5 Port Solenoid Valve
Series VQZ1000/2000/3000

Power consumption: 0.35 w / 0.9 w
(Standard)

Compact, High Flow

<table>
<thead>
<tr>
<th>Series</th>
<th>Valve width (mm)</th>
<th>Flow characteristics</th>
<th>Cylinder size</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ11</td>
<td>10</td>
<td>0.54</td>
<td>to ø63</td>
</tr>
<tr>
<td>VQZ21</td>
<td>15</td>
<td>1.4</td>
<td>to ø80</td>
</tr>
<tr>
<td>VQZ31</td>
<td>18</td>
<td>2.4</td>
<td>to ø100</td>
</tr>
<tr>
<td>VQZ12</td>
<td>10</td>
<td>0.70</td>
<td>to ø63</td>
</tr>
<tr>
<td>VQZ22</td>
<td>15</td>
<td>1.9</td>
<td>to ø80</td>
</tr>
<tr>
<td>VQZ32</td>
<td>18</td>
<td>3.0</td>
<td>to ø100</td>
</tr>
</tbody>
</table>

* Flow characteristics: 4/2→5/3 (A/B→R1/R2)
Metal Seal / Rubber Seal

5 Port Solenoid Valve
Series VQZ1000/2000/3000

High Speed Response and Long Service Life

<table>
<thead>
<tr>
<th>Series</th>
<th>Response speed</th>
<th>Service life</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000</td>
<td>17 ms</td>
<td>200 million cycles</td>
<td>±2 ms</td>
</tr>
<tr>
<td>VQZ2000</td>
<td>18 ms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ3000</td>
<td>21 ms</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- Metal seal, single solenoid with light/surge voltage suppressor, according to SMC life test conditions.

- Both 3 and 5 port valves can be mounted on the same manifold.

- DIN rail mounting is available.

- Built-in one-touch fittings for easier piping
  Easy replacement of clip type one-touch fitting.

- Enclosure IP65 compliant (DIN terminal, Common exhaust)
- Choice of metal or rubber seal for main valve construction
## Cylinder Speed Chart

### Body Ported

<table>
<thead>
<tr>
<th>Series</th>
<th>Average speed (mm/s)</th>
<th>Bore size</th>
<th>Pressure 0.5 MPa</th>
<th>Load factor 50%</th>
<th>Stroke 60 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1121-C6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ2121-C6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ3121-C6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Base Mounted

<table>
<thead>
<tr>
<th>Series</th>
<th>Average speed (mm/s)</th>
<th>Bore size</th>
<th>Pressure 0.5 MPa</th>
<th>Load factor 50%</th>
<th>Stroke 60 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1151-01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ2151-02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ3151-03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Conditions

- It is when the cylinder is extending that 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 output x 100%

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

## Model Selection

<table>
<thead>
<tr>
<th>Series VQZ Model Selection</th>
<th>Sonic conductance</th>
<th>Type of actuation</th>
<th>Voltage</th>
<th>Electrical entry</th>
<th>Light/surge voltage suppressor</th>
<th>Manual override</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5 port</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ1000</td>
<td>0.54 0.71</td>
<td>2 position single</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ2000</td>
<td>1.4 1.6</td>
<td>2 position double</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ3000</td>
<td>2.4 3.2</td>
<td>3 position closed center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3 port for mixture mounting</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ1000</td>
<td>0.54 0.71</td>
<td>3 position exhaust center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ2000</td>
<td>1.4 1.6</td>
<td>3 position pressure center</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ3000</td>
<td>2.4 3.2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **5 port**                |                   |                   |         |                  |                               |               |
| VQZ1000                   | Metal Rubber      | 2 position single |         |                  |                               |               |
| VQZ2000                   | 0.70 1.3          | 2 position double |         |                  |                               |               |
| VQZ3000                   | 3.0 4.6           | 3 position closed center |         |                  |                               |               |
| **3 port for mixture mounting** |                   |                   |         |                  |                               |               |
| VQZ1000                   | Metal Rubber      | 3 position exhaust center |         |                  |                               |               |
| VQZ2000                   | 0.90 1.3          | 3 position pressure center |         |                  |                               |               |
| VQZ3000                   | 3.0 4.6           |                   |         |                  |                               |               |

- Flow characteristics: 4/2 → S/3 (A/B → R1/R2)

- Grommet (G)
- L-type plug connector (L)
- M-type plug connector (M)
- DIN terminal (YZ)

*Non-locking push type (Tool required)*

*With light/surge voltage suppressor*

*Locking type (Tool required)*

*(Standard) 12 VDC 24 VDC*

*(Option) 100 VAC 200 VAC 110 VAC 220 VAC*
### Series VQZ Manifold

#### Body Ported

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Piping specifications</th>
<th>Applicable solenoid valve</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000</td>
<td>VV5QZ12-□□□</td>
<td>Top Rc 1/8 C (for ø3.2) C (for ø4) C (for ø6) M5 (M5 thread)</td>
<td>VQZ1□□20 VQZ1□□21</td>
<td>2 to 20 stations</td>
</tr>
<tr>
<td>VQZ2000</td>
<td>VV5QZ22-□□□</td>
<td>Top Rc 1/8 C (for ø4) C (for ø6) M5 (M5 thread)</td>
<td>VQZ2□□20 VQZ2□□21</td>
<td>2 to 20 stations</td>
</tr>
<tr>
<td>VQZ3000</td>
<td>VV5QZ32-□□□</td>
<td>Top Rc 1/4 C (for ø6) C (for ø8) C (for ø10) Rc 1/4</td>
<td>VQZ3□□20 VQZ3□□21</td>
<td>2 to 20 stations</td>
</tr>
</tbody>
</table>

#### Serial Transmission System

#### Base Mounted

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Piping specifications</th>
<th>Applicable solenoid valve</th>
<th>Applicable stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000</td>
<td>VV5QZ15-□□□</td>
<td>Side Rc 1/8 C (for ø3.2) C (for ø4) C (for ø6) M5 (M5 thread)</td>
<td>VQZ1□□50 VQZ1□□51</td>
<td>2 to 20 stations</td>
</tr>
<tr>
<td>VQZ2000</td>
<td>VV5QZ25-□□□</td>
<td>Side Rc 1/4 C (for ø4) C (for ø6) C (for ø8) Rc 1/8</td>
<td>VQZ2□□50 VQZ2□□51</td>
<td>2 to 20 stations</td>
</tr>
<tr>
<td>VQZ3000</td>
<td>VV5QZ35-□□□</td>
<td>Side 1(P) port Rc 3/8 3-5(R) port Rc 1/4 C (for ø6) C (for ø8) C (for ø10) Rc 1/4</td>
<td>VQZ3□□50 VQZ3□□51</td>
<td>2 to 20 stations</td>
</tr>
</tbody>
</table>

---

**Body Ported** P.925

**Base Mounted** P.954

**Serial Transmission System** P.936

**Serial Transmission System** P.969

---

**Base model**

**Applicable stations**

**Solenoid valve**

**Port size**

**Piping specifications**

**Piping direction**

**Series**

**VQZ**
### Series VQZ

**Manifold Options**

#### Body Ported

<table>
<thead>
<tr>
<th>Description</th>
<th>Model Numbers</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blanking plate assembly</td>
<td>VVQZ1000-10A-2 (for VQZ1000)</td>
<td>P.930</td>
</tr>
<tr>
<td></td>
<td>VVQZ2000-10A-2 (for VQZ2000)</td>
<td>P.930</td>
</tr>
<tr>
<td></td>
<td>VVQZ3000-10A-2 (for VQZ3000)</td>
<td>P.930</td>
</tr>
<tr>
<td>DIN rail</td>
<td>AXT100-DR</td>
<td>P.930</td>
</tr>
<tr>
<td>Blankling plug</td>
<td>KQ2P-23</td>
<td>P.930</td>
</tr>
<tr>
<td></td>
<td>KQ2P-04</td>
<td>P.930</td>
</tr>
<tr>
<td></td>
<td>KQ2P-06</td>
<td>P.930</td>
</tr>
<tr>
<td></td>
<td>KQ2P-10</td>
<td>P.930</td>
</tr>
<tr>
<td>Silencer (for EXH port)</td>
<td></td>
<td>P.930</td>
</tr>
</tbody>
</table>

| Port plug                             | VVQZ1000-CP (for VQZ1000/2000) | P.930 |
|                                       | VVQZ2000-CP (for VQZ3000)     | P.930 |
| Perfect block (Separated)             | VQ1000-FPG             | P.931 |
|                                       | VQ2000-FPG             | P.932 |

| Connector assembly                    | SY3000-37-80A-□        | P.941 |
| Hosing (1 set: 8 pcs.)                | SY3000-44-3A           | P.941 |

#### Base Mounted

<table>
<thead>
<tr>
<th>Description</th>
<th>Model Numbers</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blanking plate assembly</td>
<td>VVQZ1000-10A-5 (for VQZ1000)</td>
<td>P.959</td>
</tr>
<tr>
<td></td>
<td>VVQZ2000-10A-5 (for VQZ2000)</td>
<td>P.959</td>
</tr>
<tr>
<td></td>
<td>VVQZ3000-10A-5 (for VQZ3000)</td>
<td>P.959</td>
</tr>
<tr>
<td>Restrictor spacer (Applicable to VQZ2000)</td>
<td>VVQZ2000-20A-5</td>
<td>P.959</td>
</tr>
<tr>
<td>Individual SUP spacer</td>
<td>VVQZ1000-P-5-M5 (for VQZ1000)</td>
<td>P.959</td>
</tr>
<tr>
<td></td>
<td>VVQZ2000-5-01 (for VQZ2000)</td>
<td>P.959</td>
</tr>
<tr>
<td></td>
<td>VVQZ3000-5-02 (for VQZ3000)</td>
<td>P.959</td>
</tr>
<tr>
<td>Individual EXH spacer</td>
<td>VVQZ1000-R-5-M5 (for VQZ1000)</td>
<td>P.959</td>
</tr>
<tr>
<td></td>
<td>VVQZ2000-R-5-01 (for VQZ2000)</td>
<td>P.959</td>
</tr>
<tr>
<td></td>
<td>VVQZ3000-R-5-02 (for VQZ3000)</td>
<td>P.959</td>
</tr>
<tr>
<td>Name plate [-N]</td>
<td></td>
<td>P.959</td>
</tr>
<tr>
<td>DIN rail</td>
<td>AXT100-DR</td>
<td>P.960</td>
</tr>
<tr>
<td>Blankling plug</td>
<td>KQ2P-23</td>
<td>P.960</td>
</tr>
<tr>
<td></td>
<td>KQ2P-04</td>
<td>P.960</td>
</tr>
<tr>
<td></td>
<td>KQ2P-06</td>
<td>P.960</td>
</tr>
<tr>
<td></td>
<td>KQ2P-10</td>
<td>P.960</td>
</tr>
</tbody>
</table>

| Silencer (for EXH port)               |                      | P.960 |
| Perfect block (Separated)             | VQ1000-FPG            | P.961 |
|                                       | VQ2000-FPG            | P.962 |

| Connector assembly                    | SY3000-37-80A-□       | P.974 |
| Hosing (1 set: 8 pcs.)                | SY3000-44-3A          | P.974 |
5 Port Solenoid Valve
Series VQZ1000/2000/3000
Single Unit

How to Order Valve

VQZ [ ] [ ] [ ] — [ ] — [ ]
Series

1 VQZ1000 body width 10 mm
2 VQZ2000 body width 15 mm
3 VQZ3000 body width 18 mm

Type of actuation

1 2 position single
2 2 position double
3 3 position closed center
4 3 position exhaust center

Note 1) There is no 3 position pressure center for the metal seal type of the VQZ1000 series.
Note 2) The port plug of the 3 port mixing valve can be replaced with a fitting and the valve used as a 5 port single type valve. (Refer to page 919.)

Body type

0 Metal seal
1 Body ported

Seal type

0 Metal seal
1 Rubber seal

Function

Symbol Specifications DC AC
Nil Standard
B Note 1) High speed response type
K Note 1) High pressure type
R Note 1, 2) External pilot type
BR Note 1, 2) High speed response/External pilot type
KR Note 1, 2) High pressure/External pilot type

Note 1) Option
Note 2) For details on external pilot type, refer to page 933.
Note 3) There is no VQZ1000 setting.

Electrical entry

Symbol Specifications DC AC
Q: Grommet (DC specification)
L: L-type plug connector with lead wire
M: M-type plug connector with lead wire
MO: M-type plug connector without connector
C: With surge voltage suppressor
FS: With surge voltage suppressor
Y: DIN terminal (Option)
Y0: DIN terminal without connector
Y1: DIN terminal (Tool required)
Y2: DIN terminal with light/surge voltage suppressor

Note 1) Applicable to the VQZ2000/3000 DIN terminal rubber seal only (except external pilot type). For details on IP65 enclosure, refer to page 933.

Coil voltage

1 100 VAC [50/60 Hz]
2 200 VAC [50/60 Hz]
3 110 VAC [115 VAC] [50/60 Hz]
4 220 VAC [230 VAC] [50/60 Hz]
5 24 VDC
6 12 VDC

Notes:
- Nil: Non-locking push type (Tool required)
- B: Locking type (Tool required)
- Y: DIN terminal
- Y0: DIN terminal without connector
- Y1: DIN terminal (Tool required)
- Y2: DIN terminal with light/surge voltage suppressor
- MO: M-type plug connector without connector
- C: With surge voltage suppressor
- FS: With surge voltage suppressor

Note 1) Applicable one-touch fitting and silencer models for this valve series, refer to page 978.

Caution
Use standard (DC) specification for continuous duty.
**Series VQZ1000/2000/3000**

### Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air, inert gas</td>
<td>Air, inert gas</td>
</tr>
<tr>
<td>Max. operating pressure (MPa)</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Min. operating pressure (MPa)</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>2 position</td>
<td>Single</td>
<td>Double</td>
</tr>
<tr>
<td>3 position</td>
<td>Single</td>
<td>Double</td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>-10 to 60 (No freezing)</td>
<td>-10 to 60 (No freezing)</td>
</tr>
<tr>
<td>Max. operating frequency (Hz)</td>
<td>20</td>
<td>5</td>
</tr>
<tr>
<td>Manual override</td>
<td>Non-locking push type, Locking type (Tool required)</td>
<td>Non-locking push type, Locking type (Tool required)</td>
</tr>
<tr>
<td>Pilot exhaust method</td>
<td>Individual exhaust</td>
<td>Individual exhaust</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
<td>Not required</td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Single: Free</td>
<td>Double: 3 position: Main valve must be horizontal</td>
</tr>
<tr>
<td>Impact/Vibration resistance (m/s²)</td>
<td>for each condition. (Value in the initial state)</td>
<td>for each condition. (Value in the initial state)</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dustproof (DIN terminal: IP65 Note 2)</td>
<td>Dustproof (DIN terminal: IP65 Note 2)</td>
</tr>
</tbody>
</table>

### Solenoid Specifications

#### Electrical entry

<table>
<thead>
<tr>
<th>Coil rated voltage (V)</th>
<th>DC 50/60 Hz</th>
<th>AC 220V</th>
</tr>
</thead>
<tbody>
<tr>
<td>90 or less</td>
<td>50 or less</td>
<td>50 or less</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power consumption (W)</th>
<th>DC</th>
<th>AC 50/60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>0.35</td>
<td>0.45</td>
</tr>
<tr>
<td>High speed response, high pressure</td>
<td>0.9</td>
<td>0.9</td>
</tr>
</tbody>
</table>

#### Apparent power (VA)²

<table>
<thead>
<tr>
<th>Power consumption (W)</th>
<th>DC</th>
<th>AC 50/60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>0.35</td>
<td>0.45</td>
</tr>
<tr>
<td>High speed response, high pressure</td>
<td>0.9</td>
<td>0.9</td>
</tr>
</tbody>
</table>

#### Surge voltage suppressor

<table>
<thead>
<tr>
<th>Power consumption (W)</th>
<th>DC</th>
<th>AC 50/60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>0.35</td>
<td>0.45</td>
</tr>
<tr>
<td>High speed response, high pressure</td>
<td>0.9</td>
<td>0.9</td>
</tr>
</tbody>
</table>

### Options

- High speed response type
- High pressure type (Metal seal type only)
- External pilot type (Except VQZ1000) *For details on external pilot type, refer to page 933.*

### Made to Order

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>X08</td>
<td>Pilot valve common exhaust</td>
</tr>
<tr>
<td>X90</td>
<td>Main valve fluoro-rubber</td>
</tr>
<tr>
<td>X113</td>
<td>All fluoro-rubber</td>
</tr>
</tbody>
</table>

### Flow Characteristics

<table>
<thead>
<tr>
<th>Series</th>
<th>Configuration</th>
<th>Model</th>
<th>Flow characteristics</th>
<th>Response time (ms) Note 1)</th>
<th>Note 2)</th>
<th>Note 3)</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000</td>
<td>2 position Single</td>
<td>Metal seal VQZ1120</td>
<td>0.54</td>
<td>0.20</td>
<td>0.13</td>
<td>0.54</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Rubber seal VQZ1121</td>
<td>0.90</td>
<td>0.40</td>
<td>0.26</td>
<td>0.71</td>
<td>0.40</td>
</tr>
<tr>
<td>VQZ2000</td>
<td>2 position Single</td>
<td>Metal seal VQZ1220</td>
<td>1.55</td>
<td>0.20</td>
<td>0.13</td>
<td>0.54</td>
<td>0.20</td>
</tr>
<tr>
<td></td>
<td>3 position</td>
<td>Rubber seal VQZ1221</td>
<td>0.90</td>
<td>0.40</td>
<td>0.26</td>
<td>0.71</td>
<td>0.40</td>
</tr>
</tbody>
</table>

*In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC. *For 115 VAC and 230 VAC, the allowable voltage is –15% to +5% of rated voltage.

### Note:

1. Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa, with light/surge voltage suppressor: clean air) Response time values will change depending on pressure and air quality.

2. Weight for threaded connection.
Body Ported Series VQZ1000/2000/3000

Construction: VQZ1000/2000/3000

Metal seal type

<table>
<thead>
<tr>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body</td>
<td>Aluminum die-casted</td>
<td></td>
</tr>
<tr>
<td>Spool, Sleeve</td>
<td>Stainless steel</td>
<td>Metal seal</td>
</tr>
<tr>
<td>Spool valve</td>
<td>Aluminum/HNBR</td>
<td>Rubber seal</td>
</tr>
<tr>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
<tr>
<td>Pilot valve assembly</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>

Component Parts

Note) Except metal seal type of the VQZ1000.
**Series VQZ1000/2000/3000**

**Dimensions: VQZ1000**

2 Position Single/3 Port for Mixture Mounting

Grommet (G): VQZ1½ 2-□G1-C3, C4, C6

---

**L-type plug connector (L): VQZ1½ 2-□L1-C3, C4, C6**

**M-type plug connector (M): VQZ1½ 2-□M1-C3, C4, C6**

---

Note) For bracket assembly part no., refer to page 934.

Unless otherwise indicated, dimensions are the same as Grommet (G).

[@AC](#$AC^1$)
Dimensions: VQZ1000

2 Position Double

Grommet (G): VQZ122 \( \text{[M5 x 0.8]} \) [1(P), 5(R1), 3(R2) port]

Approx. 300
(Lead wire length)

2 x ø2.2
(For manifold mounting)

Manual override

One-touch fitting
4(A), 2(B) port

Applicable tubing O.D.: ø3.2, ø1/8"
ø4, ø5/32"
ø6, ø1/4"

L-type plug connector (L): VQZ122 \( \text{[M5 x 0.8]} \) [1(C), C3, C4, C6]

M-type plug connector (M): VQZ122 \( \text{[M5 x 0.8]} \) [1(C), C3, C4, C6]

Unless otherwise indicated, dimensions are the same as Grommet (G).
Series VQZ1000/2000/3000

Dimensions: VQZ1000

3 Position Closed Center/Exhaust Center/Pressure Center (Except Metal seal type)

Grommet (G): VQZ1 3/8 2 5/32 G - G1-C3, C4, C6

L-type plug connector (L): VQZ1 3/8 2 5/32 L - G1-C3, C4, C6

M-type plug connector (M): VQZ1 3/8 2 5/32 M - G1-C3, C4, C6

Unless otherwise indicated, dimensions are the same as Grommet (G).
Dimensions: VQZ2000

2 Position Single/3 Port for Mixture Mounting

Grommet (G): VQZ2 \frac{1}{2} Z \frac{3}{5} (R) - G - C6

Approx. 300 (Lead wire length)

One-touch fitting
4(A), 2(B) port
Applicable tubing O.D.: \( \phi 4, \phi 5/32", \phi 6, \phi 1/4" \)

Manual override
M3 x 0.5
(External pilot port)
<For external pilot>

2 x \( \phi 2.7 \) (For manifold mounting)

\( \phi 2.8 \) (PE port)

2 x \( \phi 3.2 \) (For mounting)

\( \phi 2.6 \) (Reverse-mounting-prevention hole)
(CE-compliant models only)

2 x \( \phi 2.2 \) die-cast hole
(For manifold gasket positioning)

Approx. 300 (Lead wire length)

One-touch fitting
4(A), 2(B) port
Applicable tubing O.D.: \( \phi 4, \phi 5/32", \phi 6, \phi 1/4" \)

Manual override
M3 x 0.5
(External pilot port)
<For external pilot>

2 x \( \phi 2.7 \) (For manifold mounting)

\( \phi 2.8 \) (PE port)

2 x \( \phi 3.2 \) (For mounting)

\( \phi 2.6 \) (Reverse-mounting-prevention hole)
(CE-compliant models only)

2 x \( \phi 2.2 \) die-cast hole
(For manifold gasket positioning)

Body Ported Series VQZ1000/2000/3000

Note 1) For bracket assembly part no., refer to page 934.
Note 2) For one-touch fittings for P/R port and silencer part no., refer to page 978.
Series VQZ1000/2000/3000

Dimensions: VQZ2000

2 Position Double

Grommet (G): VQZ222 (R)-□G□1-C4, C6

Note) For one-touch fittings for P/R port and silencer part no., refer to page 978.

VQZ222 (R)-□G□1-M5

M-type plug connector (M): VQZ222 (R)-□M□1-C4, C6

L-type plug connector (L): VQZ222 (R)-□L□1-C4, C6

DIN terminal (Y): VQZ222 (R)-□Y□1-C4, C6

Unless otherwise indicated, dimensions are the same as Grommet (G).
Body Ported Series VQZ1000/2000/3000

Dimensions: VQZ2000

3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G): VQZ2 7/8 2 9/16 (R)-□G□1-C4, C6

Approx. 300 (Lead wire length)

G1/16 [5(R1), 3(R2) port]

VQZ2 7/8 2 9/16 (R)-□G□1-M5

M5 x 0.8 (N(A); 2[I] port)

L-type plug connector (L): VQZ2 7/8 2 9/16 (R)-□L□1-C4, C6

Approx. 300 (Lead wire length)

DIN terminal (Y): VQZ2 7/8 2 9/16 (R)-□Y□1-C4, C6

Max. 10

Applicable cable O.D.: ø3.5 to ø7

Note) For one-touch fittings for P/R port and silencer part no., refer to page 978.

Unless otherwise indicated, dimensions are the same as Grommet (G).
Series VQZ1000/2000/3000

Dimensions: VQZ3000

2 Position Single/3 Port for Mixture Mounting

Grommet (G): VQZ3 2 7/8 (R) □ G □ 1-C6, C8, C10

Note) For bracket assembly part no., refer to page 934.

Grommet (G): VQZ3 2 7/8 (R) □ G □ 1-C6, C8, C10

Note) For bracket assembly part no., refer to page 934.
**Body Ported Series VQZ1000/2000/3000**

**Dimensions: VQZ3000**

2 Position Double

Grommet (G): VQZ322 (R)-□G-□1-C6, C8, C10

Approx. 300 (Lead wire length)

Manual override

M5 x 0.8 (External pilot port) <For external pilot>

2 x ø3.4 (For manifold mounting)

One-touch fitting

[4(A), 2(B) port]

Applicable tubing O.D.: ø6, ø1/4", ø6, ø5/16", ø10, ø3/8"

L-type plug connector (L): VQZ322 (R)-□□1-C6, C8, C10

Approx. 300 (Lead wire length)

M-type plug connector (M): VQZ322 (R)-□□1-C6, C8, C10

Unless otherwise indicated, dimensions are the same as Grommet (G).

Unless otherwise indicated, dimensions are the same as Grommet (G).
Series VQZ1000/2000/3000

Dimensions: VQZ3000

3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G): VQZ3 3/4 (R)-□G□1-C6, C8, C10

Approx. 300 (Lead wire length)

Manual override

M5 x 0.8 (External pilot port) <For external pilot>

2 x ø3.4 (For manifold mounting)

One-touch fitting

[4(A), 2(B) port] Applicable tubing O.D.: ø6, ø1/4" ø8, ø5/16" ø10, ø3/8"

DIN terminal (Y): VQZ3 3/4 (R)-□Y□1-C6, C8, C10

Max. 10

Applicable cable O.D.: ø3.5 to ø7

Unless otherwise indicated, dimensions are the same as Grommet (G).

L-type plug connector (L): VQZ3 3/4 (R)-□L□1-C6, C8, C10

Approx. 300 (Lead wire length)

M-type plug connector (M): VQZ3 3/4 (R)-□M□1-C6, C8, C10

Unless otherwise indicated, dimensions are the same as Grommet (G).
5 Port Solenoid Valve
Series VQZ1000/2000/3000

Manifold Connector Kit

How to Order Manifold

How to Order Valve

**Symbol Port size [4(A), 2(B) port]**

- **Symbol**: Port size
  - **VOZ1000**: VOZ1000 VOZ2000 VOZ3000
  - **C3**: a 3.2 one-touch fitting
  - **C4**: a 4 one-touch fitting
  - **C6**: a 6 one-touch fitting
  - **C8**: a 8 one-touch fitting
  - **C10**: a 10 one-touch fitting
  - **M5**: M5 thread
  - **02**: Rc 1/4

**W-Compliant**

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

**Manual override**

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

**Function**

- **Nil**: Standard
- **B**: High speed response type
- **K**: High pressure type (Metal seal type only)
- **R**: External pilot type
- **BR**: High speed response/External pilot type
- **KR**: High pressure/External pilot type (Metal seal type only)

**Symbol Specifications**

- **DC**: (0.35 W)
- **AC**: (0.9 W)

**Electrical entry**

- **Symbol**: Electrical entry
  - **G**: Grommet (DC specification)
  - **L**: L-type plug connector with lead wire
  - **LO**: L-type plug connector without connector
  - **M**: M-type plug connector with lead wire
  - **MO**: M-type plug connector without connector
  - **Y**: DIN terminal
  - **YO**: DIN terminal without connector
  - **YZ**: DIN terminal without connector (DC specification)
  - **YS**: DIN terminal without connector (DC specification)
  - **YS**: DIN terminal without connector (DC specification)

**Note**: For inch size one-touch fittings and optional thread type, refer to page 933.

**Coil voltage**

- **1**: 100 VAC (50/60 Hz)
- **2**: 200 VAC (50/60 Hz)
- **3**: 110 VAC (115 VAC) (50/60 Hz)
- **4**: 220 VAC (230 VAC) (50/60 Hz)
- **5**: 24 VDC
- **6**: 12 VDC

**Note**: For AC specification power consumption, refer to page 914.

**Caution**

- Use standard (DC) specification for continuous duty.

For details on external pilot type, refer to page 933.

Note 1) Applicable to the VQZ2000/3000 for DIN terminal type. For AC voltage valves there is no “S” option. It is already built-in to the rectifier circuit.

Note 2) Standard lead wire length: 300 mm

Note 1) Option
Note 2) For details on external pilot type, refer to page 933.
Note 3) There is no VQZ1000 setting.
Note 4) For AC specification power consumption, refer to page 914.

**Option**

- **D**: DIN rail mounting (With standard DIN rail length)
- **D0**: DIN rail mounting (Without DIN rail)

**Kit type**

- **Nil**: Connector
- **Q**: CE marked

**Body type**

- **2**: Body ported

**Option**

- **D**: DIN rail mounting (With standard DIN rail length)
- **D0**: DIN rail mounting (Without DIN rail)

**Note)** Order DIN rail separately.

For DIN rail part no., refer to page 930.

**Seal type**

- **0**: Metal seal
- **1**: Rubber seal
## Series VQZ1000/2000/3000

### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Piping specifications</th>
<th>Applicable solenoid valve</th>
<th>Applicable stations</th>
<th>Piping direction</th>
<th>Applicable mass (g)</th>
<th>Manifold base mass (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000</td>
<td>VV5QZ12-05C</td>
<td>Top</td>
<td>Rc 1/8</td>
<td>C4 (for ø4)</td>
<td>VQZ1110</td>
<td>2 to 20 stations</td>
<td>2 stations: 64</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>C6 (for ø6)</td>
<td>VQZ1211</td>
<td>Addition per station: 16</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M5 (M5 thread)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ2000</td>
<td>VV5QZ22-05C</td>
<td>Top</td>
<td>Rc 1/8</td>
<td>C6 (for ø6)</td>
<td>VQZ2110</td>
<td>2 to 20 stations</td>
<td>2 stations: 86</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M5 (M5 thread)</td>
<td>VQZ2211</td>
<td>Addition per station: 26</td>
<td></td>
</tr>
<tr>
<td>VQZ3000</td>
<td>VV5QZ32-05C</td>
<td>Top</td>
<td>Rc 1/4</td>
<td>C8 (for ø8)</td>
<td>VQZ3110</td>
<td>2 to 20 stations</td>
<td>2 stations: 181</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>C10 (for ø10)</td>
<td>VQZ3211</td>
<td>Addition per station: 53</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rc 1/4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### How to Order Manifold Assembly (Example)

**Example**

![Diagram](image)

- VV5QZ22-05C: 1 set (C kit 5-station manifold base part no.)
- VVQZ2000-10A-2: 1 set (Blanking plate assembly part no.)
- VQZ2120-5M1-C6: 1 set (Single type part no.)
- VQZ2220-5M1-C6: 2 sets (Double type part no.)
- VQZ3220-5M1-C6: 1 set (3 position type part no.)

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

Enter in order starting from the first station on the D side.

Add the valve and option part number under the manifold base part number. When entry of part numbers becomes complicated, indicate by the manifold specification sheet.

*Add the valve and option part number under the manifold base part number.*
Body Ported Series VQZ1000/2000/3000

Dimensions: VQZ1000

VV5QZ12-[Stations] C

Grommet (G)

One-touch fitting
[4(A), 2(B) port]
Applicable tubing D.O.: ø3.2, ø1/8" ø4, ø5/32" ø6, ø1/4"

M5 x 0.8
[4(A), 2(B) port]

(DIN rail)

4 x ø4.5
(For mounting)

(DIN rail clamp thread)

(Rail mounting hole pitch: 12.5)

Approx. 300
(Lead wire length)

Formula: L5 = 10.5n + 9.5   L3 = 10.5n + 17.5   n: Stations (Max. 20 stations)

Dimensions

<table>
<thead>
<tr>
<th></th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>73</td>
<td>85.5</td>
<td>98</td>
<td>110.5</td>
<td>110.5</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
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</tr>
<tr>
<td>L2</td>
<td>62.5</td>
<td>75</td>
<td>87.5</td>
<td>100</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>250</td>
<td>250</td>
</tr>
<tr>
<td>L3</td>
<td>38.5</td>
<td>49</td>
<td>59.5</td>
<td>70</td>
<td>80.5</td>
<td>91</td>
<td>101.5</td>
<td>112</td>
<td>122.5</td>
<td>133</td>
<td>143.5</td>
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<td>164.5</td>
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<td>185.5</td>
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<td>206.5</td>
<td>217</td>
<td>227.5</td>
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<tr>
<td>L4</td>
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<td>18.5</td>
<td>19.5</td>
<td>20.5</td>
<td>15</td>
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<td>19</td>
<td>20</td>
<td>21</td>
<td>16.5</td>
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<tr>
<td>L5</td>
<td>30.5</td>
<td>41</td>
<td>51.5</td>
<td>62</td>
<td>72.5</td>
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<td>167</td>
<td>177.5</td>
<td>188.5</td>
<td>198.5</td>
<td>209</td>
<td>219.5</td>
</tr>
</tbody>
</table>

Manual override

[4(A), 2(B) port]

Approx. 300
(Lead wire length)

L-type plug connector (L)

M-type plug connector (M)

The dashed lines indicate the DIN rail mounting [-D].

Unless otherwise indicated, dimensions are the same as Grommet (G).
Series VQZ1000/2000/3000

Dimensions: VQZ2000

VV5QZ22-[Stations]C

Grommet (G)

- Manual override
- (Rail mounting hole pitch: 12.5)

One-touch fitting

4 x ø4.5

(For mounting)

M3 x 0.5

(External pilot port)

Approach 300

(Approx. lead wire length)

L3 L5 L4 L2 L1

45.5

(For M5)

8.5

1/8 [1(P), 5(R1), 3(R2) port]

13

8.5

PE port

1/8

[1(P), 5(R1), 3(R2) port]

C6: 52.2

N7: 56

L-type plug connector (L)

M-type plug connector (M)

DIN terminal (Y)

Max. 10

Pg

Applicable cable O.D.

ø3.5 to ø7

The dashed lines indicate the DIN rail mounting [-D].

Unless otherwise indicated, dimensions are the same as Grommet (G).

[    ]: AC

Dimensions

<table>
<thead>
<tr>
<th>n (Stations)</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<tr>
<td>L1</td>
<td>85.5</td>
<td>98</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>173</td>
<td>185.5</td>
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<td>260.5</td>
<td>285.5</td>
<td>298</td>
<td>310.5</td>
<td>323</td>
<td>348</td>
<td>360.5</td>
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<tr>
<td>L2</td>
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<td>112.5</td>
<td>125</td>
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<td>162.5</td>
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<td>266</td>
<td>282</td>
<td>298</td>
<td>314</td>
<td>330</td>
</tr>
</tbody>
</table>

Formulas:

- L5 = 16n + 10
- L3 = 16n + 20
- n: Stations (Max. 20 stations)

The dashed lines indicate the DIN rail mounting [-D].

Unless otherwise indicated, dimensions are the same as Grommet (G).

[    ]: AC
Dimensions: VQZ3000

L-type plug connector (L)

DIN terminal (Y)

M-type plug connector (M)

The dashed lines indicate the DIN rail mounting [-D].
Unless otherwise indicated, dimensions are the same as Grommet (G).

Dimensions

| n  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| L1 | 98 | 110.5 | 135.5 | 148 | 173 | 198 | 210.5 | 235.5 | 248 | 273 | 285.5 | 310.5 | 323 | 348 | 360.5 | 385.5 | 398 | 423 | 435.5 |
| L2 | 87.5 | 100 | 125 | 137.5 | 162.5 | 187.5 | 200 | 225 | 237.5 | 262.5 | 275 | 300 | 312.5 | 337.5 | 350 | 375 | 387.5 | 412.5 | 425 |
| L3 | 61 | 80 | 99 | 118 | 137 | 156 | 175 | 194 | 213 | 232 | 251 | 270 | 289 | 308 | 327 | 346 | 365 | 384 | 403 |
| L4 | 18.5 | 15.5 | 18.5 | 15 | 18 | 21 | 18 | 21 | 17.5 | 20.5 | 17.5 | 20.5 | 17 | 20 | 17 | 20 | 16.5 | 19.5 | 16.5 |
| L5 | 49 | 68 | 87 | 106 | 125 | 144 | 163 | 182 | 201 | 220 | 239 | 258 | 277 | 296 | 315 | 334 | 353 | 372 | 391 |

Formula: L1 = 19n + 11   L2 = 19n + 23   n: Stations (Max. 20 stations)

Manual override

One-touch fitting

Applicable tubing O.D.: ø3.5 to ø7

Applicable cable O.D.: ø0.8 to ø3.5

The dashed lines indicate the DIN rail mounting [-D].

Unless otherwise indicated, dimensions are the same as Grommet (G).

Body Ported Series VQZ1000/2000/3000

Approx. 300 (Lead wire length)
Series VQZ1000/2000/3000

Manifold Options

Blanking plate assembly
VVQZ1000-10A-2 (for VQZ1000)
VVQZ2000-10A-2 (for VQZ2000)
VVQZ3000-10A-2 (for VQZ3000)

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

DIN rail
AXT100-DR-

L = 12.5n + 10.5

Each manifold can be mounted on a DIN rail. Insert "D" at the end of the manifold part number. The DIN rail is approximately 30 mm longer than the length of manifold.

Blanking plug
KQ2P-23
KQ2P-04
KQ2P-06
KQ2P-08
KQ2P-10

Silencer (for manifold EXH port)
Silencer is installed in the manifold EXH port.

Port plug
VVQZ100-CP (for VQZ1000/2000)
VVQZ2000-CP (for VQZ3000)

Used to block a cylinder port when changing 5 port valves into 3 port valves, etc.
Manifold Options

Perfect block (Separated): For VQZ1000

VQ1000-FPG-□□

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the perfect block with a built-in pilot type perfect 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 of a 2 position single or double solenoid perfect block will prevent the cylinder from “dropping” at stroke end when residual supply pressure is released.

Specifications

- **Maximum operating pressure**: 0.8 MPa
- **Minimum operating pressure**: 0.15 MPa
- **Ambient and fluid temperature**: −5 to 50°C
- **Flow characteristics**: C 0.60 dm³/(s·bar)
- **Max. operating frequency**: 180 c.p.m.

Dimensions

- **Single unit**
  - 2n x one-touch fitting assembly
  - Applicable tubing O.D.: ø4, ø6

How to Order

**Perfect block**

VQ1000-FPG-□□

**MANIFOLD (DIN rail mounting style)**

VQ1000-FPG-□□

Order DIN rail mounting style [□□] for perfect block.

<Example>

VQ1000-FPG-□□: 6 stations of manifold

VQ1000-FPG-C4M5-D: 3 sets

VQ1000-FPG-C6M5-D: 3 sets

Note) It is the tightening torque for mounting a bracket for the perfect block.

<Bracket assembly>

Part no. 0.22 to 0.25 N·m

Body Ported **Series VQZ1000/2000/3000**
Series VQZ1000/2000/3000

Manifold Options

Perfect block (Separated): For VQZ2000/3000
VQ2000-FPG-06

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the perfect block with a built-in pilot type perfect 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 of a 2 position single or double solenoid with a perfect block will prevent the cylinder from "dropping" at stroke end when residual supply pressure is released.

Specifications

<table>
<thead>
<tr>
<th>Specifications</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum operating pressure</td>
<td>0.8 MPa</td>
<td></td>
</tr>
<tr>
<td>Minimum operating pressure</td>
<td>0.15 MPa</td>
<td></td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>~5 to 50°C</td>
<td></td>
</tr>
<tr>
<td>Flow characteristics: C</td>
<td>3.0 dm³/(s·bar)</td>
<td></td>
</tr>
<tr>
<td>Max. operating frequency</td>
<td>180 c.p.m</td>
<td></td>
</tr>
</tbody>
</table>

Note: Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa)

Dimensions

How to Order

Perfect block

VQ2000-FPG-01 01 F

IN side port size

| 01 | Rc 1/8 |
| 02 | Rc 1/4 |
| C6 | ø6 one-touch fitting |
| C8 | ø8 one-touch fitting |

OUT side port size

| 01 | Rc 1/8 |
| 02 | Rc 1/4 |
| C6 | ø6 one-touch fitting |
| C8 | ø8 one-touch fitting |

Manifold (DIN rail mounting style)

VQ2000-FPG-06

Order DIN rail mounting style [-D] for perfect block.

<Ordering Example>

VQ2000-FPG-06 → 6 stations of manifold
VQ2000-FPG-C6C6-D, 3 sets
VQ2000-FPG-C8C8-D, 3 sets
Perfect block

Option

<table>
<thead>
<tr>
<th>Nil</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>DIN rail mounting (For manifold)</td>
</tr>
<tr>
<td>F</td>
<td>With bracket</td>
</tr>
<tr>
<td>N</td>
<td>Name plate</td>
</tr>
</tbody>
</table>

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

<Check valve operating principle>

Cylinder side pressure (Pc)
SUP side pressure (P1)

<Example>

2 position

3 position/exhaust center

Option

<Bracket assembly>

Note: It is the tightening torque for mounting a bracket for the perfect block.

Part no.   Tightening torque [Nm]
VQ2000-FPG-FB   0.8 to 1.0 N·m

Note: Proper tightening force for screws is as shown at the right.

Since one-touch fittings allow slight air leakage, screw piping is recommended when stopping the cylinder in the middle for a long time.

<Example>

When screwing the fittings in the perfect block, proper tightening force for screws is as shown at the right.

Connection thread   Proper tightening force [Nm]
Rc 1/8   7 to 9
Rc 1/4   12 to 14

<Example>

Since air leakage from the pipe between the valve and cylinder or the fittings will prevent the cylinder from stopping for a long time. Check for air 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 is recommended when stopping the cylinder in the middle for a long time.

Combining perfect block with 3 position closed center or pressure center solenoid valve will not work.

When screwing the fittings in the perfect block, proper tightening force for screws is as shown at the right.

Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

If exhaust side of perfect block is narrowed down too much, intermediate stopping accuracy will be decreased.

Since air leakage from the pipe between the valve and cylinder or the fittings will prevent the cylinder from stopping for a long time. Check for air 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 air leakage from the pipe between the valve and cylinder or the fittings will prevent the cylinder from stopping for a long time. Check for air 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.

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Since air leakage from the pipe between the valve and cylinder or the fittings will prevent the cylinder from stopping for a long time. Check for air 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.
**Series VQZ Body Ported**

**Options**

**External Pilot Specification (Except VQZ1000)**

The external pilot specification is used when the operating pressure is below the minimum operating pressure 0.1 to 0.2 MPa or when valve is used for a vacuum application. Order a valve by adding the external pilot specification [R] to the part number.

**Valve Part No.**

VQZ

- **Entry is the same as standard products.**

**Pressure Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>VQZ2000/3000</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 position single</td>
<td>2 position double</td>
</tr>
<tr>
<td>External pilot pressure range</td>
<td>Operating pressure range</td>
</tr>
<tr>
<td>Metal seal</td>
<td>0.1 to 0.7 MPa (VQZ3000, 3 position only)</td>
</tr>
<tr>
<td>Rubber seal</td>
<td>0.15 to 0.7 MPa</td>
</tr>
<tr>
<td>0.2 to 0.7 MPa</td>
<td>~100 kPa to 0.7 MPa</td>
</tr>
</tbody>
</table>

**Note**

- In case of the high pressure type, upper limit of max. operating pressure and external pilot pressure range is 1 MPa.

**Inch Size One-touch Fittings and Optional Threads**

Inch size one-touch fittings and NPT, NPTF and G thread are available.

**Valve Part No.**

VQZ

- **Entry is the same as standard products.**

<table>
<thead>
<tr>
<th>Cylinder port</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symbol</td>
</tr>
<tr>
<td>Applicable tubing O.D. (inch)</td>
</tr>
<tr>
<td>A, B port</td>
</tr>
<tr>
<td>VQZ2000</td>
</tr>
<tr>
<td>VQZ3000</td>
</tr>
</tbody>
</table>

**Cylinder port**

<table>
<thead>
<tr>
<th>Thread type (Cylinder port and 1(P), 3(R2), 5(R1) ports)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
</tr>
<tr>
<td>N</td>
</tr>
<tr>
<td>T</td>
</tr>
<tr>
<td>F</td>
</tr>
</tbody>
</table>

**Note**

- Metric size one-touch fittings (C/L50132) are also available.

**Manifold Part No.**

VV5QZ

- **Entry is the same as standard products.**

**Thread type**

<table>
<thead>
<tr>
<th>(1(P), 3(R2), 5(R1) ports)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
</tr>
<tr>
<td>00N</td>
</tr>
<tr>
<td>00T</td>
</tr>
<tr>
<td>00F</td>
</tr>
</tbody>
</table>

**IP65 Enclosure (Based on IEC60529)**

DIN terminal is available with IP65 enclosure.

**Valve Part No.**

(Applicable to the VQZ2000/3000 rubber seal with the exception of the external pilot type)

VQZ

- **Entry is the same as standard products.**

**Note**

- The pilot exhaust IP65 valves is common with main valve exhaust. (The standard valve has an individual exhaust for the pilot valve.)
Series VQZ  Body Ported

**Replacement Parts**

### One-touch Fitting Assembly (for Cylinder port)

<table>
<thead>
<tr>
<th>Model</th>
<th>Fitting size</th>
<th>C3</th>
<th>C4</th>
<th>C6</th>
<th>C8</th>
<th>C10</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000/2000</td>
<td>VVQ1000-50A-C3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ20000</td>
<td>—</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Purchasing order is available in units of 10 pieces.

### <Plug connector assembly>

- **DC**: SY100-30-4A-
  - 100 VAC: SY100-30-1A-
  - 200 VAC: SY100-30-2A-
- **Other AC voltages**: SY100-30-3A-

### Lead wire length

<table>
<thead>
<tr>
<th>Coils</th>
<th>Length (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>300</td>
</tr>
<tr>
<td>2</td>
<td>600</td>
</tr>
<tr>
<td>3</td>
<td>1000</td>
</tr>
<tr>
<td>4</td>
<td>1500</td>
</tr>
<tr>
<td>5</td>
<td>2000</td>
</tr>
<tr>
<td>6</td>
<td>2500</td>
</tr>
<tr>
<td>7</td>
<td>3000</td>
</tr>
<tr>
<td>8</td>
<td>5000</td>
</tr>
</tbody>
</table>

### Coil voltage

- 100 VAC (50/60 Hz)
- 200 VAC (50/60 Hz)
- 110 VAC (115 VAC) (50/60 Hz)
- 220 VAC (230 VAC) (50/60 Hz)
- 24 VDC
- 12 VDC

### Electrical entry

- DC: SY100-30-4A-
- AC: SY100-30-1A-

### How to Order

Include the connector assembly part number together with the part number for the plug connector’s solenoid valve without connector.

Example) In case of 2000 mm of lead wire

DC
VQZ1120-SLO1-M5
VQZ1000-30-4A-20

AC
VQZ1120-1L01-M5
VQZ1000-30-1A-20

### <Gasket and screw assembly>

- Part no.: VQZ1000-GS-2
- Part no.: VQZ2000-GS-2
- Part no.: VQZ3000-GS-2

Note: Above part number consists of 10 units. Each unit has one gasket and two screws. Purchasing order is available in units of 10 pieces.

### <Bracket assembly>

- Part no.: VQZ1000-FB-M
  - Metal seal: VQZ1000-50A-FB-M
    - 0.2 to 0.26
  - Rubber seal: VQ1000-50A-FB-R
  - 0.2 To 0.26
- Part no.: VQZ2000-FB
  - 0.25 to 0.35
- Part no.: VQZ3000-FB
  - 0.25 to 0.35

Note: When adding a bracket assembly later, remove the end plate screws and fasten the end plate and bracket at the tightening torque shown in the table, using the screws attached to the bracket assembly. Place the spring inside the end plate in its original position so that it does not get lost.

### <DIN terminal type (Applicable to the VQZ2000/3000)>

- DC: SY100-30-4A-
- AC: SY100-30-1A-

### Function

- Symbol Specifications
  - Nil
  - Standard
  - High speed response type
  - High pressure type

### Coil voltage

1. 100 VAC (50/60 Hz)
2. 200 VAC (50/60 Hz)
3. 110 VAC (115 VAC) (50/60 Hz)
4. 220 VAC (230 VAC) (50/60 Hz)
5. 24 VDC
6. 12 VDC

### Electrical entry

- DC: SY100-30-4A-
- AC: SY100-30-1A-

### How to Order

Include the connector assembly part number together with the part number for the plug connector’s solenoid valve without connector.

Example) In case of 2000 mm of lead wire

DC
VQZ1120-SLO1-M5
VQZ1000-30-4A-20

AC
VQZ1120-1L01-M5
VQZ1000-30-1A-20

### Note)

Above part number consists of 10 units. Each unit has one gasket and two screws. Purchasing order is available in units of 10 pieces.

### Caution

When replacing only the pilot valve assembly, use caution because it is not possible to convert to a V115 (DIN terminal) from a V111 (Grommet, L-type, M-type), or vice versa.

---

**NOTE:**

- When adding a bracket assembly later, remove the end plate screws and fasten the end plate and bracket at the tightening torque shown in the table, using the screws attached to the bracket assembly. Place the spring inside the end plate in its original position so that it does not get lost.

- For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

---

**Part no.**

- VQZ1000-GS-2
- VQZ2000-GS-2
- VQZ3000-GS-2

**Grommet and screw assembly**

- VQZ1000
- VQZ2000
- VQZ3000

**Part no.**

- VQZ1000-GS-2
- VQZ2000-GS-2
- VQZ3000-GS-2

**Tightening torque (N-m)**

- VQZ1000
  - Metal seal: VQZ1000-FB-M
    - 0.2 to 0.26
  - Rubber seal: VQZ1000-50A-FB-R
    - 0.2 to 0.26

---

**Function**

- Symbol Specifications
  - Nil
  - Standard
  - High speed response type
  - High pressure type

**Coil voltage**

1. 100 VAC (50/60 Hz)
2. 200 VAC (50/60 Hz)
3. 110 VAC (115 VAC) (50/60 Hz)
4. 220 VAC (230 VAC) (50/60 Hz)
5. 24 VDC
6. 12 VDC

**Electrical entry**

- DC: SY100-30-4A-
- AC: SY100-30-1A-

### How to Order

Include the connector assembly part number together with the part number for the plug connector’s solenoid valve without connector.

Example) In case of 2000 mm of lead wire

DC
VQZ1120-SLO1-M5
VQZ1000-30-4A-20

AC
VQZ1120-1L01-M5
VQZ1000-30-1A-20

### Note)

Above part number consists of 10 units. Each unit has one gasket and two screws. Purchasing order is available in units of 10 pieces.

---

**Part no.**

- VQZ1000-GS-2
- VQZ2000-GS-2
- VQZ3000-GS-2

**Grommet and screw assembly**

- VQZ1000
- VQZ2000
- VQZ3000

**Part no.**

- VQZ1000-GS-2
- VQZ2000-GS-2
- VQZ3000-GS-2

**Tightening torque (N-m)**

- VQZ1000
  - Metal seal: VQZ1000-FB-M
    - 0.2 to 0.26
  - Rubber seal: VQZ1000-50A-FB-R
    - 0.2 to 0.26

---

**Function**

- Symbol Specifications
  - Nil
  - Standard
  - High speed response type
  - High pressure type

**Coil voltage**

1. 100 VAC (50/60 Hz)
2. 200 VAC (50/60 Hz)
3. 110 VAC (115 VAC) (50/60 Hz)
4. 220 VAC (230 VAC) (50/60 Hz)
5. 24 VDC
6. 12 VDC

**Electrical entry**

- DC: SY100-30-4A-
- AC: SY100-30-1A-

### How to Order

Include the connector assembly part number together with the part number for the plug connector’s solenoid valve without connector.

Example) In case of 2000 mm of lead wire

DC
VQZ1120-SLO1-M5
VQZ1000-30-4A-20

AC
VQZ1120-1L01-M5
VQZ1000-30-1A-20

### Note)

Above part number consists of 10 units. Each unit has one gasket and two screws. Purchasing order is available in units of 10 pieces.
EX510 Gateway System
Serial Transmission System
Series VQZ1000/2000/3000
Body Ported Manifold

How to Order Manifold

**Symbol**

<table>
<thead>
<tr>
<th>VV5QZ</th>
<th>1 2 - SA 08</th>
</tr>
</thead>
</table>

**Series**

- 1: VQZ1000
- 2: VQZ2000
- 3: VQZ3000

**Si unit**

- Nil: NPN output (+COM.)
- P: PNP output (–COM.)

**Stations**

- Symbol: 02: 2 stations
- 08: 8 stations

**P, R port thread type**

- Nil: Rc
- 00N: NPT
- 00T: NPTF
- 00F: G

**CE compliant**

- Nil: None
- Q: CE marked

**Option**

- Nil: None
- D: With DIN rail (Rail length: Standard)
- D0: Without DIN rail (With bracket)
- K: Special wiring specification (Except double wiring)

**Note**

- Maximum 16 stations
- For special wiring specifications, indicate separately by the manifold specification sheet.

**SI Unit Part No.**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Si unit spec.</th>
<th>Si unit part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>NPN output (+COM.)</td>
<td>EX510-S001</td>
</tr>
<tr>
<td>N</td>
<td>PNP output (–COM.)</td>
<td>EX510-S101</td>
</tr>
</tbody>
</table>

**Example**

- Cylinder port size
  - C6: With one-touch fitting for ø6

**For details of “Gateway System Serial Transmission System, Series EX510”, refer to pages 1696 to 1724.**

Add the valve and option part number under the manifold base part number.

Add the asterisk to each part number for assembly.

Prefix the symbol for assembly.

Enter in order starting from the first station on the D side.

Add the valve and option part number under the manifold base part number.

When entry of part numbers becomes complicated, indicate by the manifold specification sheet.

For a manifold for an EX510, the length of the lead wire for a connector assembly depends on the number of stations.

Therefore, the manifold assembly is shipped with the valves (including blanking plates) and connector assembly mounted on it, as the standard specification. Be sure to specify the part nos. of the solenoid valves to be mounted.

**ADD A07 1 set (Type SA, 7-station manifold base part no.)**

- VQZ2210-5LO1-C6 ... 2 sets (Single solenoid part no.)
- VQZ2220-5LO1-C6 ... 3 sets (Double solenoid part no.)
- VQZ2320-5LO1-C6 ... 2 sets (3 position type no.)

- The asterisk denotes the symbol for assembly.

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

Enter in order starting from the first station on the D side.

**For details of “Gateway System Serial Transmission System, Series EX510”, refer to pages 1696 to 1724.**

Add the valve and option part number under the manifold base part number.
EX510 Gateway System
Serial Transmission System Series VQZ1000/2000/3000

How to Order Valve

VQZ 1 1 2 1 - 5 MO 1 - C6 -

Series
1 VQZ1000
2 VQZ2000
3 VQZ3000

Type of actuation
1 2 position single
2 2 position double
3 3 position closed center
4 3 position exhaust center
5 Note 1) 3 position pressure center
6 Note 2) 3 port for mature mounting N.C.
7 Note 2) 3 port for mature mounting N.O.

Note 1) There is no 3 position pressure center for the metal seal type of the VQZ1000 series.
Note 2) The port plug of the 3 port mixing valve can be replaced with a fitting and the valve used as a 5 port single type valve. (Refer to page 979.)

Seal type
0 Metal seal
1 Rubber seal

Function
Symbol Specifications
Nil Standard
B (Note 1) High speed response type
K (Note 1) High pressure type (Metal seal type only)
R (Note 1, 2, 3) External pilot type
BR (Note 1, 2, 3) High speed response/External pilot type
KR (Note 1, 2, 3) High pressure/External pilot type (Metal seal type only)

Note 1) Option
Note 2) For details on external pilot type, refer to page 933.
Note 3) There is no VQZ1000 setting.

Rated voltage: 24 VDC

Maximum flow rate
Symbol Port size VQZ1000 VQZ2000 VQZ3000
M5 M5 x 0.8 — — —
02 1/4 — — —

One-touch fitting (Metric size)
Symbol Port size VQZ1000 VQZ2000 VQZ3000
C3 ø3.2 one-touch fitting — — —
C4 ø4 one-touch fitting — — —
C6 ø6 one-touch fitting — — —
C8 ø8 one-touch fitting — — —
C10 ø10 one-touch fitting — — —

One-touch fitting (Inch size)
Symbol Port size VQZ1000 VQZ2000 VQZ3000
N1 1/8" one-touch fitting — — —
N3 5/32" one-touch fitting — — —
N7 1/4" one-touch fitting — — —
N9 ø6/6" one-touch fitting — — —
N11 ø3/8" one-touch fitting — — —

Made to Order
(For details, refer to page 975.)
Symbol Description
K30 Pilot valve common exhaust
X90 Main valve fluoro-rubber
X113 All fluoro-rubber

Thread type
Nil — CE marked
Q — —

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

Electrical entry
LO L-type plug connector without connector
MO M-type plug connector without connector
Note) With light/surge voltage suppressor

A, B port size
Thread piping
Symbol Port size VQZ1000 VQZ2000 VQZ3000
M5 M5 x 0.8 — — —
02 1/4 — — —

Notes:
Note 1) For 3(R2), 5(R1) port of the VQZ2000 is only G1/16.
Note 2) Except VQZ1000
Note 1, 2, 3) Option
Note 2) For details on external pilot type, refer to page 933.
Note 3) There is no VQZ1000 setting.

Thread piping
Symbol Port size VQZ1000 VQZ2000 VQZ3000
C3 ø3.2 one-touch fitting — — —
C4 ø4 one-touch fitting — — —
C6 ø6 one-touch fitting — — —
C8 ø8 one-touch fitting — — —
C10 ø10 one-touch fitting — — —

One-touch fitting (Inch size)
Symbol Port size VQZ1000 VQZ2000 VQZ3000
N1 1/8" one-touch fitting — — —
N3 5/32" one-touch fitting — — —
N7 1/4" one-touch fitting — — —
N9 ø6/6" one-touch fitting — — —
N11 ø3/8" one-touch fitting — — —
Series VQZ1000/2000/3000

Dimensions: VQZ1000-SA □: EX510 Gateway System Serial Transmission System

![Diagram of the connector assembly]

### Dimensions: VQZ1000-SA □: EX510 Gateway System Serial Transmission System

<table>
<thead>
<tr>
<th>L</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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</thead>
<tbody>
<tr>
<td>L1</td>
<td>123</td>
<td>123</td>
<td>123</td>
<td>123</td>
<td>123</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>198</td>
<td>210.5</td>
<td>223</td>
</tr>
<tr>
<td>L2</td>
<td>112.5</td>
<td>112.5</td>
<td>112.5</td>
<td>112.5</td>
<td>112.5</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>
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<tr>
<td>L3</td>
<td>88</td>
<td>88</td>
<td>88</td>
<td>88</td>
<td>88</td>
<td>88</td>
<td>100</td>
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<td>136</td>
<td>148</td>
<td>160</td>
<td>172</td>
<td>184</td>
<td>196</td>
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<tr>
<td>L4</td>
<td>17.5</td>
<td>17.5</td>
<td>17.5</td>
<td>17.5</td>
<td>17.5</td>
<td>17.5</td>
<td>18</td>
<td>18.5</td>
<td>18.5</td>
<td>18.5</td>
<td>19</td>
<td>19</td>
<td>19.5</td>
<td>19.5</td>
<td>20</td>
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<tr>
<td>L5</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
<td>80</td>
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<td>82</td>
<td>104</td>
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<td>128</td>
<td>140</td>
<td>152</td>
<td>164</td>
<td>176</td>
<td>188</td>
</tr>
</tbody>
</table>

Note) The L dimension of 2 to 6 stations is the same. Valves are numbered from the D side according up to the number of stations.
EX510 Gateway System
Serial Transmission System Series VQZ1000/2000/3000


One-touch fitting
(A4(A), 2(B) port)
Applicable tubing O.D.: ø4, ø5/32" ø6, ø1/4"

L-type plug connector (L)

M-type plug connector (M)

Note) The dashed lines indicate the DIN rail mounting [-D].
Unless otherwise indicated, dimensions are the same as L-type plug connector (L).
[ ]: AC

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Max. 16 stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>135.5 135.5 135.5 160.5 173 185.5 210.5 223 248 260.5 273 298 310.5 323</td>
</tr>
<tr>
<td>L2</td>
<td>125 125 125 125 150 162.5 175 200 212.5 237.5 250 262.5 287.5 300 312.5</td>
</tr>
<tr>
<td>L3</td>
<td>104 104 104 104 121 138 155 172 169 206 223 240 257 274 291</td>
</tr>
<tr>
<td>L4</td>
<td>16 16 16 16 20 17.5 15.5 19.5 17 21 19 16.5 20.5 18.5 16</td>
</tr>
<tr>
<td>L5</td>
<td>94 94 94 94 111 128 145 162 179 196 213 230 247 264 281</td>
</tr>
</tbody>
</table>

Note) The L dimension of 2 to 6 stations is the same. Valves are numbered from the D side according to the number of stations.
### Series VQZ1000/2000/3000

**Dimensions: VQZ3000-SA**: EX510 Gateway System Serial Transmission System

![Diagram](image)

The dashed lines indicate the DIN rail mounting [D].

Unless otherwise indicated, dimensions are the same as L-type plug connector (L).

[ ] AC

### Dimensions

<table>
<thead>
<tr>
<th>Station</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>123</td>
<td>123</td>
<td>148</td>
<td>173</td>
<td>185.5</td>
<td>210.5</td>
<td>223</td>
<td>248</td>
<td>273</td>
<td>285.5</td>
<td>310.5</td>
<td>323</td>
<td>348</td>
<td>373</td>
<td>385.5</td>
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<tr>
<td>L2</td>
<td>112.5</td>
<td>112.5</td>
<td>137.5</td>
<td>162.5</td>
<td>175</td>
<td>200</td>
<td>212.5</td>
<td>237.5</td>
<td>262.5</td>
<td>275</td>
<td>300</td>
<td>312.5</td>
<td>337.5</td>
<td>362.5</td>
<td>375</td>
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<tr>
<td>L3</td>
<td>92</td>
<td>92</td>
<td>112</td>
<td>132</td>
<td>152</td>
<td>172</td>
<td>192</td>
<td>212</td>
<td>232</td>
<td>252</td>
<td>272</td>
<td>292</td>
<td>312</td>
<td>332</td>
<td>352</td>
</tr>
<tr>
<td>L4</td>
<td>15.5</td>
<td>15.5</td>
<td>18</td>
<td>20.5</td>
<td>17</td>
<td>19.5</td>
<td>15.5</td>
<td>18</td>
<td>20.5</td>
<td>17</td>
<td>19.5</td>
<td>15.5</td>
<td>18</td>
<td>20.5</td>
<td>17</td>
</tr>
<tr>
<td>L5</td>
<td>70</td>
<td>70</td>
<td>90</td>
<td>110</td>
<td>130</td>
<td>150</td>
<td>170</td>
<td>190</td>
<td>210</td>
<td>230</td>
<td>250</td>
<td>270</td>
<td>290</td>
<td>310</td>
<td>330</td>
</tr>
</tbody>
</table>

Note: The L dimension of 2 to 6 stations is the same. Valves are numbered from the D side according to the number of stations.
Manifold Options

Connector assembly

Single solenoid (SY3000-37-81A-□-N)

Double solenoid (SY3000-37-81A-□□)

Note) There are no part nos. on the connectors of connector assemblies.

<table>
<thead>
<tr>
<th>Model</th>
<th>Part no.</th>
<th>Connector mounting position</th>
</tr>
</thead>
<tbody>
<tr>
<td>VVSQZ12</td>
<td>SY3000-37-81A-3-N</td>
<td>Single: for 1 to 4 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-81A-3-6</td>
<td>Double/3 position: for 1 to 4 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-81A-2-N</td>
<td>Single: for 5 to 8 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-81A-3-6</td>
<td>Double/3 position: for 5 to 8 stations</td>
</tr>
<tr>
<td>VVSQZ22</td>
<td>SY3000-37-81A-3-N</td>
<td>Single: for 1 to 8 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-81A-5-6</td>
<td>Double/3 position: for 1 to 8 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-81A-5-N</td>
<td>Single: for 1 to 4 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-81A-3-6</td>
<td>Double/3 position: for 1 to 4 stations</td>
</tr>
<tr>
<td>VVSQZ32</td>
<td>SY3000-37-81A-3-N</td>
<td>Single: for 1 to 8 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-81A-4-N</td>
<td>Single: for 5 to 8 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-81A-4-7</td>
<td>Double/3 position: for 5 to 8 stations</td>
</tr>
</tbody>
</table>

Note) There are no part nos. on the connectors of connector assemblies.

Connector assembly

SY3000-37-80A-□

Housing (1 set: 8 pieces)
SY3000-44-3A

<table>
<thead>
<tr>
<th>Model</th>
<th>Assembly part no.</th>
<th>Connector mounting position</th>
</tr>
</thead>
<tbody>
<tr>
<td>VVSQZ12</td>
<td>SY3000-37-80A-3</td>
<td>A side                      For 1 to 8 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-6</td>
<td>B side                      For 9 to 16 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-4</td>
<td>A side                      For 1 to 8 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-7</td>
<td>B side                      For 9 to 16 stations</td>
</tr>
<tr>
<td>VVSQZ22</td>
<td>SY3000-37-80A-3</td>
<td>A side                      For 1 to 8 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-6</td>
<td>B side                      For 9 to 16 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-7</td>
<td>A side                      For 1 to 8 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-9</td>
<td>B side                      For 9 to 16 stations</td>
</tr>
<tr>
<td>VVSQZ32</td>
<td>SY3000-37-80A-4</td>
<td>A side                      For 1 to 8 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-7</td>
<td>B side                      For 9 to 16 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-8</td>
<td>A side                      For 9 to 16 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-11</td>
<td>B side                      For 9 to 16 stations</td>
</tr>
</tbody>
</table>

Note 1) Since these connector assemblies are used when adding stations or for maintenance, there are no part nos. on them.

Note 2) After inserting the connector assembly into the housing, slightly pull the lead wire to make sure it does not pull out. Do not reuse the lead wire once it has been inserted.

Note 3) Please note that the wires are longer than the actual wiring distance.
Base Mounted
Plug Lead Unit

5 Port Solenoid Valve
Series VQZ1000/2000/3000
Single Unit

How to Order Valve

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard</td>
<td>0.35 W</td>
<td>0.9 W</td>
</tr>
<tr>
<td>B</td>
<td>High speed response type</td>
<td>0.9 W</td>
<td>—</td>
</tr>
<tr>
<td>K</td>
<td>High pressure type (Metal seal type only)</td>
<td>0.9 W</td>
<td>—</td>
</tr>
<tr>
<td>R</td>
<td>External pilot type</td>
<td>0.9 W</td>
<td>—</td>
</tr>
<tr>
<td>BR</td>
<td>High speed response/External pilot type</td>
<td>0.9 W</td>
<td>—</td>
</tr>
<tr>
<td>KR</td>
<td>High pressure/External pilot type (Metal seal type only)</td>
<td>0.9 W</td>
<td>—</td>
</tr>
</tbody>
</table>

Function

Symbol: Nil — Standard
Note 1) Option
Note 2) For details on external pilot type, refer to page 966.
Note 3) For AC specification power consumption, refer to page 943.

Caution

Use standard (DC) specification for continuous duty.

Note 1)

24VDC

Series

1. VQZ1000 body width 10 mm
2. VQZ2000 body width 15 mm
3. VQZ3000 body width 18 mm

Type of actuation

1. 2 position single
2. 2 position double
3. 3 position closed center
4. 3 position exhaust center

Note) There is no 3 position pressure center for the metal seal type of the VQZ1000 series.

Body type

5. Base mounted

Seal type

0. Metal seal
1. Rubber seal

Manual override

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

Port size

Symbol

<table>
<thead>
<tr>
<th>Port size</th>
<th>VQZ1000</th>
<th>VQZ2000</th>
<th>VQZ3000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>01</td>
<td>01</td>
<td>01</td>
</tr>
<tr>
<td>01 Rc 1/8</td>
<td>⢿</td>
<td>⢿</td>
<td>—</td>
</tr>
<tr>
<td>02 Rc 1/4</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>03 Rc 3/8</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Note) For inch sizes, refer to page 966.

Electrical entry

G: Grommet (DC specification)
L: L-type plug connector with lead wire
LO: L-type plug connector without lead wire
M: M-type plug connector with lead wire
MO: M-type plug connector without lead wire

V: DIN terminal
VO: DIN terminal without connector
Y: DIN terminal
YS: DIN terminal (DC specification)

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>With light/surge voltage suppressor</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>L</td>
<td>With light/surge voltage suppressor</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>LO</td>
<td>With light/surge voltage suppressor</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>M</td>
<td>With light/surge voltage suppressor</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>MO</td>
<td>With light/surge voltage suppressor</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>V</td>
<td>—</td>
<td>—</td>
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<tr>
<td>VO</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Y</td>
<td>With surge voltage suppressor</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>YS</td>
<td>With surge voltage suppressor</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

Coil voltage

<table>
<thead>
<tr>
<th>Number</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>2</td>
<td>200 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>3</td>
<td>110 VAC (115 VAC) (50/60 Hz)</td>
</tr>
<tr>
<td>4</td>
<td>220 VAC (230 VAC) (50/60 Hz)</td>
</tr>
<tr>
<td>5</td>
<td>24 VDC</td>
</tr>
<tr>
<td>6</td>
<td>12 VDC</td>
</tr>
</tbody>
</table>

Note) For sub-plate part no., refer to page 967.
**Base Mounted Series VQZ1000/2000/3000**

### Specifications

<table>
<thead>
<tr>
<th>Type</th>
<th>Metal seal</th>
<th>Rubber seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air, inert gas</td>
<td></td>
</tr>
<tr>
<td>Max. operating pressure (MPa)</td>
<td>0.7 (High pressure type: 1.0)</td>
<td>0.7</td>
</tr>
<tr>
<td>Min. operating pressure (MPa)</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>2 position</td>
<td>Single</td>
<td>Double</td>
</tr>
<tr>
<td>3 position</td>
<td>VQZ3000, 3 position only</td>
<td>0.15</td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>-10 to 50 (No freezing)</td>
<td></td>
</tr>
<tr>
<td>Max. operating frequency (Hz)</td>
<td>2 position single, double</td>
<td>3 position</td>
</tr>
<tr>
<td>10</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Manual override</td>
<td>Non-locking push type, Locking type (Tool required)</td>
<td></td>
</tr>
<tr>
<td>Pilot exhaust method</td>
<td>Individual exhaust</td>
<td></td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
<td></td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Single, Double, Main valve must be horizontal</td>
<td></td>
</tr>
<tr>
<td>Impulse/Vibration resistance (m/s²)</td>
<td>Note 1)</td>
<td>Free</td>
</tr>
<tr>
<td>Enclosure*</td>
<td>Dualseal (DIN terminal: IP66)</td>
<td></td>
</tr>
</tbody>
</table>

* Based on IEC60529

**Note 1)** Impulse resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at right angles to the main valve and armature, and the impinged to de-energized states once for every condition. (Value in the initial state)

Vibration resistance: No malfunction occurred in one sweep test between 45 and 2000 Hz. Test was performed in axis and right angle directions of the main valve and armature when pilot signal is ON and OFF. (Value in the initial state)

**Note 2)** When IP66 compliant DIN terminals are selected: VQZ1000/2000: VQZ1000/2000-<SYJ> CYL, CYL-<SYJ> CYL

### Made to Order

For details, refer to page 975.

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>X30</td>
<td>Pilot valve common exhaust</td>
</tr>
<tr>
<td>X90</td>
<td>Main valve fluoro-rubber</td>
</tr>
<tr>
<td>X115</td>
<td>All fluoro-rubber</td>
</tr>
</tbody>
</table>

### Options

- High speed response type
- High pressure type (Metal seal type only)
- External pilot type

* For details on external pilot type, refer to page 966.

### Solenoid Specifications

#### Electrical entry

<table>
<thead>
<tr>
<th>Grommet (G)</th>
<th>M-type plug connector (M)</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-type plug connector (L)</td>
<td>DIN terminal (Y)</td>
</tr>
<tr>
<td>G, L, M, Y</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coil rated voltage (V)</th>
<th>DC</th>
<th>AC 50/60 Hz</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>100, 110, 200, 220</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Power consumption (W)</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.86</td>
<td>0.86</td>
<td></td>
</tr>
<tr>
<td>0.94</td>
<td>0.94</td>
<td></td>
</tr>
<tr>
<td>1.18</td>
<td>1.15</td>
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<tr>
<td>1.30</td>
<td>1.27</td>
<td></td>
</tr>
<tr>
<td>1.42</td>
<td>1.46</td>
<td></td>
</tr>
<tr>
<td>1.53</td>
<td>1.60</td>
<td></td>
</tr>
</tbody>
</table>

**Note 1)** In common between 110VAC and 115VAC, and between 220VAC and 230VAC.

### Flow Characteristics

**For 115VAC and 220VAC, the allowable voltage is –15% to +5% of rated voltage.**

**Note 2)** Weight without sub-plate

---

**Note 1)** Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa; with light/surge voltage suppressor: clean air)

Response time values will change depending on pressure and air quality. The values at the time of ON are given for double types.

---

**Flow characteristics**

<table>
<thead>
<tr>
<th>Series</th>
<th>Configuration</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000</td>
<td>2 position</td>
<td>Metal seal</td>
</tr>
<tr>
<td>VQZ2000</td>
<td>3 position</td>
<td>Metal seal</td>
</tr>
<tr>
<td>VQZ3000</td>
<td>3 position</td>
<td>Metal seal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fluid characteristic</th>
<th>Response time (ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. speed response</td>
<td>DC 100/200</td>
</tr>
<tr>
<td>Max. speed response</td>
<td>AC 50/60</td>
</tr>
<tr>
<td></td>
<td>0.35 W AC</td>
</tr>
<tr>
<td>Mass (g)</td>
<td>90</td>
</tr>
<tr>
<td>DIN terminal (Y)</td>
<td>90</td>
</tr>
</tbody>
</table>

---

**Options**

- High speed response type
- High pressure type (Metal seal type only)
- External pilot type

* For details on external pilot type, refer to page 966.
Series VQZ1000/2000/3000

Construction: VQZ1000/2000/3000

Metal seal type

Rubber seal type

Note) Except metal seal type of the VQZ1000.

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-cast</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Spool, Sleeve</td>
<td>Stainless steel</td>
<td>Metal seal</td>
</tr>
<tr>
<td></td>
<td>Spool valve</td>
<td>Aluminum/HNBR</td>
<td>Rubber seal</td>
</tr>
<tr>
<td>3</td>
<td>Piston</td>
<td>Resin</td>
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<tr>
<td>4</td>
<td>Pilot valve assembly</td>
<td>—</td>
<td></td>
</tr>
</tbody>
</table>

Note) For “How to Order Pilot Valve Assembly”, refer to page 967.
Base Mounted Series VQZ1000/2000/3000

Dimensions: VQZ1000

2 Position Single/3 Port for Mixture Mounting

Grommet (G): VQZ\(1\frac{1}{2}\)5\(\frac{1}{4}\)(R)-\(\frac{1}{4}\)G-1-01

Approx. 300 (Lead wire length)

68.8 (Rubber seal)

69.8 (Metal seal)

Manual override

M5 x 0.8 (External pilot port) <External pilot only>

Approx. 300 (Lead wire length)

2 x ø3.4 (For mounting)

L-type plug connector (L): VQZ\(1\frac{1}{2}\)5\(\frac{1}{4}\)(R)-\(\frac{1}{4}\)L-1-01

M-type plug connector (M): VQZ\(1\frac{1}{2}\)5\(\frac{1}{4}\)(R)-\(\frac{1}{4}\)M-1-01

Unless otherwise indicated, dimensions are the same as Grommet (G).

Unless otherwise indicated, dimensions are the same as Grommet (G).
**Series VQZ1000/2000/3000**

**Dimensions: VQZ1000**

2 Position Double

Grommet (G): VQZ125 (R)-G1-01

Unless otherwise indicated, dimensions are the same as Grommet (G).

L-type plug connector (L): VQZ125 (R)-L1-01

M-type plug connector (M): VQZ125 (R)-M1-01

Unless otherwise indicated, dimensions are the same as Grommet (G).
Base Mounted Series VQZ1000/2000/3000

Dimensions: VQZ1000

3 Position Closed Center/Exhaust Center/Pressure Center (Except metal seal type)

Grommet (G): VQZ1\(\frac{3}{2}\) 5\(\frac{5}{8}\) (R)-□G□1-01

L-type plug connector (L): VQZ1\(\frac{3}{2}\) 5\(\frac{5}{8}\) (R)-□L□1-01

M-type plug connector (M): VQZ1\(\frac{3}{2}\) 5\(\frac{5}{8}\) (R)-□M□1-01

Unless otherwise indicated, dimensions are the same as Grommet (G).
Series VQZ1000/2000/3000

Dimensions: VQZ2000

2 Position Single/3 Port for Mixture Mounting

Grommet (G): VQZ2 3/8 (R)-□G□1-□0.001

Approx. 300
(Lead wire length)

Manual override

M5 x 0.8
(External port)
<External port only>

2 x ø4.5
(For mounting)

PE port

L-type plug connector (L): VQZ2 3/8 (R)-□L□1-□0.001

DIN terminal (Y): VQZ2 3/8 (R)-□Y□1-□0.001

Approx. 300
(Lead wire length)

Unless otherwise indicated, dimensions are the same as Grommet (G).

M-type plug connector (M): VQZ2 3/8 (R)-□M□1-□0.001

Approx. 300
(Lead wire length)

Unless otherwise indicated, dimensions are the same as Grommet (G).
Base Mounted Series VQZ1000/2000/3000

Dimensions: VQZ2000

2 Position Double

Grommet (G): VQZ225 \( (R) \square G \square 1\frac{1}{2} \)

Approx. 300 [Lead wire length]

1/8, 1/4

[4(A), 2(B) port]

2 x ø4.5

[For mounting]

Manual override

M5 x 0.8

(External pilot port)

<External pilot only>

2 x PE port

1/8, 1/4

[1(P), 5(R1), 3(R2) port]

M5 x 0.8

(Not used)

L-type plug connector (L): VQZ225 \( (R) \square L \square 1\frac{1}{2} \)

Approx. 300 [Lead wire length]

127 [131.4]

[    ]: AC

Unless otherwise indicated, dimensions are the same as Grommet (G).

DIN terminal (Y): VQZ225 \( (R) \square Y \square 1\frac{1}{2} \)

Max. 10

Applicable cable O.D.

ø3.5 to ø7

[    ]: AC

Unless otherwise indicated, dimensions are the same as Grommet (G).
Series VQZ1000/2000/3000

Dimensions: VQZ2000

3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G): VQZ2 5/5 (R) □G□1-□□

Manual override

Approx. 300 (Lead wire length)

M5 x 0.8 (External pilot port)

Unless otherwise indicated, dimensions are the same as Grommet (G).

[AC]: AC

L-type plug connector (L): VQZ2 5/5 (R) □L□1-□□

Approx. 300 (Lead wire length)

DIN terminal (Y): VQZ2 5/5 (R) □Y□1-□□

Max. 10

Applicable cable O.D.: ø3.5 to ø7

M-type plug connector (M): VQZ2 5/5 (R) □M□1-□□

Approx. 300 (Lead wire length)

Unless otherwise indicated, dimensions are the same as Grommet (G).
Dimensions: VQZ3000

2 Position Single/3 Port for Mixture Mounting

Grommet (G): VQZ3 1/2 5 3/4 (R)-G-1-93

Approx. 300
(Lead wire length)

Manual override

M5 x 0.8
(External pilot port)
<External pilot only>

L-type plug connector (L): VQZ3 1/2 5 3/4 (R)-L-1-93

Approx. 300
(Lead wire length)

DIN terminal (Y): VQZ3 1/2 5 3/4 (R)-Y-1-93

Max. 10

Unless otherwise indicated, dimensions are the same as Grommet (G).

Unless otherwise indicated, dimensions are the same as Grommet (G).

Unless otherwise indicated, dimensions are the same as Grommet (G).

Unless otherwise indicated, dimensions are the same as Grommet (G).
Series VQZ1000/2000/3000

Dimensions: VQZ3000

2 Position Double

Grommet (G): VQZ325 \( (R) \) \( G1-03 \)

Approx. 300
(Lead wire length)

M5 x 0.9
(External pilot port)
<External pilot only>

Manual override

2 x PE port

1/4, 3/8
([P], S(R1), 3(R2) port)

(Lead wire length)
Approx. 300

L-type plug connector (L): VQZ325 \( (R) \) \( L1-03 \)

M-type plug connector (M): VQZ325 \( (R) \) \( M1-03 \)

DIN terminal (Y): VQZ325 \( (R) \) \( Y1-03 \)

Unless otherwise indicated, dimensions are the same as Grommet (G).

Unless otherwise indicated, dimensions are the same as Grommet (G).
Base Mounted Series VQZ1000/2000/3000

Dimensions: VQZ3000

3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G): VQZ 3 1/2 5 1/2 (R)-□□□1-□3

L-type plug connector (L): VQZ 3 1/2 5 1/2 (R)-□□□1-□3

Unless otherwise indicated, dimensions are the same as Grommet (G).

M-type plug connector (M): VQZ 3 1/2 5 1/2 (R)-□□□1-□3

Unless otherwise indicated, dimensions are the same as Grommet (G).

DIN terminal (Y): VQZ 3 1/2 5 1/2 (R)-□□□1-□3

Unless otherwise indicated, dimensions are the same as Grommet (G).
5 Port Solenoid Valve
Series VQZ1000/2000/3000
Manifold Connector Kit

**How to Order Manifold**

**Series**

- VV5QZ 1 5 08 C6 C N

**Manifold type**
- 5 Base mounted

**Port size (4(A), 2(B) port)**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port size</th>
<th>VQZ1000</th>
<th>VQZ2000</th>
<th>VQZ3000</th>
</tr>
</thead>
<tbody>
<tr>
<td>C3</td>
<td>ø3.2 one-touch fitting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C4</td>
<td>ø4 one-touch fitting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C6</td>
<td>ø6 one-touch fitting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C8</td>
<td>ø8 one-touch fitting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C10</td>
<td>ø10 one-touch fitting</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Stations**
- 02: 2 stations
- 20: 20 stations

**Option**
- Nil
- CE compliant
- Q CE marked

**How to Order Valve**

**Series**

- VQZ 1 1 5 1 5 M 1

**Function**
- Symbol: Specifications
- DC: AC

**Symbol**
- B: High speed response type
- K: High pressure type (Metal seal type only)
- R: External pilot type
- BR: High speed response/External pilot type

**Symbol**
- Y: DIN terminal
- YO: DIN terminal without connector
- YZ: DIN terminal without connector (DC specification)

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

**Electrical entry**
- Symbol: Electrical entry
- Light surge voltage suppressor

**Symbol**
- G: Grommet (DC specification)
- L: L-type plug connector with lead wire
- LO: L-type plug connector without connector

**Coil voltage**

- 1: 100 VAC (50/60 Hz)
- 2: 200 VAC (50/60 Hz)
- 3: 110 VAC (115 VAC) (50/60 Hz)
- 4: 220 VAC (230 VAC) (50/60 Hz)
- 5: 24 VDC
- 6: 12 VDC

**Note**
- AC-type models that are CE compliant have DIN terminals only.

**CE compliant**
- Nil
- Q CE marked

**IP65 compliant**
- Nil
- W Compliant
Base Mounted Series VQZ1000/2000/3000

Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Piping direction</th>
<th>Port size</th>
<th>Applicable solenoid valve</th>
<th>Applicable stations</th>
<th>Manifold base mass (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000</td>
<td>VV5QZ15-05C</td>
<td>Side</td>
<td>Rc1/8</td>
<td>C3 (for ø3.2)</td>
<td>2 to 20 stations</td>
<td>2 stations: 105 Additon per station: 27</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Side</td>
<td>Rc1/4</td>
<td>C4 (for ø4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ2000</td>
<td>VV5QZ25-05C</td>
<td>Side</td>
<td>Rc1/4</td>
<td>C4 (for ø4)</td>
<td>2 to 20 stations</td>
<td>2 stations: 193 Addition per station: 54</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Side</td>
<td>Rc1/8</td>
<td>C8 (for ø8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VQZ3000</td>
<td>VV5QZ35-05C</td>
<td>Side</td>
<td>1(P) port Rc 3/8 3/5(R) port Rc 1/4</td>
<td>C6 (for ø6) C8 (for ø8) C10 (for ø10) Rc 1/4</td>
<td>2 to 20 stations</td>
<td>2 stations: 389 Addition per station: 102</td>
</tr>
</tbody>
</table>

Note) Weight without sub-plate.

How to Order Manifold Assembly (Example)

Example

- VV5QZ25-05C6C ··· 1 set (C kit 5-station manifold base part no.)
- VVQZ2000-10A-5 ··· 1 set (Blanking plate assembly part no.)
- VQZ2150-5L1 ··· 1 set (Single type part no.)
- VQZ2250-5L1 ··· 2 sets (Double type part no.)
- VQZ2350-5L1 ··· 1 set (3 position type part no.)

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

Enter in order starting from the first station on the D side.

Add the valve and option part number under the manifold base part number. When entry of part numbers becomes complicated, indicate by the manifold specification sheet.
Series VQZ1000/2000/3000

Dimensions: VQZ1000

VV5QZ15- [Stations] Port size C

Grommet (G)

L1 L2 L3 L4 (Pitch) P = 10.5 (DIN rail clamp thread) (DIN rail)

44.7 [46.9] 95.6 [100] 104.2 [108.6] 54.2 [56.4] 55.7 [62.7]

Approx. 300 (Lead wire length)

Approx. 300

123.8 [128.2] 115.2 [119.6] 40.3 [44.4] 8.5 [16.1]

C6: 3.92 N7: 7.7

55.7

The dashed lines indicate the DIN rail mounting [-D].

L-type plug connector (L)

M-type plug connector (M)

The dashed lines indicate the DIN rail mounting [-D].

Unless otherwise indicated, dimensions are the same as Grommet (G).

[ ]: AC

Dimensions

<table>
<thead>
<tr>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>L5</th>
</tr>
</thead>
<tbody>
<tr>
<td>73</td>
<td>62.5</td>
<td>38.5</td>
<td>17.5</td>
<td>30.5</td>
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<tr>
<td>85.5</td>
<td>75</td>
<td>59.5</td>
<td>18.5</td>
<td>51.5</td>
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<tr>
<td>98</td>
<td>100</td>
<td>70</td>
<td>19.5</td>
<td>62</td>
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<tr>
<td>110.5</td>
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<td>135.5</td>
<td>137.5</td>
<td>112</td>
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<td>148</td>
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<td>237.5</td>
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<td>237.5</td>
<td>217</td>
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<td>260.5</td>
<td>250</td>
<td>227.5</td>
<td>16</td>
<td>219.5</td>
</tr>
</tbody>
</table>

Formula: L1 = 10.5n + 9.5, L2 = 10.5n + 17.5, n: Stations (Max. 20 stations)

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**Base Mounted Series VQZ1000/2000/3000**

**Dimensions: VQZ2000**

<table>
<thead>
<tr>
<th>Ports</th>
<th>Port size</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grommet (G)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>L3</td>
<td>L2</td>
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</tr>
</tbody>
</table>
**Series VQZ1000/2000/3000**

**Dimensions: VQZ3000**

**VV5QZ35- [Stations] Port size C**

- **Grommet (G)**
  - Approx. 300 (Lead wire length)
  - Manual override
  - (Rail mounting hole pitch: 12.5)

- **4(A), 2(B) port**
  - One-touch fitting
  - Applicable tubing O.D.: ø6, ø1/4" ø8, ø5/16" ø10, ø3/8"

- **4(A), 2(B) port**
  - DIN rail clamp thread
  - DIN rail
  - DIN rail clamp thread

**L-type plug connector (L)**

- Approx. 300 (Lead wire length)
- DIN rail mounting [-D]
- Dimensions: VQZ3000

**M-type plug connector (M)**

- Approx. 300 (Lead wire length)
- DIN rail mounting [-D]
- Dimensions: VQZ3000

**DIN terminal (Y)**

- Applicable cable O.D.
  - ø3.5 to ø7

**Formula:**

L1 = 20n + 10
L2 = 20n + 32
n: Stations (Max. 20 stations)

---

### Dimensions

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tr>
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<td>123</td>
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<td>285.5</td>
<td>310.5</td>
<td>323</td>
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<td>385.5</td>
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<td>19.5</td>
<td>15.5</td>
<td>18</td>
<td>20.5</td>
<td></td>
<td></td>
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<td>L5</td>
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<td>130</td>
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<td>350</td>
<td>370</td>
<td>390</td>
<td>410</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Blanking plate assembly
VVQZ1000-10A-5 (for VQZ1000)
VVQZ2000-10A-5 (for VQZ2000)
VVQZ3000-10A-5 (for VQZ3000)

It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

Restrictor spacer (Applicable to VQZ2000)
VVQZ2000-20A-5

Mount a restrictor spacer between manifold base and valve, and thus making it possible to control cylinder speed by meter-out.

Individual SUP spacer
VVQZ1000-P-5-M5 (-Q) (for VQZ1000)
VVQZ2000-P-5-01 (-Q) (for VQZ2000)
VVQZ3000-P-5-02 (-Q) (for VQZ3000)

Supply port can be installed individually by mounting an individual supply spacer onto the manifold block. It’s used for such cases that the different pressure should be supplied into each valve, etc.

Individual EXH spacer
VVQZ1000-R-5-M5 (-Q) (for VQZ1000)
VVQZ2000-R-5-01 (-Q) (for VQZ2000)
VVQZ3000-R-5-02 (-Q) (for VQZ3000)

Exhaust port can be installed individually by mounting an individual exhaust spacer on to the manifold block. It’s used for such cases that the valve exhaust is likely to affect other stations due to circuit, etc.

Port plug
VVQZ1000-CP (for VQZ1000)
VVQZ2000-CP (for VQZ2000)
VVQZ3000-CP (for VQZ3000)

Used to block a cylinder port when changing 5 port valves into 3 port valves, etc.
Series VQZ1000/2000/3000

Manifold Options

Name plate [-N] (Applicable to VQZ2000/3000)
VVQZ2000-N5- Stations (for VQZ2000)
VVQZ3000-N5- stations (for VQZ3000)

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.

• To order a manifold with nameplate already attached, insert “N” at the end of the manifold number.

• 4 clips are attached for name plate mounting.

DIN rail
AXT100-DR-

As for □, enter the number from the DIN rail dimensions table. For L dimension, refer to the dimensions of each kit.

Each manifold can be mounted on a DIN rail. Order it by indicating an option symbol for DIN rail mounting, -D.
The DIN rail is approximately 30 mm longer than the length of manifold.

Blanking plug
KQ2P-23
KQ2P-04
KQ2P-06
KQ2P-08
KQ2P-10

Silencer (for manifold EXH port)

Silencer is installed in the manifold EXH port.

Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>KQ2P-23</td>
<td>16</td>
<td>31.5</td>
<td>3.2</td>
</tr>
<tr>
<td>KQ2P-04</td>
<td>16</td>
<td>32</td>
<td>6</td>
</tr>
<tr>
<td>KQ2P-06</td>
<td>18</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td>KQ2P-08</td>
<td>20.9</td>
<td>39</td>
<td>10</td>
</tr>
<tr>
<td>KQ2P-10</td>
<td>22</td>
<td>43</td>
<td>12</td>
</tr>
</tbody>
</table>

Series VQZ1000/2000/3000

Manifold Options

Name plate [-N] (Applicable to VQZ2000/3000)
VVQZ2000-N5- Stations (for VQZ2000)
VVQZ3000-N5- stations (for VQZ3000)

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.

• To order a manifold with nameplate already attached, insert “N” at the end of the manifold number.

• 4 clips are attached for name plate mounting.

DIN rail
AXT100-DR-

As for □, enter the number from the DIN rail dimensions table. For L dimension, refer to the dimensions of each kit.

Each manifold can be mounted on a DIN rail. Order it by indicating an option symbol for DIN rail mounting, -D.
The DIN rail is approximately 30 mm longer than the length of manifold.

Blanking plug
KQ2P-23
KQ2P-04
KQ2P-06
KQ2P-08
KQ2P-10

Silencer (for manifold EXH port)

Silencer is installed in the manifold EXH port.

Dimensions

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>L</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>KQ2P-23</td>
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<td>3.2</td>
</tr>
<tr>
<td>KQ2P-04</td>
<td>16</td>
<td>32</td>
<td>6</td>
</tr>
<tr>
<td>KQ2P-06</td>
<td>18</td>
<td>35</td>
<td>8</td>
</tr>
<tr>
<td>KQ2P-08</td>
<td>20.9</td>
<td>39</td>
<td>10</td>
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<tr>
<td>KQ2P-10</td>
<td>22</td>
<td>43</td>
<td>12</td>
</tr>
</tbody>
</table>
Base Mounted Series VQZ1000/2000/3000

Manifold Options

Perfect block (Separated): For VQZ1000
VQ1000-FPG-

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the perfect block with a built-in pilot type perfect 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 of a 2 position single or double solenoid with a perfect block will prevent the cylinder from "dropping" at stroke end when residual supply pressure is released.

Specifications

Maximum operating pressure 0.8 MPa
Minimum operating pressure 0.15 MPa
Ambient and fluid temperature –5 to 50°C
Flow characteristics: C 0.60 dm³/(s·bar)
Max. operating frequency 180 c.p.m

Dimensions

Single unit

IN side port size OUT side port size

Manifold (DIN rail mounting style)

VQ1000-FPG-

Order DIN rail mounting style [D] for perfect block.

How to Order

Perfect block
VQ1000-FPG-

IN side port size OUT side port size

Manifold (DIN rail mounting style)

VQ1000-FPG-

Note) Based on JIS B 8375-1981
(Supply pressure: 0.5 MPa)

<Check valve operating principle>

Cylinder side pressure (P2)
SUP side pressure (P1)

<Example>

To CYL port

<Bracket assembly>

Part no. Tightening torque (N·m)

VQ1000-FPG-FB 0.22 to 0.25

Note: It is the tightening torque for mounting a bracket for the perfect block.
**Series VQZ1000/2000/3000**

**Manifold Options**

**Perfect block (Separated): For VQ20000/3000 VQ2000-FPG-**

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the perfect block with a built-in pilot type perfect 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 of a 2 position single or double solenoid with a perfect block will prevent the cylinder from “dropping” at stroke end when residual supply pressure is released.

**Specifications**

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>Maximum operating pressure</td>
<td>0.8 MPa</td>
</tr>
<tr>
<td>Minimum operating pressure</td>
<td>0.15 MPa</td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>0°C</td>
</tr>
<tr>
<td>Flow characteristics: C</td>
<td>3.0 dm³/s bar</td>
</tr>
<tr>
<td>Max. operating frequency</td>
<td>180 c.p.m</td>
</tr>
</tbody>
</table>

**Dimensions**

**Manifold**

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>L1</td>
<td>Formula L1 = 22n + 24</td>
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<tr>
<td>n: Station</td>
<td>L1(n) = 130 + 24</td>
</tr>
<tr>
<td>L2</td>
<td>128</td>
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<tr>
<td>L3</td>
<td>45</td>
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<tr>
<td>L4</td>
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<td>L5</td>
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<td>L6</td>
<td>45</td>
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<tr>
<td>L7</td>
<td>45</td>
</tr>
<tr>
<td>L8</td>
<td>45</td>
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</tbody>
</table>

**How to Order**

**Perfect block**

VQ2000-FPG-**01**

<table>
<thead>
<tr>
<th>IN side port size</th>
<th>OUT side port size</th>
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</thead>
<tbody>
<tr>
<td>01 Rc 1/8</td>
<td>01 Rc 1/8</td>
</tr>
<tr>
<td>02 Rc 1/4</td>
<td>02 Rc 1/4</td>
</tr>
<tr>
<td>C6 ø6 one-touch fitting</td>
<td>C6 ø6 one-touch fitting</td>
</tr>
<tr>
<td>C8 ø8 one-touch fitting</td>
<td>C8 ø8 one-touch fitting</td>
</tr>
</tbody>
</table>

**Manifold (DIN rail mounting style)**

VQ2000-FPG-**06**

Order DIN rail mounting style [-D] for perfect block.

**<Example>**

2 position

3 position/exhaust center

Drop prevention

Intermediate stop

**<Bracket assembly>**

Part no. | Tightening torque (N·m)
---------|------------------------
VQ2000-FPG-FB | 0.8 to 1.0

**Note**

- Since air leakage from the pipe between the valve and cylinder or the fittings will prevent the cylinder from stopping for a long time. Check for air 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 air leakage from the pipe between the valve and cylinder or the fittings will prevent the cylinder from stopping for a long time. Check for air 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.
- If exhaust side of perfect block is narrowed down too much, intermediate stopping accuracy will be decreased.

**<Check valve operating principle>**
Compact Body Type with Restrictor: For VQZ2000

- Restrictors are built into the valve body, making it easier to adjust cylinder speed.
- Needle valve is equipped with a retainer to prevent accidental needle loss.

Flow Characteristics

<table>
<thead>
<tr>
<th>Valve Part No.</th>
<th>Manifold Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5QZ25C</td>
<td>05</td>
</tr>
<tr>
<td>Symbol</td>
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<tr>
<td>Compact body</td>
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<tr>
<td>Stations</td>
<td></td>
</tr>
<tr>
<td>02</td>
<td>2 stations</td>
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<tr>
<td>20</td>
<td>20 stations</td>
</tr>
<tr>
<td>Manifold type</td>
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</tr>
<tr>
<td>02</td>
<td>Base mounted</td>
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<tr>
<td>01</td>
<td>2 position single</td>
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<td>03</td>
<td>3 position double</td>
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<td>04</td>
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<td>05</td>
<td>3 position exhaust center</td>
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<tr>
<td>Body type</td>
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<td>Base mounted</td>
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<td>Seal type</td>
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<td>Nil</td>
<td>None</td>
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<tr>
<td>Nil</td>
<td>With</td>
</tr>
<tr>
<td>Note 1) Valve with restrictors is available on rubber seal models only.</td>
<td></td>
</tr>
<tr>
<td>Note 2) Since the body (of this type) is made compact, there is no interchangeability with the standard VQZ2000.</td>
<td></td>
</tr>
<tr>
<td>Note 3) Tightening torque of needle valve lock nut should not exceed 0.3 N.m.</td>
<td></td>
</tr>
</tbody>
</table>

Specifications

<table>
<thead>
<tr>
<th>Configuration</th>
<th>Model</th>
<th>Flow rate characteristics</th>
<th>Response time (ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single</td>
<td>VQQ1500-D-C</td>
<td>0.74 0.19 0.17 0.63 0.19 0.16</td>
<td>40</td>
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<tr>
<td></td>
<td>VQQ1511-D-C</td>
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<td></td>
<td>VQQ1522-D-C</td>
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</tr>
<tr>
<td></td>
<td>VQQ2150-D-C</td>
<td>0.74 0.19 0.17 0.63 0.19 0.16</td>
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</tr>
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<td>VQQ2151-D-C</td>
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<td>44</td>
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<tr>
<td></td>
<td>VQQ2350-D-C</td>
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<td>VQQ2351-D-C</td>
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<tr>
<td></td>
<td>VQQ2352-D-C</td>
<td>1.2 0.13 0.27 0.40 0.25 0.10</td>
<td>54</td>
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<tr>
<td></td>
<td>VQQ2450-D-C</td>
<td>0.74 0.19 0.17 0.63 0.19 0.16</td>
<td>40</td>
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<tr>
<td></td>
<td>VQQ2451-D-C</td>
<td>1.2 0.17 0.26 1.0 0.20 0.24</td>
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<tr>
<td></td>
<td>VQQ2452-D-C</td>
<td>1.2 0.13 0.27 0.40 0.25 0.10</td>
<td>54</td>
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</tbody>
</table>

Valve Part No.

VQZ2150-D-C

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port size [4(A), 2(B) port]</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>ø5.2 one-touch fitting</td>
</tr>
<tr>
<td>D</td>
<td>ø6 one-touch fitting</td>
</tr>
<tr>
<td>C</td>
<td>ø6 one-touch fitting</td>
</tr>
<tr>
<td>C</td>
<td>ø6 one-touch fitting</td>
</tr>
<tr>
<td>D</td>
<td>ø6 one-touch fitting</td>
</tr>
</tbody>
</table>

Note 1) The one-touch fittings on the compact manifold are pressed in and therefore cannot be changed out.

Note 2) For inch size one-touch fittings, refer to page 966.

Manual override

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port size</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Rc 1/8</td>
</tr>
</tbody>
</table>

Note 1) Option
Note 2) For AC specification power consumption, refer to page 943.

Coil voltage

<table>
<thead>
<tr>
<th>Number</th>
<th>Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>100 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>2</td>
<td>200 VAC (50/60 Hz)</td>
</tr>
<tr>
<td>3</td>
<td>110 VAC (115 VAC) (50/60 Hz)</td>
</tr>
<tr>
<td>4</td>
<td>220 VAC (230 VAC) (50/60 Hz)</td>
</tr>
<tr>
<td>5</td>
<td>24 VDC</td>
</tr>
<tr>
<td>6</td>
<td>12 VDC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard</td>
</tr>
<tr>
<td>Nil</td>
<td>High pressure type (Metal seal type only)</td>
</tr>
</tbody>
</table>

Sub-plate Part No.

VQZ2500C-S-01-2-(C)

Blanking Plate Assembly

VQZ2500C-T0A-5

Thread type
Series VQZ1000/2000/3000

Dimensions: VQZ2000 (Compact Body Type: Single Unit)

Grommet (G)

L-type plug connector (L)

M-type plug connector (M)

Unless otherwise indicated, dimensions are the same as Grommet (G).
Base Mounted Series VQZ1000/2000/3000

Dimensions: VQZ2000 (Compact Body Type: Manifold)

<table>
<thead>
<tr>
<th>Stations</th>
<th>Port size</th>
<th>L1</th>
<th>L2</th>
<th>L3</th>
<th>L4</th>
<th>L5</th>
<th>L6</th>
<th>L7</th>
<th>L8</th>
<th>L9</th>
<th>L10</th>
<th>L11</th>
<th>L12</th>
<th>L13</th>
<th>L14</th>
<th>L15</th>
<th>L16</th>
<th>L17</th>
<th>L18</th>
<th>L19</th>
<th>L20</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>85.5</td>
<td>98</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>173</td>
<td>185.5</td>
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<td>283</td>
<td>299</td>
<td>315</td>
<td>331</td>
<td></td>
</tr>
</tbody>
</table>

L-type plug connector (L)

M-type plug connector (M)

The dashed lines indicate the DIN rail mounting (D).
Unless otherwise indicated, dimensions are the same as Grommet (G).

เคลื่อนที่: AC
**Series VQZ Options**

**External Pilot Specification**

The external pilot specification is used when the operating pressure is below the minimum operating pressure 0.1 to 0.2 MPa or when valve is used for a vacuum application. Order a valve by adding the external pilot specification [R] to the part number.

**Valve Part No.**

VQZ [ ] 5 [ ] [ ] [ ] [ ] [ ]

- Entry is the same as standard products.

**Manifold Part No.**

VV5QZ [ ] 5 [ ] [ ] [ ] [ ] [ ]

- Entry is the same as standard products.

**Pressure Specifications**

<table>
<thead>
<tr>
<th>Series</th>
<th>VQZ1000/2000/3000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 position single</td>
</tr>
<tr>
<td>Metal seal range</td>
<td>0.1 to 0.7 MPa</td>
</tr>
<tr>
<td>Rubber seal range</td>
<td>0.15 to 0.7 MPa</td>
</tr>
<tr>
<td>Operating pressure range</td>
<td>–100 kPa to 0.7 MPa</td>
</tr>
</tbody>
</table>

**Note:** In case of the high pressure type, upper limit of max. operating pressure and external pilot pressure range is 1 MPa.

**Inch Size One-touch Fittings and Optional Threads**

Inch size one-touch fittings and NPT, NPTF and G thread are available.

**Manifold Part No.**

VV5QZ [ ] 5 [ ] [ ] [ ] [ ] [ ]

- Cylinder port

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Applicable tubing O.D.</th>
<th>N1</th>
<th>N3</th>
<th>N7</th>
<th>N9</th>
<th>N11</th>
<th>Nil</th>
<th>M5</th>
<th>01</th>
<th>02</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000</td>
<td>ø1/8” ø5/32” ø1/4” ø5/16” ø3/8” Mixed</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>VQZ2000</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
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<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>VQZ2000 (Compact)</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
</tr>
<tr>
<td>VQZ3000</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
<td>☑</td>
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<td>☑</td>
<td>☑</td>
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</tbody>
</table>

- Thread type

<table>
<thead>
<tr>
<th>Cylinder port and 1(P), 3(R2), 5(R1) ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
</tr>
</tbody>
</table>

**Note 1:** Mixing one-touch fittings and thread types is impossible.

**Note 2:** Metric size one-touch fittings are also available.

**Valve Part No.**

VQZ [ ] 5 [ ] [ ] [ ] [ ] [ ]

- Entry is the same as standard products.

**Thread type**

<table>
<thead>
<tr>
<th>Cylinder port and 1(P), 3(R2), 5(R1) ports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
</tr>
</tbody>
</table>

**IP65 Enclosure (Based on IEC60529)**

DIN terminal is available with IP65 enclosure.

**How to Order Single Valve**

(Applicable to the VQZ2000/3000 rubber seal with the exception of the external pilot type)

VQZ [ ] 5 [ ] [ ] [ ] [ ] [ ]

- Entry is the same as standard products.

**Note:** The pilot exhaust IP65 valves is common with main valve exhaust. (The standard valve has an individual exhaust for the pilot valve.)
### Series VQZ Base Mounted

#### Replacement Parts

**One-touch Fitting Assembly (for Cylinder port)**

<table>
<thead>
<tr>
<th>Model</th>
<th>Fitting size</th>
<th>C3</th>
<th>C4</th>
<th>C6</th>
<th>C8</th>
<th>C10</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000</td>
<td>VVQ1000-50A-C3</td>
<td>VVQ1000-50A-C4</td>
<td>VVQ1000-50A-C6</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>VQZ2000</td>
<td>—</td>
<td>VVQ1000-51A-C4</td>
<td>VVQ1000-51A-C6</td>
<td>VVQ1000-51A-C8</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

(Notice: Purchasing order is available in units of 10 pieces.)

**Plug connector assembly**

- **DC**: SY100-30-4A-
- **100 VAC**: SY100-30-1A-
- **200 VAC**: SY100-30-2A-

**Other AC voltages**: SY100-30-3A-

**Without lead wire**: SY100-30-A

**Lead wire length**

- **Nil**: 300 mm
- **6**: 600 mm
- **10**: 1000 mm
- **20**: 2000 mm
- **25**: 2500 mm
- **30**: 3000 mm
- **50**: 5000 mm

**How to Order**

Include the connector assembly part number together with the part number for the plug connector’s solenoid valve without connector.

**Example**

- **DC**: VQZ1150-1LO1-M5
- **AC**: VQZ1150-5LO1-M5

**Pilot valve assembly**

**Function**

**V111**

- **Symbol**: G

**Applicable model (Length of screws attached is different from each other)**

- **Nil**: VQZ2000/3000
- **A and B side of VQZ1000 single, double solenoid type**: VQZ1150
- **A side of VQZ1000 3 position**: VQZ1000-50A-C6
- **B side of VQZ1000 3 position**: VQZ1000-51A-C6

**Coil voltage**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Specifications</th>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nil</td>
<td>Standard</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>High speed response type</td>
<td>(0.5 W)</td>
<td>(0.9 W)</td>
</tr>
<tr>
<td>K</td>
<td>High pressure type (Metal seal type only)</td>
<td>(0.5 W)</td>
<td>(0.9 W)</td>
</tr>
</tbody>
</table>

**Electrical entry**

- **Symbol**: Electrical entry
- **Light/surge voltage suppressor**: None
- **Grommet (DC specification)**: Yes
- **L-type plug connector with lead wire**: Yes
- **L-type plug connector without connector**: Yes
- **M-type plug connector with lead wire**: Yes
- **M-type plug connector without connector**: Yes

**Gasket and screw assembly**

<table>
<thead>
<tr>
<th>Part no.</th>
<th>Model</th>
<th>Part no.</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000-50A-C3</td>
<td>VQZ1000-GS-5</td>
<td>VQZ2000-GS-5</td>
<td>VQZ3000-GS-5</td>
</tr>
</tbody>
</table>

(Notice: Each unit has one gasket and two screws. Purchasing order is available in units of 10 pieces.)

**Sub-plate**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sub-plate part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000</td>
<td>VQZ100-01-(O)</td>
</tr>
<tr>
<td>VQZ2000</td>
<td>VQZ200-01-(O)</td>
</tr>
<tr>
<td>VQZ3000</td>
<td>VQZ300-01-(O)</td>
</tr>
</tbody>
</table>

(Notice: Thread type)

---

**Caution**

When replacing only the pilot valve assembly, use caution because it is not possible to convert to a V115 (DIN terminal) from a V111 (Grommet, L-type, M-type), or vice versa.
**EX510 Gateway System**

**Serial Transmission System**

**Series VQZ1000/2000/3000**

**Base Mounted Manifold**

---

**How to Order Manifold**

**Example**

**Symbol**

- M5
- NPT
- NPTF
- Rc
- G
- F

**Port size**

- A, B port size
- Thread piping

**One-touch fitting (Metric size)**

**Symbol**

- C3
- C4
- C6
- C8
- C10
- CM

**Port size**

- Ø3.2 one-touch fitting
- Ø4 one-touch fitting
- Ø6 one-touch fitting
- Ø8 one-touch fitting
- Ø10 one-touch fitting
- Mixture of port sizes

**One-touch fitting (Inch size)**

**Symbol**

- N1
- N3
- N7
- N9
- N11
- NM

**Port size**

- 1/8” one-touch fitting
- 3/32” one-touch fitting
- 1/16” one-touch fitting
- a3/8” one-touch fitting
- Mixture of port sizes

---

**Symbol**

- VI
- VQ
- VP
- VQZ
- VFS
- VFR
- VQ7

---

**How to Order Valve Manifold Assembly (Example)**

**Symbol**

- VQZ2150
- VQZ2250
- VQZ2350

**Port size**

- VQ5
- VQ6
- VQ7

**CE compliant**

- Nil
- Q

---

For details of "Gateway System Serial Transmission System, Series EX510", refer to pages 1696 through to 1724.
Series VQZ1000/2000/3000

How to Order Valve

VQZ 1 1 5 1 — 5 MO 1 —

Series
1 VQZ1000
2 VQZ2000
3 VQZ3000

Type of actuation
1 2 position single
2 2 position double
3 3 position closed center
4 3 position exhaust center
5 3 position pressure center
8 3 port for mixture mounting, N.C.
9 3 port for mixture mounting, N.O.

Note) There is no 3 position pressure center for the metal seal type of the VQZ1000 series.

Seal type
0 Metal seal
1 Rubber seal

Function
Symbol Specifications DC
Nil Standard 0.32 W
B Note 1) High speed response type 0.32 W
K Note 1) High pressure type (Metal seal type only) 0.32 W
R Note 1, 2) External pilot type 0.3 W
BR Note 1, 2) High speed response/External pilot type 0.3 W
KR Note 1, 2) High pressure/External pilot type (Metal seal type only) 0.3 W

Note 1) Option
Note 2) For details on external pilot type, refer to page 966.

Made to Order
(For details, refer to page 975.)

Symbol Description
X30 Pilot valve common exhaust
X90 Main valve fluoro-rubber
X113 All fluoro-rubber

Rated voltage: 24 VDC

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

Electrical entry
LO L-type plug connector without connector
MO M-type plug connector without connector

Note) With light/surge voltage suppressor

CE compliant
Nil
Q CE marked

Made to Order
(For details, refer to page 975.)

Symbol Description
X30 Pilot valve common exhaust
X90 Main valve fluoro-rubber
X113 All fluoro-rubber
EX510 Gateway System  
Serial Transmission System Series VQZ1000/2000/3000

Dimensions: VQZ1000-SA: EX510 Gateway System Serial Transmission System

The dashed lines indicate the DIN rail mounting [-D].

Unless otherwise indicated, dimensions are the same as L-type plug connector (L).

Dimensions

<table>
<thead>
<tr>
<th></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>123</td>
<td>123</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>
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<td>210.5</td>
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<td>235.5</td>
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<tr>
<td>L2</td>
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<td>112.5</td>
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<td>112.5</td>
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<td>152</td>
<td>164</td>
<td>176</td>
<td>188</td>
<td>200</td>
</tr>
</tbody>
</table>

Note) The L dimension of 2 to 6 stations is the same. Valves are numbered from the D side according up to the number of stations.

The M-type plug connector (M)
Series VQZ1000/2000/3000


One-touch fitting
[4(A), 2(B) port]
Applicable tubing D.D.: ø4, ø5/32"
ø6, ø1/4"
ø8, ø5/16"

(Pitch)
P = 17

(Pitch)
P = 17

1/8
[4(A), 2(B) port]

L-type plug connector (L)

M-type plug connector (M)

The dashed lines indicate the DIN rail mounting [D].
Unless otherwise indicated, dimensions are the same as L-type plug connector (L).

AC

Dimensions

<table>
<thead>
<tr>
<th>L</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>16</th>
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</thead>
<tbody>
<tr>
<td>L1</td>
<td>135.5</td>
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<td>135.5</td>
<td>135.5</td>
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<tr>
<td>L3</td>
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<td>213</td>
<td>230</td>
<td>247</td>
<td>264</td>
<td>281</td>
</tr>
</tbody>
</table>

Max. 16 stations

Note) The L dimension of 2 to 5 stations is the same. Valves are numbered from the D side according up to the number of stations.
### Dimensions: VQZ3000-SA

**EX510 Gateway System Serial Transmission System**

- **One-touch fitting**
  - (4(A), 2(B) port)
  - Applicable tubing O.D.: ø6, ø1/4”
  - ø8, ø5/16”
  - ø10, ø3/8”

- **Manual override**
  - Output no.

- **Connector locking pin**
  - (Remove before wiring the connector assembly.)

#### L-type plug connector (L)

- **Dimensions**

<table>
<thead>
<tr>
<th></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>
<th>Max. 16 stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>123</td>
<td>123</td>
<td>148</td>
<td>173</td>
<td>185.5</td>
<td>210.5</td>
<td>223</td>
<td>248</td>
<td>273</td>
<td>285.5</td>
<td>310.5</td>
<td>323</td>
<td>348</td>
<td>373</td>
<td>385.5</td>
<td></td>
</tr>
<tr>
<td>L2</td>
<td>112.5</td>
<td>112.5</td>
<td>137.5</td>
<td>162.5</td>
<td>175</td>
<td>200</td>
<td>212.5</td>
<td>237.5</td>
<td>262.5</td>
<td>275</td>
<td>300</td>
<td>312.5</td>
<td>337.5</td>
<td>362.5</td>
<td>375</td>
<td></td>
</tr>
<tr>
<td>L3</td>
<td>92</td>
<td>92</td>
<td>112</td>
<td>132</td>
<td>152</td>
<td>172</td>
<td>192</td>
<td>212</td>
<td>232</td>
<td>252</td>
<td>272</td>
<td>292</td>
<td>312</td>
<td>332</td>
<td>352</td>
<td></td>
</tr>
<tr>
<td>L4</td>
<td>15.5</td>
<td>15.5</td>
<td>16</td>
<td>20.5</td>
<td>17</td>
<td>19.5</td>
<td>15.5</td>
<td>18</td>
<td>20.5</td>
<td>17</td>
<td>19.5</td>
<td>15.5</td>
<td>18</td>
<td>20.5</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>L5</td>
<td>70</td>
<td>70</td>
<td>90</td>
<td>110</td>
<td>130</td>
<td>150</td>
<td>170</td>
<td>190</td>
<td>210</td>
<td>230</td>
<td>250</td>
<td>270</td>
<td>290</td>
<td>310</td>
<td>330</td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
- The L dimension of 2 to 3 stations is the same. Valves are numbered from the D side according to the number of stations.
- Unless otherwise indicated, dimensions are the same as L-type plug connector (L).
Series VQZ1000/2000/3000

Manifold Options

Connector assembly

Single solenoid (SY3000-37-81A-N)

Double solenoid (SY3000-37-81A-N)

Connector Assembly Part No. (for a manifold with 8 stations or less with an unspecified layout)

<table>
<thead>
<tr>
<th>Model</th>
<th>Part no.</th>
<th>Connector mounting position</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5QZ12</td>
<td>SY3000-37-81A-3-N</td>
<td>Single: for 1 to 4 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-81A-3-6</td>
<td>Double/3 position: for 1 to 4 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-81A-2-N</td>
<td>Single: for 5 to 8 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-81A-3-6</td>
<td>Double/3 position: for 5 to 8 stations</td>
</tr>
<tr>
<td>VV5QZ22</td>
<td>SY3000-37-81A-3-N</td>
<td>Single: for 1 to 4 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-81A-3-6</td>
<td>Double/3 position: for 1 to 8 stations</td>
</tr>
<tr>
<td>VV5QZ32</td>
<td>SY3000-37-81A-3-N</td>
<td>Single: for 1 to 4 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-81A-3-6</td>
<td>Double/3 position: for 1 to 8 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-81A-4-N</td>
<td>Single: for 5 to 8 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-81A-4-7</td>
<td>Double/3 position: for 5 to 8 stations</td>
</tr>
</tbody>
</table>

Note) There are no part nos. on the connectors of connector assemblies.

Connector Assembly Part No. (for a manifold with a specified layout)

<table>
<thead>
<tr>
<th>Model</th>
<th>Part no.</th>
<th>Connector mounting position</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV5QZ12</td>
<td>SY3000-37-80A-3</td>
<td>A side For 1 to 8 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-6</td>
<td>B side For 9 to 16 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-4</td>
<td>A side For 9 to 16 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-7</td>
<td>B side For 9 to 16 stations</td>
</tr>
<tr>
<td>VV5QZ22</td>
<td>SY3000-37-80A-3</td>
<td>A side For 1 to 8 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-6</td>
<td>B side For 9 to 16 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-7</td>
<td>A side For 9 to 16 stations</td>
</tr>
<tr>
<td>VV5QZ32</td>
<td>SY3000-37-80A-4</td>
<td>A side For 9 to 16 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-7</td>
<td>B side For 9 to 16 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-8</td>
<td>A side For 9 to 16 stations</td>
</tr>
<tr>
<td></td>
<td>SY3000-37-80A-11</td>
<td>B side For 9 to 16 stations</td>
</tr>
</tbody>
</table>

Note 1) Since these connector assemblies are used when adding stations or for maintenance, there are no part nos. on them.

Note 2) After inserting the connector assembly into the housing, slightly pull the lead wire to make sure it does not pull out. Do not reuse the lead wire once it has been inserted.

Note 3) Please note that the wires are longer than the actual wiring distance.
Series VQZ1000/2000/3000
Made to Order
Please contact SMC for detailed dimensions, specifications, and lead times.

1 Pilot Valve Common Exhaust Specification

Pilot exhaust is exhausted through the main R port.
* Not designed to prevent leakage to outside.
* A combination of external pilots is not available.
* "How to Order Manifold" is the same as standard products. Please specify this to "How to Order Valve."

Applicable solenoid valve series: VQZ1000/2000/3000

How to Order

VQZ X30

* Entry is the same as standard products.

X30 Pilot valve common exhaust

2 Main Valve Fluoro-rubber Specification

The seal material, the part of the main valve in contact with fluid, is made of fluoro-rubber.
* "How to Order Manifold" is the same as standard products. Please specify this to "How to Order Valve."

Applicable solenoid valve series: VQZ1000/2000/3000

How to Order

VQZ X90

* Seal type
  1 Rubber seal

X90 Main valve fluoro-rubber

3 All Fluoro-rubber Specification

The rubber material of the part in contact with fluid, is made of fluoro-rubber.
* "How to Order Manifold" is the same as standard products. Please specify this to "How to Order Valve."

Applicable solenoid valve series: VQZ1000/2000/3000

How to Order

VQZ X113

* Entry is the same as standard products.

X113 All fluoro-rubber
### Series VQZ

#### Specific Product Precautions 1

Be sure to read before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

---

**Manual Override**

**Caution**

Without an electric signal for the solenoid valve the manual override is used for switching the main valve. Push type is standard. Locking type (Tool required) is available as an option.

**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 type (Tool required)**

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.

**Precautions**

When operating with a screwdriver, turn it gently using a watchmaker's screwdriver. (Torque: less than 0.1 N·m)

---

**How to Use L/M-Type Plug Connector**

**Caution**

1. **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.

---

**Light/Surge Voltage Suppressor**

**Caution**

1. **L/M-type plug connector**
   - **<DC>**
     - Push down completely on the varistor.
   - **<AC>**
     - Push down completely on the varistor.

2. **DIN terminal**
   - **<DC>**
     - With light/surge voltage suppressor (YS, YOS)
   - **<AC>**
     - With light (YZ)

   Note: Surge voltage suppressor of varistor has residual voltage corresponding to the protective element and rated voltage; therefore, protect the controller side from the surge.

3. **Surge voltage countermeasures**
   - When shutting off the DC power supply using an emergency circuit breaker, the valve may operate incorrectly due to surge voltage generated by other electric parts (e.g., the solenoid). To ensure that surge does not affect the valve, take anti-surge measures (diode for surge protection, etc.) or use a valve with diode to prevent reverse current. (Contact SMC for model numbers.)

---

**Circuit example**

1. Valve equipped with diode to prevent reverse current
2. Examples of anti-surge measures
Series VQZ
Specific Product Precautions 2

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Lead Wire Connection

Caution
1. Crimping of lead wires and sockets
Not necessary if ordering the lead wire pre-connected model. Strip 3.2 to 3.7 mm at the end of the lead wires, insert the ends of the core wires evenly into the sockets, and then crimp with a crimping tool. When this is done, take care that the coverings of the lead wires do not enter the core wire crimping area.

Crimping tool part no. DXT170-75-1

2. Attaching and detaching sockets with lead wires
Attaching
Insert the sockets into the square holes of the connector (socket indication), and continue to push the sockets all the way in until they lock by hooking into the seats in the connector. (When they are pushed in, their hooks open and they are locked automatically.) Then, confirm that they are locked by pulling lightly on the lead wires.

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.

Valve and Pilot Valve Replacement

Caution
1. When replacing a conventional type valve with a new type for maintenance or other reasons, a “conversion connector assembly” is necessary to convert the connector from 3 terminals to 2 terminals and must be ordered separately. (When ordering, refer to the below part nos.)

For pilot valves, there is no compatibility between the conventional type and new type. When replacing a pilot valve, be sure to confirm whether it is the new type or the conventional type.

[Conventional]

[New]

Coil voltage

1. 24/12 VDC
2. 100 VAC
3. 200 VAC
4. Other AC voltages

Crimping tool part no. DXT170-75-1

0.2 to 0.33 mm²
(Max. cover diameter: ø1.7 mm)

Connector

VQZ1000V-85-L50132A
**How to Use DIN Terminal**

1. **Conforming to ISO#: EN-175301-803C (Former DIN 43650C)**
   (8 mm between pins)
   The DIN terminal type with an IP65 enclosure is protected against dust and water, however, it must not be used in water.

2. **Connection**
   1) Loosen the holding screw and pull the connector out of the solenoid valve terminal block.
   2) After removing the holding screw, insert a flat head screwdriver, etc. into the notch on the bottom of the terminal block and pry it open, separating the terminal block and the housing.
   3) Loosen the terminal screws (slotted screws) on the terminal block, insert the cores of the lead wires into the terminals according to the connection method, and fasten them securely with the terminal screws.
   4) Secure the cord by fastening the ground nut.

3. **Changing the entry direction**
   After separating the terminal block and housing, the cord entry can be changed by attaching the housing in the desired direction (4 directions at 90° intervals).
   * When equipped with a light, be careful not to damage the light with the cord’s lead wires.

4. **Precautions**
   Plug in and pull out the connector vertically without tilting to one side.

5. **Compatible cable**
   Cable O.D.: ø3.5 to ø7
   (Reference) 0.5 mm², 2-core or 3-core, equivalent to JIS C 3306

---

**DIN Connector Part No.**

**Without light**

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>Voltage symbol</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>All voltages</td>
<td>None</td>
<td>SY100-82-1</td>
</tr>
</tbody>
</table>

**With light**

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>Voltage symbol</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 VDC</td>
<td>24 V</td>
<td>SY100-82-3-05</td>
</tr>
<tr>
<td>12 VDC</td>
<td>12 V</td>
<td>SY100-82-3-06</td>
</tr>
<tr>
<td>100 VAC</td>
<td>100 V</td>
<td>SY100-82-2-01</td>
</tr>
<tr>
<td>200 VAC</td>
<td>200 V</td>
<td>SY100-82-2-02</td>
</tr>
<tr>
<td>110 VAC (110 VAC)</td>
<td>110 V</td>
<td>SY100-82-2-03</td>
</tr>
<tr>
<td>220 VAC (230 VAC)</td>
<td>220 V</td>
<td>SY100-82-2-04</td>
</tr>
</tbody>
</table>

**Circuit diagram with light**

**AC circuit**

1 2
NL R

**DC circuit**

1 2
NL: Neon light
R: Resistor

**LED: Light emitting diode**

R: Resistor

**Fitting and Silencer Part No. for P, R Ports When Using Valve as an Individual Unit**

Part no. for one-touch fitting for 1(P) port and silencer/one-touch fitting for 3(R2, R), 5(R1) port

<table>
<thead>
<tr>
<th>Series</th>
<th>(1) One-touch fitting for 1(P) port</th>
<th>(2) For 3(R2, R) port, 5(R1) port</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000</td>
<td>KQ2H06-M5</td>
<td>AN120-M5</td>
</tr>
<tr>
<td>VQZ2000</td>
<td>KQ2S06-01S</td>
<td>AN25-46</td>
</tr>
<tr>
<td>VQZ3000</td>
<td>KQ2H08-02S</td>
<td>AN101-01</td>
</tr>
</tbody>
</table>

The diameter of the above fitting and silencer is the maximum diameter to in the EXH port.

---

**Specific Product Precautions 3**

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.
## Series VQZ
### Specific Product Precautions 4

Be sure to read before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

### 3 Port Valve for Mixture Mounting

1. **Body ported (VQZ 82, N.C./VQZ 92, N.O.)**
   - Even though 3 port valves have the same construction as the 5 port single solenoid valves, the port plug is installed in the 2(B) port for N.C. type, and 4(A) port for N.O. type. By changing the port plug into a fitting, it can be used as the 5 port single solenoid valves, too.

   ![3 port valve diagram](image)

2. **Base mounted (VQZ 85, N.C./VQZ 95, N.O.)**
   - 3 port valves have the same external appearance as the 5 port valves. When using this type, 4(A) port on the 3 port valves can be used as 4(A) port on the 5 port valves' manifold, too. Besides, there’s no problem, even though 2(B) port can be either plugged or unplugged.

   ![3 port valve diagram](image)

When port plug is used on 2 (B) port, indicate CM in manifold part no. and port size, and specify the port plug location by the manifold specification sheet.

### One-touch Fittings Replacement

△ **Caution**

The built-in fittings on the manifold can be changed easily. Simply remove the corresponding valve and take out the fitting clip underneath.

Take out the clip with a screwdriver, etc., then replace the fittings. About mounting the fittings, after inserting the fitting until it stops, then put the clip into the prescribed position.

**Precautions**

When pulling the fitting assembly away from the valve base, remove the clip, then connect a tube or plug (KQP-L50132/L50132) with the one-touch fitting and pull it out holding the tube or plug. Do not hold the release bushing to avoid damage.
Series VQZ
Specific Product Precautions 5

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

DIN Rail Removal/Mounting

⚠️ Caution

1. Removing
   1) Loosen the clamp screw on the @ side of both ends of the manifold.
   2) Lift the @ side of the manifold off the DIN rail and slide it in the direction of the @ side.

2. Mounting
   1) Catch the hook of the DIN rail bracket on the @ side on the DIN rail.
   2) Push side @ onto the DIN rail and tighten the clamp screw. The proper tightening torque for screws is 0.3 to 0.4 N·m.

Serial Wiring EX510 Precautions

⚠️ Warning

1. Use within the allowable voltage range.
   Using beyond the allowable voltage range is likely to cause the units and connecting devices to be damaged or to malfunction.

2. Do not use beyond the specified range.
   Using beyond the specified range is likely to cause a fire, malfunction, or breakdown in the units and connecting devices. Check the specifications before handling.

3. Establish a backup system beforehand, which employs fail-safe concepts such as multiple equipment and devices to prevent breakage or malfunction of this product.

4. Provide an external emergency stop circuit that will immediately stop an operation and cut off the power supply.

5. When using for an interlock circuit:
   • Provide a double interlock which is operated by another system (such mechanical protection function).
   • Perform an inspection to check that it is working properly because it can cause possible injuries.

Valve Mounting

⚠️ Caution

1. After confirming the gasket is correctly placed under the valve, securely tighten the bolts with the proper torque shown in the table below.

<table>
<thead>
<tr>
<th>Model</th>
<th>Proper tightening torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQZ1000</td>
<td>0.18 to 0.25 N·m</td>
</tr>
<tr>
<td>VQZ2000</td>
<td>0.25 to 0.35 N·m</td>
</tr>
<tr>
<td>VQZ3000</td>
<td>0.5 to 0.7 N·m</td>
</tr>
</tbody>
</table>

980
### Series VQZ

**Specific Product Precautions 6**

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

---

### Serial Wiring EX510 Precautions

#### Design and Selection

**Caution**

1. **Keep the surrounding space free for maintenance.**
   When designing a system, take into consideration the amount of free space needed for performing maintenance.

2. **Use the following UL approved products for DC power supply combinations.**

   1) Controlled voltage current circuit conforming to UL508
   - Circuit uses the secondary coil of an isolated transformer as the power supply, satisfying the following conditions.
     - Max. voltage (with no load): 30 Vrms (42.4 V peak) or less
     - Max. current: (1) 8 A or less (including shorts), and
     (2) When controlled by a circuit protector (fuse, etc.) with the following rating
     | No-load voltage (V peak) | Max. current rating |
     |-------------------------|---------------------|
     | 0 to 20 [V]             | 5.0                 |
     | Over 20 [V] to 30 [V]   | 100                 |
   2) A circuit (class 2 circuit) with maximum 30 Vrms (42.4 V peak) or less, and a power supply consisting of a class 2 power supply unit confirming to UL1310, or a class 2 transformer confirming to UL1585

3. **This product is one of the components to be equipped into a final equipment. Confirm the adaptability to the EMC directive as the whole equipment by customers themselves.**

4. **The power supply for the Gateway unit should be 0 V as the standard for both power supply for outputs as well as inputs and for the control unit of the Gateway.**

### Mounting

**Caution**

1. **Do not drop, bump, or apply excessive impact.**
   Otherwise, the unit can become damaged, malfunction, or fail to function.

2. **Hold the body while handling this product.**
   Otherwise, the unit can become damaged, malfunction, or fail to function.

3. **Observe the tightening torque range.**
   Tightening outside of the allowable torque range will likely damage the product.

4. **Do not install a unit in a place where it can be used as a scaffold.**
   Applying any excessive load such as stepping on the unit by mistake or placing a foot on it, will cause it to break.

### Wiring

**Warning**

1. **Avoid miswiring.**
   If miswired, there is a probability of damaging units or connecting devices.

2. **Do not wire while energizing the product.**
   It is likely to damage the units or connecting devices.

3. **Avoid wiring the power line and high pressure line in parallel.**
   Noise or surge produced by signal line resulting from the power line or high pressure line could cause a malfunction. Wiring of the reduced-wiring system and the power line or high pressure line should be separated from each other.

4. **Confirm the wiring insulation.**
   Inferior insulation (contact with other circuit, insulation between terminals, etc.) will likely cause damage to the units or connecting devices due to excessive voltage or the influx of current.

**Caution**

1. **Take measures to avoid applying repeated bending force or pulling force to the cable.**
   Also, pay attention not to place any heavy matter on the cable or clipping. It is likely to cause a broken wire.

2. **Confirm grounding to maintain the safety of the reduced-wiring system and for anti-noise performance.**
   Grounding should be close to units and keep the grounding distance short.
**Series VQZ**

**Specific Product Precautions 7**

Be sure to read before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

---

### Serial Wiring EX510 Precautions

<table>
<thead>
<tr>
<th>Operating Environment</th>
<th>Adjustment and Operation</th>
</tr>
</thead>
</table>

**⚠️ Warning**

1. **Do not use this product in the presence of dust, particles, water, chemicals, and oil.**
   
   Use with such materials is likely to cause a malfunction or breakage.

2. **Do not use this product in the presence of a magnetic field.**
   
   Use in such an environment is likely to cause a malfunction.

3. **Do not use this product in an atmosphere containing an inflammable gas, explosive gas, or corrosive gas.**
   
   Use in such an atmosphere is likely to cause a fire, explosion, or corrosion. This reduced-wiring system is not explosion-proof.

4. **Do not use this product in places where there are cyclic temperature changes.**
   
   In case that the cyclic temperature is beyond normal temperature changes, the internal unit is likely to be adversely affected.

5. **Do not use this product in places where there is radiated heat around it.**
   
   Such a place is likely to cause a malfunction or breakage.

6. **Do not use this product near sources that generate a surge which exceeds the benchmark test, even though this product is CE-marked certified.**

   The internal circuit components are likely to deteriorate or become damaged when there are equipment (solenoid type lifter, high frequency guided furnace, motor, etc.) which generate a large surge around the reduced wiring system. Take measures to prevent an electrical surge and avoid having the wires touch each other.

7. **Use the product type that has an integrated surge absorption element when directly driving a load which generates surge voltage by relay or solenoid valves.**

8. **The reduced wiring system should be installed in places with no vibration or shock.**

   If installed in a place with vibration or shock, a malfunction or breakage is likely to occur.

---

**⚠️ Warning**

1. **Do not short-circuit a load.**

   If a load is short-circuited, excessive current can cause damage to the connected devices. The fuse of the input unit will melt and blow. The output and SI unit will activate its overcurrent protection function. However, they cannot cover all modes, so damage is likely to occur.

2. **Do not manipulate or perform settings with wet hands.**

   Performing such activity will likely cause an electrical shock.

**⚠️ Caution**

1. **DIP switches and rotary switches should be set with a small watchmaker’s screwdriver.**

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**⚠️ Warning**

1. **Do not disassemble, modify (including circuit board replacement) or repair this product.**

   Such actions are likely to cause injuries or breakage.

2. **Perform periodic inspection.**

   Confirm that wiring or screws are not loose. Otherwise, unpredicted malfunction in the system composition devices is likely to occur.

3. **When an inspection is performed.**

   - Turn off the power supply.
   - Stop the supplied fluid and discharge the fluid in the piping and confirm the release to the atmosphere before performing an inspection. It is likely to cause injuries.

**⚠️ Caution**

1. **Do not wipe this product with chemicals such as benzine or thinner.**

   Using such chemicals is likely to cause damage.