</td>
<td>198</td>
<td>209</td>
<td>220</td>
<td>231</td>
</tr>
<tr>
<td>L3</td>
<td>87.5</td>
<td>100</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>98</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
</tr>
</tbody>
</table>

**Notes**

1) For power consumption of AC type, refer to page 2-4-10.

2) Except double (latching).
**MIL flat ribbon cable connector reduces installation labor savings for electrical connection.**

- **Using the connector for flat ribbon cable (20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.**
- **Top or side receptacle position can be selected in accordance with the available mounting space.**
- **Maximum stations are 16.**

**Flat Ribbon Cable (20 pins)**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Side</td>
<td>C6, C3, C4, C6, M5</td>
</tr>
</tbody>
</table>

**Electrical wiring specifications**

- **1 station**
- **16 stations**

**Manifold**

- Plug-in unit/Flip
- Top entry
- Side entry

**Option**

- **Nil**
- **D** DIN rail mounting style
- **K** Special wiring specifications (Except double wiring)
- **N** With name plate
- **S** Built-in silencer, direct exhaust (U side only)

**How to Order Manifold**

**VV5Q1 3-08 J S 1 N**

- **Series VQ1000** Manifold
- **Stations**
  - Plug-in unit/Flip
  - 01 1 station
  - 16 16 stations
- **Cable (Length)**
  - 0 Without cable
  - 1 With cable (1.5 m)
  - 2 With cable (3 m)
  - 3 With cable (5 m)
- **Connector entry direction**
  - U Top entry
  - S Side entry

**Connector terminal no.**

- Cable 20 core x 28AWG

**Note** For details, refer to page 2-4-29.

**Flat Ribbon Cable Connector Assembly (Option)**

<table>
<thead>
<tr>
<th>Cable length [L]</th>
<th>Assembly part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC20-1</td>
<td></td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC20-2</td>
<td></td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC20-3</td>
<td></td>
</tr>
</tbody>
</table>

- Cable assembly

**Cable assembly**

**A XT100-FC20-1 to 3**

Flat ribbon cable connector assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.

**Connector manufacturers’ example**

- Hirose Electric Co., Ltd.
- Japan Aviation Electronics Industry, Ltd.
- Oki Electric Cable Co. Ltd.
- Sumitomo 3M Limited
- J.S.T. Mfg. Co., Ltd.
- Fujitsu Limited

**Flat ribbon cable connector Terminal no.**

<table>
<thead>
<tr>
<th>Flat ribbon cable connector</th>
<th>Terminal no.</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOL. A</td>
<td>1</td>
<td>(+)</td>
</tr>
<tr>
<td>SOL. B</td>
<td>2</td>
<td>(–)</td>
</tr>
<tr>
<td>SOL. A</td>
<td>3</td>
<td>(+)</td>
</tr>
<tr>
<td>SOL. B</td>
<td>4</td>
<td>(–)</td>
</tr>
<tr>
<td>SOL. A</td>
<td>5</td>
<td>(+)</td>
</tr>
<tr>
<td>SOL. B</td>
<td>6</td>
<td>(–)</td>
</tr>
<tr>
<td>SOL. A</td>
<td>7</td>
<td>(+)</td>
</tr>
<tr>
<td>SOL. B</td>
<td>8</td>
<td>(–)</td>
</tr>
<tr>
<td>SOL. A</td>
<td>9</td>
<td>(+)</td>
</tr>
<tr>
<td>SOL. B</td>
<td>10</td>
<td>(–)</td>
</tr>
<tr>
<td>SOL. A</td>
<td>11</td>
<td>(+)</td>
</tr>
<tr>
<td>SOL. B</td>
<td>12</td>
<td>(–)</td>
</tr>
<tr>
<td>SOL. A</td>
<td>13</td>
<td>(+)</td>
</tr>
<tr>
<td>SOL. B</td>
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<td>(–)</td>
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<tr>
<td>SOL. A</td>
<td>15</td>
<td>(+)</td>
</tr>
<tr>
<td>SOL. B</td>
<td>16</td>
<td>(–)</td>
</tr>
<tr>
<td>COM</td>
<td>17</td>
<td>(+)</td>
</tr>
<tr>
<td>COM</td>
<td>18</td>
<td>(–)</td>
</tr>
<tr>
<td>COM</td>
<td>19</td>
<td>(+)</td>
</tr>
<tr>
<td>COM</td>
<td>20</td>
<td>(–)</td>
</tr>
</tbody>
</table>

**Note** When using the negative common specifications, use valves for negative common. (Refer to page 2-4-29.)

**As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-29.**

**Note** When using the negative common specifications, use valves for negative common. (Refer to page 2-4-29.)

**Flat ribbon cable connector assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.**

**Connector terminal no.**

- Cable 20 core x 28AWG

- For other commercial connectors, use a 20 pins with strain relief conforming to MIL-C-83503.

**Flat Ribbon Cable Connector Assembly (Option)**

- Cable assembly

**Flat Ribbon Cable Connector Assembly (Option)**

- Cable assembly

**Note** When using the negative common specifications, use valves for negative common. (Refer to page 2-4-29.)

**Note** When using the negative common specifications, use valves for negative common. (Refer to page 2-4-29.)

**Note** For details, refer to page 2-4-29.

**Note** Negative common specifications

**Note** When using the negative common specifications, use valves for negative common. (Refer to page 2-4-29.)

**Note** When using the negative common specifications, use valves for negative common. (Refer to page 2-4-29.)

**Flat Ribbon Cable Connector Assembly (Option)**

- Cable assembly

**Flat Ribbon Cable Connector Assembly (Option)**

- Cable assembly

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- Cable assembly

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- Cable assembly

**Flat Ribbon Cable Connector Assembly (Option)**

- Cable assembly

**Flat Ribbon Cable Connector Assembly (Option)**

- Cable assembly

**Flat Ribbon Cable Connector Assembly (Option)**

- Cable assembly
Plug-in Unit: Flip Type Series VQ1000

How to Order Valves

VQ1 1 3 0 Y 5 C6

Series VQ1000
Type of actuation

1 2 position single
2 2 position double (Latching)
3 3 position closed center
4 4 position exhaust center
8 8 position pressure center

Note) 3 position types need two station. Seal
0 Metal seal
1 Rubber seal

Note) For negative common specifications, refer to “Option” on page 2-4-29.

Function

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard type</td>
<td>1.0 (W)</td>
<td>0 (W)</td>
</tr>
<tr>
<td>H</td>
<td>High pressure type</td>
<td>1.5 (W)</td>
<td>—</td>
</tr>
<tr>
<td>Y</td>
<td>Low wattage type</td>
<td>0.5 (W)</td>
<td>—</td>
</tr>
</tbody>
</table>

Note 1) For power consumption of AC type, refer to page 2-4-10.
Note 2) Except double (latching).

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

Example: Flat ribbon cable kit with 3 m cable
VQ5013-05U2... 1 set — Manifold base no.
VQ1130-5-C6... 4 sets — Valve part no. (Stations 1 to 4)
VQ1230-5B-C6... 4 sets — Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Note) 3 position types need two station.

Notes:
1) For power consumption of AC type, refer to page 2-4-10.
2) Except double (latching).
It is the standard type which lead wire is extracted directly.

Maximum stations are 16.

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Port size</th>
<th>Port location</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Side</td>
<td>C6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>C3, C4, C6, M5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Max. 16</td>
<td>stations</td>
</tr>
</tbody>
</table>

Wiring specifications: Positive COM

Irrespective of the valve mounted, three lead wires are attached to each station.
The red wire is for COM connection.

![Diagram of wiring connections]

Lead wire color:
- Black: COM (+)
- Red: A side solenoid (+)
- White: B side solenoid (+) (Only for double solenoid)

3 position uses two stations. The A side solenoid of a 3 position valve is connected to SOL. A at the station with the smaller number in the above figure and the B side solenoid to SOL. A at the next station.

Lead wire entry direction:
- D: Entry on D side
- U: Entry on U side

Wiring specifications: Negative COM (Option)

Irrespective of the valve mounted, three lead wires are attached to each station.
The black wire is for COM connection.

![Diagram of wiring connections]

Lead wire color:
- Red: A side solenoid (+)
- Black: COM (+)
- White: B side solenoid (+) (Only for double solenoid)

3 position uses two stations. The A side solenoid of a 3 position valve is connected to SOL. A at the station with the smaller number in the above figure and the B side solenoid to SOL. A at the next station.

How to Order Manifold

VV5Q1 3-06 L D 1 N

Series VQ1000

Manifold

Plug-in/Swing

Stations

<table>
<thead>
<tr>
<th>Stations</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>1 station</td>
</tr>
<tr>
<td>16</td>
<td>16 stations</td>
</tr>
</tbody>
</table>

Cable (Length)

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>With cable (0.6 m)</td>
</tr>
<tr>
<td>1</td>
<td>With cable (1.5 m)</td>
</tr>
<tr>
<td>2</td>
<td>With cable (3 m)</td>
</tr>
</tbody>
</table>

Lead wire entry direction

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>Entry on D side</td>
</tr>
<tr>
<td>U</td>
<td>Entry on U side</td>
</tr>
</tbody>
</table>

Note) When using the negative common specifications, use valves for negative common. (Refer to page 2-4-29.)

Option

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>DIN rail mounting style</td>
</tr>
<tr>
<td>N</td>
<td>With name plate</td>
</tr>
<tr>
<td>S</td>
<td>Built-in silencer, direct exhaust</td>
</tr>
</tbody>
</table>

Note) When two or more symbols are specified, indicate them alphabetically. (Example) -DNS
**Plug-in Unit: Flip Type Series VQ1000**

**Type of actuation**
- Seal

**Function**
- Coil voltage
- Cylinder port
- Indicator light
- Manual override
- Light/Surge voltage suppressor

**Dimensions**

<table>
<thead>
<tr>
<th>Station</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>26.5</td>
<td>39</td>
<td>62.5</td>
<td>73</td>
</tr>
<tr>
<td>2</td>
<td>37.5</td>
<td>50</td>
<td>75</td>
<td>85.6</td>
</tr>
<tr>
<td>3</td>
<td>48.5</td>
<td>61</td>
<td>87.5</td>
<td>98</td>
</tr>
<tr>
<td>4</td>
<td>59.5</td>
<td>72</td>
<td>100</td>
<td>110.5</td>
</tr>
<tr>
<td>5</td>
<td>70.5</td>
<td>83</td>
<td>112.5</td>
<td>123</td>
</tr>
<tr>
<td>6</td>
<td>81.5</td>
<td>94</td>
<td>125</td>
<td>135.5</td>
</tr>
<tr>
<td>7</td>
<td>92.5</td>
<td>105</td>
<td>125</td>
<td>148</td>
</tr>
<tr>
<td>8</td>
<td>103.5</td>
<td>116</td>
<td>137.5</td>
<td>160.5</td>
</tr>
<tr>
<td>9</td>
<td>114.5</td>
<td>127</td>
<td>150</td>
<td>185.5</td>
</tr>
<tr>
<td>10</td>
<td>125.5</td>
<td>139</td>
<td>162.5</td>
<td>215</td>
</tr>
<tr>
<td>11</td>
<td>136.5</td>
<td>149</td>
<td>187.5</td>
<td>256</td>
</tr>
<tr>
<td>12</td>
<td>147.5</td>
<td>160</td>
<td>200</td>
<td>298</td>
</tr>
<tr>
<td>13</td>
<td>158.5</td>
<td>171</td>
<td>212.5</td>
<td>320</td>
</tr>
<tr>
<td>14</td>
<td>169.5</td>
<td>181</td>
<td>225</td>
<td>343</td>
</tr>
<tr>
<td>15</td>
<td>180.5</td>
<td>193</td>
<td>240</td>
<td>380</td>
</tr>
<tr>
<td>16</td>
<td>191.5</td>
<td>204</td>
<td>330</td>
<td>400</td>
</tr>
</tbody>
</table>

**How to Order Valves**

**Series VQ1000**
- Type of actuation
- Seal

**Function**
- Coil voltage
- Cylinder port
- Indicator light
- Manual override
- Light/Surge voltage suppressor

**How to Order Manifold Assembly**
- Specify the part numbers for valves and options together beneath the manifold base part number.

**Example**
- Lead wire kit
  - V5Q13-08LD2—1 set — Manifold base part no.
  - VQ1230-5-C6—4 sets — Valve part no. (Stations 1 to 4)

**Note**
- For negative common specifications, refer to "Option" on page 2-4-29.
- For power consumption of AC type, refer to page 2-4-10.
- Prefix the asterisk to the part nos. of the solenoid valve, etc.

**Specifications**
- DC (1.0 W)
- AC (0.5 W)

**Characteristics**
- Standard type
- High pressure type
- Low wattage type

**Materials**
- Metal seal
- Rubber seal

**Dimensions**

- Electrical entry: 2-Ω/6
- Lead wire length:
  - L0 = 600 mm
  - L1 = 1500 mm
  - L2 = 3000 mm

**Note**
- The broken lines indicate the DIN rail mounting style [-D]. The lead wire entry is on D side (LDC) in this case.
- Note 3 position types need two stations. Cylinder port is located at U side of body.

**Notes**
- For inch-size One-touch fittings, refer to "Option" on page 2-4-29.
The serial transmission system reduces wiring work, while minimizing wiring and saving space.

The system comes in two types: type SA (for small scale systems), with a maximum of 16 stations, or type SB (for larger scale systems), with a maximum of 512 stations.

Stations are counted from station 1 on the D side.

As the standard electrical wiring specifications, double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station. Mixed single and double wiring is available as an option. For details, refer to page 2-4-29.

### How to Order Manifold

**VV5Q1 3**

- **Series VQ1000**
- **Manifold 3**
  - Plug-in unit/Flip
  - 01: 1 station
  - 08: 8 stations (Double)
  - 16: 16 stations (Single)

**Model**

- **Without SI unit**
  - A: With general type SI unit (Series EX300)
  - B: Mitsubishi Electric Corp., MELSECNET/Mini-S3 Data Link System
  - C: OMRON Corp.: SYSBUS Wire System
  - D: SHARP Corp.: Satellite I/O Link System
  - F1: NKE Corp.: Uni-wire System (16 output points)
  - H: NKE Corp.: Uni-wire H System

**Option**

- **D**
  - DIN rail mounting style
- **K**
  - Special wiring specifications (Except double wiring)
- **N**
  - With name plate
- **S**
  - Built-in silencer, direct exhaust (U side only)

**Note**

1. When two or more symbols are specified, indicate them alphabetically. (Example): ONS
2. 8 kits are DIN rail mounting styles, so include suffix D.
3. Specify the wiring specifications on the manifold specification sheet.

*The dust-protected type SI unit is applicable, too.*

For details, please contact SMC.
### How to Order Valves

**Series VQ1000**

**Type of actuation**
- 1: 2 position single
- 2: 2 position double (Latching)
- 3: 3 position closed center
- 4: 3 position exhaust center
- 5: 3 position pressure center

**Seal**
- 0: Metal seal
- 1: Rubber seal

**Function**
- Nil: Standard type
- H: High pressure type
- Y: Low wattage type

**Note**
- Except double (latching)

**Symbol**
- DC: 11 W
- AC: 15 W

**Cylinder port**
- C3: With One-touch fitting for ø3.2
- C4: With One-touch fitting for ø4
- C5: With One-touch fitting for ø5
- M5: M5 thread

**Manual override**
- Nil: Non-locking push type (Tool required)
- B: Locking type (Tool required)
- C: Locking type (Manual)

**Coil voltage**
- 5: 24 VDC/With indicator light/surge voltage suppressor

### How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

### Wiring example 1

Double wiring (Standard)

<table>
<thead>
<tr>
<th>Station</th>
<th>A</th>
<th>A</th>
<th>B</th>
<th>B</th>
<th>A</th>
<th>A</th>
<th>B</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Wiring example 2

Mixed wiring is available as an option. Use the manifold specification sheet to specify.

<table>
<thead>
<tr>
<th>Station</th>
<th>A</th>
<th>A</th>
<th>B</th>
<th>B</th>
<th>A</th>
<th>A</th>
<th>B</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SI unit output and coil numbering

#### SI unit output and coil numbering

- **0**: Locked by double solenoid valve.
- **1**: Double wiring (Standard)
- **2**: Double wiring (Option)
- **3**: Mixed wiring (Option)
- **4**: Single/Double Mixed wiring (Option)
- **5**: Single wiring (Standard)
- **6**: Single wiring (Option)

#### Wiring examples

**Wiring example 1**

Double wiring (Standard)

- SI unit output no. 0 1 2 3 4 5 6 7 8 9
- SOL. location A B A A B A A B B

**Wiring example 2**

Mixed wiring is available as an option. Use the manifold specification sheet to specify.

- SI unit output no. 0 1 2 3 4 5 6
- SOL. location A B A A B A A B B

The places of asterisk are not used.

### SI unit output and coil numbering

- **Double**
- **Single**
- **Mixed wiring**

**Stations 12345**

**Double Wiring (Standard)**

- **Double wiring:** Available as an option.
- **Use the manifold specification sheet to specify.**

**Mixed Wiring (Option)**

- **Mixed wiring:** Available as an option.
- **Use the manifold specification sheet to specify.**

**Si unit output no.**

- **Locked by double solenoid valve.**

**3 position uses two stations for wiring:**

The A side solenoid of 3 position valve is connected to A at the station with the smaller number in the above figure.

### Names of terminal block (LED)

<table>
<thead>
<tr>
<th>Type SC</th>
<th>Type SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OMRON Corporation</strong></td>
<td><strong>SHARP Corporation</strong></td>
</tr>
<tr>
<td><strong>SYSBUS Wire System</strong></td>
<td><strong>Satellite I/O Link System</strong></td>
</tr>
</tbody>
</table>

#### LED Description

- **RUN:** Lights when transmission is normal and PLC is in operation mode
- **T/R:** Blinks during data transmission/reception
- **ERR:** ON when transmission is abnormal
- **POWER:** ON when power supply is ON
- **ERROR:** Lights when slave station switch setting is abnormal, communication is abnormal, PLC stopped and defective slave unit
- **R.SET:** ON for master unit control input
- **HOLD:** ON when transmission is abnormal

#### Note

- Master station unit:
  - OMRON PLC
  - SYSMAC C(CV) series
  - Types C500-RM201 and C200H-RM201
  - 32 units max., transmission terminal connection (512 points max.)
  - No. of output points, 16 points

- Master station unit:
  - SHARP’s PLC
  - New Satellite Series W
  - ZW-31LM
  - New Satellite Series JW
  - JW-23LM, JW-31LM
  - Max. 31 units, I/O slave stations connected (504 points max.)
  - No. of output points, 16 points

### How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

### Example

Serial transmission kit VVQ1013-08SA-D---1 set — Manifold base part no.

- VVQ1230-C6---4 sets — Valve part no. (Stations 1 to 4)
- VVQ1230-D6---4 sets — Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Write sequentially from the 1st station on the D side. When part nos. written collectively are complicated, specify by using the manifold specification sheet.
Dimensions

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>26.5</td>
<td>37.5</td>
<td>48.5</td>
<td>59.5</td>
<td>70.5</td>
<td>81.5</td>
<td>92.5</td>
<td>103.5</td>
<td>114.5</td>
<td>125.5</td>
<td>136.5</td>
<td>147.5</td>
<td>158.5</td>
<td>169.5</td>
<td>180.5</td>
<td>191.5</td>
</tr>
<tr>
<td>L2</td>
<td>66</td>
<td>77</td>
<td>88</td>
<td>99</td>
<td>110</td>
<td>121</td>
<td>132</td>
<td>143</td>
<td>154</td>
<td>165</td>
<td>176</td>
<td>187</td>
<td>198</td>
<td>209</td>
<td>220</td>
<td>231</td>
</tr>
<tr>
<td>L3</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
<td>325</td>
<td>337.5</td>
<td>350</td>
<td>362.5</td>
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<tr>
<td>L4</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
</tr>
</tbody>
</table>

Note) 3 position types need two stations.
Cylinder port is located at U side body.
Manifold Option Parts

Blanking plate assembly
VQQ1000-10A-3

It is used when a blanking plate is mounted to a manifold in advance for possible valve mounting, etc.

Individual SUP spacer
VQQ1000-P-3-C6

When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.)

Since the SUP passage on the spacer’s D side is blocked in advance, it is mounted on the D side the valves U side. (Refer to the application example.)

* Specify the spacer mounting position and SUP block plate mounting position on the manifold specification sheet.
* Electric wiring is connected to the position of the manifold station where the individual SUP spacer is mounted.

Individual EXH spacer
VQQ1000-R-3-C6

When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (1 station space is occupied.)

Since the EXH passage on the spacer’s D side is blocked in advance, it is mounted on the D side of the valve for individual supply while blocking the valves U side. (Refer to the application example.)

* Specify the spacer mounting position and EXH block plate mounting position on the manifold specification sheet.
* Electric wiring is connected to the position of the manifold station where the individual EXH spacer is mounted.

Block valve
VQQ1000-P-3-C6

For a flip plug-in unit, block plate is built in the valve for blocking SUP and EXH passages. Since the no. is classified by the passage to be blocked, specify it by attaching the option no. to the valve no. The block valve is constructed so that D sides of SUP and EXH passages are blocked.

* Specify the number of stations on the manifold specification sheet.

<Shut off label>

When using block plates for SUP, EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label for each)

* When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.
### Manifold Option Parts

**Name plate [-N3]**
VQ1000-N3-Station (1 to Max. stations)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc. Insert it into the groove on the side of the end plate and bend it as shown in the figure.

**Blanking plug**
KQ2P-

It is inserted into an unused cylinder port and SUP/EXH ports. Purchasing order is available in units of 10 pieces.

**DIN rail mounting bracket**
VQ1000-57A-3

It is used for mounting a manifold on a DIN rail. The DIN rail mounted bracket is fixed to the manifold end. (The specification is the same as that for the option “-D”.)

1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).

**Built-in silencer, Direct exhaust [-S]**

This is an exhaust port on top of the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. F, P and S kits are provided with single exhaust on U side.

Note) A large quantity of drainage generated in the air.

For maintenance, refer to page 2-4-27.

**Silencer**
AN103-X233

This is inserted into the centralized type EXH port (One-touch fitting).

**Port plug**
VQ0000-58A

The plug is used to block the cylinder port when using a 4 port valve as a 3 port valve. When ordering it incorporated with a manifold, suffix A or B, the symbol of the plug port, to the valve no.

Example) VQ1130-5L-C6-A
Double check block (Separated type)  
VQ1000-FPG-\[\square\]  
It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the double check block with a built-in pilot type double check valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time. The combination with a two position single/double solenoid valve will permit this block to be used for preventing the dropping at the cylinder stroke end when the SUP residual pressure is released.

Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. operating pressure</td>
<td>0.8 MPa</td>
</tr>
<tr>
<td>Min. operating pressure</td>
<td>0.15 MPa</td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>-5 to 50°C</td>
</tr>
<tr>
<td>Flow characteristics C</td>
<td>0.60 dm³/(s·bar)</td>
</tr>
<tr>
<td>Max. operating frequency</td>
<td>180 CPM</td>
</tr>
</tbody>
</table>

Dimensions

Formula: \[ L_1 = 11n + 20 \]  
\( n \): Station (Maximum 24)

How to Order

**Double check block**

VQ1000-FPG-\[\square\]

- IN side port size
  - C4: One-touch fitting for ø4
  - C6: One-touch fitting for ø6

- OUT side port size
  - M5: M5 thread

**Manifold**

VVQ1000-FPG-06

- Stations
  - 01: 1 station
  - 16: 16 stations

Option

- Nil
- F: With bracket
- D: DIN rail mounting style
- N: Name plate

\( \text{Note: When two or more symbols are specified, indicate them alphabetically. Example: } \text{-D} \)

Caution

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap.
- Also check the cylinder's tube gasket, piston packing and rod packing for air leakage.
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- Combining double check block with 3 position closed center or pressure center solenoid valve will not work.
- M5 fitting assembly is attached, not incorporated into the double check block.
- After screwing in the M5 fittings, mount the assembly on the double check block. (Tightening torque: 0.8 to 1.2 N·m)
- If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop intermediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
**Precautions**

Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 2-9-2.

---

**Caution**

The lighting positions are concentrated on one side for both single solenoid and double (latching) type. In the double (latching) type, A side and B side energization are indicated by two colors which match the colors of the manual overrides.

---

**Light/ Surge Voltage Suppressor**

**Caution**

Avoid using the latching solenoid valves in environments where 20 ms energization time is necessary for self-holding.

---

**How to Mount/ Remove Solenoid Valve**

**<Procedure>**

How to remove
1. Loosen tie-rod bolt B. (Two to four turns)
2. After fully loosening the tie-rod bolt, take off bold A upward as shown above.
3. Slide the valves aside to make a 1 mm clearance between the valve to betaken off and the others. As shown above, remove the whole valve while holding up the (a) side.

Mounting
Reverse the sequence of steps above to remount. Torque applied to tie-rod bolt should be 1.0 to 1.4 N-m. Tighten evenly.

Note) Be careful not to push on the light cover while mounting/ removing the valve.

---

**DC type circuit diagram**

**Single solenoid**

A→ (Set) B→ (Reset)

**Double (Latching) solenoid (DC)**

A→ (Set) B→ (Reset)

**Caution**

Different from the conventional double solenoid, the double uses a latching (self-holding system) solenoid. Although the appearance is the same as the single solenoid, it is constructed so that the movable iron core in the solenoid is held in the ON position on A and B sides by instantaneous energization (20 ms or more). The usage and function is the same as the double solenoid.

---

**Double (Latching solenoid) Type**

**Caution**

Different from the conventional double solenoid, the double uses a latching (self-holding system) solenoid. Although the appearance is the same as the single solenoid, it is constructed so that the movable iron core in the solenoid is held in the ON position on A and B sides by instantaneous energization (20 ms or more). The usage and function is the same as the double solenoid.

---

**<Special Cautions for Latching Solenoid>**

1. Select the circuit in which ON and OFF signals are not energized simultaneously.
2. 20 ms energization time is necessary for self-holding.
3. Avoid using the latching solenoid valves in environments where impact or collisions with the valve might occur. Also, do not use in places where strong magnetic fields are present.
4. Even though the armature in the solenoid of this valve is held on to B side, ON position (Reset), verify either A side, ON position or B side, ON position by energizing prior to use. After manual operation, the main valve will return to its original position.
5. Manual override on the pilot valve side can retain its switching position after manipulation.
6. Please contact SMC for long-term energization applications.
7. If the metal seal type goes down below the minimum operating pressure of supply air (0.1 MPa or less), the main valve will get back the home position (B side ON position). Therefore, in the event of shutting the supply air or applying the air with being A side ON position remained, cylinder may be pulsed. In the event of manipulating the supply air, the valve’s switching position has to be set in the home position side (B side ON position side).

**Warning**

Without an electric signal for the solenoid valve the manual override is used for switching the main valve.

**Push type (Tool required)**

Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

**Locking slotted type**

Push down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it.

**Locking lever type (Option)**

Push down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it. Turn it counterclockwise to release it.

**Manual override for double (latching) type**

In the case of a double (latching) type, a manual override is provided not only on the body side but to the pilot as a standard. After manual operation, the main valve of the manual on the body side returns to the position before the manual operation, however, the pilot valve manual override maintains the change-over position.

---

**Caution**

Do not apply excessive torque when turning the locking type manual override. (0.1 N-m or less)
Replacement of Cylinder Port Fittings

**Caution**
The cylinder port fittings are a cassette for easy replacement. The fittings are blocked by a clip inserted from the top of the valve. Remove the clip with a screwdriver to remove fittings. For replacement, insert the fitting assembly until it strikes against the inside wall and then re-insert the clip to the specified position.

<table>
<thead>
<tr>
<th>Applicable tubing O.D.</th>
<th>Fitting assembly part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable tubing ø3.2</td>
<td>VQ1000-50A-C3</td>
</tr>
<tr>
<td>Applicable tubing ø4</td>
<td>VQ1000-50A-C4</td>
</tr>
<tr>
<td>Applicable tubing ø6</td>
<td>VQ1000-50A-C6</td>
</tr>
</tbody>
</table>

Purchasing order is available in units of 10 pieces.

**Caution**
1. Use caution that O-rings must be free from scratches and dust. Otherwise, air leakage may result.
2. The tightening torque for inserting fittings to the M5 thread assembly should be 0.8 to 1.4 N·m.

Mounting/Removing from the DIN Rail

**Caution**

Removing
1. Loosen the clamp screw of the end plate on both sides.
2. Lift side (a) of the manifold base and side the end plate in the direction of (2) shown in the figure to remove.

Mounting
1. Hook side (b) of the manifold base on the DIN rail.
2. Press down side (a) and mount the end plate on the DIN rail. Tighten the clamp screw on side (a) of the end plate. The proper tightening torque for screws is 0.4 to 0.6 N·m.

Built-in Silencer Replacement Element

**Caution**
A silencer element is incorporated in the end plate on both sides of the base. A dirty and choked element may reduce cylinder speed or cause malfunction. Clean or replace the dirty element.

**Element Part No.**

<table>
<thead>
<tr>
<th>Type</th>
<th>Element part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built-in silencer, direct exhaust (-S)</td>
<td>VVQ1000-82A-3</td>
</tr>
</tbody>
</table>

* The minimum order quantity is 10 pcs.

Remove the cover from the side of the end plate and remove the old element with a screwdriver, etc.

How to Calculate the Flow Rate

For obtaining the flow rate, refer to pages 2-1-8 to 2-1-11.
**Option**

Different Number of Connector Pins

F and P kits with the following number of pins are available. Besides the standard number (F = 25; P = 26) select the desired number of pins and cable length from the cable assembly list. Place an order for the cable assembly separately.

**F**  
kit (D-sub connector) 15 pins

![D-sub connector image]

**P**  
kit (Flat ribbon cable connector) 10 pins, 16 pins, 20 pins

![Flat ribbon cable image]

How to order manifold

**VV5Q13-06 FSA-N**

**VV5Q13-06 PSC-N**

### Kit/Electrical entry

<table>
<thead>
<tr>
<th>Pins</th>
<th>Top entry</th>
<th>Side entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>15P</td>
<td>Kit F</td>
<td>Kit F</td>
</tr>
<tr>
<td></td>
<td>UA</td>
<td>SA</td>
</tr>
</tbody>
</table>

### Wiring Specifications

- As in the case of 25-pin models (standard), terminal no. 1 is the first station SOL.A and the terminal no. 8 is COM.

### D-sub Connector Cable Assembly

<table>
<thead>
<tr>
<th>Cable length (m)</th>
<th>Pins</th>
<th>15P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-DS15-1</td>
<td></td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-DS15-2</td>
<td></td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-DS15-3</td>
<td></td>
</tr>
</tbody>
</table>

- For other commercial connectors, use a type conforming to MIL-C-24308.

### Flat Ribbon Cable Assembly

<table>
<thead>
<tr>
<th>Cable length (m)</th>
<th>Pins</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC10-1</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC10-2</td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC10-3</td>
</tr>
</tbody>
</table>

- For other commercial connectors, use a type with strain relief that conform to MIL-C-83503.
Option

Special Wiring Specifications

In the internal wiring of F kit, P kit, and JS kit, double wiring (connected to SOL A and SOL B) is adopted for each station regardless of the valve and option types. Mixed single and double wiring is available as an option.

1. How to order valves

   Indicate an option symbol, -K, for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification sheet.

Example)

VV5Q13-09FSO-D K S

Refer to following model no. for inch-size One-touch fittings.

Inch-size One-touch Fittings

Refer to following model no. for inch-size One-touch fittings.

How to order manifold

VV5Q13-08FSO-DN-00T

1(P), 3(R) port size: Ø1/4

How to order valves

VV1130-5-N7

Cylinder ports

Cable length

Lead wire entry on D side

Negative Common Specifications

Specify the valve model no. as shown below for negative COM specification. The manifold no. shown below is for the L kits. For other kits the standard manifold can be used. Please contact for negative COM S kit.

How to order negative COM valves

VQ1130 N — 5 — C6

Negative common specifications

How to order negative COM manifold

L kit:

VV5Q13-08LND1-DOS

Others, option symbols: to be indicated alphabetically.

DIN Rail Mounting

Each manifold can be mounted on a DIN rail. Order it by indicating an option symbol for DIN rail mounting style, -D. In this case, a DIN rail which is approx. 30 mm longer than the manifold with the specified number of stations is attached. Besides, it is also available in the following cases.

- When DIN rail is unnecessary (Except S kit) (DIN rail mounting brackets only are attached.)

   Indicate the option symbol, -DO, for the manifold no.

   Example)

   VV5Q13-08LD1-DOS

   Others, option symbols: to be indicated alphabetically.

- When using DIN rail longer than the manifold with specified number of stations

   Clearly indicate the necessary number of stations next to the option symbol, -D, for the manifold no.

   Example)

   VV5Q13-08FS1-D09S

   DIN rail for 9 stations

   Others, option symbols: to be indicated alphabetically.

- When changing the manifold style into a DIN rail mount

   Order brackets for mounting a DIN rail. (Refer to "Option" on page 2-4-24.)

   No. VVQ1000-57A-3 2 pcs. per one

- When ordering DIN rail only

   DIN rail no.: AXT100-DR-n

   = Refer to the DIN rail dimension table for determining the length.
Series VQ0000

Body Ported

Plug Lead Unit: Flip Type

How to Order Manifold

<table>
<thead>
<tr>
<th>Series</th>
<th>Manifold</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5Q</td>
<td>0 4</td>
<td>08 F S</td>
</tr>
</tbody>
</table>

**Option**
- None (C kit only)
- DIN rail mounting style
- Special wiring specifications (Except double wiring)
- With name plate
- Built-in silencer, direct exhaust

**Notes**
1. When two or more symbols are specified, indicate them alphabetically. Example) DNS
2. F, P, T, and S kits are DIN rail in mounting styles, so include suffix -D.
3. Specify the wiring specifications on the manifold specification sheet. (Except C kit)
4. F, P, T, and S kits are provided with an exhaust on one side, while C kits are with an exhaust on both sides.

**Kit/Electrical entry/Cable length**

**F** kit (D-sub connector)

**P** kit (Flat ribbon cable connector)

**T** kit (Terminal block)

**C** kit (Connector)

**S** kit (Serial transmission unit)

**Notes**
1. Besides the above, F and P kits with different number of pins are available. For details, refer to page 2-4-69.
2. See page 2-4-69 for details.
3. Please consult with SMC for the following serial transmission kits: Matsushita Electric Works, Ltd.; Rockwell Automation, Inc.; SUNX Corporation; Fuji Electric Co., Ltd.; OMRON Corporation.
How to Order Valves

Manifold Option

Blanking plate assembly VQQ0000-10A-4

Name plate [-N4] VQQ0000-N4-Station (1 to Max. stations)

Built-in silencer, Direct exhaust [-S]

Individual SUP spacer VQQ0000-P-4-C4

Double Check block VQ1000-FPG

Block valve VQQ0|4-[C-]O

Individual EXH spacer VQQ0000-R-4-C4

DIN rail mounting bracket VQQ0000-57A-4

Blanking plug KQ2P

How to Order Manifold Assembly

Example

Single solenoid (24 VDC) VQQ140-SMO-C4 (4 sets)

Double (latching) Solenoid 24 VDC VQQ240-SMO-C4 (4 sets)

Manifold base (8 stations) VVS004-08FU2-D

Cylinder parts C4: With One-touch fitting for ø4

The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

Please indicate manifold base type, corresponding valve, and option parts. When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

- For replacement parts, refer to page 2-4-105.
How to Order Manifold

### Manifold

**Series VQ1000**

**Body Ported**

**Plug Lead Unit: Flip Type**

#### Kit/Electrical entry/Cable length

- **F** kit (D-sub connector)
  - Side entry
  - Top entry
  - Connector entry direction: Top entry, Side entry

- **P** kit (Flat ribbon cable connector)
  - Side entry
  - Top entry
  - Connector entry direction: Top entry, Side entry

- **T** kit (Terminal block)
  - Side entry
  - Top entry

- **C** kit (Connector)
  - Side entry
  - Top entry
  - Connector entry direction: Top entry, Side entry

- **S** kit (Serial transmission unit)
  - Side entry
  - Top entry
  - Connector entry direction: Top entry, Side entry

#### Simple specials are available with SMC Simple Specials System. For details about applicable models, please contact SMC.

#### Note:
- For details about certified products conforming to international standards, visit us at [www.smcworld.com](http://www.smcworld.com).

#### Options:

- **Nil** None (C kit only)
- **D** DIN rail mounting style
- **K** Special wiring specifications (Except double wiring)
- **N** With name plate
- **S** Built-in silencer, direct exhaust

#### Note:
- When two or more symbols are specified, indicate them alphabetically. Example: -DNS
- **F** and **P** kits are DIN rail mounting styles, so include suffix -D.
- Specify the wiring specifications in the manifold specification sheet. (Except C kit)
- **F**, **P**, **T**, and **S** kits are provided with an exhaust on one side, while **C** kits are with an exhaust on both sides.

#### Kit

- **1** No. of terminals: 8, 1 row
- **2** No. of terminals: 16, 2 rows
- **C** Connector kit
- Max. 16 stations

#### Cable Length

- **Without cable**
- **With cable (1.5 m)**
- **With cable (3 m)**
- **With cable (5 m)**

#### Ports

- **U0**
- **U1**
- **U2**
- **U3**
- **S0**
- **S1**
- **S2**
- **S3**

#### Wiring Specifications

- **With general type SI unit (Series EX300)**
- **OMRON Corp.: SYSBUS Wire System**
- **SHARP Corp.: Satellite I/O Link System**
- **NKE Corp.: Uni-wire H System**

#### Limitations

- **Max. 16 stations**

#### Note:
- **A** With general type SI unit (Series EX300)
- **B** Mitsubishi Electric Corp. BUS/CompactLink System
- **C** OMRON Corp.: SYSBUS Wire System
- **D** SHARP Corp.: Satellite I/O Link System
- **F1** NKE Corp.: Uni-wire System (16 output points)
- **H** NKE Corp.: Uni-wire H System

#### Additional Notes:
- Besides the above, **F** and **P** kits with different number of pins are available. For details, see page 2-4-68.
- Please consult with SMC for the following serial transmission kits: Matsushita Electric Works, Ltd.; Rockwell Automation, Inc.; SUNX Corporation; Fuji Electric Co., Ltd.; OMRON Corporation.
**How to Order Valves**

### VQ1000 Series

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>Symbol</th>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Cylinder port**
- Symbol: C<br>- Port size: C3, C4, C6, M5

**Manual override**
- Non-locking push type (Tool required)
- Locking type (Manual)

**Seal**
- 0: Metal seal
- 1: Rubber seal

**Function**
- Nil: Standard type (DC 1.0 W)
- H: High pressure type (DC 1.5 W)
- Y: Low voltage type (DC 0.5 W)

**Coil voltage**
- 1: 100 VAC (50/60 Hz)
- 2: 200 VAC (50/60 Hz)
- 3: 110 VAC (50/60 Hz)
- 4: 220 VAC (50/60 Hz)
- 5: 24 VDC
- 6: 12 VDC

**Electrical entry**
- G: Grommet C kit single only. (Except AC.)
- L: L plug connector With lead wire
- LO: L plug connector Without connector
- M: M plug connector With lead wire
- MO: M plug connector Without connector

**Note**
- The C kit is applicable to 200/220 VAC.

**How to Order Manifold Assembly**

**Example**
- Single solenoid (24 VDC)
- Double solenoid (24 VDC)

**How to Order Valves**

**Manifold Option**

**Blanking plate assembly**
- VQ1000-10A-4

**Double check block**
- VQ1000-FPG

**Block valve VQ1000**
- 4-5-6

**Port plug**
- VQ0000-58A

**Built-in silencer, direct exhaust [-S]**
- EXH outlet

**Silencer (For EXH port)**
- AN103-X233

**Blanking plug**
- KQ2P

**Note**
- For replacement parts, refer to page 2-4-107.
**Series VQ2000**

Body Ported

Plug Lead Unit: Flip Type

---

**How to Order Manifold**

**Series**

![Series VQ2000 Diagram](image)

**Manifold**

![Manifold Diagram](image)

**Option**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>C kit only</td>
</tr>
<tr>
<td>D</td>
<td>DIN rail mounting style</td>
</tr>
<tr>
<td>K</td>
<td>Special wiring specifications (Except double wiring)</td>
</tr>
<tr>
<td>N</td>
<td>With name plate</td>
</tr>
<tr>
<td>S</td>
<td>Built-in silencer, direct exhaust</td>
</tr>
</tbody>
</table>

**Stations**

- 01: 1 station

The number of max. stations differs from kit to kit. (Refer to the table below.)

**Kit/Electrical entry/Cable length**

- **F** kit (D-sub connector)
  - Top entry
  - Side entry

- **P** kit (Flat ribbon cable connector)
  - Top entry
  - Side entry

- **T** kit (Terminal block)
  - Top entry
  - Side entry

- **C** kit (Connector)
  - Top entry
  - Side entry

- **S** kit (Serial transmission unit)
  - Top entry
  - Side entry

---

**Note 1)** Besides the above, F and P kits with different number of pins are available. For details, refer to page 2-4-68.

**Note 2)** See page 2-4-69 for details.

**Note 3)** Please consult with SMC for the following serial transmission kits: Matsushita Electric Works, Ltd.; Rockwell Automation, Inc.; SUNX Corporation; Fuji Electric Co., Ltd.; OMRON Corporation.

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**Simple specials are available with SMC Simple Specials System. For details about applicable models, please contact SMC.**

---

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How to Order Valves

**Cylinder port**
- Symbol: Port size
  - C4: With One-touch fitting for ø4
  - C6: With One-touch fitting for ø6
  - CB: With One-touch fitting for ø8

**Manual override**
- A manual override for pilot valves is provided to the standard model for double type.

**Function**
- Symbol: Specifications
  - Nil: Standard type (1.0 W)
  - H(1): High pressure type (1.5 W)
  - Y(1): Low wattage type (0.5 W)

**Seal**
- 0: Metal seal
- 1: Rubber seal

**How to Order Manifold Assembly**

<table>
<thead>
<tr>
<th>Example</th>
<th>Single solenoid (24 VDC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ2140-5LO-C8 (4 sets)</td>
<td></td>
</tr>
</tbody>
</table>

| Double solenoid (24 VDC) |
| VQ2240-5LOB-C8 (4 sets) |

**Note**
- For negative common specifications, refer to “Option” on page 2-4-69.
- For part nos., refer to “Option” on page 2-4-69.

**Connector assembly will be required when the F, P, T, S kits add a valve.**

**For inch-size One-touch fittings, refer to “Option” on page 2-4-69.**

**For negative common specifications, refer to “Option” on page 2-4-69.**

**Note 1**
- For negative common specifications, refer to “Option” on page 2-4-69.

**Note 2**
- For replacement parts, refer to page 2-4-109.
### Series VQ0000/1000/2000

#### Plug Lead Unit: Flip Type

**Model**

<table>
<thead>
<tr>
<th>Series</th>
<th>Number of solenoids</th>
<th>Model</th>
<th>Flow characteristics</th>
<th>Response time (ms)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>Single 2 position</td>
<td>Metal seal VQ0140</td>
<td>0.43  0.20  0.10  0.50  0.19  0.12</td>
<td>12 or less 15 or less 29 or less</td>
<td>57</td>
</tr>
<tr>
<td></td>
<td>Rubber seal VQ0141</td>
<td>0.49  0.34  0.13  0.59  0.19  0.14</td>
<td>15 or less 20 or less 34 or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double (Latching) 2 position</td>
<td>Metal seal VQ0240</td>
<td>0.43  0.20  0.10  0.50  0.19  0.12</td>
<td>12 or less 15 or less 29 or less</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rubber seal VQ0241</td>
<td>0.49  0.34  0.13  0.59  0.19  0.14</td>
<td>15 or less 20 or less 34 or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Closed center 3 position</td>
<td>Metal seal VQ0340</td>
<td>0.34  0.12  0.08  0.36  0.38  0.10</td>
<td>20 or less 26 or less 40 or less</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rubber seal VQ0341</td>
<td>0.37  0.25  0.09  0.42  0.45  0.12</td>
<td>25 or less 33 or less 47 or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exhaust center 2 position</td>
<td>Metal seal VQ0440</td>
<td>0.36  0.21  0.09  0.48  0.18  0.12</td>
<td>20 or less 26 or less 40 or less</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rubber seal VQ0441</td>
<td>0.37  0.31  0.11  0.59  0.24  0.14</td>
<td>25 or less 33 or less 47 or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQ1000</td>
<td>Single 2 position</td>
<td>Metal seal VQ1140</td>
<td>0.77  0.14  0.18  0.84  0.14  0.19</td>
<td>12 or less 15 or less 29 or less</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rubber seal VQ1141</td>
<td>0.91  0.19  0.21  1.0  0.21  0.25</td>
<td>15 or less 20 or less 34 or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Double (Latching) 2 position</td>
<td>Metal seal VQ1240</td>
<td>0.77  0.14  0.18  0.84  0.14  0.19</td>
<td>12 or less 15 or less 29 or less</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rubber seal VQ1241</td>
<td>0.91  0.19  0.21  1.0  0.21  0.25</td>
<td>15 or less 20 or less 34 or less</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Closed center 3 position</td>
<td>Metal seal VQ1340</td>
<td>0.67  0.13  0.16  0.73  0.13  0.17</td>
<td>20 or less 26 or less 40 or less</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rubber seal VQ1341</td>
<td>0.78  0.22  0.18  0.84  0.21  0.20</td>
<td>25 or less 33 or less 47 or less</td>
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<tr>
<td></td>
<td>Exhaust center 2 position</td>
<td>Metal seal VQ1440</td>
<td>0.74  0.14  0.17  0.84  0.16  0.20</td>
<td>20 or less 26 or less 40 or less</td>
<td></td>
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<tr>
<td></td>
<td>Rubber seal VQ1441</td>
<td>0.78  0.28  0.19  1.0  0.21  0.24</td>
<td>25 or less 33 or less 47 or less</td>
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<td>Pressure center 3 position</td>
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<td>Rubber seal VQ1541</td>
<td>0.80  0.28  0.19  0.84  0.21  0.22</td>
<td>25 or less 33 or less 47 or less</td>
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<tr>
<td>VQ2000</td>
<td>Single 2 position</td>
<td>Metal seal VQ2140</td>
<td>2.0  0.13  0.43  2.3  0.15  0.58</td>
<td>22 or less 29 or less 49 or less</td>
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<tr>
<td></td>
<td>Rubber seal VQ2141</td>
<td>2.3  0.21  0.54  2.7  0.25  0.62</td>
<td>24 or less 31 or less 51 or less</td>
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<td></td>
<td>Double (Latching) 2 position</td>
<td>Metal seal VQ2240</td>
<td>2.0  0.13  0.43  2.3  0.15  0.58</td>
<td>22 or less 29 or less 49 or less</td>
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<tr>
<td></td>
<td>Rubber seal VQ2241</td>
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<td>24 or less 31 or less 51 or less</td>
<td></td>
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</tr>
</tbody>
</table>

**JIS Symbol**

- 2 position single
- 2 position double (Latching)
- 3 position closed center
- 3 position exhaust center
- 3 position pressure center

**Standard Specifications**

### Valve specifications

- **Valve construction**: Metal seal | Rubber seal
- **Fluid**: Air/Inert gas | Air/Inert gas
- **Maximum operating pressure**: 0.7 MPa (High pressure type: 0.8 MPa)(3)
- **Min. operating pressure**: Single 0.1 MPa | Double (Latching) 0.15 MPa
- **3 position**: 0.15 MPa | 0.2 MPa
- **Ambient and fluid temperature**: –10 to 50°C(1)
- **Lubrication**: Not required
- **Manual override**: Push type/Locking type (Tool required, Manual type) Option
- **Impact resistance/Vibration resistance**: 150/30 m/s²
- **Enclosure**: Dust-protected
- **Coil rated voltage**: 12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz)
- **Allowable voltage fluctuation**: ±10% of rated voltage
- **Coil insulation type**: Class B or equivalent
- **Power consumption (Current)**:
  - 24 VDC: 1 W DC (42 mA), 1.5 W DC (63 mA)(3), 0.5 W DC (21 mA)(4)
  - 12 VDC: 1 W DC (83 mA), 1.5 W DC (125 mA)(3), 0.5 W DC (42 mA)(4)
  - 100 VAC: Inrush 0.5 VA (5 mA), Holding 0.5 VA (5 mA)
  - 110 VAC: Inrush 0.55 VA (6 mA), Holding 0.55 VA (5 mA)
  - 200 VAC: Inrush 1.0 VA (5 mA), Holding 1.0 VA (5 mA)
  - 220 VAC: Inrush 1.1 VA (5 mA), Holding 1.1 VA (5 mA)

**Note 1)** Use dry air to prevent condensation when operating at low temperatures.
**Note 2)** Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

**Vibration resistance**: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

**Note 3)** Values in the case of high pressure type (1.5 W) specifications.
**Note 4)** Values in the case of low wattage type (0.5 W) specifications.
## Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
<th>Applicable solenoid valve</th>
<th>Station weight (g)</th>
</tr>
</thead>
</table>
| VQ0000 | VV5Q04-□□□□ | ■ F kit-D-sub connector  
■ P kit-Flat cable connector  
■ T kit-Terminal block  
■ C kit-Individual connector  
■ S kit-Serial transmission unit | Side  
1(P) Port  
3(R) Port  
4(A), 2(B) Port  
Option Built-in silencer, direct exhaust | C6 (ø6)  
C3 (ø3.2)  
M5 (M5 thread) | VQ0□□40  
VQ0□□41 | 225 |
| VQ1000 | VV5Q14-□□□□ | ■ F kit-D-sub connector  
■ P kit-Flat cable connector  
■ T kit-Terminal block  
■ C kit-Individual connector  
■ S kit-Serial transmission unit | Side  
1(P) Port  
3(R) Port  
4(A), 2(B) Port  
Option Built-in silencer, direct exhaust | C6 (ø6)  
C3 (ø3.2)  
C4 (ø4)  
M5 (M5 thread) | VQ1□□40  
VQ1□□41 | 380 |
| VQ2000 | VV5Q24-□□□□ | ■ F kit-D-sub connector  
■ P kit-Flat cable connector  
■ T kit-Terminal block  
■ C kit-Individual connector  
■ S kit-Serial transmission unit | Side  
1(P) Port  
3(R) Port  
4(A), 2(B) Port  
Option Built-in silencer, direct exhaust | C8 (ø8)  
C4 (ø4)  
C6 (ø6)  
C8 (ø8) | VQ2□□40  
VQ2□□41 | 671 |

Note 1) Inch-size One-touch fittings are also available. For details, refer to page 2-4-69.

Note 2) See page 2-4-69 for details.
D-sub Connector (25 pins)

- The D-sub connector reduces installation labor for electrical connections.
- Using the D-sub connector (25P), (15P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 16.

**How to Order Manifold**

*Using the D-sub connector (25P), (15P as an option) conforming to Connector manufacturers’ example the available mounting space. g gives a wide interchangeability. The D-sub connector reduces installation labor for electrical assembly is 20 mm. For details, refer to page 2-4-68. Types with 15 pin are also available. 5 or more stations totaling less than 1000 are available as an option. For details, refer to page 2-4-69.

**Electrical wiring specifications**

As the standard electrical wiring specifications, double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-69.

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>Side C6, C3, C4, M5</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td>VQ1000</td>
<td>Side C6, C3, C4, C8, M5</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side C8, C4, C6, C8</td>
<td>Max. 16 stations</td>
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</table>

**D-sub Connector Cable Assembly (Option)**

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Assembly part no.</th>
<th>Note</th>
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<tbody>
<tr>
<td>1.5 m</td>
<td>AX100-DS25-015</td>
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<tr>
<td>3 m</td>
<td>AX100-DS25-030</td>
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</tr>
<tr>
<td>5 m</td>
<td>AX100-DS25-050</td>
<td></td>
</tr>
</tbody>
</table>

- For other commercial connectors, use a 25 pins type with female connector conforming to MIL-D-24308.

**Connector manufacturers’ example**

- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.

**Cable Color by Terminal No. of D-sub Connector Cable Assembly**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Lead wire color</th>
<th>Dot marking</th>
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<td>None</td>
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<tr>
<td>2</td>
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<tr>
<td>3</td>
<td>Red</td>
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<td>4</td>
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<tr>
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<td>Purple</td>
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<tr>
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</table>

**Electric Characteristics**

- 25 m x 24 AWG
- 0.3 mm² x 25C
- Electric Characteristics
  - Item
  - Characteristics
  - Conductor resistance (Ω/km, 20°C) 65 or less
  - Insulation resistance (Ω) 1000
  - Insulation resistance (Ω/km, 20°C) 5 or more

**Note**

- Types with 15 pin are also available. For details, refer to page 2-4-69.
Plug Lead Unit: Flip Type Series VQ0000/1000/2000

**VQ0000**

**Dimensions: Side Entry Connector [-FS]**

<table>
<thead>
<tr>
<th>Station</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
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**Dimensions: Top Entry Connector [-FU]**

<table>
<thead>
<tr>
<th>Station</th>
<th>L1</th>
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<th>L3</th>
<th>L4</th>
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</tbody>
</table>

**How to Order Valves**

**Series**

- 0 VQ0000
- 1 VQ1000
- 2 VQ2000

**Function**

- Nil
- Standard type (0.5 W)
- Low wattage type (0.1 W)

**Seal**

- Nil
- Metal seal
- Rubber seal

**Type of actuation**

- 2 position single
- 2 position double (Latching)
- 3 position closed center
- 3 position double (Latching)
- 3 position exhaust center
- 3 position latching center

**Coil voltage**

- 100 VAC (50/60 Hz)
- 110 VAC (50/60 Hz)
- 24 VDC
- 12 VDC

**Note 1)** For power consumption of AC type, refer to page 2-4-36.

**Note 2)** Except double (latching).

**Cylinder port**

- C3 With one-touch fitting for ø3.2
- C4 With one-touch fitting for ø4
- C5 With one-touch fitting for ø6
- M5 M5 thread

**Manual override**

- Nil
- Non-locking push type (Tool required)
- B Locking type (Tool required)
- C Locking type (Manual)

**Electrical entry**

- LO L plug connector without connector
- MO M plug connector without connector

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.
Dimensions: Side Entry Connector [-FS]

Formula: \[ L_2 = 11n + 28 \]

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</table>

Dimensions: Top Entry Connector [-FU]

Formula: \[ L_1 = 11(n + 15.5) \]

<table>
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Plug Lead Unit: Flip Type  Series VQ0000/1000/2000

Dimensions: Side Entry Connector [-FS]

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Dimensions: Top Entry Connector [-FU]

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VQ0000/1000/2000 Kit (Flat ribbon cable connector)

- MIL flat ribbon cable connector reduces installation labor savings for electrical connection.
- Using the connector for flat ribbon cable (26P), (10P, 16P, 20P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 16.

Flat Ribbon Cable (26 pins)

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
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<tbody>
<tr>
<td>VQ0000</td>
<td>Side C6 (P), 3(R)</td>
<td>Max. 16 stations</td>
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<tr>
<td>VQ1000</td>
<td>Side C6, C3, C4, M5</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side C6, C8</td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>

**Cable assembly**

- For other commercial connectors, use a 26 pins type with strain relief conforming to MIL-C-83503.

**Connector manufacturers’ example**

- Hirose Electric Co., Ltd.
- Sumitomo 3M Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

**Electrical wiring specifications**

- As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-69.
- When using the negative common specifications, use valves for negative common. (Refer to page 2-4-69.)

**How to Order Manifold**

- For details, refer to page 2-4-69.

**Option**

- DIN rail mounting style
- Special wiring specifications (Except double wiring)
- Built-in silencer, direct exhaust (U side only)

**Note**

- When two or more symbols are specified, indicate them alphabetically. Example) -DNS
- P kits are DIN rail mounting styles, so include suffix -D
- Specify the wiring specifications on the manifold specification sheet.
How to Order Valves

**Series**

- **VQ**
- **VQ1000**
- **VQ2000**

**Function**

- **Symbol**: Specifications
- **Nil**: Standard type
- **DC**: High pressure type
- **AC**: Low wattage type

**Type of actuation**

1. 2 position single
2. 2 position double (Latching)
3. 3 position closed center
4. 3 position exhaust center
5. 3 position pressure center

**Seal**

- **Metal seal**
- **Rubber seal**

**Coil voltage**

- 100 VAC (50/60 Hz)
- 110 VAC (50/60 Hz)
- 24 VDC
- 12 VDC

**Body Ported**

Plug Lead Unit: Flip Type Series VQ0000/1000/2000

**Dimensions: Side Entry Connector [-PS]**

<table>
<thead>
<tr>
<th>1</th>
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**Dimensions: Top Entry Connector [-PU]**

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</table>

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

**Cylinder port**

- **Symbol**: Port size
- **Nil**: With One-touch fitting for ø 3.2
- **C3**: With One-touch fitting for ø 3.2
- **C4**: With One-touch fitting for ø 4
- **C6**: With One-touch fitting for ø 6
- **C8**: With One-touch fitting for ø 8
- **M5**: M5 thread

**Manual override**

- **Nil**: Non-locking push type (Tool required)
- **B**: Locking type (Tool required)
- **C**: Locking type (Manual)

**Electrical entry**

- **LO**: L plug connector without connector
- **MO**: M plug connector without connector

Note 1) For negative common specifications, refer to “Option” on page 2-4-69.

Note 2) For inch-size one-touch fittings, refer to “Option” on page 2-4-69.

Note 3) 3 position needs two stations. Cylinder port is located at U side of body.

Note 4) All double latching valves of VQ0000 are non-locking push type.

Note 5) A manual override for pilot valve is provided to the standard model for double type.

Note 6) Plug connector and lead wire layers are attached to the manifold.
Dimensions: Side Entry Connector [-PS]

Formula L1 = 11n + 15.5, L2 = 11n + 28  
n: Stations (Maximum 16 stations)

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Dimensions: Top Entry Connector [-PU]

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Plug Lead Unit: Flip Type Series VQ0000/1000/2000

VQ2000

Dimensions: Side Entry Connector [-PS]

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Dimensions: Top Entry Connector [-PU]

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<td>360.5</td>
</tr>
</tbody>
</table>

Inductive "L1" = 16n + 29, "L2" = 16n + 40

n: Stations (Maximum 16 stations)
It is a standard terminal block type.

Two quantities of terminals can be selected in accordance with the number of stations.
(8 terminals/16 terminals)

Maximum stations are 16.

**Electrical wiring specifications**

In the case of double wiring (standard spec.)
T1 (Terminal block of 1 row): 1 to 4 stations
T2 (Terminal block of 2 rows): 5 to 8 stations
T1 and T2 can be optionally chosen by adopting the combinations of single and double wiring (optional spec.), etc.

The quantity of terminal blocks used depends on the number of manifold stations.

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<tr>
<th>Manifold</th>
<th>No. of terminals</th>
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<td>5 to 8 stations</td>
<td>2 rows</td>
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</table>

Wiring other than those above is possible. See page 2-4-69 for details.

Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-69.

**How to Order Manifold**

**Series**

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**Manifold**

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**Option**

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<th>DIN rail mounting style</th>
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<td>K</td>
<td>Special wiring specifications (Except double wiring)</td>
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<tr>
<td>N</td>
<td>With name plate</td>
</tr>
<tr>
<td>S</td>
<td>Built-in silencer, direct exhaust (U side only)</td>
</tr>
</tbody>
</table>

Note 1) When two or more symbols are specified, indicate them alphabetically. Example: -DNS
Note 2) T kits are DIN rail mounted type, so include suffix -D.
Note 3) Specify the wiring specifications in the manifold specification sheet.

**Number of terminals**

| 8 terminals in 1 row | Applicable stations 1 to 4 stations (Double), 8 stations (Single) |
| 16 terminals in 2 rows | Applicable stations 5 to 8 stations (Double), 16 stations (Single) |

Note) The number of terminal blocks can be chosen regardless of station qty. Suffix the option symbol, K, when the wiring specification is special.
Plug Lead Unit: Flip Type  Series VQ0000/1000/2000

How to Order Valves

<table>
<thead>
<tr>
<th>Series</th>
<th>VQ</th>
<th>1</th>
<th>1</th>
<th>4</th>
<th>0</th>
<th>Y</th>
<th>5</th>
<th>LO</th>
<th>-</th>
<th>C6</th>
</tr>
</thead>
</table>

- **Function**
  - Symbol: VQ
  - Specifications: LO-C6

- **Seal**
  - 0: Metal seal
  - 1: Rubber seal

- **Type of actuation**
  - VQ0000: LO
  - VQ1000: C6
  - VQ2000: C6

- **Coil voltage**
  - 1: 100 VAC (50/60 Hz)
  - 2: 110 VAC (50/60 Hz)
  - 3: 24 VDC
  - 4: 12 VDC

- **Cylinder port**
  - Symbol: LO (L plug connector)

- **Manual override**
  - Symbol: LO (L plug connector)

- **Electrical entry**
  - Symbol: LO (L plug connector)

Note 1) Built-in silencer types are equipped with a 1 (P) SUP port on both D and U sides.
Note 2) 3 position needs two stations.

This drawing shows the case of VVSQ04-T2-D.  

**Dimensions**

<table>
<thead>
<tr>
<th>L1</th>
<th>25</th>
<th>35.5</th>
<th>46</th>
<th>56.5</th>
<th>67</th>
<th>77.5</th>
<th>89</th>
<th>98.5</th>
<th>109</th>
<th>119.5</th>
<th>130</th>
<th>140.5</th>
<th>151</th>
<th>161.5</th>
<th>172</th>
<th>182.5</th>
</tr>
</thead>
<tbody>
<tr>
<td>L2</td>
<td>35.5</td>
<td>46</td>
<td>56.5</td>
<td>67</td>
<td>77.5</td>
<td>89</td>
<td>98.5</td>
<td>109</td>
<td>119.5</td>
<td>130</td>
<td>140.5</td>
<td>151</td>
<td>161.5</td>
<td>172</td>
<td>182.5</td>
<td></td>
</tr>
<tr>
<td>L3</td>
<td>100</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>212.5</td>
<td>225</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) For negative common specifications, refer to “Option” on page 2-4-69.
Note 2) Connector assembly will be reserved when the T kits add a valve. For model nos., refer to “Option” on page 2-4-69.
This drawing shows the case of VV5Q04-T2-D.

Dimensions

<table>
<thead>
<tr>
<th>n</th>
<th>L1 (mm)</th>
<th>L2 (mm)</th>
<th>L3 (mm)</th>
<th>L4 (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>26.5</td>
<td>37.5</td>
<td>48.5</td>
<td>59.5</td>
</tr>
<tr>
<td>2</td>
<td>39</td>
<td>50</td>
<td>61</td>
<td>72</td>
</tr>
<tr>
<td>3</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
</tr>
<tr>
<td>4</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
</tr>
</tbody>
</table>

Formula: 
- L1 = 11n + 15.5
- L2 = 11n + 28

n: Station (Maximum 16 stations)
The drawing shows the case of VV5Q24-L50132T2.

**Dimensions**

Formula: \( L1 = 16n + 29, \ L2 = 16n + 40 \)

<table>
<thead>
<tr>
<th>( n )</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
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<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>45</td>
<td>61</td>
<td>77</td>
<td>93</td>
<td>109</td>
<td>125</td>
<td>141</td>
<td>157</td>
<td>173</td>
<td>189</td>
<td>205</td>
<td>221</td>
<td>237</td>
<td>253</td>
<td>269</td>
<td>285</td>
</tr>
<tr>
<td>L2</td>
<td>56</td>
<td>72</td>
<td>88</td>
<td>104</td>
<td>120</td>
<td>136</td>
<td>152</td>
<td>168</td>
<td>184</td>
<td>200</td>
<td>216</td>
<td>232</td>
<td>248</td>
<td>264</td>
<td>280</td>
<td>296</td>
</tr>
<tr>
<td>L3</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>312.5</td>
<td>325</td>
<td>337.5</td>
</tr>
<tr>
<td>L4</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
</tr>
</tbody>
</table>
### VQ0000/1000/2000 Kit (Connector)

- **Standard with lead wires connected to each valve individually.**
- **Maximum stations are 16.**

#### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Port location</th>
<th>Port size</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>Side C6, 3(A), 2(B)</td>
<td>C6</td>
<td>4(A), 2(B)</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td>VQ1000</td>
<td>Side C3, C4, C6, M5</td>
<td>C3, C4, C6</td>
<td>4(A), 2(B)</td>
<td>Max. 16 stations</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side C8, C4, C6, C8</td>
<td>C3, C4, C6</td>
<td>4(A), 2(B)</td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>

#### Wiring specifications: Positive COM

- The lead wires are connected to the valve as shown below. Connect each to the power supply side.

#### Wiring specifications: Negative COM (Option)

- The lead wires are connected to the valve as shown below. Connect each to the power supply side.

#### Connector Assembly Part No. (For DC)

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Single/3 position part no.</th>
<th>Double solenoid part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socket only (3 pcs.)</td>
<td>AXT661-14A</td>
<td>AXT661-14A</td>
</tr>
<tr>
<td>300 mm</td>
<td>AXT661-14A</td>
<td>AXT661-13A</td>
</tr>
<tr>
<td>600 mm</td>
<td>AXT661-14A-6</td>
<td>AXT661-13A-6</td>
</tr>
<tr>
<td>1000 mm</td>
<td>AXT661-14A-10</td>
<td>AXT661-13A-10</td>
</tr>
<tr>
<td>2000 mm</td>
<td>AXT661-14A-20</td>
<td>AXT661-13A-20</td>
</tr>
<tr>
<td>3000 mm</td>
<td>AXT661-14A-30</td>
<td>AXT661-13A-30</td>
</tr>
</tbody>
</table>

#### Wiring specifications: Positive COM

- The lead wires are connected to the valve as shown below. Connect each to the power supply side.

#### Wiring specifications: Negative COM (Option)

- The lead wires are connected to the valve as shown below. Connect each to the power supply side.

#### Plug connector lead wire length

**Note:** The lead wire length of the valves with lead wire is 300 mm. When ordering a valve with a lead wire of 600 mm or longer, be sure to indicate the model number of the valve without connector and connector assembly.

#### Lead wires connected to the valve as shown below.

**Example** Lead wire length 1000 mm

**Example** Lead wire length 1000 mm

VQ1140-SLO-C6···3 pcs.
AXT661-14A-10···3 pcs.

#### How to Order Manifold

**Series**

| 0 | VQ0000 |
| 1 | VQ1000 |
| 2 | VQ2000 |

**Manifold**

| 4 | Plug lead unit/Flip |

**Stations**

| 01 | 1 station |
| 16 | 16 stations |

**Option**

| Nil | None |
| D | DIN rail mounting style |
| N | With name plate |
| S | Built-in silencer, direct exhaust |

**Note 1:** When using the negative common specifications, use valves for negative common.

**Note 2:** 3 position type requires 2 sets for A side and B side.

**Example** -DNS
### Layout Diagram

- **Indicator light**
- **Lead wire: 0.2 mm²**
- **Cover OD: ø1.4**

### Dimensions

- **Formula L1 = 10.5n + 14.5, L2 = 10.5n + 25**
- **n: Station (Maximum 16 stations)**

### How to Order Valves

#### VQ 114 0 Y 5 L C6

**Function**
- Symbol: Port size
- Specification: DC, AC
- Standard type: (1W)
- High pressure type: (1.5W)
- Low voltage type: (0.5W)

**Seal**
- Metal seal
- Rubber seal

**Type of actuation**
- 1 position single
- 2 position single
- 2 position double (Latching)
- 3 position closed center
- 3 position exhaust center
- 3 position pressure center

**Coil voltage**
- 100 VAC (50/60 Hz)
- 200 VAC (50/60 Hz)
- 110 VAC (50/60 Hz)
- 220 VAC (50/60 Hz)
- 24 VDC
- 12 VDC

### How to Order Manifold Assembly

- **Cylinder port**
- **Manual override**
- **Electrical entry**

---

**Note:**
- For negative common specifications, refer to “Option” on page 2-4-69.
**Dimensions**

Formula: \( L_1 = 11n + 15.5 \), \( L_2 = 11n + 28 \)  
\( n \): Station (Maximum 16 stations)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>26.5</td>
<td>37.5</td>
<td>48.5</td>
<td>59.5</td>
<td>70.5</td>
<td>81.5</td>
<td>92.5</td>
<td>103.5</td>
<td>114.5</td>
<td>125.5</td>
<td>136.5</td>
<td>147.5</td>
<td>158.5</td>
<td>169.5</td>
<td>180.5</td>
<td>191.5</td>
</tr>
<tr>
<td>L2</td>
<td>39</td>
<td>50</td>
<td>61</td>
<td>72</td>
<td>83</td>
<td>94</td>
<td>105</td>
<td>116</td>
<td>127</td>
<td>138</td>
<td>149</td>
<td>160</td>
<td>171</td>
<td>182</td>
<td>193</td>
<td>204</td>
</tr>
<tr>
<td>L3</td>
<td>62.5</td>
<td>75</td>
<td>87.5</td>
<td>100</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>73</td>
<td>85.5</td>
<td>98</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Dimensions**

<table>
<thead>
<tr>
<th></th>
<th>L1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>45</td>
<td>61</td>
<td>77</td>
<td>93</td>
<td>109</td>
<td>125</td>
<td>141</td>
<td>157</td>
<td>173</td>
<td>189</td>
<td>205</td>
<td>221</td>
<td>227</td>
<td>233</td>
<td>249</td>
<td></td>
</tr>
<tr>
<td>L1</td>
<td>56</td>
<td>72</td>
<td>88</td>
<td>104</td>
<td>120</td>
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<td>216</td>
<td>232</td>
<td>248</td>
<td>264</td>
<td>280</td>
<td>296</td>
</tr>
<tr>
<td>L2</td>
<td>87.5</td>
<td>100</td>
<td>112.5</td>
<td>125</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
<td>300</td>
<td>325</td>
</tr>
<tr>
<td>L3</td>
<td>98</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>335.5</td>
</tr>
</tbody>
</table>
The serial transmission system reduces wiring work, while minimizing wiring and saving space.

The system comes in an type SA (generic for small scale systems) for equipment with a small number of I/O points, or 32 points max., type SB (applicable to Mitsubishi Electric models) for controlling 512 I/O points max., type SC (applicable to OMRON models), and type SD (applicable to SHARP models; 504 points max.).

Maximum 8 stations, optional 16 stations possible. (16 stations available as an option. Indicate 9 to 16 stations on the manifold specification sheet.)

Stations are sequentially numbered from the D side.

Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-69.

### How to Order Manifold

**VVQ0** 4 08 S A D

- **Series**
  - 0: VQ0000
  - 1: VQ1000
  - 2: VQ2000

- **Model**
  - Without SI unit
  - With general type SI unit (Series EX300)
  - Mitsubishi Electric Corp.: MELSECNET/MINI-S3 Data Link System
  - OMRON Corp.: SYSBUS Wire System
  - SHARP Corp.: Satellite I/O Link System
  - NKE Corp.: Uni-wire System (16 output points)
  - NKE Corp.: Uni-wire II System

- **Option**
  - D: DIN rail mounting style
  - K: Special wiring specifications (Except double wiring)
  - N: With name plate
  - S: Built-in silencer, direct exhaust (U side only)

Note 1) When two or more symbols are specified, indicate them alphabetically. (Example) DNS

Note 2) S kits are DIN rail mounting styles, so include suffix -D.

Note 3) Specify the wiring specifications in the manifold specification sheet.

#### VQ0000/1000/2000 Kit (Serial transmission unit)

- **External power supply**
  - Current consumption

- **How to Order Manifold**

#### Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>External power supply</td>
<td>24 VDC ±10%</td>
</tr>
<tr>
<td>Current consumption (internal unit)</td>
<td>SA, SB, SD, SFI, SH: 0.1 A, ASC: 0.3 A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Series</td>
<td>Port</td>
</tr>
<tr>
<td>VQ0000</td>
<td>Side</td>
</tr>
<tr>
<td>VQ1000</td>
<td>Side</td>
</tr>
<tr>
<td>VQ2000</td>
<td>Side</td>
</tr>
</tbody>
</table>

### Name of terminal block (LED)

- **LED**
  - Description
  - TRD: Lighting during data reception
  - RUN/ERR: Blinking when received data is normal; Lighting when data reception

- **Port size**
  - D: M3 Screw

- **Porting specifications**
  - Up to 32 points per unit.
  - No. of output points, 16 points
  - No. of output points, 16 points

* For details on specifications and handling, refer to the separate technical instruction manual.

**Nominal VQ0000/1000/2000 Kit (Serial transmission unit)**
**Si unit output and coil numbering**

*Wiring example 1* Double wiring (Standard)

<table>
<thead>
<tr>
<th>Si unit output no. (looked by double solenoid valve) SOL. location</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stations</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

*Wiring example 2* Single/Double Mixed Wiring (Option)

Mixed wiring is available as an option. Use the manifold specification sheet to specify.

**How to Order Valves**

**Series**

- VQ 114 0 Y 5 LO C6

**Type of actuation**

- 2 position single
- 2 position double (Latching)
- 3 position closed center
- 3 position pressure center

**Seal**

- 0 Metal seal
- 1 Rubber seal

**Function**

- Symbol: Standard type (1.0 W)
- H: High pressure type (1.5 W)
- L: Low wattage type (0.5 W)

Note: Except double (latching).

**Coil voltage**

- 5 VDC with light/surge voltage suppressor

Note 1) Connector assembly will be required when the S kits add a valve. For part nos., refer to "Option" on page 2-4-69.

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

**Cylinder port**

- Symbol: Port size
- VQ0000 VQ1000 VQ2000

- C3 With One-touch fitting for ø3.2
- C4 With One-touch fitting for ø4
- C5 With One-touch fitting for ø5
- C8 With One-touch fitting for ø8

**Manual override**

- Nil Non-locking push type (Tool required)
- B Locking type (Tool required)
- C Locking type (Manual)

Note 1) All double latching valves of VQ0000 are non-locking push type. (Refer to page 2-4-66.)

Note 2) A manual override for pilot valve is provided to the standard model for double type.

**Electrical entry**

- L plug connector without connector
- M plug connector without connector

Note 1) Plug connector and lead wire layers are attached to the manifold.
### Dimensions

Formula $L_1 = 10.5n + 14.5$, $L_2 = 10.5n + 25$  
$n$: Station (Maximum 16 stations)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
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<tr>
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<td>325</td>
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<td>260.5</td>
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<td>310.5</td>
<td>323</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
</tr>
</tbody>
</table>

Note 1) Built-in silencer styles are equipped with a $1(P)$ SUP port on both D and U sides.

Note 2) 3 position needs two stations.

Cylinder port is located U side of body.

---

The DWG shows the SA type (General type).

Applicable connector: Flat ribbon cable connector (20P)  
(Conforming to MIL-C-83503)

Indicator light

DIN rail clamp screw

Lead wire length 300 mm

Flat ribbon cable unit mounting screw

Flat ribbon cable connector (20P)  
(Conforming to MIL-C-83503)

Note 1) Built-in silencer styles are equipped with a $1(P)$ SUP port on both D and U sides.

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Lead wire length 300 mm

Flat ribbon cable unit mounting screw

Flat ribbon cable connector (20P)  
(Conforming to MIL-C-83503)

Note 1) Built-in silencer styles are equipped with a $1(P)$ SUP port on both D and U sides.

Note 2) 3 position needs two stations.

Cylinder port is located U side of body.
**VQ1000**

**Dimensions**

Formula: L1 = 11n + 15.5, L2 = 11n + 28  

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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<td>360.5</td>
<td>373</td>
<td>385.5</td>
</tr>
</tbody>
</table>
The DWG shows the type SA (General type)

Applicable connector:
- Flat ribbon cable connector (20P) (Conforming to MIL-C-83503)

The following table shows the dimensions:

<table>
<thead>
<tr>
<th>Station (Maximum 16 stations)</th>
<th>1</th>
<th>2</th>
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<th>4</th>
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<tr>
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<td>410.5</td>
<td>423</td>
<td>448</td>
<td>460.5</td>
<td>473</td>
</tr>
</tbody>
</table>
Manifold Option Parts for VQ0000

Blanking plate assembly
VVQ0000-10A-4

It is used when a blanking plate is mounted to a manifold in advance for possible valve mounting, etc.

Individual SUP spacer
VVQ0000-P-4-C4

When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.) Since the SUP passage on the spacer’s D side is blocked in advance, it is mounted on the D side of the valve for individual supply while blocking the valve’s U side. (See the application ex.)

Specify the spacer mounting position and SUP block plate mounting position on the manifold specification sheet.

Individual EXH spacer
VVQ0000-R-4-C4

When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (One station space is occupied.) Since the EXH passage on the spacer’s D side is blocked in advance, it is mounted on the D side of the valve for individual supply while blocking the valve’s U side. (See the application ex.)

Specify the spacer mounting position and EXH block plate mounting position on the manifold specification sheet.

R block valve

P block valve

P block valve is mounted in the blocking position when ordering an individual SUP spacer incorporated with a manifold. When separately ordering an individual SUP spacer, separately order a P block valve.

R block valve is mounted in the blocking position when ordering an individual EXH spacer incorporated with a manifold. When separately ordering an individual EXH spacer, separately order a R block valve.

Name plate [-N4]
VVQ0000-N4-Station (1 to Max. stations)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc. Insert it into the groove on the side of the end plate and bend it as shown in the figure.

Blanking plug
KQ2P-23

It is inserted into an unused cylinder port and SUP/EXH ports. Purchasing order is available in units of 10 pieces.
Manifold Option Parts for VQ0000

DIN rail mounting bracket
VVQ0000-57A-4
It is used for mounting a manifold on a DIN rail. The DIN rail mounted bracket is fixed to the manifold end plate. (The specification is the same as that for the option -D.) 1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).

Built-in silencer, Direct exhaust [-S]
This is a type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. F, P, T and S kits are provided with exhaust on one side. Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.

- For maintenance, refer to page 2-4-67.

Manifold Option Parts for VQ1000

Blanking plate assembly
VVQ1000-10A-4
It is used when a blanking plate is mounted to a manifold in advance for possible valve mounting, etc.

Individual SUP spacer
VVQ1000-P-4-C6
When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.) Since the SUP passage on the spacer’s D side is blocked in advance, it is mounted on the D side of the valve for individual supply while blocking the valve’s U side. (See the application ex.)
* Specify the spacer mounting position and SUP block plate mounting position on the manifold specification sheet.

Individual EXH spacer
VVQ1000-R-4-C6
When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (One station space is occupied.) Since the EXH passage on the spacer’s D side is blocked in advance, it is mounted on the D side of the valve for individual supply while blocking the valve’s U side. (Refer to the application example.)
* Specify the spacer mounting position and EXH block plate mounting position on the manifold specification sheet.
* When the electrical entry is F, P, T, S kit, and if you choose the option with built-in silencer, no exhaust port will be supplied on the D side end plate.
In this case, install a spacer for individual EXH on the 1st station.

Note)
R block valve is mounted in the blocking position when ordering an individual EXH spacer incorporated with a manifold.
When separately ordering an individual EXH spacer, separately order an R block valve.
Manifold Option Parts for VQ1000

**Block valve**

For a flip plug-in unit, block plate is built in the valve for blocking SUP and EXH passages. Since the no. is classified by the passage to be blocked, specify it by attaching the option no. to the valve no.

+ Specify the number of stations on the manifold specification sheet.

<Shut off label>

When using block plates for SUP, EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label for each)

+ Caution on using R/PR block valve If the electrical entry is selected for an option for built-in silencer when F, P, T, S kit, there will not be the exhaust port on the D side end plate. In this case, mount an individual EXH spacer for the 1st station.

**Name plate [-N4]**

VQ1000-N4-Station (1 to Max. stations)

It is a transparent resin plate for placing a label that indicates solenoid valve function, etc. Insert it into the groove on the side of the end plate and bend it as shown in the figure.

**Blanking plug**

KQ2P-[23 04 06]

It is inserted into an unused cylinder port and SUP/EXH ports. Purchasing order is available in units of 10 pieces.

**DIN rail mounting bracket**

VQ1000-57A-4

It is used for mounting a manifold on a DIN rail. The DIN rail mounted bracket is fixed to the manifold end plate. (The specification is the same as that for the option -D.)

1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).

**Built-in silencer, Direct exhaust [-S]**

This is an exhaust port on top of the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect. F, P, T and S kits are provided with exhaust on one side. Note: A large quantity of drainage generated in the airsource results in exhaust of air together with drainage.

+ For maintenance, refer to page 2-4-67.

**Silencer (For EXH port)**

This is inserted into the centralized type EXH port (One-touch fitting).

**Port plug**

VQ0000-58A

The plug is used to block the cylinder port when using a 4 port valve as a 3 port valve. When ordering it incorporated with a manifold, suffix A or B, the symbol of the plug port, to the valve no.

Example) VQ1140-SL-C6-A

+A port, Plug
**Manifold Option Parts**

**Double check block (Separated type): For VQ0000/1000**  
**VQ1000-FPG-□□**

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the double check block with a built-in pilot type double check valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time.

The combination with a two position single/double solenoid valve will permit this block to be used for preventing the dropping at the cylinder stroke end when the SUP residual pressure is released.

**Specifications**

- Max. operating pressure: 0.8 MPa
- Min. operating pressure: 0.15 MPa
- Ambient and fluid temperature: –5 to 50°C
- Flow characteristics: C
- Max. operating frequency: 180 CPM

**Dimensions**

- Formula \( L_1 = 11n + 20 \)  
  \( n: \) Station (Max. 24)

**How to Order**

**Double check block**

- **VQ1000-FPG-C4 M5**
- **VQ1000-FPG-C6 M5**

**Manifold**

- **VVQ1000-FPG-06**
  
  - **Stations**
    - 01 1 station
    - 16 16 stations

**Option**

- Nil: None
- F: With bracket
- D: DIN rail mounting style (For manifold)
- N: Name plate

**Caution**

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap. Also check the cylinder’s tube gasket, piston packing and rod packing for air leakage.
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- Combining double check block with 3 position closed center or pressure center solenoid valve will not work.
- M5 fitting assembly is attached, not incorporated into the double check block. After screwing in the M5 fittings, mount the assembly on the double check block. (Tightening torque: 0.8 to 1.2 N·m)
- If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop immediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
Blanking plate assembly  
VQ2000-10A-4

It is used when a blanking plate is mounted to a manifold in advance for possible valve mounting, etc.

Individual SUP spacer  
VQ2000-P-4-C8

When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.)

Since the SUP passage on the spacer’s D side is blocked in advance, it is mounted on the D side the valves U side. (Refer to the application example.)

* Specify the spacer mounting position and SUP block plate mounting position on the manifold specification sheet.

Individual EXH spacer  
VQ2000-R-4-C8

When the same manifold is to be used for different pressures, individual EXH spacers are used as EXH ports for different pressures. (One station space is occupied.)

Since the EXH passage on the spacer’s D side is blocked in advance, it is mounted on the D side the valves U side. (Refer to the application example.)

* Specify the spacer mounting position and EXH block plate mounting position on the manifold specification sheet.

* When the electrical entry is F, P, T, S kit, and if you choose the option with built-in silencer, no exhaust port will be supplied on the D side end plate. In this case, mount a spacer for individual EXH on the 1st station.

<Shut off label>

When using block plates for SUP, EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label for each)

* When ordering a block plate incorporated with the manifold no., a block indication label is attached to the manifold.

* Caution on handling P/RP block valve

When the electrical entry is F, P, T, S kit, and if you choose the option with built-in silencer, no exhaust port will be supplied on the D side end plate. In this case, mount a spacer for individual EXH on the 1st station.
Manifold Option Parts for VQ2000

Name plate [-N4]
VQ2000-N4-Station (1 to Max. stations)
It is a transparent resin plate for placing a label that indicates solenoid valve function, etc.
Insert it into the groove on the side of the end plate and bend it as shown in the figure.

Blanking plug
KQ2P
It is inserted into an unused cylinder port and SUP/EXH ports.
Purchasing order is available in units of 10 pieces.

DIN rail mounting bracket
VQ2000-57A-4
It is used for mounting a manifold on a DIN rail. The DIN rail mounting bracket is fixed to the manifold end plate. (The specification is the same as that for the option -D.)
1 set of DIN rail mounting bracket is used for 1 manifold (2 DIN rail mounting brackets).

Built-in silencer, Direct exhaust [-S]
This is type with an exhaust port atop the manifold end plate. The built-in silencer exhibits an excellent noise suppression effect.
F, P, T and S kits are provided with exhaust on one side.
Note) A large quantity of drainage generated in the air source results in exhaust of air together with drainage.
For maintenance, refer to page 2-4-67.

Silencer (For EXH port)
This silencer is to be inserted into the EXH port (One-touch fittings) of the common exhaust.

Port plug
VQ1000-58A
The plug is used to block the cylinder port when using a 4 port valve as a 3 port valve.
When ordering it incorporated with a manifold, suffix A or B, the symbol of the plug port, to the valve no.
Example) VQ2140-5L-C8-A A port, Plug
Manifold Option

Double check block (Separated type) VQ2000-FPG-□□-□

It is used on the outlet side piping. Combining the double check block with built-in pilot double check valve and a two-position single/double solenoid valve will prevent the dropping at the cylinder stroke end when the SUP residual pressure is released.

Specifications

- Maximum operating pressure: 0.8 MPa
- Ambient and fluid temperature: 0.15 MPa
- Ambient and fluid temp.: –5 to 50 °C
- Flow characteristics: C
- Max. operating frequency: 180 c.p.m

Dimensions

<table>
<thead>
<tr>
<th>Single unit</th>
<th>Manifold</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>46</td>
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<tr>
<td>L2</td>
<td>75</td>
</tr>
<tr>
<td>L3</td>
<td>105</td>
</tr>
</tbody>
</table>

Dimensions

Formula L1 = 22n + 24 n: Station

How to Order

Double check block VQ2000-FPG-□□-□

Option

- D: DIN rail mounting style (For manifold)
- F: With bracket
- N: Name plate

Note) When two or more symbols are specified, indicate them alphabetically. Example) -DN

Manifold VVQ2000-FDG-□□-

Option

- D: DIN rail mounting style (For manifold)
- F: With bracket
- N: Name plate

Note) When two or more symbols are specified, indicate them alphabetically. Example) -DN

Caution

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap.
- Also check the cylinder’s tube gasket, piston packing and rod packing for air leakage.
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- When screwing the fittings in the double check block, proper tightening torque is as shown below.
- If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop immediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

Example

VQ2000-FPG-06—6 stations manifold

VQ2000-FDG-C6-D: 3 sets

VQ2000-FDG-C8-D: 3 sets

Double check block
## Precautions

### Caution

The lighting positions are concentrated on one side for both single solenoid and double (latching) type. In the double (latching) type, A side and B side energization are indicated by two colors which match the colors of the manual overrides.

### Light/Surge Voltage Suppressor

- B-side energization: B light (green) illuminates.
- Equipped with a wiring error prevention (stop diode) mechanism and a surge absorption mechanism (ZNR/surge absorption diode) mechanism.

### DC Circuit Diagram

- Single solenoid
- Double (latching) solenoid

#### Note
2. B-side energization: B light (green) illuminates.
3. In the case of double energization, the electromagnetic channel is A-(set), B-(reset). 
4. Applicable to negative COM specification models.

### Double (Latching solenoid) Type

#### Caution

Different from the conventional double solenoid, the double type uses a latching (self-holding system) solenoid. Although the appearance is different from the conventional double solenoid, the double type uses the colors of the manual overrides.

#### Warning

- Without an electric signal for the solenoid valve the manual override is used for switching the main valve.
- If the manual override is turned by 180° counterclockwise and the mark is adjusted to 0, locking is released. (0.1 N·m or less)

#### Procedure

1. Pull the manual override with a small screwdriver until it stops. Release the screwdriver and the manual override will return.
2. Pull down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it. Turn it counterclockwise to release it.

#### Manual override for double (latching) type

In the case of a double (latching) type, a manual override is provided not only on the body side but to the pilot as a standard. (VQ0000: Pilot valve only). After manual operation, the main valve of the manual on the body side returns to the position before the manual operation, however, the pilot valve manual override maintains the change-over position.

#### Manual override body side

- Self-holding of the main valve is impossible. (Returns to the main valve position before operation.)
- If the manual override is turned by 180° clockwise and the mark is adjusted to A, then pushed in the direction of an arrow (↓), it will be locked in the OFF state. If the manual override is turned by 180° counterclockwise and the mark is adjusted to 0, locking will be released and the manual override will return.

#### Pilot valve

- Self-holding of the main valve is impossible. (Returns to the main valve position before operation.)
- If the manual override is turned by 180° counterclockwise and the mark is adjusted to A, then pushed in the direction of an arrow (↓), it will be back to the reset condition. (passage P → A)
- If the manual override is turned by 180° counterclockwise and the mark is adjusted to B, then pushed in the direction of an arrow (↓), it will be back to the reset condition. (passage P → B)

#### Caution

- Do not apply excessive torque when turning the locking type manual override. (0.1 N·m or less)
Replacement of Cylinder Port Fittings

⚠️ Caution
The cylinder port fittings are a cassette for easy replacement. (Except VQ1000)
The fittings are blocked by a clip inserted from the top of the valve. Remove the clip with a screwdriver to remove fittings.
For replacement, insert the fitting assembly until it strikes against the inside wall and then re-insert the clip to the specified position.

<table>
<thead>
<tr>
<th>Applicable tubing ØD</th>
<th>Fitting assembly part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applicable tubing Ø3.2</td>
<td>VVQ1000-50A-C3</td>
</tr>
<tr>
<td>Applicable tubing Ø4</td>
<td>VVQ1000-50A-C4</td>
</tr>
<tr>
<td>Applicable tubing Ø6</td>
<td>VVQ1000-51A-C6</td>
</tr>
<tr>
<td>Applicable tubing Ø8</td>
<td>VVQ1000-51A-C8</td>
</tr>
</tbody>
</table>

Note: The minimum order quantity is 10 pcs.

Mounting/Removing from the DIN Rail

⚠️ Caution

How to Remove
1. Protect O-rings from scratches and dust to prevent air leakage.
2. The tightening torque for inserting fittings to the M5 thread assembly should be 0.8 to 1.4 N·m.

How to Install
1. Hook side (b) of the manifold base on the DIN rail.
2. Press down side (a) and mount the end plate on the DIN rail. Tighten the clamp screw on side (a) of the end plate. The proper tightening torque for screws is 0.4 to 0.6 N·m.

How to Calculate the Flow Rate

For obtaining the flow rate, refer to pages 2-1-8 to 2-1-11.

Built-in Silencer Replacement Element

⚠️ Caution

A silencer element is incorporated in the end plate on both sides of the manifold base. A dirty and choked element may reduce cylinder speed or cause malfunction. Clean or replace the dirty element.

Element Part No.

<table>
<thead>
<tr>
<th>Type</th>
<th>Element part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built-in silencer, direct exhaust</td>
<td>VVQ0000-82A-4</td>
</tr>
<tr>
<td></td>
<td>VVQ1000-82A-4</td>
</tr>
<tr>
<td></td>
<td>VVQ2000-82A-4</td>
</tr>
</tbody>
</table>

Remove the cover from the side of the end plate and remove the old element with a screwdriver, etc.

How to Use Plug Connector

⚠️ Caution

Attaching and detaching connectors

To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever’s pawl is pushed into the groove and locks.

To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.

Crimping the lead wire and socket

Peel 3.2 to 3.7 mm of the tip of lead wire, enter the core wires and press contact it by a press tool. Be careful so that the cover of lead wire does not enter into the core pressing part.

Attaching and detaching lead wires with sockets

Attaching
Insert a socket in the square hole (Indicated as +, –) of connector, push in the lead wire and lock by hanging the hook of the socket to the seat of connector. (Pushing-in can open the hook and lock it automatically.) Then confirm the lock by lightly pulling on the lead wire.

Detaching
To detach a socket from a connector, pull out the lead wire while pressing the socket’s hook with a stick having a thin tip (approx. 1 mm). If the socket will be used again, first spread the hook outward.

For VQC, SQ, VQ01, VQ4, VQ5, VQZ, VQD
**Option**

### Different Number of Connector Pins

F and P kits with the following number of pins are available. Besides the standard number (F = 25; P = 26) select the desired number of pins and cable length from the cable assembly list. Place an order for the cable assembly separately.

**F** kit (D-sub connector) 15 pins

**P** kit (Flat ribbon cable connector) 10 pins, 16 pins, 20 pins

---

**How to order manifold**

**VV5Q14-06 FSA-D**

- **Stations**
  - D-sub connector, 15 pins
  - Connector location: Side (horizontal)
  - Without cable

**Kit/Electrical entry**

- **Pins**
  - 15P (Max. 7 stations)

- **Location**
  - Top entry: Kit F
  - Side entry: UA, Kit F, SA

**Wiring specifications**

- *In the same way as the 25-pin models (standard) the terminal no. 1 is for SOL.A at the 1st station, the terminal no. 9 for SOL.B at the 1st station, and the terminal no. 8 for COM.*

**D-sub Connector Cable Assembly**

<table>
<thead>
<tr>
<th>Pins</th>
<th>15P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-DS15-1</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-DS15-2</td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-DS15-3</td>
</tr>
</tbody>
</table>

* For other commercial connectors, use a type conforming to MIL-C-24308.

---

**How to order manifold**

**VV5Q14-06 PSC-D**

- **Stations**
  - Flat ribbon cable, 20 pins
  - Connector location: Side (horizontal)
  - Without cable

**Kit/Electrical entry**

- **Pins**
  - 10P (Max. 4 stations)
  - 16P (Max. 7 stations)
  - 20P (Max. 8 stations)

- **Location**
  - Top entry: Kit, UA, Kit P
  - Side entry: P, UA, Kit SC

**Wiring Specifications**

- *In the same way as the 26-pin models (standard) the terminal no. 1 is for SOL.A at the 1st station, the terminal no. 2 for SOL.B at the 1st station, and two pins from the max. terminal numbers are for COM.*

---

**Flat Ribbon Cable Assembly**

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Pins 10P</th>
<th>Pins 16P</th>
<th>Pins 20P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC10-1</td>
<td>AXT100-FC16-1</td>
<td>AXT100-FC20-1</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC10-2</td>
<td>AXT100-FC16-2</td>
<td>AXT100-FC20-2</td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC10-3</td>
<td>AXT100-FC16-3</td>
<td>AXT100-FC20-3</td>
</tr>
</tbody>
</table>

- Connector width (W): 17.2, 24.8, 30

* For other commercial connectors, use a type with strain relief conforming to MIL-C-83503.
### Special Wiring Specifications

In the internal wiring of F kit, P kit, T kit and S kit, double wiring (connected to SOL. A and SOL. B) is adopted for each station regardless of the valve and option types. Mixed single and double wiring is available as an option.

1. **How to order valves**
   - Indicate an option symbol, -K, for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification sheet.

   **Example**
   
   VV5Q14-09FS0-D K S

   Others, option symbols: to be indicated alphabetically.

2. **Wiring specifications**
   - Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without skipping any terminal numbers.

   ![Diagram](image)

   **3. Max. number of stations**
   - The maximum number of stations depends upon the number of solenoids. Assuming one for a single and two for a double, determine the number of stations so that the total number is not more than the maximum number given in the following table.

<table>
<thead>
<tr>
<th>kit</th>
<th>F kit (D-sub connector)</th>
<th>P kit (Flat ribbon cable connector)</th>
<th>T kit (Terminal block)</th>
<th>S kit (Serial)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>F 25P</td>
<td>P 26P</td>
<td>T 16P</td>
<td>S 16P</td>
</tr>
<tr>
<td>Max. points</td>
<td>16</td>
<td>14</td>
<td>16</td>
<td>16</td>
</tr>
</tbody>
</table>

   **Note** Due to the limitation of internal wiring.

### Inch-size One-touch Fittings

Refer to following model no. for inch-size One-touch fittings.

#### How to order manifold

**VV5Q14 – 08FSO – DN – 00T**

<table>
<thead>
<tr>
<th>P, R port size</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ0000</td>
<td>φ1/4&quot;</td>
</tr>
<tr>
<td>VQ1000</td>
<td>φ1/4&quot;</td>
</tr>
<tr>
<td>VQ2000</td>
<td>φ5/16&quot;</td>
</tr>
</tbody>
</table>

#### How to order valves

**VQ1140 – 5M – N7**

<table>
<thead>
<tr>
<th>Cylinder port</th>
<th>Symbol</th>
<th>N1</th>
<th>N3</th>
<th>N7</th>
<th>N9</th>
</tr>
</thead>
<tbody>
<tr>
<td>A, B port</td>
<td>VQ0000</td>
<td>○</td>
<td>○</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>VQ1000</td>
<td>–</td>
<td>○</td>
<td>○</td>
<td>–</td>
</tr>
<tr>
<td></td>
<td>VQ2000</td>
<td>–</td>
<td>–</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

### Plug Connector Assembly Model

Connector assembly will be required when the F, P, T, S kits add a valve.

Specify the type of valve and connector assembly.

#### Connector Assembly Part No.

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single (2-wire)</td>
<td>Positive common</td>
</tr>
<tr>
<td></td>
<td>AXT661-14A-F</td>
</tr>
<tr>
<td>Double (latching)</td>
<td>Positive common</td>
</tr>
<tr>
<td></td>
<td>AXT661-13A-F</td>
</tr>
<tr>
<td></td>
<td>Negative common</td>
</tr>
<tr>
<td></td>
<td>AXT661-14AN-F</td>
</tr>
<tr>
<td></td>
<td>AXT661-13AN-F</td>
</tr>
</tbody>
</table>

**Note** Lead wire length: 300 mm

*Note* The parts numbers above are applicable to VQ0000/1000 (2 to 16 stations) and VQ2000 (2 to 10 stations). VQ2000 (11 to 16 stations) uses AXT661-14AN-F425.

### Negative Common Specifications

Specify the valve model no. as shown below for negative COM specification. The standard manifold no. can be used. Please contact SMC for negative COM S kit.

#### How to order negative COM valves

**VQ1140 N – 5LO – C6**

- Negative common specifications
Option

DIN Rail Mounting

Each manifold can be mounted on a DIN rail. Order it by indicating an option symbol for DIN rail mounting style, -D. In this case, a DIN rail which is approx. 30 mm longer than the manifold with the specified number of stations is attached. Besides, it is also available in the following cases.

- When DIN rail is unnecessary (C kit only.)
- (DIN rail mounting brackets only are attached.)
- Indicate the option symbol, -DO, for the manifold no.

Example)

VV5Q14-08C-DOS

Others, option symbols:
- to be indicated alphabetically.

- When using DIN rail longer than the manifold with specified number of stations
- Clearly indicate the necessary number of stations next to the option symbol, -D, for the manifold no.

Example)

VV5Q14-08FS1-D09S

DIN rail for 9 stations

Others, option symbols:
- to be indicated alphabetically.

- When changing the manifold style into a DIN rail mount
- Order brackets for mounting a DIN rail. (Refer to “Option” on pages 2-4-60, 61 and 64.)

No. VQ0000-57A4 (For VQ0000)
VQ1000-57A-4 (For VQ1000)
VQ2000-57A-4 (For VQ2000)
- 2 pcs. per one set

- When ordering DIN rail only
- DIN rail no.: AXT100-DR-n
- Refer to the DIN rail dimension table for determining the length.

<table>
<thead>
<tr>
<th>No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>L dimension</td>
<td>23</td>
<td>35.5</td>
<td>48</td>
<td>60.5</td>
<td>73</td>
<td>85.5</td>
<td>98</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
</tr>
<tr>
<td>No.</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
</tr>
<tr>
<td>L dimension</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
</tr>
<tr>
<td>No.</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>L dimension</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>335.5</td>
<td>348</td>
<td>360.5</td>
<td>373</td>
<td>385.5</td>
</tr>
<tr>
<td>No.</td>
<td>31</td>
<td>32</td>
<td>33</td>
<td>34</td>
<td>35</td>
<td>36</td>
<td>37</td>
<td>38</td>
<td>39</td>
<td>40</td>
</tr>
<tr>
<td>L dimension</td>
<td>398</td>
<td>410.5</td>
<td>423</td>
<td>435.5</td>
<td>448</td>
<td>460.5</td>
<td>473</td>
<td>485.5</td>
<td>498</td>
<td>510.5</td>
</tr>
</tbody>
</table>
### Series VQ1000

**Body Ported**

**Plug Lead Unit: Cassette Type**

#### How to Order Manifold

<table>
<thead>
<tr>
<th>VV5Q1</th>
<th>7</th>
<th>08</th>
<th>F</th>
<th>U1</th>
<th>D</th>
</tr>
</thead>
</table>

**Manifold**

**Stations**

- Simple specials are available with SMC Simple Specials System. For details about applicable models, please contact SMC.

**Option**

- **D**: DIN rail mounting style
- **K**: Special wiring specifications (Except double wiring)
- **N**: With name plate

**Note 1)** Since the manifold is all with DIN rail, so suffix -D to the part number.

**Note 2)** Specify the wiring specifications on the manifold specification sheet. (Except C kit)

**Note 3)** Unmountable when the valve's manual override is a locking lever type.

**Note 4)** When two or more symbols are specified, indicate them alphabetically.

#### Kit/Electrical entry/Cable length

**F**

- (D-sub connector)
- Top entry
- Side entry
- Kit types: 25P, 250P

**P**

- (Flat ribbon cable connector)
- Top entry
- Side entry
- Kit types: 26P, 260P

**T**

- (Terminal block)
- Top entry
- Side entry

**C**

- (Connector)
- Top entry
- Side entry

**S**

- (Serial transmission unit)
- Top entry
- Side entry

**Connector entry direction**

<table>
<thead>
<tr>
<th>Kit</th>
<th>Top entry</th>
<th>Side entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>U0</td>
<td>Without cable</td>
<td>U1</td>
</tr>
<tr>
<td>U1</td>
<td>S0</td>
<td>U2</td>
</tr>
<tr>
<td>U2</td>
<td>S2</td>
<td>U3</td>
</tr>
<tr>
<td>U3</td>
<td>S3</td>
<td></td>
</tr>
</tbody>
</table>

**Cable length**

- Without cable
- With cable (1.5 m)
- With cable (3 m)
- With cable (5 m)

**Max. 16 stations**

**Note 1)** Besides the above, F and P kits with different number of pins are available. For details, refer to page 2-4-92.

**Note 2)** See page 2-4-93 for details.
Plug Lead Unit: Cassette Type  Series VQ1000

How to Order Valves

| VQ1 | 1 | 7 | 0 | Y | 5 | M | C6 |

**Series VQ1000**

**Type of actuation**

1. 2 position single (Non-locking)
2. 2 position double (Latching)
3. 3 position closed center
4. 3 position exhaust center
5. 3 position pressure center

**Coil voltage**

- 1: 100 VAC (50/60 Hz)
- 2: 200 VAC (50/60 Hz)
- 3: 110 VAC (50/60 Hz)
- 4: 220 VAC (50/60 Hz)
- 5: 24 VDC
- 6: 12 VDC

**Manual override**

- A: Non-locking push type (Tool required)
- B: Locking type (Tool required)
- C: Locking type (Manual)

**Electrical entry**

- G: Grommet
- L: L plug with lead wire
- LO: L plug with lead wire
- M: M plug with lead wire
- MO: M plug with lead wire

**Seal**

- 0: Metal seal
- 1: Rubber seal

**Function**

- H: High pressure type (1.5 W)
- Y: Low wattage type (0.5 W)

**Note**

1. For power consumption of AC type, refer to page 2-4-74.
2. Except double (latching).

**Manifold Option**

**Individual SUP spacer** VQ1000-P-7-C6

- C6 (SUP) port
- One-touch fitting for ø6
- Block bushing assembly (2 pcs. attached)

**SUP/EXH block bush assembly** VQ1000-87A-B-S0

- C6 port
- One-touch fitting for ø6
- Elbow fitting assembly

**Double Check block** VQ1000-FPG-L50538

**Blanking plug** KQ2P-L50132

**Manifold Assembly**

- How to Order Valves
- How to Order Manifold Assembly

**Example**

- Double (latching) solenoid (24 VDC) VQ1170-SMD-C6 (4 sets)
- Single solenoid (24 VDC) VQ1170-SM-C6 (4 sets)

**How to Order Manifold Assembly**

- silicon rubber
- polyurethane
- EPDM

- UV cut resistant
- EPDM

- Polyurethane
- EPDM

**How to Order Cylinder Base**

- Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

**How to Order Individual EXH Spacar** VQ1000-R-7-C6

- C6 (EXH) port
- One-touch fitting for ø6
- Block bushing assembly (4 pcs. attached)

**Elbow fitting assembly** VQ1000-F7-L06

- C6 port
- One-touch fitting for ø6

**Silencer** AN103-X233

**Name plate [-N7]** VQ1000-N7-station (1 to Max. stations)

**Port plug** VQ00000-58A

**Options**

- See page 2-4-91 for cylinder port fittings.
- For replacement parts, refer to page 2-4-111.
## Model

<table>
<thead>
<tr>
<th>Series</th>
<th>Number of solenoids</th>
<th>Model</th>
<th>Flow characteristics</th>
<th>Response time (ms)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>2 position</td>
<td>Single</td>
<td>Metal seal</td>
<td>VQ1170</td>
<td>0.56</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>VQ1171</td>
<td>0.71</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>Double (Latching)</td>
<td>Single</td>
<td>Metal seal</td>
<td>VQ1270</td>
<td>0.56</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>VQ1271</td>
<td>0.71</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>Closed center</td>
<td>Metal seal</td>
<td>VQ1370</td>
<td>0.53</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>VQ1371</td>
<td>0.65</td>
<td>0.23</td>
</tr>
<tr>
<td></td>
<td>Exhaust center</td>
<td>Metal seal</td>
<td>VQ1470</td>
<td>0.54</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>VQ1471</td>
<td>0.65</td>
<td>0.23</td>
</tr>
<tr>
<td></td>
<td>Pressure center</td>
<td>Metal seal</td>
<td>VQ1570</td>
<td>0.54</td>
<td>0.16</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rubber seal</td>
<td>VQ1571</td>
<td>0.70</td>
<td>0.20</td>
</tr>
</tbody>
</table>

Note 1) Cylinder port size C6
Note 2) As per JIS B 8375-1981 (Supply pressure: 0.5 MPa; with indicator light/surge voltage suppressor; clean air. Subject to the pressure and air quality.)

### Standard Specifications

<table>
<thead>
<tr>
<th>Solenoid</th>
<th>Valve specifications</th>
<th>Standard Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fluid</td>
<td>Metal seal</td>
</tr>
<tr>
<td></td>
<td>Maximum operating pressure</td>
<td>0.7 MPa (High pressure type: 0.8 MPa)</td>
</tr>
<tr>
<td></td>
<td>Minimum operating pressure</td>
<td>Single: 0.1 MPa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Double (Latching): 0.1 MPa</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 position: 0.15 MPa</td>
</tr>
<tr>
<td></td>
<td>Ambient and fluid temperature</td>
<td>10 to 50°C</td>
</tr>
<tr>
<td></td>
<td>Lubrication</td>
<td>Not required</td>
</tr>
<tr>
<td></td>
<td>Manual override</td>
<td>Push type/Locking type (Tool required, Manual) Option</td>
</tr>
<tr>
<td></td>
<td>Impact/Vibration resistance</td>
<td>150/30 m/s²</td>
</tr>
<tr>
<td></td>
<td>Enclosure</td>
<td>Dust-protected</td>
</tr>
<tr>
<td></td>
<td>Coil rated voltage</td>
<td>12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz)</td>
</tr>
<tr>
<td></td>
<td>Allowable voltage fluctuation</td>
<td>±10% of rated voltage</td>
</tr>
<tr>
<td></td>
<td>Coil insulation type</td>
<td>Class B or equivalent</td>
</tr>
<tr>
<td></td>
<td>Power consumption (Current)</td>
<td>24 VDC: 1 W DC (42 mA), 1.5 W DC (83 mA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12 VDC: 1 W DC (83 mA), 1.5 W DC (125 mA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100 VAC: Inrush 0.5 VA (5 mA), Holding 0.5 VA (5 mA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>110 VAC: Start-up 0.55 VA (5 mA), Holding 0.55 VA (7.5 mA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200 VAC: Inrush 1.0 VA (5 mA), Holding 1.0 VA (5 mA)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>220 VAC: Inrush 1.1 VA (5 mA), Holding 1.1 VA (5 mA)</td>
</tr>
</tbody>
</table>

Note 1) Use dry air to prevent condensation when operating at low temperatures.

Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Impact resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

Note 3) Values in the case of high pressure type (1.5 W).

Note 4) Values in the case of low wattage (0.5 W) specifications.
## Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Type of connection</th>
<th>Type of connection</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
<th>Applicable solenoid valve</th>
<th>5 station weight (g)</th>
</tr>
</thead>
</table>
| VQ1000 | VV5Q17□□□□D | ■ F kit–D-sub connector  
■ P kit–Flat ribbon cable connector  
■ T kit–Terminal block  
■ C kit–Individual connector  
■ S kit–Serial transmission unit | Top | C6 (ø6) | 1 to 16 stations | VQ1□□70  
VQ1□□71 | 405 |

Note 1) Inch-size One-touch fittings are also available. For details, refer to page 2-4-93.
Note 2) For details, refer to page 2-4-93.
The D-sub connector reduces installation labor for electrical connections.
Using the D-sub connector (25P), (15P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
Top or side receptacle position can be selected in accordance with the available mounting space.
Maximum stations are 16.

D-sub Connector (25 pins)

Cable assembly

Wire Color by Terminal No. of D-sub Connector Cable Assembly

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Lead wire color</th>
<th>Dot marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Brown</td>
<td>None</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>None</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>None</td>
</tr>
<tr>
<td>5</td>
<td>Yellow</td>
<td>None</td>
</tr>
<tr>
<td>6</td>
<td>Pink</td>
<td>None</td>
</tr>
<tr>
<td>7</td>
<td>Blue</td>
<td>None</td>
</tr>
<tr>
<td>8</td>
<td>Purple</td>
<td>White</td>
</tr>
<tr>
<td>9</td>
<td>Gray</td>
<td>Black</td>
</tr>
<tr>
<td>10</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>11</td>
<td>White</td>
<td>Red</td>
</tr>
<tr>
<td>12</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>13</td>
<td>Orange</td>
<td>Red</td>
</tr>
<tr>
<td>14</td>
<td>Yellow</td>
<td>Black</td>
</tr>
<tr>
<td>15</td>
<td>Pink</td>
<td>Blue</td>
</tr>
<tr>
<td>16</td>
<td>Blue</td>
<td>White</td>
</tr>
<tr>
<td>17</td>
<td>Purple</td>
<td>None</td>
</tr>
<tr>
<td>18</td>
<td>Gray</td>
<td>None</td>
</tr>
<tr>
<td>19</td>
<td>Orange</td>
<td>Black</td>
</tr>
<tr>
<td>20</td>
<td>Red</td>
<td>White</td>
</tr>
<tr>
<td>21</td>
<td>Brown</td>
<td>White</td>
</tr>
<tr>
<td>22</td>
<td>Pink</td>
<td>Red</td>
</tr>
<tr>
<td>23</td>
<td>Gray</td>
<td>Red</td>
</tr>
<tr>
<td>24</td>
<td>Black</td>
<td>White</td>
</tr>
<tr>
<td>25</td>
<td>White</td>
<td>None</td>
</tr>
</tbody>
</table>

D-sub Connector Cable Assembly (Option)

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Assembly part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-DS25-015</td>
<td>Multi-core vinyl cable</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-DS25-020</td>
<td></td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-DS25-050</td>
<td></td>
</tr>
</tbody>
</table>

Note): Types with 15 pin are also available. Refer to page 2-4-92 for details.

Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Port location</td>
<td>Port size</td>
</tr>
<tr>
<td></td>
<td>1(P), 3(R), 4(A), 2(B)</td>
<td></td>
</tr>
</tbody>
</table>

How to Order Manifold

VV5Q1 08  F  U  1  D

Series VQ1000

Manifold

7 Plug lead unit/Cassette

Stations +

01 1 station
16 16 stations

Note): For details, refer to page 2-4-93.

Cable (Length)

<table>
<thead>
<tr>
<th>0</th>
<th>Without cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>With cable (1.5 m)</td>
</tr>
<tr>
<td>2</td>
<td>With cable (3 m)</td>
</tr>
<tr>
<td>3</td>
<td>With cable (5 m)</td>
</tr>
</tbody>
</table>

Connector entry direction

U Top entry
S Side entry

Option

D (1) DIN rail mounting style
K (2) Special wiring specifications (Except double wiring)
N (3) With name plate

Note): Since the manifold is all with DIN rail, and so suffix -D to the part number.
Note 2): Specify the wiring specifications in the manifold specification sheet.
Note 3): Unmountable when the valve's manual override is a locking lever type.
Note 4): When two or more symbols are specified, indicate them alphabetically.
Body Ported

Plug Lead Unit: Cassette Type  Series VQ1000

Type of actuation
- 1: 2 position single
- 2: 2 position double (Latching)
- 3: 3 position closed center
- 4: 3 position exhaust center
- 5: 4 position center

Function
- Seal: Metal seal
- Coil voltage: 100 VAC (50/60 Hz)
- Manual override: Tool required
- Electrical entry: L plug connector without connector

How to Order Valves

Series VQ1000

Type of actuation
- 1: 2 position single
- 2: 2 position double (Latching)
- 3: 3 position closed center
- 4: 3 position exhaust center
- 5: 4 position center

Function
- Seal: Metal seal
- Coil voltage: 100 VAC (50/60 Hz)
- Manual override: Tool required
- Electrical entry: L plug connector without connector

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

Example:
D-sub connector kit with 3 m cable

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Enter in order starting from the first station on the D side. Besides, when the arrangement will be complicated, fill out the Manifold Specification Sheet to instruct us.
VQ1000 Kit (Flat ribbon cable connector)

- MIL flat ribbon cable connector reduces installation labor savings for electrical connection.
- Using the connector for flat ribbon cable (26P), (10P, 16P, 20P as an option) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.
- Top or side receptacle position can be selected in accordance with the available mounting space.
- Maximum stations are 16.

**Flat Ribbon Cable (26 pins)**

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Top</td>
<td>C6, C3, C4, C6, MS</td>
</tr>
</tbody>
</table>

**Electrical wiring specifications**

- Flat ribbon cable connector assembly can be ordered individually or included in a specific manifold model no. Refer to How to Order Manifold.

**Flat Ribbon Cable Connector Assembly (Option)**

<table>
<thead>
<tr>
<th>Cable length (L)</th>
<th>Assembly part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC26-1</td>
<td>Cable 26 core x 28AWG</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC26-2</td>
<td></td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC26-3</td>
<td></td>
</tr>
</tbody>
</table>

- For other commercial connectors, use a 26 pins type with strain relief conforming to MIL-C-83503.
- Connector manufacturers’ example
  - Sumitomo 3M Limited
  - Fujitsu Limited
  - Oki Electric Cable Co., Ltd.

**How to Order Manifold**

<table>
<thead>
<tr>
<th>Series VQ1000</th>
<th>Manifold</th>
<th>7</th>
<th>Plug lead unit/Cassette</th>
</tr>
</thead>
</table>

**Option**

- DIN rail mounting style
- Special wiring specifications (Except double wiring)
- With name plate

**Cable (Length)**

<table>
<thead>
<tr>
<th>0</th>
<th>Without cable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>With cable (1.5 m)</td>
</tr>
<tr>
<td>2</td>
<td>With cable (3 m)</td>
</tr>
<tr>
<td>3</td>
<td>With cable (5 m)</td>
</tr>
</tbody>
</table>

**Connector entry direction**

<table>
<thead>
<tr>
<th>U</th>
<th>Top entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>Side entry</td>
</tr>
</tbody>
</table>

**Porting specifications**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Polarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOL.A</td>
<td></td>
</tr>
<tr>
<td>SOL.B</td>
<td></td>
</tr>
<tr>
<td>COM.</td>
<td></td>
</tr>
</tbody>
</table>

**Note** When using the negative common specifications, use valves for negative common. (Refer to page 2-4-93.)

**Total number of stations is tabulated starting from station one on the D side.**

**As the standard electrical wiring specifications, double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-93.**

**When using the negative common specifications, use valves for negative common. (Refer to page 2-4-93.)**

**Note** When two or more symbols are specified, indicate them alphabetically.

**Note 1)**

**Note 2)**

**Note 3)**

**Note 4)**
**How to Order Valves**

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

**Example**

Connector kit

**Series VQ1000**

**Type of actuation**

1. 2 position single
2. 2 position double (Latching)
3. 3 position exhaust center
4. 3 position closed center
5. 3 position pressure center

**Function**

- Seal: Metal seal, Rubber seal
- Coil voltage: 100 VAC [50/60 Hz] (AC), 110 VAC [50/60 Hz] (AC), 24 VDC, 12 VDC

**Cylinder port**

- C3: With One-touch fitting for ø3.2
- C4: With One-touch fitting for ø4
- C5: With One-touch fitting for ø6

- Note 1) The code is L for elbow piping for all manifold stations. (Example) L6: Elbow with One-touch fittings for ø6

- Note 2) For inch-size One-touch fittings, refer to "Option" on page 2-4-93.

- Manual override

- Nil: Non-locking push type (Tool required)
- B: Locking type (Tool required)
- C: Locking type (Manual)

- Electrical entry

- LO: L plug connector without connector
- MO: M plug connector without connector

Note) For power consumption of AC type, refer to page 2-4-79. For DC type, refer to page 2-4-74.

Note) Except double (latching).

Note) For negative common specifications, refer to "Option" on page 2-4-93.

Note) Connector assembly will be required when the P kits add a valve. For model no., refer to "Option" on page 2-4-93.

**Dimensions: Top Entry Connector [-PU]**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>34.5</td>
<td>45</td>
<td>55.5</td>
<td>66</td>
<td>76.5</td>
<td>87</td>
<td>97.5</td>
<td>108</td>
<td>118.5</td>
<td>129</td>
<td>139.5</td>
<td>150</td>
<td>160.5</td>
<td>171</td>
<td>181.5</td>
</tr>
<tr>
<td>L2</td>
<td>54.5</td>
<td>65</td>
<td>75.5</td>
<td>86</td>
<td>96.5</td>
<td>107</td>
<td>117.5</td>
<td>128</td>
<td>138.5</td>
<td>149</td>
<td>159.5</td>
<td>170</td>
<td>180.5</td>
<td>191</td>
<td>201.5</td>
</tr>
<tr>
<td>L3</td>
<td>112.5</td>
<td>122.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>237.5</td>
<td>250</td>
</tr>
<tr>
<td>L4</td>
<td>123</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>248</td>
<td>260.5</td>
</tr>
</tbody>
</table>

**Dimensions: Side Entry Connector [-PS]**

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>L3</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>262.5</td>
<td>275</td>
<td>287.5</td>
</tr>
<tr>
<td>L4</td>
<td>148</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>201.5</td>
<td>210.5</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>273</td>
</tr>
</tbody>
</table>

**Example**

Connector kit VQ5Q17-08PU2-D 1 set - Manifold base part no. VQ1170-SMO-C6 4 sets - Valve part no. (Stations 1 to 4) VQ1270-SMO-C6 4 sets - Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the manifold, solenoid valve, etc.

Enter in order starting from the first station on the D side. Besides, when the arrangement will be complicated, fill out the Manifold Specification Sheet to instruct us.
VQ1000 Kit (Terminal block)

- It is a standard terminal block type.
- Two quantities of terminals can be selected in accordance with the number of stations.
  (8 terminals/16 terminals)
- Maximum stations are 16.

**Electrical wiring specifications**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Terminal no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 station</td>
<td>1 station</td>
</tr>
<tr>
<td>2 stations</td>
<td>2 stations</td>
</tr>
<tr>
<td>3 stations</td>
<td>3 stations</td>
</tr>
<tr>
<td>4 stations</td>
<td>4 stations</td>
</tr>
<tr>
<td>SOL A 1</td>
<td>SOL B 2</td>
</tr>
<tr>
<td>SOL A 3</td>
<td>SOL B 4</td>
</tr>
<tr>
<td>SOL A 5</td>
<td>SOL B 6</td>
</tr>
<tr>
<td>SOL A 7</td>
<td>SOL B 8</td>
</tr>
<tr>
<td>COM</td>
<td>COM</td>
</tr>
<tr>
<td>(-)</td>
<td>(-)</td>
</tr>
<tr>
<td>(-)</td>
<td>(-)</td>
</tr>
<tr>
<td>(-)</td>
<td>(-)</td>
</tr>
<tr>
<td>(+)</td>
<td>(+)</td>
</tr>
</tbody>
</table>

The quantity of terminal blocks used depends on the number of manifold stations.

<table>
<thead>
<tr>
<th>Manifold</th>
<th>Number of terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 to 4 stations</td>
<td>1 row</td>
</tr>
<tr>
<td>5 to 8 stations</td>
<td>2 rows</td>
</tr>
</tbody>
</table>

Wiring other than those above is possible. For details, refer to page 2-4-93.

### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Top C6 C3 C4 C6 M5</td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>

### How to connect wires to terminal block

Open the terminal block cover to connect the wires to the terminal block. (With M3 thread)

- **Double wiring** (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-93.

### How to Order Manifold

**VV5Q1 7-08 T 2 D**

**Series VQ1000**

**Manifold**

7 Plug lead unit/Cassette

<table>
<thead>
<tr>
<th>Stations</th>
<th>Number of stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 station</td>
</tr>
<tr>
<td>16</td>
<td>16 stations</td>
</tr>
</tbody>
</table>

**Option**

D DIN rail mounting style
K Special wiring specifications (Except double wiring)
N With name plate

Note 1) Since the manifold is all with DIN rail, and so suffix -D to the part number.
Note 2) Specify the wiring specifications in the manifold specification sheet.
Note 3) Unmountable when the valve's manual override is a locking lever type.
Note 4) When two or more symbols are specified, indicate them alphabetically.

**Number of terminals**

1 8 terminals in 1 row Applicable stations 1 to 4 stations (Double)
2 16 terminals in 2 rows Applicable stations 5 to 8 stations (Double)

Note) The number of terminal blocks can be chosen regardless of station qty. Suffix the option symbol, K, when the wiring specification is special.
Plug Lead Unit: Cassette Type  Series VQ1000

**Dimensions**

Formula:  
\[ L_1 = 10.5n + 24, L_2 = 10.5n + 44 \]

- \( n \): Stations (Maximum 16 stations)

<table>
<thead>
<tr>
<th>Stations</th>
<th>U side</th>
<th>D side</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>115</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>110.5</td>
<td>0</td>
</tr>
<tr>
<td>3</td>
<td>54.5</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>38.5</td>
<td>0</td>
</tr>
</tbody>
</table>

**How to Order Valves**

**Series VQ1000**

**Type of actuation**
- 1: 2 position single
- 2: 2 position double (Latching)
- 3: 3 position closed center
- 4: 3 position exhaust center
- 5: 3 position pressure center

**Seal**
- 0: Metal seal
- 1: FFKD seal

**Function**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Standard type</td>
<td>100 VAC (50/60 Hz)</td>
<td>100 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>3</td>
<td>High pressure</td>
<td>10 VAC (50/60 Hz)</td>
<td>10 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>5</td>
<td>Low voltage</td>
<td>24 VDC</td>
<td>24 VDC</td>
</tr>
</tbody>
</table>

**Coil voltage**

- 1: 100 VAC (50/60 Hz)
- 3: 120 VAC (50/60 Hz)
- 5: 24 VDC

**Manual override**

- Nil: Non-locking push type (Tool required)
- B: Locking type (Tool required)
- C: Locking type (Manual)

**Cylinder port**

- C3: One-touch fitting for ø3.2
- C4: One-touch fitting for ø4
- C6: One-touch fitting for ø6
- M5: M5 thread

**Electrical entry**

- LO: L plug connector without connector
- MO: M plug connector without connector

**Note**

1. L type plug connector is used for 3 position AC.
2. A manual override for a pilot valve is provided to the standard model for double type.
3. The code is L for elbow piping for all manifold stations.
4. Prefix the asterisk to the part nos. of the solenoid valve, etc.
5. For negative common specifications, refer to "Option" on page 2-4-93.
6. Connector assembly will be required when the T kits add a valve. For model no., refer to "Option" on page 2-4-93.

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

<Example>

- VVSQ17-08T2D-1: 1 set—Manifold base part no.
- VQ1170-5MO-C6: 4 sets—Valve part no. (Stations 1 to 4)
- VQ1270-5MOB-C6: 4 sets—Valve part no. (Stations 5 to 8)

Enter in order starting from the first station on the D side. Besides, when the arrangement will be complicated, fill out the Manifold Specification Sheet to instruct us.
Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Top C6 C3, C4, C5, M5</td>
<td>Max. 16 stations</td>
</tr>
</tbody>
</table>

Wiring specifications: Positive COM

The lead wires are connected to the valve as shown below. Connect each to the power supply side.

**Example**

<table>
<thead>
<tr>
<th>Lead wire color</th>
<th>Solenoid</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 V DC 100 VAC</td>
<td>SOLA (-)</td>
<td>100 V, 110 VAC</td>
</tr>
<tr>
<td>200 V 220 V</td>
<td>COM (+)</td>
<td></td>
</tr>
<tr>
<td>24 V DC 100 VAC</td>
<td>SOLA (-)</td>
<td>100 V, 110 VAC</td>
</tr>
<tr>
<td>200 V 220 V</td>
<td>COM (+)</td>
<td></td>
</tr>
</tbody>
</table>

Wiring specifications: Negative COM (Option)

The lead wires are connected to the valve as shown below. Connect each to the power supply side.

**Example**

<table>
<thead>
<tr>
<th>Lead wire color</th>
<th>Solenoid</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 V DC 100 VAC</td>
<td>SOLA (+)</td>
<td>100 V, 110 VAC</td>
</tr>
<tr>
<td></td>
<td>COM (-)</td>
<td></td>
</tr>
<tr>
<td>24 V DC 100 VAC</td>
<td>SOLA (+)</td>
<td>100 V, 110 VAC</td>
</tr>
<tr>
<td></td>
<td>COM (-)</td>
<td></td>
</tr>
</tbody>
</table>

How to Order Manifold

**VV5Q17**

**Option**

- **D** DIG rail mounting style
- **N** With name plate

**Note**

1) Manifolds are a DIN rail mounting style, and so suffix -D should be indicated.
2) Unmountable when the valve's manual override is a locking lever type.
3) When both options are specified, indicate as DN.
**Plug Lead Unit: Cassette Type Series VQ1000**

---

**How to Order Valves**

**Series VQ1000**

- **Type of actuation**
  - 1 2 position single
  - 2 2 position double (Latching)
  - 3 3 position closed center
  - 4 3 position exhaust center
  - 5 3 position pressure center

- **Function**
  - Symbol Specifications DC AC
  - Nil Standard type 1.0 V
  - H High pressure type 1.5 V
  - Y Low voltage type 0.5 V

- **Seal**
  - 0 Metal seal
  - 1 Rubber seal

- **Coil voltage**
  - 1 100 VAC (50/60 Hz)
  - 2 200 VAC (50/60 Hz)
  - 3 110 VAC (50/60 Hz)
  - 4 220 VAC (50/60 Hz)
  - 5 24 VDC
  - 6 12 VDC

**Cylinder port**

- C3 With One-touch fitting for ø3.2
- C4 With One-touch fitting for ø4
- C6 With One-touch fitting for ø6
- M5 M5 thread

**Manual override**

- Nil Non-locking push type (Tool required)
- B Locking type (Tool required)
- C Locking type (Manual)

**Electrical entry**

- G Grommet (Except double (latching) and AC)
- L L plug connector with lead wire
- LO L plug connector without connector
- M M plug connector with lead wire
- MO M plug connector without connector

---

**How to Order Manifold Assembly**

Specify the part numbers for valves and options together beneath the manifold base part number.

**Connector kit with 3 m cable**

- VQ170-08C-D 1 set—Manifold base part no.
- VQ1170-5M-C6 4 sets—Valve part no. (Stations 1 to 4)
- VQ1270-5MB-C6 4 sets—Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc.

Specify the part numbers for valves and options together beneath the manifold base part number.

**Example**

Connector kit with 3 m cable

VQ170-08C-D 1 set—Manifold base part no.

VQ1170-5M-C6 4 sets—Valve part no. (Stations 1 to 4)

VQ1270-5MB-C6 4 sets—Valve part no. (Stations 5 to 8)

---

**Dimensions**

<table>
<thead>
<tr>
<th>Station</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
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<tbody>
<tr>
<td>L1</td>
<td>34.5</td>
<td>45</td>
<td>55.5</td>
<td>66</td>
<td>76.5</td>
<td>87</td>
<td>97.5</td>
<td>108</td>
<td>118.5</td>
<td>129</td>
<td>139.5</td>
<td>150</td>
<td>160.5</td>
<td>171</td>
<td>181.5</td>
<td>192</td>
</tr>
<tr>
<td>L2</td>
<td>54.5</td>
<td>65</td>
<td>75.5</td>
<td>86</td>
<td>96.5</td>
<td>107</td>
<td>117.5</td>
<td>128</td>
<td>138.5</td>
<td>149</td>
<td>159.5</td>
<td>170</td>
<td>180.5</td>
<td>191</td>
<td>201.5</td>
<td>212</td>
</tr>
<tr>
<td>L3</td>
<td>75</td>
<td>87.5</td>
<td>100</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>200</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>85.5</td>
<td>98</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>148</td>
<td>160.5</td>
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<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>210.5</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
</tr>
</tbody>
</table>

**Formula**

L1 = 10.5n + 24, L2 = 10.5n + 44

- n: Station (Maximum 16 stations)
**VQ1000 Kit (Serial transmission unit)**

- The serial transmission system reduces wiring work, while minimizing wiring and saving space.
- The system comes in an available manifold specification sheet.
- The serial transmission system reduces wiring work, while minimizing wiring and saving space.

**Stations**
- Stations are counted from station 1 on the D side.
- As the standard electrical wiring specifications, double wiring (connected to SOL A and SOL B) is adopted for the internal wiring of each station for 8 stations or less, regardless of valve and option types. Mixed single and double wiring is available as an option. For details, refer to page 2-4-93.

**Current consumption**
- 2-4-93. (Internal unit)

**How to Order Manifold**

**Manifold Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>Porting specifications</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>Top</td>
<td>C6</td>
</tr>
</tbody>
</table>

**Type SA**

- With general type SI unit (Series EX300)

**Type SB**

- Mitsubishi Electric Corporation

**Dust-protected type (-XP)**

Suffix "-XP" for the dust-protected SI units. (Except SE and SQ)

**How to Order Manifold**

**VV5Q17 08 S A D XL**

**Option**

- D (D) Special wiring specifications (Except double wiring)
- K (K) With name plate

**Note**
- Since the manifold is all with DIN rail, and so suffix -D to the part number.
- Specify the wiring specifications in the manifold specification sheet.
- Unmountable when the valve's manual override is a locking lever type.
- When two or more symbols are specified, indicate them alphabetically.

**2-4-84**
Si unit output and coil numbering

Wiring Example 1: Double wiring (Standard)

- Si unit output no. (Looked by double solenoid valve) SOL. location
- Stations: 1 2 3 4 5

Wiring Example 2: Single/Double mixed wiring (Option)

- Mixed wiring is available as an option. Use the manifold specification sheet to specify.

How to Order Valves

Series VQ1000

Type of actuation
1 2 position single
2 2 position double (Latching)
3 3 position closed center
4 3 position exhaust center
5 3 position pressure center

Note: L type plug connector is used for 3 position AC.

Function
- Specification Sheet to instruct us.

Cylinder ports
- C6: With One-touch fitting for ø6

Manual override
- C: Locking type (Manual)

Electrical entry
- MO: M plug connector without connector
- LO: L plug connector without connector

How to Order Manifold Assembly

Specify the part numbers for valves and options together beneath the manifold base part number.

Example:
- Serial transmission unit kit
  V5Q17-08SA-D: 1 set – Manifold base part no. (Stations 1 to 4)
  + VQ1170-SMO-C6: 4 sets – Valve part no. (Stations 5 to 8)
  + VQ1270-SM05-C6: 4 sets – Valve part no. (Stations 5 to 8)

Prefix the asterisk to the part nos. of the solenoid valve, etc.
Dimensions

Dust-protected type SI unit: L5 = L3 + 25, L6 = L4 + 25

Formula L1 = 10.5n + 24, L2 = 10.5n + 44

n: Station (Maximum 16 stations)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>34.5</td>
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<tr>
<td>L3</td>
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<tr>
<td>L4</td>
<td>148</td>
<td>160.5</td>
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<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
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<td>248</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td></td>
</tr>
</tbody>
</table>

Manifolds with SI unit for Matsushita Electric Works’ MEWNET FP and Rockwell Automation’s model are the same with L5 and L6 dimensions of dust-protected type SI unit.
Manifold Option Parts

Individual SUP spacer
VVQ1000-P-7-C6

When the same manifold is to be used for different pressures, individual SUP spacers are used as SUP ports for different pressures. (One station space is occupied.) Block both sides of the station, for which the supply pressure from the individual SUP spacer is used, with SUP block plates. (See the application ex.)

* Specify the spacer mounting position and SUP block plate mounting position on the manifold specification sheet. The block plate are used in two places for one set. (Two SUP block plates for blocking SUP station are attached to the individual SUP spacer.)

* The spacer's specification can be changed (from an individual SUP spacer to an individual EXH spacer) by changing the coupling of the fittings and bushing.

Individual EXH spacer
VVQ1000-R-7-C6

When valve exhaust affects other stations due to the circuit configuration, this spacer is used for individual valve exhaust. (One station space is occupied.) Block both sides of the individual valve EXH station.

* Specify the spacer mounting position and EXH block plate mounting position on the manifold specification sheet. The block plate are used in two places for one set. (Four EXH block plates for blocking EXH station are attached to the individual EXH spacer.)

* The spacer's specification can be changed (from an individual EXH spacer to an individual SUP spacer) by changing the coupling of the fittings and bushing.

Individual SUP/EXH spacer
VVQ1000-PR-7-C6

This spacer has both functions of the above individual SUP and EXH spacers. (Refer to the application example.)

* Specify the spacer mounting position and SUP/EXH block plate mounting position on the manifold specification sheet. The blockplates are used in two places for one set. (A SUP/EXH block plates for blocking SUP/EXH station are attached to the individual SUP/EXH spacer.)

* When using the spacer not for individual SUP/EXH but for improving the ability to supply/exhaust air, it is unnecessary to block the SUP/EXH passage. In this case, place an order via VVQ1000-PRA-7-C6.

* The spacer's specification can be changed by changing the coupling of the fittings and bushing.
Manifold Option Parts

SUP Block bushing assembly
VVQ1000-87A-B-50

<For SUP>
When one manifold is to be used for different, high and low pressures, this block bushing assembly is used between the stations under a different pressure. The block assembly is mounted on the U side of the valve’s SUP passage.
* Specify the number stations on the manifold specification sheet.
<For EXH>
When a valve exhaust affects other stations due to the circuit configuration, this block bushing assembly is used between the stations whose EXH passages are to be separated each other. Since the block bushing assembly is mounted on the U side of the valve’s R1 and R2 passages, two assemblies are necessary for one station.
* Specify the number stations on the manifold specification sheet.

<Shut off label>
When using block bushing assembly for SUP, EXH passage, indication label for confirmation of the blocking position from outside is attached. (One label for each)

Elbow fitting assembly
VVQ1000-F7-L (C3, C4, C6)
It is used in a side-valve-port application.

Name plate [-N7]
VVQ1000-N7-Station (1 to Max. stations)
It is a transparent resin plate for placing a label that indicates solenoid valve function, etc. Insert it into the groove on the side of the end plate and bend it as shown in the figure. Open the face plate seating when the manual override is operating.
* It is not applicable to locking manual override.

Blanking plug
KQ2P-23

Used for unused cylinder port, SUP and EXH port. Purchasing order is available in units of 10 pieces.

Silencer
AN103-X233
This silencer is to be inserted into the EXH port (One-touch fittings) of the common exhaust type.

Port plug
VVQ0000-58A
The plug is used to block the cylinder port when using a 4 port valve as a 3 port valve.
When ordering it incorporated with a manifold, suffix A or B, the symbol of the plug port, to the valve no.
Example) VQ1170-5L-C6-A

VQ1000

Dimensions
Series Applicable fittings size ød Model A L D Effective area (mm²) Noise reduction (dB)
VQ1000 6 AN103-X233 20 37 11 7 25
Double check block (Separated type)  VQ1000-FPG-□□

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the double check block with a built-in pilot type double check valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time. The combination with a two position single/double solenoid valve will permit this block to be used for preventing the dropping at the cylinder stroke end when the SUP residual pressure is released.

Specifications

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. operating pressure</td>
<td>0.8 MPa</td>
</tr>
<tr>
<td>Min. operating pressure</td>
<td>0.15 MPa</td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>–5 to 50°C</td>
</tr>
<tr>
<td>Flow characteristics: C</td>
<td>0.60 dm³/(s·bar)</td>
</tr>
<tr>
<td>Max. operating frequency</td>
<td>180 CPM</td>
</tr>
</tbody>
</table>

Note) Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa)

Dimensions

<table>
<thead>
<tr>
<th>Single unit</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>31</td>
</tr>
<tr>
<td>L2</td>
<td>42</td>
</tr>
<tr>
<td>L3</td>
<td>60.5</td>
</tr>
<tr>
<td>L4</td>
<td>73</td>
</tr>
<tr>
<td>L5</td>
<td>85.5</td>
</tr>
<tr>
<td>L6</td>
<td>123</td>
</tr>
<tr>
<td>L7</td>
<td>135</td>
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<tr>
<td>L8</td>
<td>148</td>
</tr>
<tr>
<td>L9</td>
<td>160.5</td>
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</table>

<table>
<thead>
<tr>
<th>Manifold</th>
<th></th>
</tr>
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<tbody>
<tr>
<td>L1</td>
<td>31</td>
</tr>
<tr>
<td>L2</td>
<td>42</td>
</tr>
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<td>L8</td>
<td>148</td>
</tr>
<tr>
<td>L9</td>
<td>160.5</td>
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</tbody>
</table>

How to Order

Double check block  VQ1000-FPG-□□

<table>
<thead>
<tr>
<th>IN side port size</th>
<th>OUT side port size</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>C4</td>
<td>C5</td>
<td>M5 thread</td>
</tr>
<tr>
<td>C6</td>
<td>C4</td>
<td>One-touch fitting ø3.2</td>
</tr>
<tr>
<td></td>
<td>C6</td>
<td>One-touch fitting ø6</td>
</tr>
</tbody>
</table>

Manifold  VVQ1000-FPG-□□

<table>
<thead>
<tr>
<th>Stations</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>1 station</td>
</tr>
<tr>
<td>16</td>
<td>16 stations</td>
</tr>
</tbody>
</table>

Bracket Assembly

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Tightening torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000-FPG-FB</td>
<td>0.22 to 0.25 N·m</td>
</tr>
</tbody>
</table>

Caution

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long time. Check the leakage using neutral household detergent, such as dish washing soap.
- Also check the cylinder’s tube gasket, piston packing and rod packing for air leakage.
- Since One-touch fittings allow slight air leakage, screw piping (with M5 thread) is recommended when stopping the cylinder in the middle for a long time.
- Combining double check block with 3 position closed center or pressure center solenoid valve will not work. M5 fitting assembly is attached, not incorporated into the double check block.
- After screwing in the M5 fittings, mount the assembly on the double check block. (Tightening torque: 0.8 to 1.2 N·m) If the exhaust of the double check block is throttled too much, the cylinder may not operate properly and may not stop intermediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
![Precautions](image)

**Caution**

The standard model is equipped with an indicator light and surge voltage suppressor. The lighting positions are concentrated on one side for both single solenoid type and double (latching) type. In the double (latching) type, A side and B side energization are indicated by two colors which match the colors of the manual overrides.

**Warning**

Without an electric signal for the solenoid valve the manual override is used for switching the main valve.

- **Push type (Tool required)**
  - Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

- **Locking slotted type**
  - Push down on the manual override button with a small screwdriver. While down, turn clockwise by 90° to lock it. Turn it counterclockwise to release it.

- **Locking lever type (Option)**
  - Push down completely on the manual override button with a small screwdriver. While down, turn clockwise 90° to lock it. Turn it counterclockwise to release it.

- **Manual override for double (latching) type**
  - In case of a double (latching) type, a manual override is provided not only on the body side but to the pilot as a standard specification. After manual operation, the main valve of the manual override on the body side returns to the position before the manual operation, however, the pilot valve manual override maintains the change-over position.
  - Turn before pushing.
  - Manual override body side
  - Self-holding of the main valve is impossible. (Returns to the main valve position before operation.)
  - If the manual override is turned by 180° clockwise and the ▲ mark is adjusted to A, then pushed in the direction of an arrow (▲), it will be back to the reset condition. (passage P → A)
  - If the manual override is turned by 180° counterclockwise and the ▲ mark is adjusted to B, then pushed in the direction of an arrow (▲), it will be back to the reset condition. (passage P → B)
  - It is in the reset state at the time of shipment.

**Caution**

Do not apply excessive torque when turning the locking type manual override. (0.1 N-m or less)
How to Mount/Remove Solenoid Valve

⚠️ Caution

<Procedure>

How to Remove
1. Loosen the clamp screw on one side.
2. Slightly slide a part the valve stations on both sides of the station to be removed.
3. Pull up side (a) of the valve station and remove it from the DIN rail.

How to Mount
1. Take procedures 1 and 2 above to make an open space in the position for mounting a new valve station.
2. Diagonally insert the clip on the side (b) of the valve station to the DIN rail.
3. Press down on the valve station and insert the clip on the side (a) of the valve station to the DIN rail.
4. Slide the valve stations together so that there is no clearance between them. Position the clamp screw and tighten. (Proper tightening torque: 0.7 to 1.0 N·m)

Note) Be careful to keep O-ring or gallery dust free since dirt may cause air leakage.
Be sure both hooks of the bracket are fixed to the DIN rail.
Use caution not to apply force on the light cover when mounting or dismounting the valve.

Replacement of Cylinder Port Fittings

⚠️ Caution

The cylinder port fittings are a cassette for easy replacement.
The fittings are blocked by a clip inserted from the side of the valve. Remove the clip with a screwdriver and remove fittings.
For replacement, insert the fitting assembly until it strikes against the inside wall and then reinsert the clip to the specified position.

<table>
<thead>
<tr>
<th>Applicable tubing O.D</th>
<th>Fitting assembly part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ø3.2</td>
<td>VVQ1000-50A-C3</td>
</tr>
<tr>
<td>Ø4</td>
<td>VVQ1000-50A-C4</td>
</tr>
<tr>
<td>Ø6</td>
<td>VVQ1000-50A-C6</td>
</tr>
</tbody>
</table>

* Purchasing order is available in units of 10 pieces.

⚠️ Caution
1. Protect O-rings from scratches and dust to prevent air leakage.
2. The tightening torque for inserting fittings to the M5 thread ass’y should be 0.8 to 1.4 N·m.

How to Use Plug Connector

⚠️ Caution

For details, refer to page 2-4-67.
### Option

#### Different Number of Connector Pins

F and P kits with the following number of pins are available besides the standard number (F = 25; P = 26). Select the desired number of pins and cable length from the cable assembly list. Place an order for the cable assembly separately.

**F**

kit (D-sub connector) 15 pins

**P**

kit (Flat ribbon cable connector) 10 pins, 16 pins, 20 pins

---

### How to order manifold

**VV5Q17**

**Option**

<table>
<thead>
<tr>
<th>Station</th>
<th>How to Order</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>F</strong></td>
<td>D-sub connector, 15 pins</td>
</tr>
<tr>
<td><strong>SA</strong></td>
<td>Kit F</td>
</tr>
<tr>
<td><strong>D</strong></td>
<td>Top entry</td>
</tr>
</tbody>
</table>

**VV5Q17**

**Option**

<table>
<thead>
<tr>
<th>Station</th>
<th>How to Order</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P</strong></td>
<td>Flat ribbon cable, 20 pins</td>
</tr>
<tr>
<td><strong>SC</strong></td>
<td>Kit P</td>
</tr>
<tr>
<td><strong>D</strong></td>
<td>Top entry</td>
</tr>
</tbody>
</table>

### Wiring Specifications

Like 25-pin models (standard), terminal no. 1 will be the 1st station SOL.A, and terminal no. 9 for the 1st station SOL.B. Then COM will be the terminal no. 8.

### D-sub Connector Cable Assembly

<table>
<thead>
<tr>
<th>Cable Length (m)</th>
<th>Pins</th>
<th>10P</th>
<th>16P</th>
<th>20P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-DS15-1</td>
<td>AXT100-FC10-1</td>
<td>AXT100-FC16-1</td>
<td>AXT100-FC20-1</td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-DS15-2</td>
<td>AXT100-FC10-2</td>
<td>AXT100-FC16-2</td>
<td>AXT100-FC20-2</td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-DS15-3</td>
<td>AXT100-FC10-3</td>
<td>AXT100-FC16-3</td>
<td>AXT100-FC20-3</td>
</tr>
</tbody>
</table>

* For other commercial connectors, use a type conforming to MIL-C-24308.

---

### Flat Ribbon Cable Assembly

<table>
<thead>
<tr>
<th>Cable Length (m)</th>
<th>Pins</th>
<th>10P</th>
<th>16P</th>
<th>20P</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 m</td>
<td>AXT100-FC10-1</td>
<td>AXT100-FC16-1</td>
<td>AXT100-FC20-1</td>
<td></td>
</tr>
<tr>
<td>3 m</td>
<td>AXT100-FC10-2</td>
<td>AXT100-FC16-2</td>
<td>AXT100-FC20-2</td>
<td></td>
</tr>
<tr>
<td>5 m</td>
<td>AXT100-FC10-3</td>
<td>AXT100-FC16-3</td>
<td>AXT100-FC20-3</td>
<td></td>
</tr>
</tbody>
</table>

* For other commercial connectors, use a type with strain relief conforming to MIL-C-83503.
Special Wiring Specifications

In the internal wiring of F kit, P kit, J kit, G kit, T kit and S kit, double wiring (connected to SOL. A and SOL. B) is adopted for each station regardless of the valve and option types. Mixed single and double wiring is available as an option.

1. How to order valves

Indicate an option symbol, -K, for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification sheet.

Example)
VV5Q17-09FU0-D KS

Others, option symbols: to be indicated alphabetically.

2. Wiring specifications

Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without shipping any terminal numbers.

3. Max. number of stations

The maximum number of stations depends upon the number of solenoids. Assuming one for a single and two for a double, determine the number of stations so that the total number is not more than the maximum number given in the following table.

<table>
<thead>
<tr>
<th>Kit</th>
<th>Single (2-wire)</th>
<th>Double (latching) (3-wire)</th>
</tr>
</thead>
<tbody>
<tr>
<td>F kit</td>
<td>Positive common</td>
<td>Positive common</td>
</tr>
<tr>
<td>P kit</td>
<td>Negative common</td>
<td>Negative common</td>
</tr>
<tr>
<td>T kit</td>
<td>Positive common</td>
<td>Negative common</td>
</tr>
</tbody>
</table>

Mixed single and double wiring is available as an option.

1. How to order valves

Indicate an option symbol, -K, for the manifold no. and be sure to specify the mounting position and number of stations of the single and double wiring by means of the manifold specification sheet.

Example)
VV5Q17-09FU0-D KS

Others, option symbols: to be indicated alphabetically.

2. Wiring specifications

Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without shipping any terminal numbers.

3. Max. number of stations

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<td>Positive common</td>
<td>Positive common</td>
</tr>
<tr>
<td>P kit</td>
<td>Negative common</td>
<td>Negative common</td>
</tr>
<tr>
<td>T kit</td>
<td>Positive common</td>
<td>Negative common</td>
</tr>
</tbody>
</table>

Mixed single and double wiring is available as an option.

Note) Due to the limitation of internal wiring.

Negative Common Specifications

Specify the valve model no. as shown below for negative COM specification. The standard manifold no. can be used. Please contact SMC for negative COM S kit.

How to order negative COM valves

VQ1170 N 5MO C6

Negative common specifications

Inch-size One-touch Fittings

Refer to following model no. for inch-size One-touch fittings.

How to order manifold

VV5Q17 08FSO DN 00T

How to order valves

VQ1170 5M N7

Plug Connector Assembly Model

Connector assembly will be required when the F, P, T, S kits add a valve.

Specify the valve and connector assembly.

Connector Assembly Part No.

DIN Rail Mounting

Each manifold can be mounted on a DIN rail.

Order it by indicating an option symbol for DIN rail mounting style, -D. In this case, a DIN rail which is approx. 30 mm longer than the manifold with the specified number of stations is attached. Besides, it is also available in the following cases.

- When using DIN rail longer than the manifold with specified number of stations

Clearly indicate the necessary number of stations next to the option symbol, -D, for the manifold no.

Example)
VV5Q17-09FU1-D09S

Others, option symbols: to be indicated alphabetically.

- When ordering DIN rail only

DIN rail no.: AXT100-DR-n

Refer to the DIN rail dimension table for determining the length.

Note) Lead wire length: 300 mm
## Series VQ
### Single Unit

For individual use of a single valve.

<table>
<thead>
<tr>
<th>Model</th>
<th>Flow characteristics</th>
<th>Response time (ms)</th>
<th>Weight (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ1000</td>
<td>1 → 2/2 (P → A/B)</td>
<td>4/2 → 3/3 (A/B → R1/R2)</td>
<td>Standard: 1 W H: 1.5 W</td>
</tr>
<tr>
<td>VQ1000</td>
<td>1 → 2/2 (P → A/B)</td>
<td>4/2 → 3/3 (A/B → R1/R2)</td>
<td>Standard: 1 W H: 1.5 W</td>
</tr>
</tbody>
</table>

### Standard Specifications

**Valve construction**
- Metal seal
- Rubber seal

**Fluid**
- Air/Inert gas

**Maximum operating pressure**
- Single: 0.7 MPa (High pressure type: 0.8 MPa)
- Double (Latch): 0.15 MPa

**Min. operating pressure**
- Single: 0.1 MPa
- Double (Latch): 0.1 MPa

**Ambient and fluid temperature**
- −10 to 50°C

**Lubrication**
- Not required

**Manual override**
- Push type/Locking type (Tool required, Manual type) Option

**Impact/Vibration resistance**
- 150/30 m/s²

**Enclosure**
- Dust tight

**Coil rated voltage**
- 12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz)

**Allowable voltage fluctuation**
- ±10% of rated voltage

**Solenoid**

<table>
<thead>
<tr>
<th>Power consumption (Current)</th>
<th>VQ1000</th>
<th>24 VDC</th>
<th>1 W DC (42 mA), 1.5 W DC (63 mA)</th>
<th>1 W DC (42 mA), 0.5 W DC (21 mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 VDC</td>
<td>1 W DC (63 mA), 1.5 W DC (125 mA)</td>
<td>0.5 W DC (21 mA)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100 VAC</td>
<td>Inrush 0.5 VA (5 mA), Holding 0.5 VA (5 mA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>110 VAC</td>
<td>Inrush 0.5 VA (5 mA), Holding 0.5 VA (5 mA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>200 VAC</td>
<td>Inrush 1.0 VA (5 mA), Holding 1.0 VA (5 mA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>220 VAC</td>
<td>Inrush 1.1 VA (5 mA), Holding 1.1 VA (5 mA)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note 1)** Use dry air to prevent condensation when operating at low temperatures.

**Note 2)** Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

**Vibration resistance:** No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

**Note 3)** Values in the case of high pressure type (1.5 W) specifications.

**Note 4)** Values in the case of low wattage type (0.5 W) specifications.
How to Order Valves

Series VQ1000

Symbol

1 2 position single
2 2 position double (Latching)
3 3 position closed center
4 3 position exhaust center
5 3 position pressure center

Seal

0 Metal seal
1 Rubber seal

Function

Symbol Specifications DC AC
Nil Standard type 0.5 W 0.5 W
H 12 V DC High pressure type 1.5 W —
N Negative common type — —
Y Low wattage type 0.5 W —

Note 1) For power consumption of AC type, refer to page 2-4-94.
Note 2) Except double (latching). When two or more symbols are specified, indicate them alphabetically.

Coil rated voltage

1 100 VAC (50/60 Hz)
2 200 VAC (50/60 Hz)
3 110 VAC (50/60 Hz)
4 220 VAC (50/60 Hz)
5 24 VDC
6 12 VDC

Wiring Specifications: Positive COM

The lead wires are connected to the valve as shown below.
Connect each to the power supply side.

Lead wire color

- 24 VDC
- 100 VAC
- 220 VAC
- 110 V

Single solenoid

COM (+) [Red]
Red (Blue) [Red]
Black (Blue) [Red]

Double solenoid

Note) The length of the lead wire provided is 300 mm. When ordering a valve with a lead wire of 600 mm or longer, be sure to indicate the model number of the valve without connector and connector assembly.

Connector Assembly Part No. (For DC)

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Single/3 position part no.</th>
<th>Double solenoid part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socket only (3 pcs.)</td>
<td>AXT661-12A</td>
<td>AXT661-13A</td>
</tr>
<tr>
<td>300 mm</td>
<td>AXT661-14A</td>
<td>AXT661-13A-6</td>
</tr>
<tr>
<td>600 mm</td>
<td>AXT661-14A-8</td>
<td>AXT661-13A-6</td>
</tr>
<tr>
<td>1000 mm</td>
<td>AXT661-14A-10</td>
<td>AXT661-13A-10</td>
</tr>
<tr>
<td>2000 mm</td>
<td>AXT661-14A-20</td>
<td>AXT661-13A-20</td>
</tr>
<tr>
<td>3000 mm</td>
<td>AXT661-14A-30</td>
<td>AXT661-13A-30</td>
</tr>
</tbody>
</table>

Note 1) 100/110 VAC for single: AXT661-31A-; for double: AXT661-32A-; 200/220 VAC for single: AXT661-34A-; for double: AXT661-35A-; are in accordance with the above table.
Note 2) 3 position type requires 2 sets for A side and B side.

Wiring Specifications: Negative COM (Option)

The lead wires are connected to the valve as shown below.
Connect each to the power supply side.

Lead wire color

- 24 VDC
- 100 VAC
- 220 VAC
- 110 V

Single solenoid

COM (+) [Red]
Red (Blue) [Red]
Black (Blue) [Red]

Double solenoid

Note) The length of the lead wire provided is 300 mm. When ordering a valve with a lead wire of 600 mm or longer, be sure to indicate the model number of the valve without connector and connector assembly.

Connector Assembly Part No. (For DC)

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Single/3 position part no.</th>
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<tr>
<td>Socket only (3 pcs.)</td>
<td>AXT661-12A</td>
<td>AXT661-13A</td>
</tr>
<tr>
<td>300 mm</td>
<td>AXT661-14AN</td>
<td>AXT661-13AN</td>
</tr>
<tr>
<td>600 mm</td>
<td>AXT661-14AN-8</td>
<td>AXT661-13AN-6</td>
</tr>
<tr>
<td>1000 mm</td>
<td>AXT661-14AN-10</td>
<td>AXT661-13AN-10</td>
</tr>
<tr>
<td>2000 mm</td>
<td>AXT661-14AN-20</td>
<td>AXT661-13AN-20</td>
</tr>
<tr>
<td>3000 mm</td>
<td>AXT661-14AN-30</td>
<td>AXT661-13AN-30</td>
</tr>
</tbody>
</table>

Note 1) When using the negative common specifications, use valves for negative common.
Note 2) 3 position type requires 2 sets for A side and B side.
Series VQ

Dimensions

2 position single/double (Latching): VQ1_{2/1}^6

3 position closed center/exhaust center/pressure center: VQ1_{3/2/1}^6

Built-in silencer
EXH blow out hole
Built-in silencer
Series VQ
Construction
Main Parts, Replacement Parts

Construction: VQ1000/Plug-in Unit, Flip Type

Metal seal
Single/Double (Latching)

Rubber seal
Single/Double (Latching)

Component Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>Body</td>
<td>Aluminum</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>die-casted</td>
<td></td>
</tr>
<tr>
<td>②</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>③</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

Component Parts

<table>
<thead>
<tr>
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<th>Description</th>
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</thead>
<tbody>
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<td>Body</td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>die-casted</td>
<td></td>
</tr>
<tr>
<td>②</td>
<td>Spool valve</td>
<td>Aluminum/HNBR</td>
<td></td>
</tr>
<tr>
<td>③</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

Pilot valve assembly

Single/3 position

| Description | VQ111(Y) F | Voltage: 1 to 6 |

Double (Latching)

| Description | VQ110L-Y F | Voltage: 1 to 6 |

Note) (H): 1.5 W, (Y): 0.5 W
Component Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum die-casted</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

4 Pilot valve assembly

Single
3 position (VQ1000)  
VQ111

Double (Latching)  
VQ110L

3 position (VQ1000)  
VQ111L

Note 1) (H): 1.5 W, (Y): 0.5 W, G type: DC only

Note 2) (H): 1.5 W, (Y): 0.5 W, G type: DC only

The direction of the L and M connectors of a pilot valve is opposite to that of the single and double type.
Series VQ

Construction: VQ1000/Plug Lead Unit, Cassette Type

Metal seal
Single/Double (Latching)

Component Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>Body</td>
<td>Zinc die-casted</td>
<td></td>
</tr>
<tr>
<td>②</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>③</td>
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<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

4 Pilot valve assembly

Single

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L plug connector</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L plug connector</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Rubber seal
Single/Double (Latching)

Component Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
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<td>Body</td>
<td>Zinc die-casted</td>
<td></td>
</tr>
<tr>
<td>②</td>
<td>Spool valve</td>
<td>Aluminum/HNBR</td>
<td></td>
</tr>
<tr>
<td>③</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
</tbody>
</table>

4 Pilot valve assembly

Single

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
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<tr>
<td></td>
<td>L plug connector</td>
<td></td>
<td></td>
</tr>
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<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>L plug connector</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3 position

VQ1170  VQ1270  VQ1370  VQ1470  VQ1570

3 position

VQ1171  VQ1271  VQ1371  VQ1471  VQ1571

Note 1) (H): 1.5 W, (Y): 0.5 W, G type: DC only

Note) L M G 2 -L50132 -VQ111(H) (Y) Voltage 1 to 6

The direction of the L and M connectors of a pilot valve is opposite to that of the single and double type.

The direction of the L and M connectors of a pilot valve is opposite to that of the single and double type.
Construction: VQ1000/Single Unit

Metal seal
Single/Double (Latching)

Rubber seal
Single/Double (Latching)

Component Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Zinc die-casted</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool/Sleeve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td>VQ1160</td>
<td>1.5 W, (Y): 0.5 W, G type: DC only</td>
</tr>
<tr>
<td></td>
<td>Single/3 position</td>
<td>VQ1260</td>
<td>Voltage 1 to 6</td>
</tr>
<tr>
<td></td>
<td>Double (Latching)</td>
<td>VQ1150</td>
<td>Voltage 1 to 6</td>
</tr>
</tbody>
</table>

Construction Main Parts, Replacement Parts Series VQ

Main Parts
- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD

D plug connector

Note 1) (H): 1.5 W, (Y): 0.5 W, G type: DC only
Exploded View of Manifold

VQ1000 (VV5Q13)/Plug-in Unit, Flip Type

(F, P, J, L, S kit) + For how to increase the stations, refer to the instruction manual.

<table>
<thead>
<tr>
<th>Housing assembly and SI unit</th>
<th>Valve and junction box assembly</th>
<th>D side end plate assembly</th>
<th>Station increase parts</th>
</tr>
</thead>
</table>

Note 1) S kit is composed of a flat ribbon cable housing assembly (AXT100-1-PU20) of SI unit and P kit (20 pins).
<Housing Assembly and SI Unit>
Housing assembly and SI unit no.

<table>
<thead>
<tr>
<th>No.</th>
<th>Manifold Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(SA kit) EX330-S001</td>
<td>General type SI unit (Series EX300)</td>
</tr>
<tr>
<td></td>
<td>(SB kit) EX130-SMB1</td>
<td>SI unit for MELSECNET/mini-S3 Data Link System (Mitsubishi Electric Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SC kit) EX130-STA1</td>
<td>SI unit for SYSBUS Wire System (OMRON Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SD kit) EX130-SSH1</td>
<td>SI unit for Satellite I/O Link System (SHARP Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SF1 kit) EX130-SUW1</td>
<td>SI unit for 16 point Uni-wire System (NKE Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SH kit) EX130-SUH1</td>
<td>SI unit for 16 point Uni-wire H System (NKE Corporation)</td>
</tr>
<tr>
<td></td>
<td>P kit</td>
<td>Flat cable housing assembly</td>
</tr>
<tr>
<td></td>
<td>J kit</td>
<td>D-sub connector housing assembly</td>
</tr>
<tr>
<td></td>
<td>F kit</td>
<td>Flat cable housing assembly</td>
</tr>
</tbody>
</table>

Note 1) S kit is composed of a flat ribbon cable housing assembly (AXT100-1-P20) of 1) SI unit and 2) P kit (20 pins). Place an order for AXT-100-1-PS20 separately.
Note 2) Top/vertical entry connector for FU and PU while side (horizontal) entry connector for FS and PS.
Note 3) The 0's fitting assembly is included.

<D Side End Plate Assembly>
D side end plate assembly no.

Option
Nil: Common exhaust
S: Built-in silencer, direct exhaust

Electrical entry
F: For F kit
P: For P kit
J: For J kit
L: For L kit
S: For S kit

<U Side End Plate Assembly No.>
U side end plate assembly no.

Option
Nil: Common exhaust
S: Built-in silencer, direct exhaust

<Junction Box Assembly>
Junction box assembly no.

Electrical entry
F1: For F kit
P1: For P kit
G, T, S kit for 1 to 12 stations/Double wiring
P2: G, S kit for 13 to 16 stations/Double wiring
P3: G, S kit for 1 to 16 stations/Single wiring
L0: L0 kit (1)
L1: L1 kit (2)
L2: L2 kit (3)

Port size
C3: Applicable tubing ø3.2
C4: Applicable tubing ø4
C6: Applicable tubing ø6 (1)

<Replacement Parts>

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>VVQ1000-80A-3-2</td>
<td>Seal</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>9</td>
<td>VVQ1000-80A-4</td>
<td>Clip</td>
<td>Stainless steel</td>
<td>12</td>
</tr>
</tbody>
</table>

Note) A set of parts containing 12 pcs. each is enclosed.

<Fittings Assembly>
Fittings assembly part no.

Port size
C3: Applicable tubing ø3.2
C4: Applicable tubing ø4
C6: Applicable tubing ø6 (1)

<Station Increase Parts>
* The station can be increased up to 2 stations.

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VVQ1000-105A-3-2</td>
<td>Tie-rod bolt</td>
<td>Carbon steel</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>VVQ1000-105A-3-2</td>
<td>Junction cover</td>
<td>Stainless steel</td>
<td>1</td>
</tr>
</tbody>
</table>

Note 1) Each number of replacement parts are included in one set.
Note 2) Number of stations (01 to 16)
Note 3) (1) and (2) are in one set.

Note 1) Standard SUP/EXH port is C6.
Note 2) Purchasing order is available in units of 10 pieces.

Note) Lead wire assembly for extensions is attached.

2-4-103
For how to increase the stations, refer to the instruction manual.

<table>
<thead>
<tr>
<th>S kit</th>
<th>U side plate assembly</th>
<th>Valve</th>
<th>D side plate assembly</th>
<th>Station increase parts</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Housing assembly and SI unit (2)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note 1) S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PU20) of ① SI unit and ② P kit (20 pins).
Note 2) Since no connector assembly is included, order it separately. (Refer to page 2-4-69.)
Note 3) A housing assembly is not used for a C kit.
Note 4) A DIN rail clamping bracket is attached to each.
<Housing Assembly and SI Unit>

Housing assembly and SI unit no.

<table>
<thead>
<tr>
<th>No.</th>
<th>Manifold</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(SA kit)</td>
<td>EX330-S001</td>
<td>General type SI unit (Series EX300)</td>
</tr>
<tr>
<td>1</td>
<td>(SB kit)</td>
<td>EX130-SMB1</td>
<td>SI unit for MELSECNET/mini-S3 Data Link System (Mitsubishi Electric Corporation)</td>
</tr>
<tr>
<td>1</td>
<td>(SC kit)</td>
<td>EX130-STA1</td>
<td>SI unit for SYSBUS Wire System (OMRON Corporation)</td>
</tr>
<tr>
<td>1</td>
<td>(SD kit)</td>
<td>EX130-SSH1</td>
<td>SI unit for Satellite I/O Link System (SHARP Corporation)</td>
</tr>
<tr>
<td>1</td>
<td>SF1 kit</td>
<td>EX130-SUW1</td>
<td>SI unit for 16 point Uni-wire System (NKE Corporation)</td>
</tr>
<tr>
<td>1</td>
<td>SH kit</td>
<td>EX130-SUH1</td>
<td>SI unit for 16 point Uni-wire H System (NKE Corporation)</td>
</tr>
<tr>
<td>2</td>
<td>P kit</td>
<td>AXT100-2-P/□ (2)</td>
<td>Flat ribbon cable housing assembly □ = Number of pins: 26, 20, 16, 10</td>
</tr>
<tr>
<td>3</td>
<td>F kit</td>
<td>AXT100-2-F/□ (2)</td>
<td>D-sub connector housing assembly □ = Number of pins: 25, 15</td>
</tr>
<tr>
<td>4</td>
<td>T kit</td>
<td>AXT100-2-TB1</td>
<td>Terminal block assembly (8 terminals)</td>
</tr>
<tr>
<td>5</td>
<td>T kit</td>
<td>AXT100-2-TB2</td>
<td>Terminal block assembly (8 terminals)</td>
</tr>
</tbody>
</table>

Note 1) S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PS20) of SI unit and P kit (20 pins). Place an order for AXT100-2-PS20 separately.

Note 2) Top/vertical entry connector for FU and PU while side (horizontal) entry connector for FS and PS.

Note 3) In the case of standard specifications and double wiring, is for 1 to 4 stations and is for 5 to 8 stations.

<Station Increase Parts>

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>VVQ0000-105A-4-□ (3)</td>
<td>Tie-rod bolt</td>
<td>Carbon steel</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>VVQ0000-80A-4-2</td>
<td>Guide rod</td>
<td>Stainless steel</td>
<td>1</td>
</tr>
</tbody>
</table>

Note 1) Each number of replacement parts are included in one set.

Note 2) □ Number of stations (01 to 16)

Note 3) and are in one set.
**Series VQ**

**VQ1000 (VV5Q14)/Plug Lead Unit, Flip Type**

**(F, P, T, S kit)**

<table>
<thead>
<tr>
<th>Housing assembly and SI unit (^{(2)})</th>
<th>U side end plate assembly</th>
<th>Valve</th>
<th>D side end plate assembly</th>
<th>Station increase parts</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="S kit diagram" /></td>
<td><img src="image" alt="P kit diagram" /></td>
<td><img src="image" alt="F kit diagram" /></td>
<td><img src="image" alt="T kit diagram" /></td>
<td><em>For how to increase the stations, refer to the instruction manual.</em></td>
</tr>
</tbody>
</table>

**Note 1)** S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PU20) of SI unit and P kit (20 pins).

**Note 2)** Since no connector assembly is included, order it separately. (Refer to page 2-4-69.)

**Note 3)** A housing assembly is not used for a C kit.

**Note 4)** A DIN rail clamping bracket is attached to each.
### Housing Assembly and SI Unit

<table>
<thead>
<tr>
<th>No.</th>
<th>Manifold</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>SA kit</td>
<td>EX330-S001</td>
<td>General type SI unit (Series EX300)</td>
</tr>
<tr>
<td>(2)</td>
<td>P kit</td>
<td>AXT100-2-P</td>
<td>Flat ribbon cable housing assembly</td>
</tr>
<tr>
<td>(3)</td>
<td>T kit</td>
<td>AXT100-2-TB1</td>
<td>Terminal block assembly (8 terminals)</td>
</tr>
<tr>
<td>(4)</td>
<td>FS kit</td>
<td>AXT100-2-TB2</td>
<td>Terminal block assembly (8 terminals)</td>
</tr>
</tbody>
</table>

#### Note 1)
The S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PS20) of 1 SI unit and 2 P kit (20 pins). Place an order for AXT100-2-PS20 separately.

#### Note 2)
Top/vertical entry connector for FU and PU while side (horizontal) entry connector for FS and PS.

#### Note 3)
Since no connector assembly is included, order it separately. (Refer to page 2-4-69.)

#### Note 4)
In the case of standard specifications and double wiring, 1 is for 1 to 4 stations and 2 is for 5 to 8 stations.

### D Side End Plate Assembly

**Option**

- Nil: Common exhaust
- S: Built-in silencer, direct exhaust (Applicable for C kit only)

### U Side End Plate Assembly

#### Option

- Nil: Common exhaust
- S: Built-in silencer, direct exhaust

### Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VVQ1000-80A-3-2</td>
<td>Seal</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>2</td>
<td>VVQ1000-80A-4</td>
<td>Clip</td>
<td>Stainless steel</td>
<td>12</td>
</tr>
</tbody>
</table>

#### Note 1)
A set of parts containing 12 pcs. each is enclosed.

### Fittings Assembly

#### Option

- C3: Applicable tubing ø3.2
- C4: Applicable tubing ø4
- C6: Applicable tubing ø6 (1)

#### Note 1)
Standard SUP/EXH port is C6.

#### Note 2)
Purchasing order is available in units of 10 pieces.

### Station Increase Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>VVQ1000-10SA-4-2</td>
<td>Tie-rod bolt</td>
<td>Carbon steel</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>VVQ1000-10SA-5-2</td>
<td>Guide rod</td>
<td>Stainless steel</td>
<td>1</td>
</tr>
</tbody>
</table>

#### Note 1)
Each number of replacement parts are included in one set.

#### Note 2)
Number of stations (01 to 16) 1 and 2 are in one set.
**Series VQ**

**VQ2000 (VV5Q24)/Plug Lead Unit, Flip Type**

*(F, P, T, S kit)*

*For how to increase the stations, refer to the instruction manual.*

<table>
<thead>
<tr>
<th>Housing assembly and SI unit</th>
<th>U side end plate assembly</th>
<th>Valve</th>
<th>D side end plate assembly</th>
<th>Station increase parts</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Diagram" /></td>
<td><img src="image2.png" alt="Diagram" /></td>
<td><img src="image3.png" alt="Diagram" /></td>
<td><img src="image4.png" alt="Diagram" /></td>
<td></td>
</tr>
</tbody>
</table>

**Note 1)** S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PU20) of ① SI unit and ② P kit (20 pins).

**Note 2)** Since no connector assembly is included, order it separately. (Refer to page 2-4-69.)

**Note 3)** A housing assembly is not used for a C kit.

**Note 4)** A DIN rail clamping bracket is attached to each.
<Housing Assembly and SI Unit>

<table>
<thead>
<tr>
<th>No.</th>
<th>Manifold</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)</td>
<td>(SA kit)</td>
<td>EX330-S001</td>
<td>General type SI unit (Series EX300)</td>
</tr>
<tr>
<td></td>
<td>(SB kit)</td>
<td>EX130-SMB1</td>
<td>SI unit for MELSECNET/Mini-S3 Data Link System (Mitsubishi Electric Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SC kit)</td>
<td>EX130-STA1</td>
<td>SI unit for SYSBUS Wire System (OMRON Corporation)</td>
</tr>
<tr>
<td></td>
<td>(SD kit)</td>
<td>EX130-SSH1</td>
<td>SI unit for Satellite I/O Link System (SHARP Corporation)</td>
</tr>
<tr>
<td></td>
<td>SF1 kit</td>
<td>EX130-SUW1</td>
<td>SI unit for 16 point Uni-wire System (NKE Corporation)</td>
</tr>
<tr>
<td></td>
<td>SH kit</td>
<td>EX130-SUH1</td>
<td>SI unit for 16 point Uni-wire H System (NKE Corporation)</td>
</tr>
</tbody>
</table>

Note 1) S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PS20) of 1 SI unit and 2 P kit (20 pins). Place an order for AXT100-2-PS20 separately.

Note 2) Top/vertical entry connector for FU and PU while side (horizontal) entry connector for FS and PS.

Note 3) Since no connector assembly is included, order it separately. (Refer to page 2-4-93.)

Note 4) In the case of standard specifications and double wiring, 4 is for 1 to 4 stations and 5 is for 5 to 8 stations.

---

<D Side End Plate Assembly>

<table>
<thead>
<tr>
<th></th>
<th>D side end plate assembly no.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VVQ2000-3A-4-</td>
</tr>
</tbody>
</table>

Option

Nill: Common exhaust
S: Built-in silencer, direct exhaust
(Applicable for C kit only)

<U Side End Plate Assembly No.>

<table>
<thead>
<tr>
<th></th>
<th>U side end plate assembly no.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VVQ2000-2A-4-</td>
</tr>
</tbody>
</table>

Option

Nill: Common exhaust
S: Built-in silencer, direct exhaust

Note) The φ's fitting assembly is included.

<Replacement Parts>

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>VVQ2000-80A-3-2</td>
<td>Seal</td>
<td>HNBR</td>
<td>12</td>
</tr>
<tr>
<td>9</td>
<td>VVQ2000-80A-3-4</td>
<td>Clip</td>
<td>Stainless steel</td>
<td>12</td>
</tr>
</tbody>
</table>

Note) A set of parts containing 12 pcs. each is enclosed.

<Fittings Assembly>

<table>
<thead>
<tr>
<th></th>
<th>Fittings assembly part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VVQ1000-51A-</td>
</tr>
</tbody>
</table>

Port size

C4: Applicable tubing ø4
C6: Applicable tubing ø6
C8: Applicable tubing ø8 (1)

Note 1) Standard SUP/EXH port is C8.
Note 2) Purchasing order is available in units of 10 pieces.

<Station Increase Parts>

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number (1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>VVQ2000-105A-4-</td>
<td>Tie-rod bolt</td>
<td>Carbon steel</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>VVQ2000-105A-4-</td>
<td>Guide rod</td>
<td>Stainless steel</td>
<td>1</td>
</tr>
</tbody>
</table>

Note 1) Each number of replacement parts are included in one set.
Note 2) φ: Number of stations (01 to 16)
Note 3) 1 and 3 are in one set.
Series VQ

VQ1000 (VV5Q17)/Plug Lead Unit, Cassette Type
(F, P, T, S kit)

For how to increase the stations, refer to the instruction manual.

<table>
<thead>
<tr>
<th>Housing assembly and SI unit</th>
<th>U side end plate assembly</th>
<th>Valve</th>
<th>D side end plate assembly</th>
</tr>
</thead>
</table>

Note 1) S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PU20) of ① SI unit and ② P kit (20 pins).
Note 2) Since no connector assembly is included, order it separately. (Refer to page 2-4-93.)
Note 3) A housing assembly is not used for a C kit.
Note 4) A DIN rail clamping bracket is attached to each.
<Housing Assembly and SI Unit>

Housing assembly and SI unit no.

<table>
<thead>
<tr>
<th>No.</th>
<th>Manifold</th>
<th>Part no.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(SA kit)</td>
<td>EX321-S001(-XP)</td>
<td>General type SI unit (Series EX300)</td>
<td></td>
</tr>
<tr>
<td>(SB kit)</td>
<td>EX121-SMB1(-XP)</td>
<td>SI unit for MELSENET/MINI-S3 Data Link System (Mitsubishi Electric Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SC kit)</td>
<td>EX121-STA1(-XP)</td>
<td>SI unit for SYSBUS Wire System (OMRON Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SD kit)</td>
<td>EX121-SSH1(-XP)</td>
<td>SI unit for Satellite I/O Link System (SHARP Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SE kit)</td>
<td>EX121-SPA1</td>
<td>SI unit for MEWNET-F System (Matsushita Electric Works Ltd.)</td>
<td></td>
</tr>
<tr>
<td>(SF1kit)</td>
<td>EX121-SUW1(-XP)</td>
<td>SI unit for 16 point Uni-wire System (NKE Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SG kit)</td>
<td>EX121-SAB1(-XP)</td>
<td>SI unit for Allen Bradley Remote I/O (RIO) System (Rockwell Automation, Inc.)</td>
<td></td>
</tr>
<tr>
<td>(SH kit)</td>
<td>EX121-SUH1(-XP)</td>
<td>SI unit for 16 point Uni-wire H System (NKE Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SJ1 kit)</td>
<td>EX121-SSL1(-XP)</td>
<td>SI unit for 16 point S-LINK System (SUNX Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SJ2 kit)</td>
<td>EX121-SSL2(-XP)</td>
<td>SI unit for 8 point S-LINK System (SUNX Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SK kit)</td>
<td>EX121-SFU1(-XP)</td>
<td>SI unit for T-LINK Mini System (Fuji Electric Co., Ltd.)</td>
<td></td>
</tr>
<tr>
<td>(SQ kit)</td>
<td>EX121-SDN1</td>
<td>SI unit for DeviceNet, CompoBus/D (OMRON Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SR1 kit)</td>
<td>EX121-SCS1(-XP)</td>
<td>SI unit for 16 point CompoBus/S System (OMRON Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SR2 kit)</td>
<td>EX121-SCS2(-XP)</td>
<td>SI unit for 8 point CompoBus/S System (OMRON Corporation)</td>
<td></td>
</tr>
<tr>
<td>(SV kit)</td>
<td>EX121-SMJ1(-XP)</td>
<td>Mitsubishi Electric Corporation: CC-LINK System</td>
<td></td>
</tr>
</tbody>
</table>

Note 1) A S kit is composed of a flat ribbon cable housing assembly (AXT100-2-PS20) of SI unit and P kit (20 pins). Place an order for AXT100-2-PS20 separately. Suffix -XP for dustproof type SI unit.

Note 2) Top/vertical entry connector for FU and PU while side (horizontal) entry connector for FS and PS.

Note 3) Since no connector assembly is included, order it separately. (Refer to page 2-4-93.)

Note 4) In the case of standard specifications and double wiring, ④ is for 1 to 4 stations and ⑤ is for 5 to 8 stations.

<Replacement Parts>

<table>
<thead>
<tr>
<th>No.</th>
<th>Part no.</th>
<th>Description</th>
<th>Material</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>⑧</td>
<td>VVQ1000-80A-7-2</td>
<td>Bushing assembly</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>⑨</td>
<td>VVQ1000-80A-7-4</td>
<td>Clip</td>
<td>Stainless steel</td>
<td>12</td>
</tr>
</tbody>
</table>

<Fittings Assembly>

Fittings assembly part no.

VVQ1000-50A-□

Port size

C3: Applicable tubing ø3.2
C4: Applicable tubing ø4
C6: Applicable tubing ø6

Note 1) Standard SUP/EXH port is C6.
Note 2) Purchasing order is available in units of 10 pieces.