

# 5 Port Solenoid Valve

## VQZ1000/2000/3000 Series

Metal Seal

Rubber Seal

Power consumption: **0.35 w / 0.9 w**  
 (Standard)  
 (High pressure type,  
 High speed response type)



### Compact, High Flow

|              | Series  | Valve width (mm) | Flow rate characteristics               |  | Cylinder size |
|--------------|---------|------------------|---|--|---------------|
|              |         |                  | Metal seal C [dm <sup>3</sup> /(s·bar)] | Rubber seal C [dm <sup>3</sup> /(s·bar)] |               |
| Body ported  | VQZ1□2□ | 10               | 0.54                                    | 0.71                                     | to ø63        |
|              | VQZ2□2□ | 15               | 1.4                                     | 1.6                                      | to ø80        |
|              | VQZ3□2□ | 18               | 2.4                                     | 3.2                                      | to ø100       |
| Base mounted | VQZ1□5□ | 10               | 0.70                                    | 1.3                                      | to ø63        |
|              | VQZ2□5□ | 15               | 1.9                                     | 2.3                                      | to ø80        |
|              | VQZ3□5□ | 18               | 3.0                                     | 4.6                                      | to ø100       |

\* Flow rate characteristics: 4/2→5/3 (A/B→R1/R2)

SV

SYJ

SZ

VF

VP4

VQ 1/2

VQ 4/5

VQC 1/2

VQC 4/5

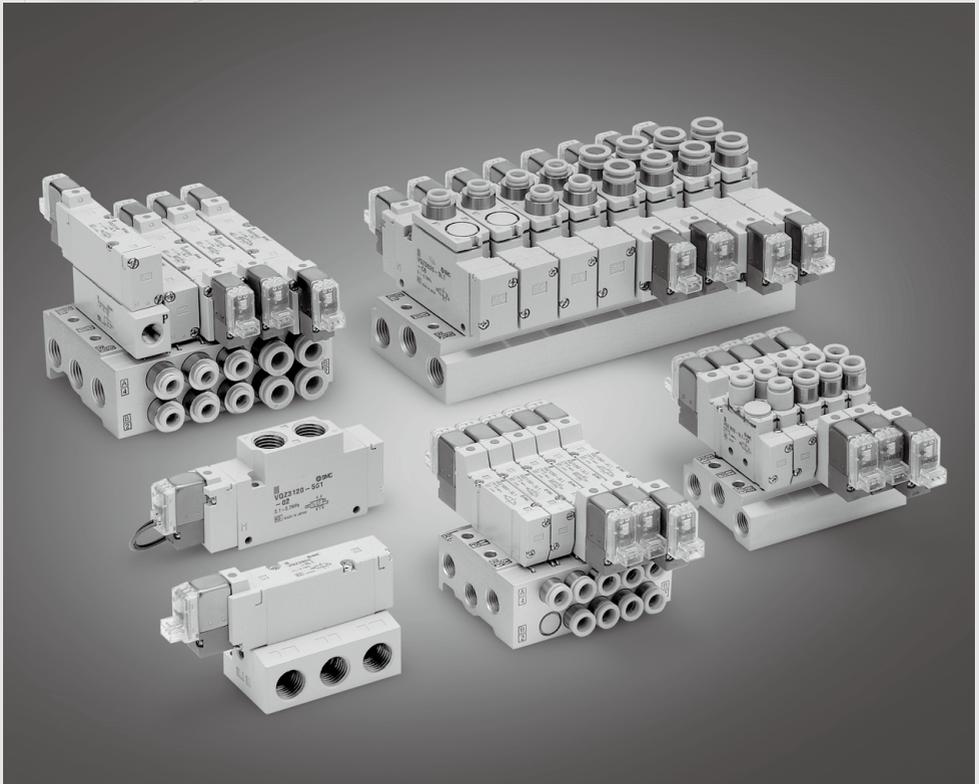
VQZ

SQ

VFS

VFR

VQ7

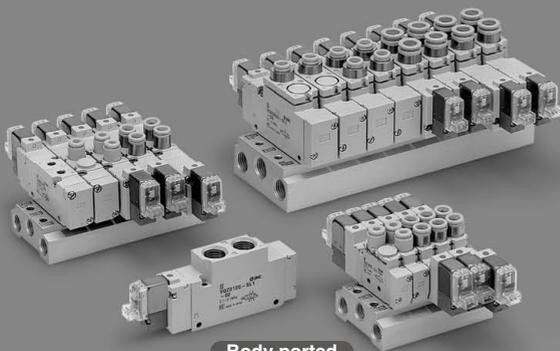


Metal Seal / Rubber Seal

# 5 Port Solenoid Valve

## VQZ1000/2000/3000 Series

### High Speed Response and Long Service Life

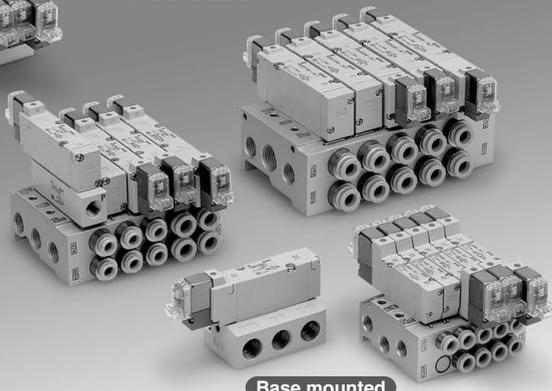
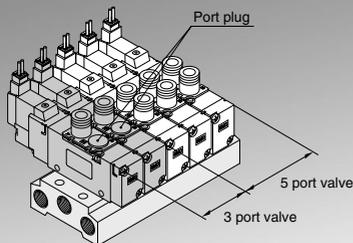


| Series  | Response speed | Service life       | Accuracy |
|---------|----------------|--------------------|----------|
| VQZ1000 | 17 ms          | 200 million cycles | ±2 ms    |
| VQZ2000 | 18 ms          |                    |          |
| VQZ3000 | 21 ms          |                    |          |

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

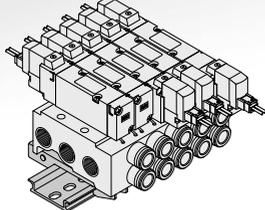
Body ported

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



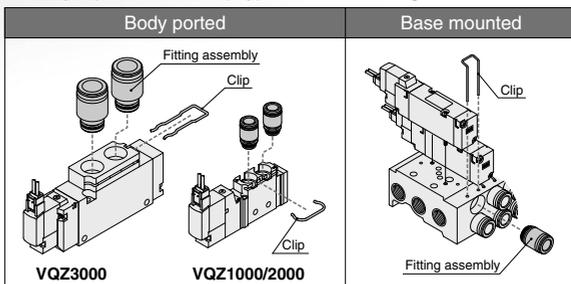
Base mounted

- DIN rail mounting is available.



- Built-in One-touch fittings for easier piping

Easy replacement of clip type One-touch fitting.

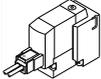


- Enclosure IP65 compliant (DIN terminal, Common exhaust)
- Choice of metal or rubber seal for main valve construction



# VQZ Series

## Model Selection

|              |                             | Sonic conductance<br>C [dm <sup>3</sup> /(s·bar)]                                   |               | Type of actuation | Voltage   | Electrical entry   | Light/surge voltage suppressor   | Manual override   |                                       |  |   |                                    |                              |
|--------------|-----------------------------|---|---------------|-------------------|---|--|--|---|---------------------------------------|--|---|------------------------------------|------------------------------|
| Body ported  | 5 port                      |    | Metal<br>0.54 | Rubber<br>0.71    | 2 position single<br>(A)4 (B)3<br><br>(R)1 (S 1, 3/R)2 (P)           |  |  |   |                                       |  |   |                                    |                              |
|              |                             |    | 1.4           | 1.6               | 2 position double<br>(A)4 (B)3<br><br>(R)1 (S 1, 3/R)2 (P)           |  |  |   |                                       |  |   |                                    |                              |
|              |                             |    | 2.4           | 3.2               | 3 position closed center<br>(A)4 (B)3<br><br>(R)1 (S 1, 3/R)2 (P)    |  |  |   |                                       |  |   |                                    |                              |
|              | 3 port for mixture mounting |    | 0.54          | 0.71              | (A)4 (B)2<br><br>(R)1 (S 1, 3/R)2 (P)                                |  |  |   |                                       |  |   |                                    |                              |
|              |                             |    | 1.4           | 1.6               | N.C.<br>(A)4 (B)2<br><br>(R)1 (S 1, 3/R)2 (P)                        |  |  |   |                                       |  |   |                                    |                              |
|              |                             |    | 2.4           | 3.2               | N.O.<br>(A)4 (B)2<br><br>(R)1 (S 1, 3/R)2 (P)                        |  |  |   |                                       |  |   |                                    |                              |
| Base mounted | 5 port                      |    | Metal<br>0.70 | Rubber<br>1.3     | 2 position single<br>(A)4 (B)3<br><br>(R)1 (S 1, 3/R)2 (P)           | (Standard)<br>12 VDC<br>24 VDC<br><br>(Option)<br>100 VAC<br>200 VAC<br>110 VAC<br>220 VAC | Grommet (G)<br><br><br>L-type plug connector (L)<br><br><br>M-type plug connector (M)<br> | With light/surge voltage suppressor<br><br>L-type plug connector (L)<br><br>M-type plug connector (M) | Non-locking push type (Tool required) |  |   |                                    |                              |
|              |                             |  | 1.9           | 2.3               | 3 position closed center<br>(A)4 (B)3<br><br>(R)1 (S 1, 3/R)2 (P)  |  |  |   |                                       |  |   |                                    |                              |
|              |                             |  | 3.0           | 4.6               | 3 position exhaust center<br>(A)4 (B)3<br><br>(R)1 (S 1, 3/R)2 (P) |  |  |   |                                       |  |   |                                    |                              |
|              | 3 port for mixture mounting |  | 0.90          | 1.3               | 4(A)<br><br>(R)5 1(P)  |  |  |   |                                       |  |   |                                    |                              |
|              |                             |  | 1.9           | 2.3               | N.C.<br>4(A)<br><br>(R)5 1(P)                                      |  |  |   |                                       |  |   |                                    |                              |
|              |                             |  | 3.0           | 4.6               | N.O.<br>4(A)<br><br>(R)5 1(P)                                      |  |  |   |                                       |  |   |                                    |                              |
|              |                             |   |               |                   |   |  |  |   |                                       |  | DIN terminal (Y)<br><br><br>(Except VQZ1000) | DIN terminal (YZ) (Except VQZ1000) | Locking type (Tool required) |

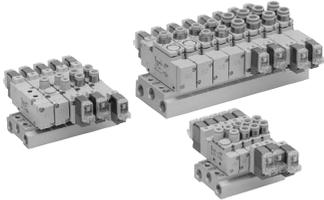
\* Flow rate characteristics: 4/2→5/3 (A/B→R1/R2)

# VQZ Series Manifold

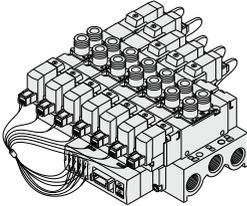
## Manifold

Body Ported

P.701



Serial Transmission System P.712



| Series  | Base model  | Piping direction | Piping specifications |   | Applicable solenoid valve | Applicable stations |
|---------|-------------|------------------|-----------------------|---|---------------------------|---------------------|
|         |             |                  | Port size             |   |                           |                     |
|         |             |                  | 1(P), 3-5(R)          | 4(A), 2(B)  |                           |                     |
| VQZ1000 | VV5QZ12-□□□ | Top              | Rc 1/8                | C3 (for ø3.2)<br>C4 (for ø4)<br>C6 (for ø6)<br>M5 (M5 thread) | VQZ1□20<br>VQZ1□21        | 2 to 20 stations    |
| VQZ2000 | VV5QZ22-□□□ | Top              | Rc 1/8                | C4 (for ø4)<br>C6 (for ø6)<br>M5 (M5 thread)                  | VQZ2□20<br>VQZ2□21        | 2 to 20 stations    |
| VQZ3000 | VV5QZ32-□□□ | Top              | Rc 1/4                | C6 (for ø6)<br>C8 (for ø8)<br>C10 (for ø10)<br>Rc 1/4         | VQZ3□20<br>VQZ3□21        | 2 to 20 stations    |

SV

SYJ

SZ

VF

VP4

VQ  
1/2

VQ  
4/5

VQC  
1/2

VQC  
4/5

VQZ

SQ

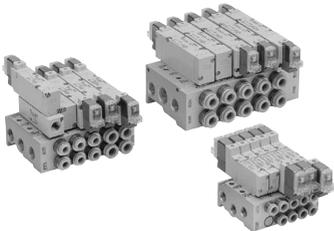
VFS

VFR

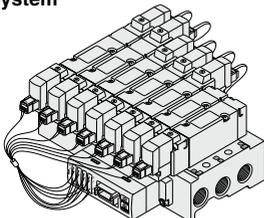
VQ7

Base Mounted

P.730



Serial Transmission System P.745

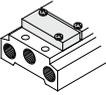
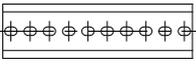
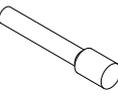
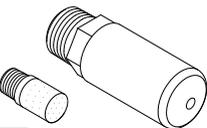
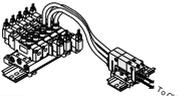
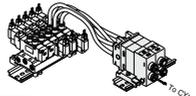


| Series  | Base model  | Piping direction | Piping specifications                        |   | Applicable solenoid valve | Applicable stations |
|---------|-------------|------------------|--|---|---------------------------|---------------------|
|         |             |                  | Port size                                    |   |                           |                     |
|         |             |                  | 1(P), 3-5(R)                                 | 4(A), 2(B)  |                           |                     |
| VQZ1000 | VV5QZ15-□□□ | Side             | Rc 1/8                                       | C3 (for ø3.2)<br>C4 (for ø4)<br>C6 (for ø6)<br>M5 (M5 thread) | VQZ1□50<br>VQZ1□51        | 2 to 20 stations    |
| VQZ2000 | VV5QZ25-□□□ | Side             | Rc 1/4                                       | C4 (for ø4)<br>C6 (for ø6)<br>C8 (for ø8)<br>Rc 1/8           | VQZ2□50<br>VQZ2□51        | 2 to 20 stations    |
| VQZ3000 | VV5QZ35-□□□ | Side             | 1(P) port<br>Rc 3/8<br>3-5(R) port<br>Rc 1/4 | C6 (for ø6)<br>C8 (for ø8)<br>C10 (for ø10)<br>Rc 1/4         | VQZ3□50<br>VQZ3□51        | 2 to 20 stations    |

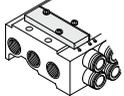
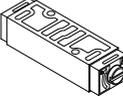
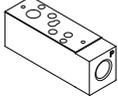
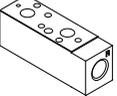
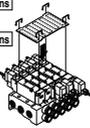
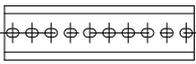
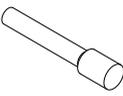
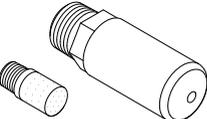
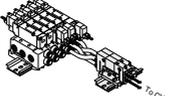
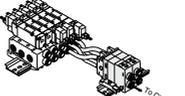
# VQZ Series

## Manifold Options

### Body Ported

|  |   |   |   |
|--|---|---|---|
| <p>Blanking plate assembly<br/>VVQZ1000-10A-2 (for VQZ1000)<br/>VVQZ2000-10A-2 (for VQZ2000)<br/>VVQZ3000-10A-2 (for VQZ3000)</p>  <p>P.706</p> | <p>DIN rail<br/>AXT100-DR-□</p>  <p>P.706</p>                                      | <p>Blanking plug<br/>KQ2P-23<br/>KQ2P-04<br/>KQ2P-06<br/>KQ2P-08<br/>KQ2P-10</p>  <p>P.706</p> | <p>Silencer (for EXH port)</p>  <p>P.706</p>  |
| <p>Port plug<br/>VVQZ100-CP (for VQZ1000/2000)<br/>VVQZ2000-CP (for VQZ3000)</p>  <p>P.706</p>  | <p>Perfect block (Separated)<br/>for VQZ1000<br/>VQ1000-FPG-□□-□</p>  <p>P.707</p> | <p>Perfect block (Separated)<br/>for VQZ2000/3000<br/>VQ2000-FPG-□□-□</p>  <p>P.708</p>        | <p>Connector assembly<br/>for single solenoid<br/>SY3000-37-81A-□-N<br/>for double solenoid<br/>SY3000-37-81A-□-□</p>  <p>P.717</p> |
| <p>Connector assembly<br/>SY3000-37-80A-□</p>  <p>P.717</p>  | <p>Housing (1 set: 8 pcs.)<br/>SY3000-44-3A</p>  <p>P.717</p>                      |   |   |

### Base Mounted

|  |  |   |   |
|--|--|---|---|
| <p>Blanking plate assembly<br/>VVQZ1000-10A-5 (for VQZ1000)<br/>VVQZ2000-10A-5 (for VQZ2000)<br/>VVQZ3000-10A-5 (for VQZ3000)</p>  <p>P.735</p> | <p>Restrictor spacer<br/>(Applicable to VQZ2000)<br/>VVQZ2000-20A-5</p>  <p>P.735</p>   | <p>Individual SUP spacer<br/>VVQZ1000-P-5-M5 (for VQZ1000)<br/>VVQZ2000-P-5-01 (for VQZ2000)<br/>VVQZ3000-P-5-02 (for VQZ3000)</p>  <p>P.735</p> | <p>Individual EXH spacer<br/>VVQZ1000-R-5-M5 (for VQZ1000)<br/>VVQZ2000-R-5-01 (for VQZ2000)<br/>VVQZ3000-R-5-02 (for VQZ3000)</p>  <p>P.735</p> |
| <p>Port plug<br/>VVQZ1000-CP (for VQZ1000)<br/>VVQZ2000-CP (for VQZ2000)<br/>VVQZ3000-CP (for VQZ3000)</p>  <p>P.735</p>                      | <p>Name plate [-N]<br/>(Applicable to VQZ2000/3000)<br/>VVQZ2000-N5-<sup>Stations</sup><br/>(for VQZ2000)<br/>VVQZ3000-N5-<sup>Stations</sup><br/>(for VQZ3000)</p>  <p>P.736</p> | <p>DIN rail<br/>AXT100-DR-□</p>  <p>P.736</p>  | <p>Blanking plug<br/>KQ2P-23<br/>KQ2P-04<br/>KQ2P-06<br/>KQ2P-08<br/>KQ2P-10</p>  <p>P.736</p>  |
| <p>Silencer (for EXH port)</p>  <p>P.736</p>   | <p>Perfect block (Separated)<br/>for VQZ1000<br/>VQ1000-FPG-□□-□</p>  <p>P.737</p>  | <p>Perfect block (Separated)<br/>for VQZ2000/3000<br/>VQ2000-FPG-□□-□</p>  <p>P.738</p>  | <p>Connector assembly<br/>for single solenoid<br/>SY3000-37-81A-□-N<br/>for double solenoid<br/>SY3000-37-81A-□-□</p>  <p>P.750</p>           |
| <p>Connector assembly<br/>SY3000-37-80A-□</p>  <p>P.750</p>  | <p>Housing (1 set: 8 pcs.)<br/>SY3000-44-3A</p>  <p>P.750</p>   |   |   |

Body Ported  
Plug Lead Unit

# 5 Port Solenoid Valve

## VQZ1000/2000/3000 Series

### Single Unit



[Option]  
Note) AC-type models that are CE-compliant have DIN terminals only.

### How to Order Valve



Made to Order  
(For details, refer to page 751.)

**VQZ 1 1 2 1** — **5 M** — **1** — **C6** — —

**Series**

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

**Body type**

|   |             |
|---|-------------|
| 2 | Body ported |
|---|-------------|

**Seal type**

|   |             |
|---|-------------|
| 0 | Metal seal  |
| 1 | Rubber seal |

**Type of actuation**

|          |   |          |   |
|----------|---|----------|---|
| <b>1</b> | 2 position single<br>(A)4 (2)(B)<br>(R)1(1, 3)(R)2 (P)        | <b>4</b> | 3 position exhaust center<br>(A)4 (2)(B)<br>(R)1(1, 3)(R)2 (P)  |
| <b>2</b> | 2 position double<br>(A)2 (3)(B)<br>(R)1(1, 3)(R)2 (P)        | <b>5</b> | 3 position pressure center<br>(A)4 (2)(B)<br>(R)1(1, 3)(R)2 (P) |
| <b>3</b> | 3 position closed center<br>(A)4 (2)(B)<br>(R)1(1, 3)(R)2 (P) |          |   |

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

**Function**

| Symbol                  | Specifications   | DC               | AC      |
|-------------------------|--|------------------|---------|
| Nil                     | Standard   | (0.35 W) Note 4) | Note 4) |
| <b>B</b> Note 1)        | High speed response type                                 | (0.9 W)          | —       |
| <b>K</b> Note 1)        | High pressure type (Metal seal type only)                | (0.9 W)          | —       |
| <b>R</b> Note 1, 2, 3)  | External pilot type                                      | ○                | ○       |
| <b>BR</b> Note 1, 2, 3) | High speed response/External pilot type                  | (0.9 W)          | —       |
| <b>KR</b> Note 1, 2, 3) | High pressure/External pilot type (Metal seal type only) | (0.9 W)          | —       |

Note 1) Semi-standard  
Note 2) For details on external pilot type, refer to page 709.  
Note 3) There is no VQZ1000 setting.  
Note 4) For AC specification power consumption, refer to page 690.

**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                       |

**IP65 compliant**

|         |           |
|---------|-----------|
| Nil     | —         |
| W Note) | Compliant |

Note) VQZ2000/3000 DIN terminal rubber seal only (except external pilot). For details on IP65 enclosure, refer to page 709.

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

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

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

| Symbol     | Port size              | VQZ1000 | VQZ2000 | VQZ3000 |
|------------|------------------------|---------|---------|---------|
| <b>C3</b>  | ø3.2 One-touch fitting | ○       | —       | —       |
| <b>C4</b>  | ø4 One-touch fitting   | ○       | ○       | —       |
| <b>C6</b>  | ø6 One-touch fitting   | ○       | ○       | ○       |
| <b>C8</b>  | ø8 One-touch fitting   | —       | —       | ○       |
| <b>C10</b> | ø10 One-touch fitting  | —       | —       | ○       |
| <b>M5</b>  | M5 thread              | ○       | ○       | —       |
| <b>O2</b>  | Rc 1/4                 | —       | —       | ○       |

Note) For inch size One-touch fittings and optional thread type, refer to page 709.

**Manual override**

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

**B:** Locking type (Tool required)

**Option**

**Nil:** None  
**F:** With bracket (2 position single only)

**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 |
|--------------|-------------------------------------|--|---|--|---|
|              | With light/surge voltage suppressor | With light/surge voltage suppressor        | With light/surge voltage suppressor         | With light/surge voltage suppressor                            | With light/surge voltage suppressor         |
| CE-compliant | AC                                  | —  | —   | —  | —   |
|              | DC                                  | —  | —   | —  | —   |
|              | Y: DIN terminal Note 1)             | YO: DIN terminal Note 1) without connector | YZ: DIN terminal Note 1)                    | YOS: DIN terminal Note 1) without connector (DC specification) | YS: DIN terminal Note 1) (DC specification) |
|              | With light/surge voltage suppressor | With surge voltage suppressor              | With surge voltage suppressor               | With surge voltage suppressor                                  | With surge voltage suppressor               |
| CE-compliant | AC                                  | ●  | ●   | —  | —   |
|              | DC                                  | ●  | ●   | ●  | ●   |

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) For applicable one-touch fitting and silencer models for this valve series, refer to page 754.

Note) When ordering the body ported type solenoid valve as a single unit, the manifold mounting screw and gasket are not included. Please order them separately, if necessary. (For details, refer to page 710.)

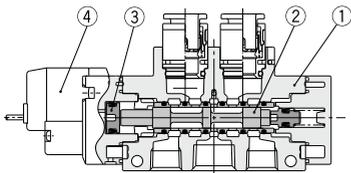
**Caution**  
Use standard (DC) specification for continuous duty.

SV  
SYJ  
SZ  
VF  
VP4  
VQ 1/2  
VQ 4/5  
VQC 1/2  
VQC 4/5  
VQZ  
SQ  
VFS  
VFR  
VQ7

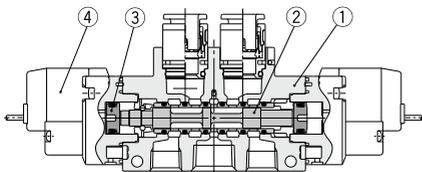
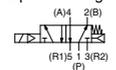


## Construction: VQZ1000/2000/3000

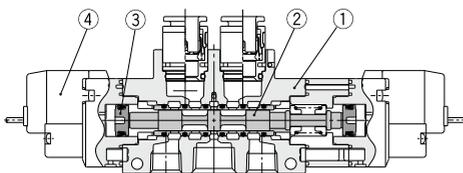
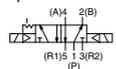
### Metal seal type



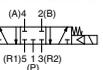
2 position single



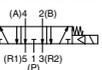
2 position double



3 position closed center



3 position exhaust center

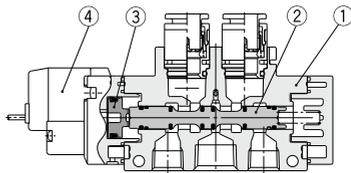


3 position pressure center

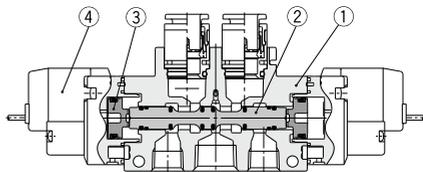
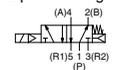


Note) Except metal seal type of the VQZ1000.

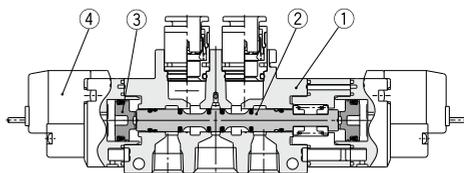
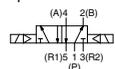
### Rubber seal type



2 position single



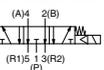
2 position double



3 position closed center



3 position exhaust center



3 position pressure center



### Component Parts

| No. | Description          | Material            | Note        |
|-----|----------------------|---------------------|-------------|
| 1   | Body                 | Aluminum die-casted |             |
| 2   | Spool, Sleeve        | Stainless steel     | Metal seal  |
|     | Spool valve          | Aluminum/HNBR       | Rubber seal |
| 3   | Piston               | Resin               |             |
| 4   | Pilot valve assembly | —                   |             |

Note) For "How to Order Pilot Valve Assembly", refer to page 710.

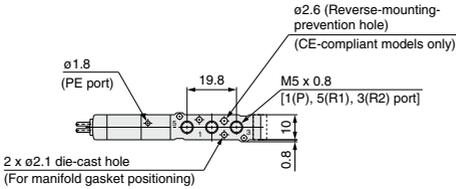
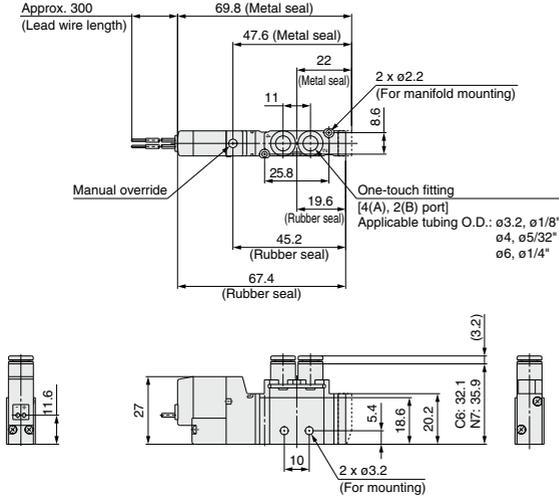
|            |
|------------|
| SV         |
| SYJ        |
| SZ         |
| VF         |
| VP4        |
| VQ<br>1/2  |
| VQ<br>4/5  |
| VQC<br>1/2 |
| VQC<br>4/5 |
| VQZ        |
| SQ         |
| VFS        |
| VFR        |
| VQ7        |

# VQZ1000/2000/3000 Series

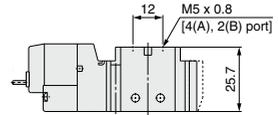
## Dimensions: VQZ1000

### 2 Position Single

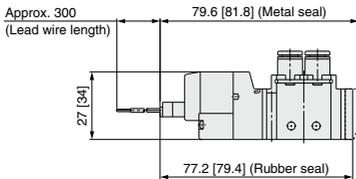
Grommet (G): VQZ112<sup>0</sup> - □G□1-C3, C4, C6



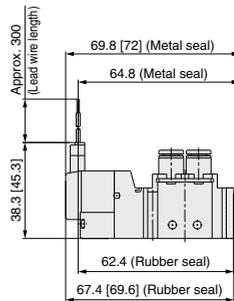
VQZ112<sup>0</sup> - □G□1-M5



L-type plug connector (L): VQZ112<sup>0</sup> - □L□1-C3, C4, C6



M-type plug connector (M): VQZ112<sup>0</sup> - □M□1-C3, C4, C6



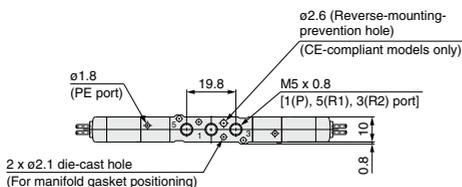
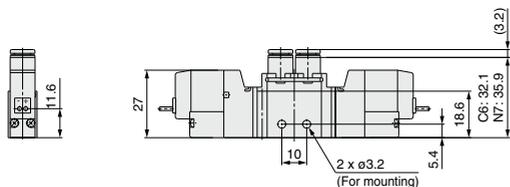
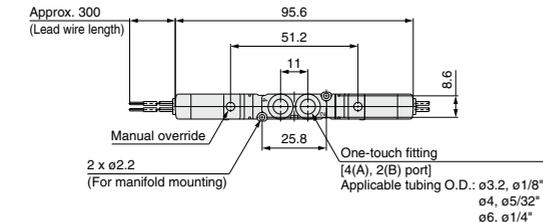
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

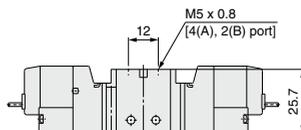
## Dimensions: VQZ1000

### 2 Position Double

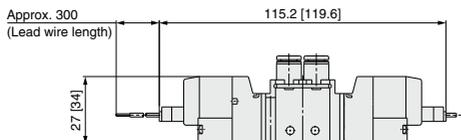
Grommet (G): VQZ122<sup>0</sup> - □G□1-C3, C4, C6



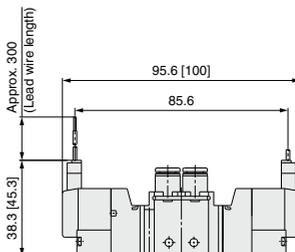
### VQZ122<sup>0</sup> - □G□1-M5



### L-type plug connector (L): VQZ122<sup>0</sup> - □L□1-C3, C4, C6



### M-type plug connector (M): VQZ122<sup>0</sup> - □M□1-C3, C4, C6



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

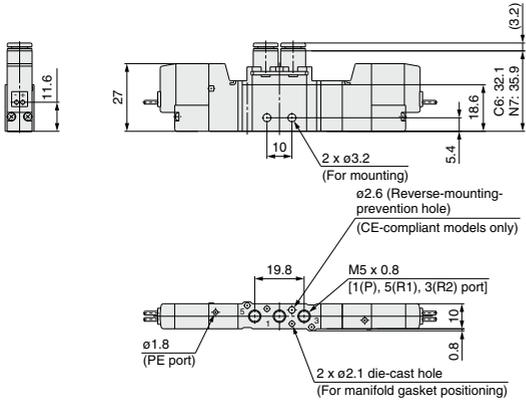
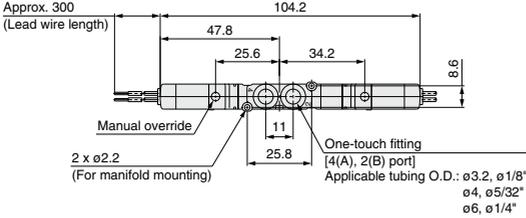
|         |
|---------|
| SV      |
| SYJ     |
| SZ      |
| VF      |
| VP4     |
| VQ 1/2  |
| VQ 4/5  |
| VQC 1/2 |
| VQC 4/5 |
| VQZ     |
| SQ      |
| VFS     |
| VFR     |
| VQ7     |

# VQZ1000/2000/3000 Series

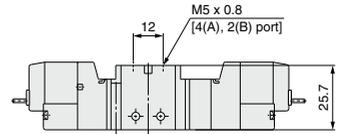
## Dimensions: VQZ1000

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

Grommet (G): VQZ1  $\frac{3}{5}$   $\frac{2}{1}$  -□G□1-C3, C4, C6

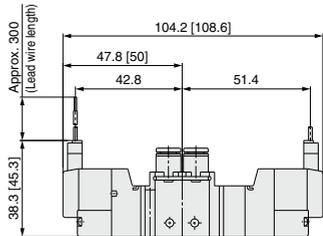
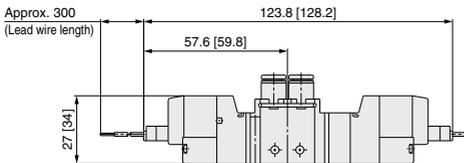


VQZ1  $\frac{3}{5}$   $\frac{2}{1}$  -□G□1-M5



L-type plug connector (L): VQZ1  $\frac{3}{5}$   $\frac{2}{1}$  -□L□1-C3, C4, C6

M-type plug connector (M): VQZ1  $\frac{3}{5}$   $\frac{2}{1}$  -□M□1-C3, C4, C6



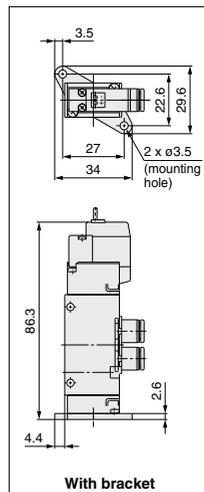
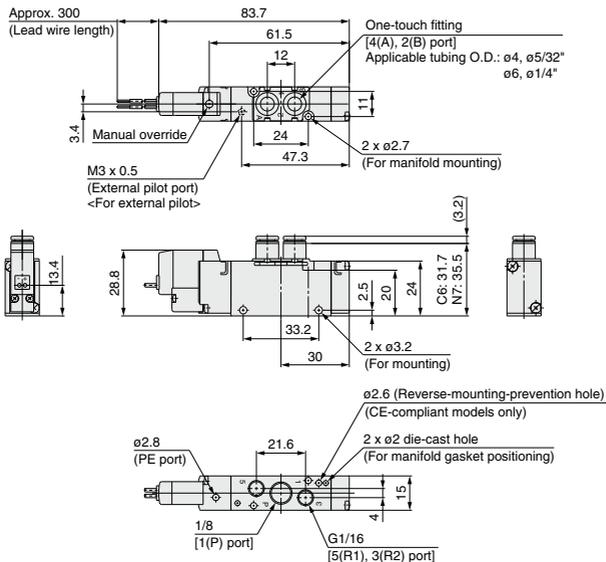
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

## Dimensions: VQZ2000

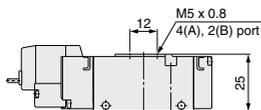
### 2 Position Single

#### Grommet (G): VQZ212<sub>Q</sub> (R)-□G□1-C4, C6

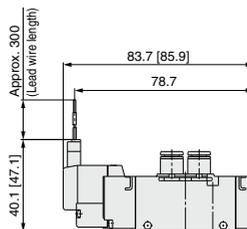


Note 1) For bracket assembly part no., refer to page 710.  
Note 2) For One-touch fittings for P/R port and silencer part no., refer to page 754.

#### VQZ212<sub>Q</sub> (R)-□G□1-M5

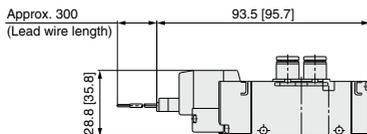


#### M-type plug connector (M): VQZ212<sub>Q</sub> (R)-□M□1-C4, C6



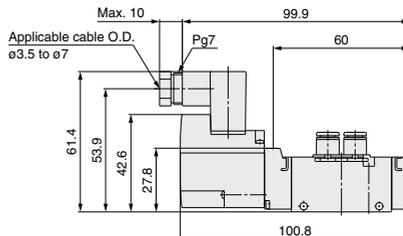
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

#### L-type plug connector (L): VQZ212<sub>Q</sub> (R)-□L□1-C4, C6



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

#### DIN terminal (Y): VQZ212<sub>Q</sub> (R)-□Y□1-C4, C6



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

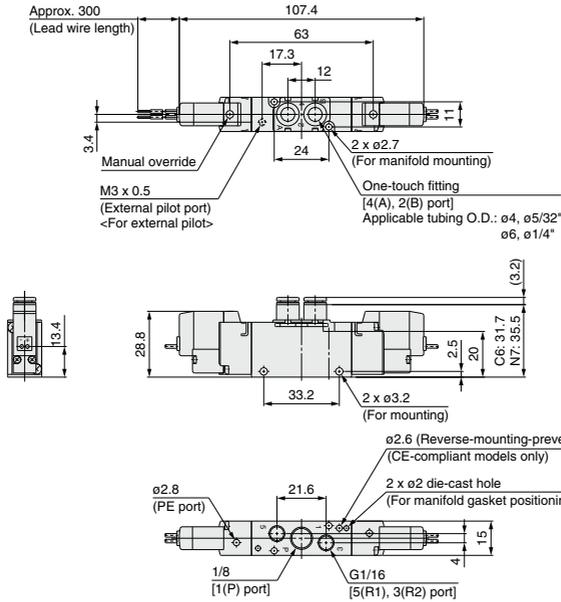
|            |
|------------|
| SV         |
| SYJ        |
| SZ         |
| VF         |
| VP4        |
| VQ 1/2     |
| VQ 4/5     |
| VQC 1/2    |
| VQC 4/5    |
| <b>VQZ</b> |
| SQ         |
| VFS        |
| VFR        |
| VQ7        |

# VQZ1000/2000/3000 Series

## Dimensions: VQZ2000

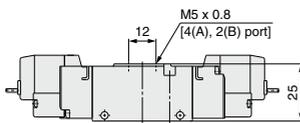
### 2 Position Double

Grommet (G): VQZ222<sup>□</sup> (R)-□G□1-C4, C6

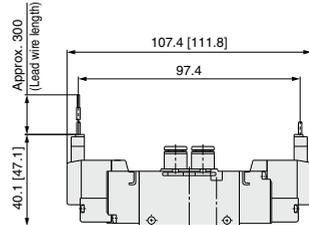


Note) For One-touch fittings for P/R port and silencer part no., refer to page 754.

VQZ222<sup>□</sup> (R)-□G□1-M5

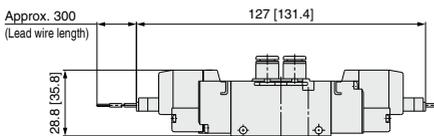


M-type plug connector (M): VQZ222<sup>□</sup> (R)-□M□1-C4, C6



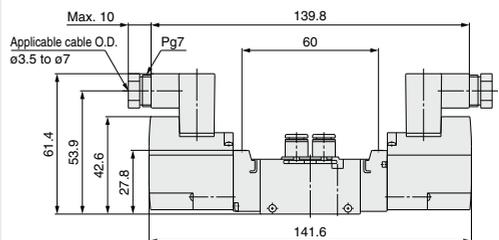
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

L-type plug connector (L): VQZ222<sup>□</sup> (R)-□L□1-C4, C6



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

DIN terminal (Y): VQZ222<sup>□</sup> (R)-□Y□1-C4, C6

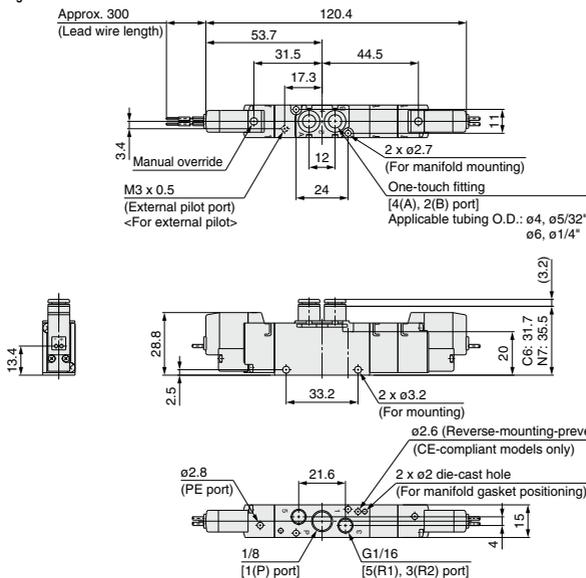


Unless otherwise indicated, dimensions are the same as Grommet (G).

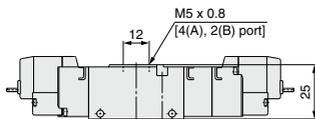
## Dimensions: **VQZ2000**

### 3 Position Closed Center/Exhaust Center/Pressure Center

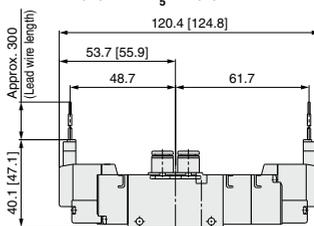
Grommet (G): VQZ2 $\frac{3}{8}$  2 $\frac{0}{1}$  (R)-□G□1-C4, C6



VQZ2 $\frac{3}{8}$  2 $\frac{0}{5}$  (R)-□G□1-M5

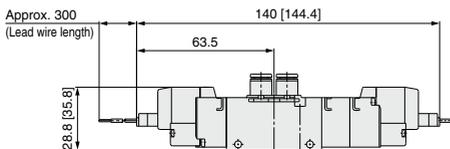


M-type plug connector (M): VQZ2 $\frac{3}{8}$  2 $\frac{0}{5}$  (R)-□M□1-C4, C6

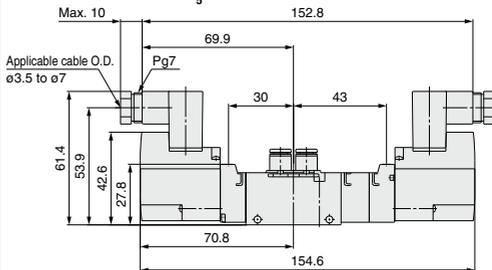


Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

L-type plug connector (L): VQZ2 $\frac{3}{8}$  2 $\frac{0}{5}$  (R)-□L□1-C4, C6



DIN terminal (Y): VQZ2 $\frac{3}{8}$  2 $\frac{0}{5}$  (R)-□Y□1-C4, C6



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

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

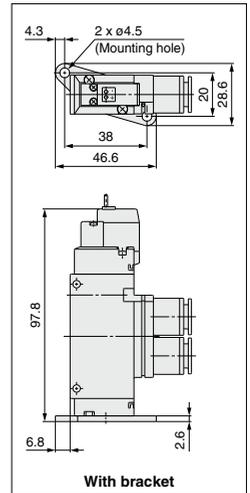
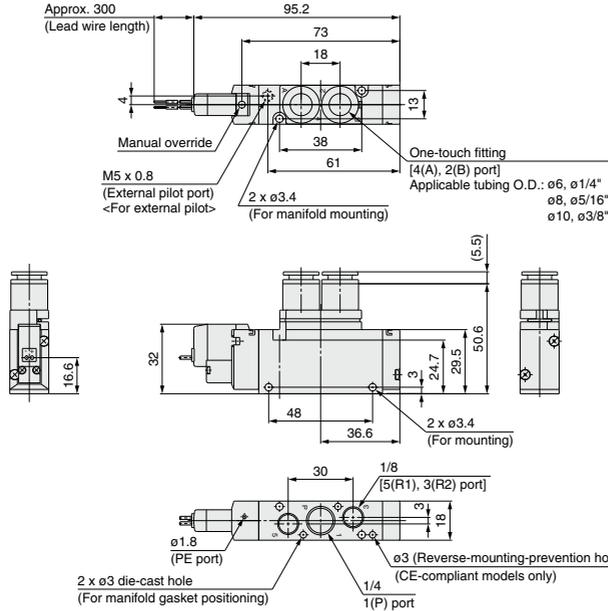
|         |
|---------|
| SV      |
| SYJ     |
| SZ      |
| VF      |
| VP4     |
| VQ 1/2  |
| VQ 4/5  |
| VQC 1/2 |
| VQC 4/5 |
| VQZ     |
| SQ      |
| VFS     |
| VFR     |
| VQ7     |

# VQZ1000/2000/3000 Series

## Dimensions: VQZ3000

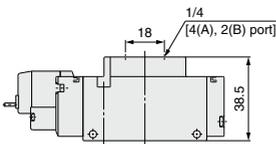
### 2 Position Single

Grommet (G): VQZ312<sup>0</sup> (R)-□G□1-C6, C8, C10

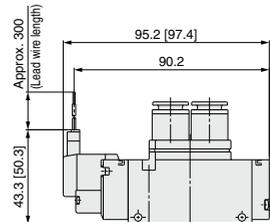


Note) For bracket assembly part no., refer to page 710.

VQZ312<sup>0</sup> (R)-□G□1-02

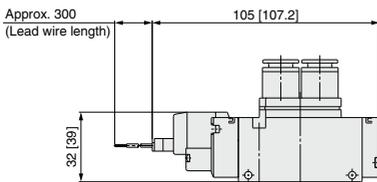


M-type plug connector (M): VQZ312<sup>0</sup> (R)-□M□1-C6, C8, C10



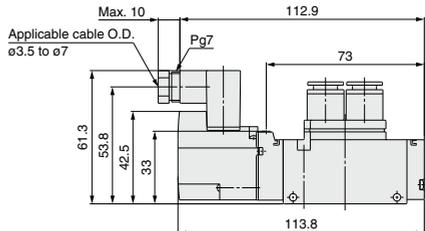
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

L-type plug connector (L): VQZ312<sup>0</sup> (R)-□L□1-C6, C8, C10



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

DIN terminal (Y): VQZ312<sup>0</sup> (R)-□Y□1-C6, C8, C10

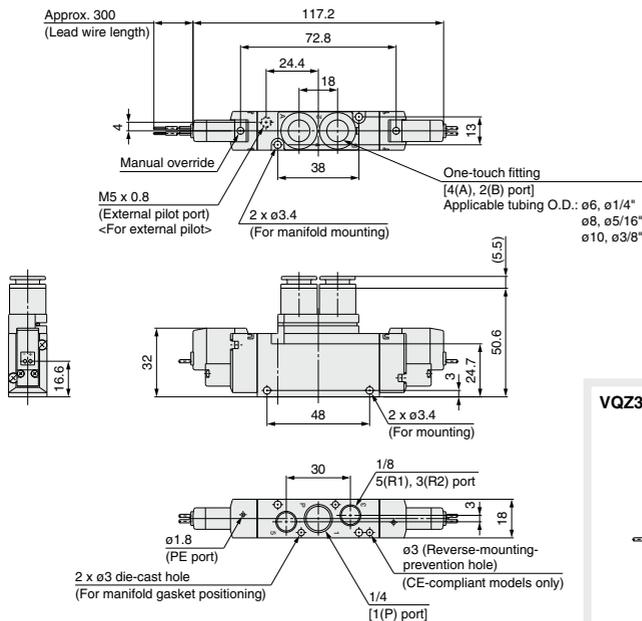


Unless otherwise indicated, dimensions are the same as Grommet (G).

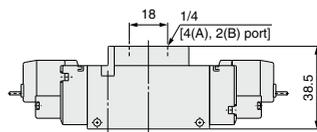
## Dimensions: **VQZ3000**

### 2 Position Double

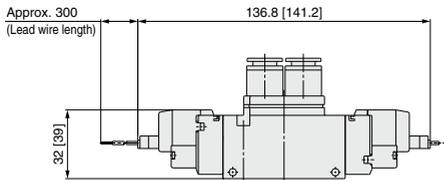
#### Grommet (G): VQZ322 $\frac{0}{1}$ (R)-□□1-C6, C8, C10



#### VQZ322 $\frac{0}{1}$ (R)-□□1-02

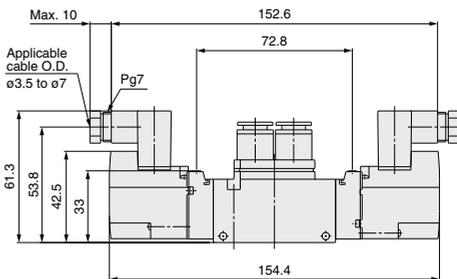


#### L-type plug connector (L): VQZ322 $\frac{0}{1}$ (R)-□□1-C6, C8, C10



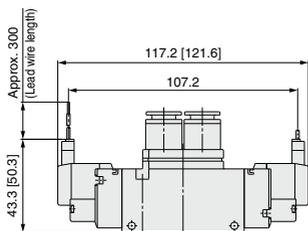
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

#### DIN terminal (Y): VQZ322 $\frac{0}{1}$ (R)-□□1-C6, C8, C10



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

#### M-type plug connector (M): VQZ322 $\frac{0}{1}$ (R)-□□1-C6, C8, C10



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

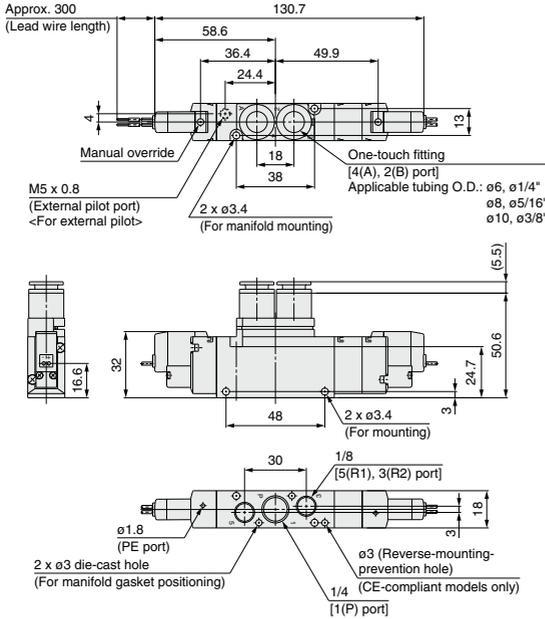
|            |
|------------|
| SV         |
| SYJ        |
| SZ         |
| VF         |
| VP4        |
| VQ 1/2     |
| VQ 4/5     |
| VQC 1/2    |
| VQC 4/5    |
| <b>VQZ</b> |
| SQ         |
| VFS        |
| VFR        |
| VQ7        |

# VQZ1000/2000/3000 Series

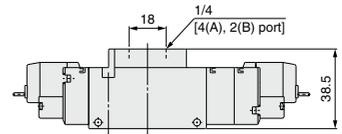
## Dimensions: VQZ3000

### 3 Position Closed Center/Exhaust Center/Pressure Center

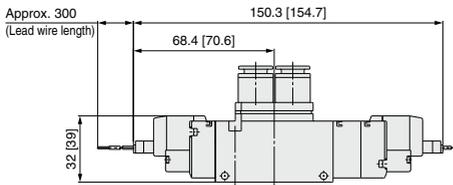
#### Grommet (G): VQZ3 $\frac{3}{5}$ 2 $\frac{0}{1}$ (R)-□G□1-C6, C8, C10



#### VQZ3 $\frac{3}{5}$ 2 $\frac{0}{1}$ (R)-□G□1-02

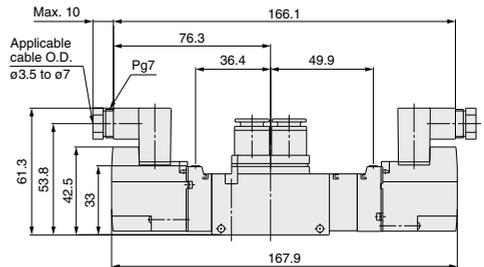


#### L-type plug connector (L): VQZ3 $\frac{3}{5}$ 2 $\frac{0}{1}$ (R)-□L□1-C6, C8, C10



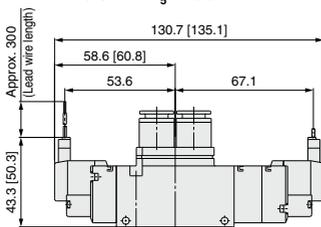
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ]: AC

#### DIN terminal (Y): VQZ3 $\frac{3}{5}$ 2 $\frac{0}{1}$ (R)-□Y□1-C6, C8, C10



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

#### M-type plug connector (M): VQZ3 $\frac{3}{5}$ 2 $\frac{0}{1}$ (R)-□M□1-C6, C8, C10



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ]: AC

Body Ported  
Plug Lead Unit

# 5 Port Solenoid Valve

## VQZ1000/2000/3000 Series

### Manifold Connector Kit

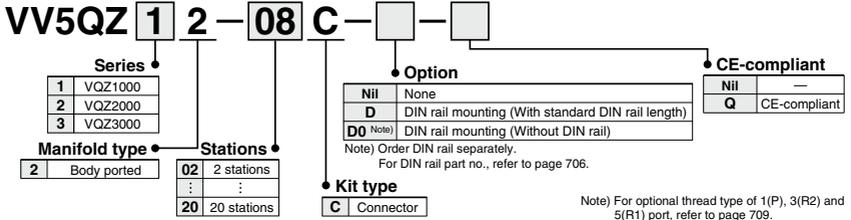


[Option]  
Note) AC-type models that are CE-compliant have DIN terminals only.

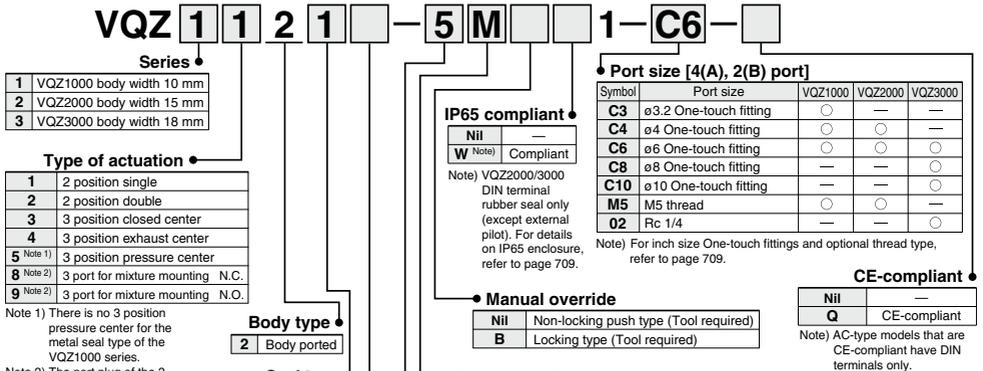


Made to Order  
(For details, refer to page 751.)

### How to Order Manifold



### How to Order Valve



**Function**

| Symbol            | Specifications   | DC         | AC        |
|-------------------|--|------------|-----------|
| Nil               | Standard   | (0.35 W) ○ | Note 4) ○ |
| B (Note 1)        | High speed response type                                 | (0.9 W) ○  | —         |
| K (Note 1)        | High pressure type (Metal seal type only)                | (0.9 W) ○  | —         |
| R (Note 1, 2, 3)  | External pilot type                                      | ○          | ○         |
| BR (Note 1, 2, 3) | High speed response/External pilot type                  | (0.9 W) ○  | —         |
| KR (Note 1, 2, 3) | High pressure/External pilot type (Metal seal type only) | (0.9 W) ○  | —         |

Note 1) Semi-standard  
Note 2) For details on external pilot type, refer to page 709.  
Note 3) There is no VQZ1000 setting.  
Note 4) For AC specification power consumption, refer to page 690.

**Caution**  
Use standard (DC) specification for continuous duty.

**Electrical entry**

| Symbol       | Electrical entry                                  | Light/surge voltage suppressor | CE-compliant    |
|--------------|---|--------------------------------|-----------------|
| G            | Grommet (DC specification)                        | None                           | AC DC           |
| L            | L-type plug connector with lead wire              | Yes                            | — ●             |
| LO           | L-type plug connector without connector           |                                | — ●             |
| M            | M-type plug connector with lead wire              |                                | — ●             |
| MO           | M-type plug connector without connector           | None                           | — ●             |
| Y (Note 1)   | DIN terminal                                      |                                | — ●             |
| YO (Note 1)  | DIN terminal without connector                    | Yes                            | — ●             |
| YZ (Note 1)  | DIN terminal                                      |                                | — ●             |
| YS (Note 1)  | DIN terminal (DC specification)                   | Yes                            | — ●             |
| YOS (Note 1) | DIN terminal without connector (DC specification) |                                | (Without light) |

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

**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                       |

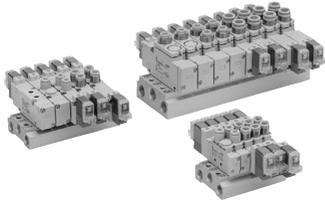
Note) When ordering the body ported type solenoid valve as a single unit, the manifold mounting screw and gasket are not included. Please order them separately, if necessary. (For details, refer to page 710.)



SV  
SYJ  
SZ  
VF  
VP4  
VQ 1/2  
VQ 4/5  
VQC 1/2  
VQC 4/5  
VQZ  
SQ  
VFS  
VFR  
VQ7

# VQZ1000/2000/3000 Series

## Manifold Specifications



| Series  | Base model  | Piping specifications |              |   | Applicable solenoid valve | Applicable stations | Manifold base weight (g)                    |
|---------|-------------|-----------------------|--------------|---|---------------------------|---------------------|---|
|         |             | Piping direction      | Port size    |   |                           |                     |   |
|         |             |                       | 1(P), 3/5(R) | 4(A), 2(B)  |                           |                     |   |
| VQZ1000 | VV5QZ12-□□□ | Top                   | Rc 1/8       | C3 (for ø3.2)<br>C4 (for ø4)<br>C6 (for ø6)<br>M5 (M5 thread) | VQZ1□20<br>VQZ1□21        | 2 to 20 stations    | 2 stations: 64<br>Addition per station: 18  |
| VQZ2000 | VV5QZ22-□□□ | Top                   | Rc 1/8       | C4 (for ø4)<br>C6 (for ø6)<br>M5 (M5 thread)                  | VQZ2□20<br>VQZ2□21        | 2 to 20 stations    | 2 stations: 86<br>Addition per station: 26  |
| VQZ3000 | VV5QZ32-□□□ | Top                   | Rc 1/4       | C6 (for ø6)<br>C8 (for ø8)<br>C10 (for ø10)<br>Rc 1/4         | VQZ3□20<br>VQZ3□21        | 2 to 20 stations    | 2 stations: 181<br>Addition per station: 53 |

## How to Order Manifold Assembly (Example)

**Example**

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.)

→ VQZ2320-5M1-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.

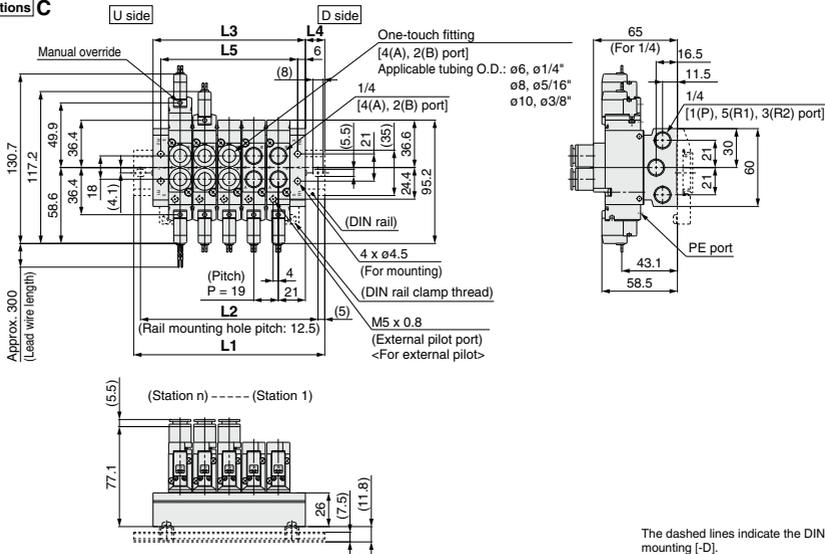




## Dimensions: VQZ3000

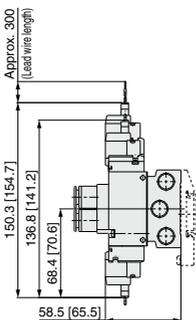
### VV5QZ32- Stations C

#### Grommet (G)

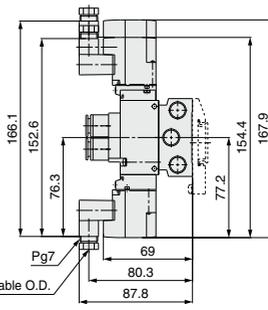


- SV
- SYJ
- SZ
- VF
- VP4
- VQ 1/2
- VQ 4/5
- VQC 1/2
- VQC 4/5
- VQZ
- SQ
- VFS
- VFR
- VQ7

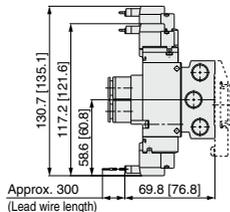
#### L-type plug connector (L)



#### DIN terminal (Y)



#### M-type plug connector (M)



### Dimensions

| n         | Stations (Max. 20 stations) |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |    |
|-----------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
|           | 1                           | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 |
| <b>L1</b> | 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 |    |
| <b>L2</b> | 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   |    |
| <b>L3</b> | 61                          | 80    | 99    | 118   | 137   | 156   | 175   | 194   | 213   | 232   | 251   | 270   | 289   | 308   | 327   | 346   | 365   | 384   | 403   |    |
| <b>L4</b> | 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  |    |
| <b>L5</b> | 49                          | 68    | 87    | 106   | 125   | 144   | 163   | 182   | 201   | 220   | 239   | 258   | 277   | 296   | 315   | 334   | 353   | 372   | 391   |    |

# VQZ1000/2000/3000 Series

## Manifold Options

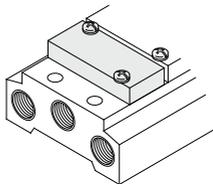
### Blanking plate assembly

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

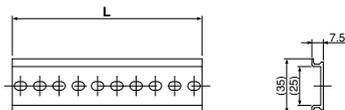
AXT100-DR-□

\* 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.

Insert "D" at the end of the manifold part number.

The DIN rail is approximately 30 mm longer than the length of manifold.



#### L Dimension

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

### Blanking plug

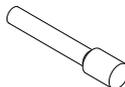
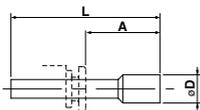
KQ2P-23

KQ2P-04

KQ2P-06

KQ2P-08

KQ2P-10

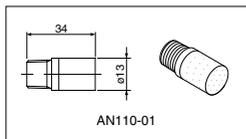


#### Dimensions

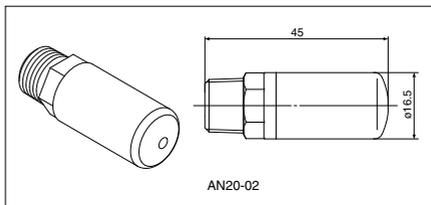
| Applicable fitting size øD | Model          | A    | L    | D  |
|----------------------------|----------------|------|------|----|
| 3.2                        | <b>KQ2P-23</b> | 16   | 31.5 | 5  |
| 4                          | <b>KQ2P-04</b> | 16   | 32   | 6  |
| 6                          | <b>KQ2P-06</b> | 18   | 35   | 8  |
| 8                          | <b>KQ2P-08</b> | 20.5 | 39   | 10 |
| 10                         | <b>KQ2P-10</b> | 22   | 43   | 12 |

### Silencer (for manifold EXH port)

Silencer is installed in the manifold EXH port.



AN110-01



AN20-02

#### Dimensions

| Model          | Silencer part no. |
|----------------|-------------------|
| <b>VQZ1000</b> | AN110-01          |
| <b>VQZ2000</b> | AN110-01          |
| <b>VQZ3000</b> | AN20-02           |

For a silencer to be mounted in a single valve unit, refer to page 754.

### 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-□□

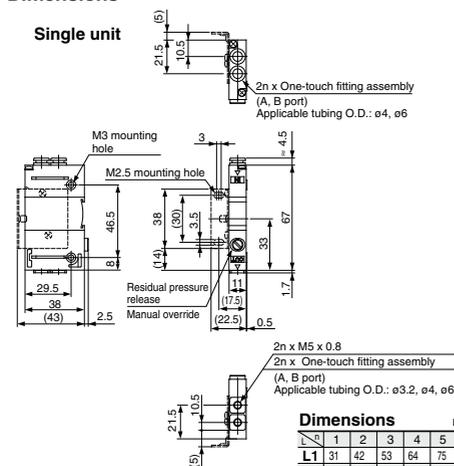
It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the perfect block with a built-in pilot type perfect valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time. The combination of a 2 position single or double solenoid 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 rate characteristics: C  | 0.60 dm <sup>3</sup> /(s-bar) |
| Max. operating frequency      | 180 c.p.m                     |

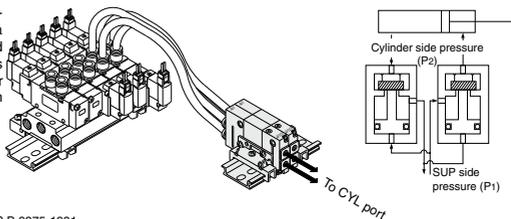
Note) Based on JIS B 8375-1981  
(Supply pressure: 0.5 MPa)

#### Dimensions



| Dimensions |       | n: Station (Maximum 24 stations) |       |       |       |       |       |       |       |       |       |       |    |
|------------|-------|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
|            |       | 1                                | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12 |
| L1         | 31    | 42                               | 53    | 64    | 75    | 86    | 97    | 108   | 119   | 130   | 141   | 152   |    |
| L2         | 50    | 62.5                             | 75    | 87.5  | 100   | 112.5 | 125   | 137.5 | 150   | 162.5 | 175   |       |    |
| L3         | 60.5  | 73                               | 85.5  | 98    | 110.5 | 123   | 135.5 | 148   | 160.5 | 173   | 185.5 |       |    |
|            |       | 13                               | 14    | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24 |
| L1         | 163   | 174                              | 185   | 196   | 207   | 218   | 229   | 240   | 251   | 262   | 273   | 284   |    |
| L2         | 187.5 | 187.5                            | 200   | 212.5 | 225   | 237.5 | 250   | 262.5 | 275   | 287.5 | 300   |       |    |
| L3         | 198   | 198                              | 210.5 | 223   | 235.5 | 248   | 260.5 | 260.5 | 273   | 285.5 | 298   | 310.5 |    |

#### <Check valve operating principle>



#### How to Order

##### Perfect block

VQ1000-FPG-**C4** **M5** **F**

##### IN side port size

|           |                      |
|-----------|----------------------|
| <b>C4</b> | ø4 One-touch fitting |
| <b>C6</b> | ø6 One-touch fitting |

##### OUT side port size

|           |                        |
|-----------|------------------------|
| <b>M5</b> | M5 thread              |
| <b>C3</b> | ø3.2 One-touch fitting |
| <b>C4</b> | ø4 One-touch fitting   |
| <b>C6</b> | ø6 One-touch fitting   |

##### Option

|          |                                  |
|----------|----------------------------------|
| Nil      | None                             |
| <b>D</b> | DIN rail mounting (For manifold) |
| <b>F</b> | With bracket                     |
| <b>N</b> | Name plate                       |

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

##### Manifold (DIN rail mounting type)

VQ1000-FPG-**06**

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

##### Stations

|           |             |
|-----------|-------------|
| <b>01</b> | 1 station   |
| ⋮         | ⋮           |
| <b>16</b> | 16 stations |

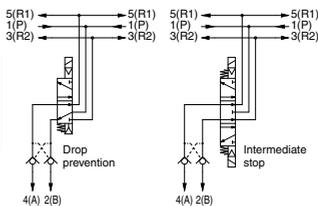
<Ordering Example>

VQ1000-FPG-06 .... 6 stations of manifold

\* VQ1000-FPG-C4M5-D, 3 sets } Perfect block

\* VQ1000-FPG-C6M5-D, 3 sets }

#### <Example>



#### <Bracket assembly>

|                      |                                    |
|----------------------|------------------------------------|
| Part no.             | Tightening torque <sup>(N10)</sup> |
| <b>VQ1000-FPG-FB</b> | 0.22 to 0.25 N·m                   |

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

# VQZ1000/2000/3000 Series

## Manifold Options

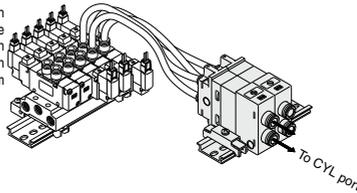
### Perfect block (Separated): For VQZ2000/3000 VQ2000-FPG-□□-□□

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.

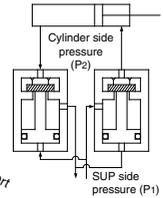
#### Specifications

|                               |                              |
|-------------------------------|------------------------------|
| Maximum operating pressure    | 0.8 MPa                      |
| Minimum operating pressure    | 0.15 MPa                     |
| Ambient and fluid temperature | -5 to 50°C                   |
| Flow rate characteristics: C  | 3.0 dm <sup>3</sup> /(s·bar) |
| Max. operating frequency      | 180 c.p.m                    |

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

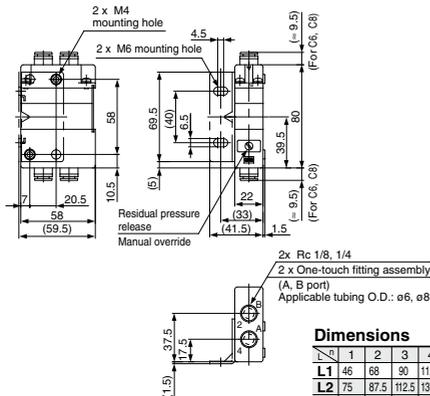
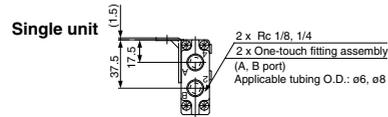


<Check valve operating principle>

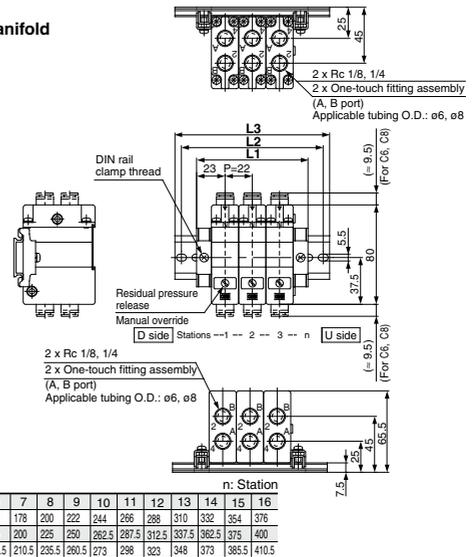


#### Dimensions

##### Single unit



##### Manifold



#### 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 |

#### Option

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

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

### Manifold (DIN rail mounting type)

VVQ2000-FPG-06

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

#### Stations

|     |             |
|-----|-------------|
| 01  | 1 station   |
| ... | ...         |
| 16  | 16 stations |

<Ordering Example>

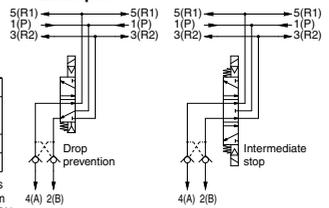
VVQ2000-FPG-06 ... 6 stations of manifold  
\* VQ2000-FPG-C6C6-D, 3 sets } Perfect block  
\* VQ2000-FPG-C8C8-D, 3 sets }

### Caution

- 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 torque 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.

| Connection thread | Proper tightening torque (N·m) |
|-------------------|--------------------------------|
| Rc 1/8            | 7 to 9                         |
| Rc 1/4            | 12 to 14                       |

### <Example>



### <Bracket assembly>

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

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

# Semi-standard Specifications

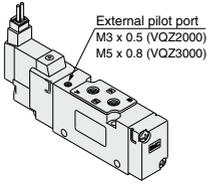
## External Pilot Specification (Except VQZ1000)

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.



• Entry is the same as standard products.



### Pressure Specifications

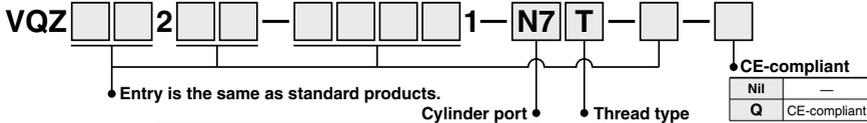
| Series   | VQZ2000/3000   |                   |            |
|--|--|-------------------|------------|
|  | 2 position single  | 2 position double | 3 position |
| External pilot pressure range <sup>Note1</sup> | Metal seal<br>0.1 to 0.7 MPa ( VQZ3000, 3 position only )<br>0.15 to 0.7 MPa |                   |            |
|  | Rubber seal<br>0.15 to 0.7 MPa    0.1 to 0.7 MPa    0.2 to 0.7 MPa           |                   |            |
| Operating pressure range <sup>Note2</sup>      | -100 kPa to 0.7 MPa  |                   |            |

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.



• Entry is the same as standard products.

• Cylinder port

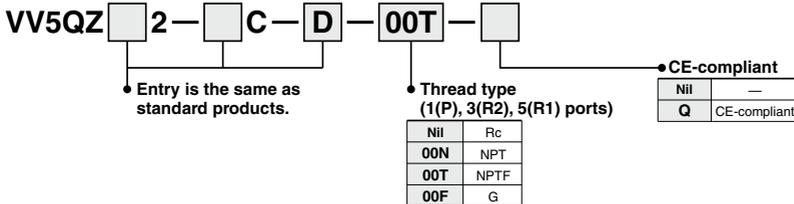
• Thread type (Cylinder port and 1(P), 3(R2), 5(R1) ports)

| Symbol                        | N1      | N3     | N7    | N9     | N11   | M5        | 02         |
|-------------------------------|---------|--------|-------|--------|-------|-----------|------------|
| Applicable tubing O.D. (Inch) | ø1/8"   | ø5/32" | ø1/4" | ø5/16" | ø3/8" | M5 thread | 1/4 thread |
| A, B port                     | VQZ1000 | ●      | ●     | ●      | —     | ●         | —          |
|                               | VQZ2000 | —      | ●     | ●      | —     | ●         | —          |
|                               | VQZ3000 | —      | —     | ●      | ●     | —         | ●          |

Note) Metric size One-touch fittings (C) are also available.

Note 1) 3(R2), 5(R1) port of the VQZ2000 is only G1/16.  
Note 2) Except VQZ1000.

Manifold Part No.



• Entry is the same as standard products.

## 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)



• 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.)

- SV
- SYJ
- SZ
- VF
- VP4
- VQ 1/2
- VQ 4/5
- VQC 1/2
- VQC 4/5
- VQZ
- SQ
- VFS
- VFR
- VQ7

## Replacement Parts

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

| Fitting size | C3             | C4             | C6             | C8             | C10             |
|--------------|----------------|----------------|----------------|----------------|-----------------|
| Model        | C3             | C4             | C6             | C8             | C10             |
| VQZ1000/2000 | VVQ1000-50A-C3 | VVQ1000-50A-C4 | VVQ1000-50A-C6 | —              | —               |
| VQZ3000      | —              | —              | VVQ1000-51A-C6 | VVQ1000-51A-C8 | VVQ1000-51A-C10 |

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-□

Without lead wire: SY100-30-A  
(with connector and 2 sockets only)

#### Lead wire length

|     |         |
|-----|---------|
| Nil | 300 mm  |
| 6   | 600 mm  |
| 10  | 1000 mm |
| 15  | 1500 mm |
| 20  | 2000 mm |
| 25  | 2500 mm |
| 30  | 3000 mm |
| 50  | 5000 mm |

#### <Pilot valve assembly>

V111 — 5 — G — □

| Symbol   | Specifications                               | Function |    |
|----------|--|----------|----|
|          |  | DC       | AC |
| Nil      | Standard                                     | (0.35 W) |    |
| B (Note) | High speed response type                     | (0.9 W)  | —  |
| K (Note) | High pressure type<br>(Metal seal type only) | (0.9 W)  | —  |

Note) Semi-standard

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

|     |  |
|-----|--|
| Nil | VQZ2000/3000   |
| 4   | A and B side of VQZ1000 single, double solenoid type<br>A side of VQZ1000 3 position |
| 5   | B side of VQZ1000 3 position   |

#### 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

| Symbol | Electrical entry |   | Light/surge voltage suppressor |
|--------|------------------|---|--------------------------------|
|        | DC               | AC                                      |                                |
| G      | —                | Grommet (DC specification)              | None                           |
| LU     | LZ               | L-type plug connector with lead wire    | Yes                            |
| LOU    | LOZ              | L-type plug connector without connector |                                |
| MU     | MZ               | M-type plug connector with lead wire    |                                |
| MOU    | MOZ              | M-type plug connector without connector |                                |

#### 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              | AC              |
|-----------------|-----------------|
| VQZ1120-5LO1-M5 | VQZ1120-1LO1-M5 |
| SY100-30-4A-20  | SY100-30-1A-20  |

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

V115 — 5 — Y — X110

| Symbol   | Specifications                               | Function |    |
|----------|--|----------|----|
|          |  | DC       | AC |
| Nil      | Standard                                     | (0.35 W) |    |
| B (Note) | High speed response type                     | (0.9 W)  | —  |
| K (Note) | High pressure type<br>(Metal seal type only) | (0.9 W)  | —  |

Note) Semi-standard

#### 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

| Symbol | Electrical entry   |    | Light/surge voltage suppressor |
|--------|--|----|--------------------------------|
|        | DC   | AC |                                |
| Y      | DIN terminal   |    | None                           |
| YO     | DIN terminal without connector   |    |                                |
| YZ     | DIN terminal with light/surge voltage suppressor                                 |    | Yes (With indicator light)     |
| YS     | DIN terminal with surge voltage suppressor (DC specification)                    |    |                                |
| YOS    | DIN terminal with surge voltage suppressor, without connector (DC specification) |    |                                |

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

#### <Gasket and screw assembly>

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

Note) The above part numbers are for 10 valves (a set of 10 gaskets and 20 screws).



#### <Bracket assembly>

|         |             | Part no.      | Tightening torque (N·m) (Note) |
|---------|-------------|---------------|--------------------------------|
| VQZ1000 | Metal seal  | VQZ1000V-FB-M | 0.2 to 0.26                    |
|         | Rubber seal | VQZ1000V-FB-R |                                |
| VQZ2000 |             | VQZ2000-FB    | 0.25 to 0.35                   |
| VQZ3000 |             | 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.

### 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.

|            |
|------------|
| <b>SV</b>  |
| <b>SYJ</b> |
| <b>SZ</b>  |
| <b>VF</b>  |
| <b>VP4</b> |
| VQ<br>1/2  |
| VQ<br>4/5  |
| VQC<br>1/2 |
| VQC<br>4/5 |
| <b>VQZ</b> |
| <b>SQ</b>  |
| <b>VFS</b> |
| <b>VFR</b> |
| <b>VQ7</b> |

# EX510 Gateway-type Serial Transmission System VQZ1000/2000/3000 Series Body Ported Manifold



## How to Order Manifold

**VV5QZ 1 2-SA 08**

**Series**

|   |         |
|---|---------|
| 1 | VQZ1000 |
| 2 | VQZ2000 |
| 3 | VQZ3000 |

**SI unit**

|     |                    |
|-----|--------------------|
| Nil | NPN output (+COM.) |
| N   | PNP output (-COM.) |

**Stations**

| Symbol | No. of stations |
|--------|-----------------|
| 02     | 2 stations      |
| ...    | ...             |
| 08     | 8 stations      |

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

**P, R port thread type**

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

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

**Option**

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

Note 1) Order DIN rail separately.  
For DIN rail part no., refer to page 706.  
Note 2) When two or more symbols are specified, indicate them alphabetically.

## How to Order Valve Manifold Assembly (Example)

**Example**

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

VQZ2320-5L01-C6  
VQZ2220-5L01-C6  
VQZ2120-5L01-C6  
VV5QZ22-SA07

U side 1-7-6-5-4-3-2-1 Stations D side

**VV5QZ22-SA07** ..... 1 set (Type SA, 7-station manifold base part no.)  
 \* **VQZ2120-5L01-C6** ... 2 sets (Single solenoid part no.)  
 \* **VQZ2220-5L01-C6** ... 3 sets (Double solenoid part no.)  
 \* **VQZ2320-5L01-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.

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.

## SI Unit Part No.

| Symbol | SI unit spec.      | SI unit part no. |
|--------|--------------------|------------------|
| Nil    | NPN output (+COM.) | EX510-S001       |
| N      | PNP output (-COM.) | EX510-S101       |

Refer to Best Pneumatics No. 1-1 and the Operation Manual for the details of EX510 Gateway-type Serial Transmission System. Please download the Operation Manual via our website, <http://www.smworld.com>

### 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 <small>Note 1)</small> | 3 position pressure center       |
| 8 <small>Note 2)</small> | 3 port for mixture mounting N.C. |
| 9 <small>Note 2)</small> | 3 port for mixture 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 755.)

• **Seal type**

|   |             |
|---|-------------|
| 0 | Metal seal  |
| 1 | Rubber seal |

• **Function**

| Symbol                          | Specifications   | DC         |
|---------------------------------|--|------------|
| Nil                             | Standard   | (0.35 W) ○ |
| B <small>Note 1)</small>        | High speed response type                                 | (0.9 W) ○  |
| K <small>Note 1)</small>        | High pressure type (Metal seal type only)                | (0.9 W) ○  |
| R <small>Note 1, 2, 3)</small>  | External pilot type                                      | ○          |
| BR <small>Note 1, 2, 3)</small> | High speed response/External pilot type                  | (0.9 W) ○  |
| KR <small>Note 1, 2, 3)</small> | High pressure/External pilot type (Metal seal type only) | (0.9 W) ○  |

Note 1) Semi-standard

Note 2) For details on external pilot type, refer to page 709.

Note 3) There is no VQZ1000 setting.

Rated voltage: 24 VDC •

• **CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

• **Thread type**

|     |      |
|-----|------|
| Nil | Rc   |
| N   | NPT  |
| T   | NPTF |
| F   | G    |

Note 1) For 3(R2), 5(R1) port of the VQZ2000 is only G1/16.

Note 2) Except VQZ1000

• **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       | —       | —       | ○       |

**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     | ø1/8" One-touch fitting  | ○       | —       | —       |
| N3     | ø5/32" One-touch fitting | ○       | ○       | —       |
| N7     | ø1/4" One-touch fitting  | ○       | ○       | ○       |
| N9     | ø5/16" One-touch fitting | —       | —       | ○       |
| N11    | ø3/8" One-touch fitting  | —       | —       | ○       |



**Made to Order**  
(For details, refer to page 751.)

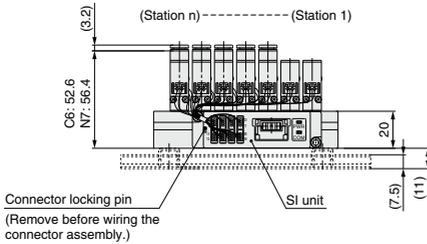
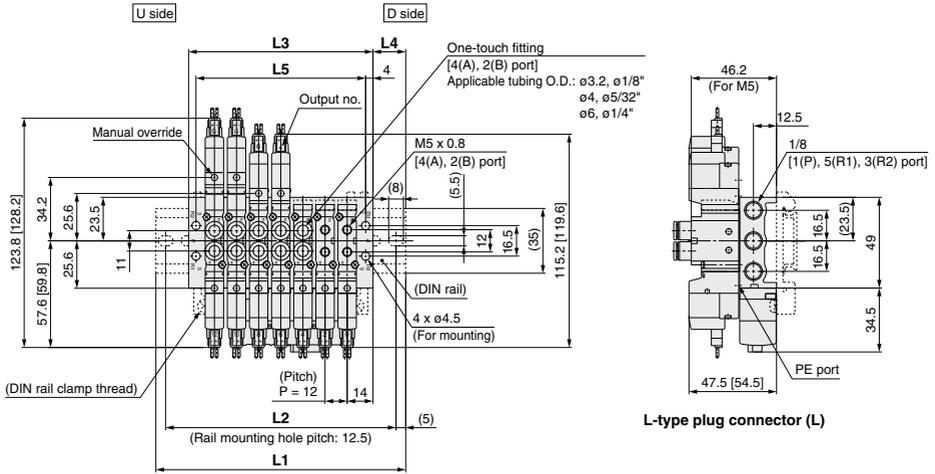
| Symbol | Description                |
|--------|----------------------------|
| X30    | Pilot valve common exhaust |
| X90    | Main valve fluororubber    |
| X113   | All fluororubber           |

|         |
|---------|
| SV      |
| SYJ     |
| SZ      |
| VF      |
| VP4     |
| VQ 1/2  |
| VQ 4/5  |
| VQC 1/2 |
| VQC 4/5 |
| VQZ     |
| SQ      |
| VFS     |
| VFR     |
| VQ7     |

Note) When ordering the body ported type solenoid valve as a single unit, the manifold mounting screw and gasket are not included. Please order them separately, if necessary. (For details, refer to page 710.)

# VQZ1000/2000/3000 Series

## Dimensions: VQZ1000-SA□: EX510 Gateway-type 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).  
[ ] : AC

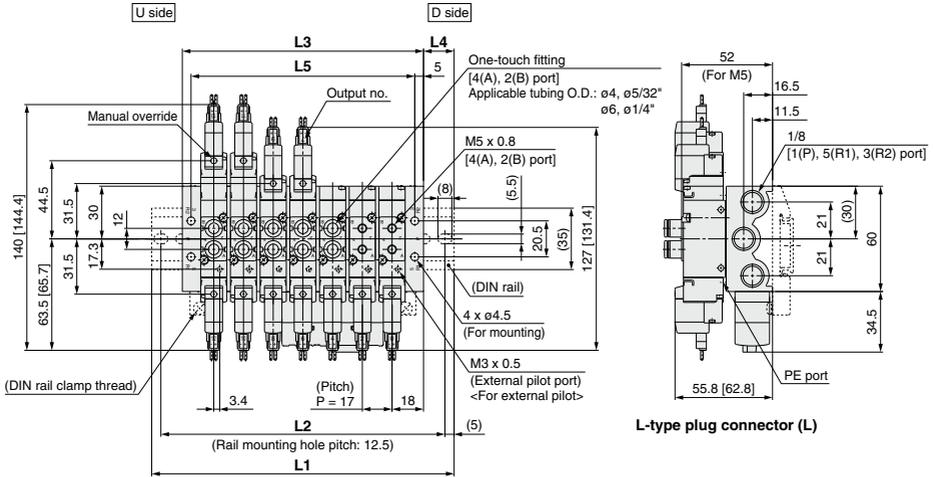
### Dimensions

|           |       | Max. 16 stations |       |       |       |       |       |       |       |       |       |       |       |       |       |    |  |
|-----------|-------|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|--|
| L         | n     | 2                | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16 |  |
| <b>L1</b> | 123   | 123              | 123   | 123   | 123   | 135.5 | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 223   | 235.5 | 248   |    |  |
| <b>L2</b> | 112.5 | 112.5            | 112.5 | 112.5 | 112.5 | 125   | 137.5 | 150   | 162.5 | 175   | 187.5 | 200   | 212.5 | 225   | 237.5 |    |  |
| <b>L3</b> | 88    | 88               | 88    | 88    | 88    | 100   | 112   | 124   | 136   | 148   | 160   | 172   | 184   | 196   | 208   |    |  |
| <b>L4</b> | 17.5  | 17.5             | 17.5  | 17.5  | 17.5  | 18    | 18.5  | 18.5  | 19    | 19    | 19    | 19.5  | 19.5  | 20    | 20    |    |  |
| <b>L5</b> | 80    | 80               | 80    | 80    | 80    | 92    | 104   | 116   | 128   | 140   | 152   | 164   | 176   | 188   | 200   |    |  |

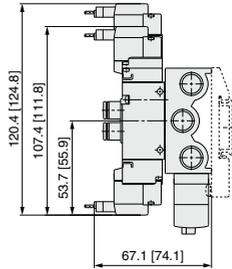
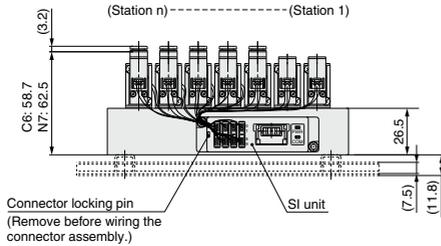
Note) The L dimension of 2 to 6 stations is the same. Valves are numbered from the D side according to the number of stations.

EX510 Gateway-type Serial Transmission System **VQZ1000/2000/3000 Series**

**Dimensions: VQZ2000-SA□: EX510 Gateway-type Serial Transmission System**



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**

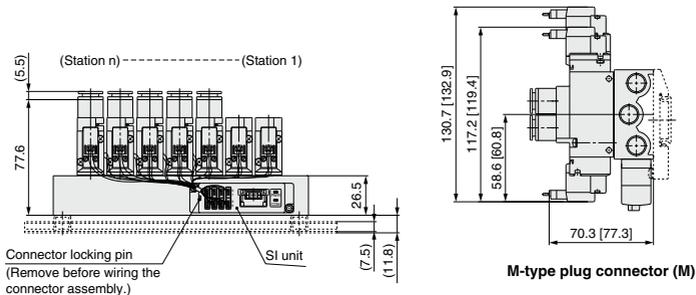
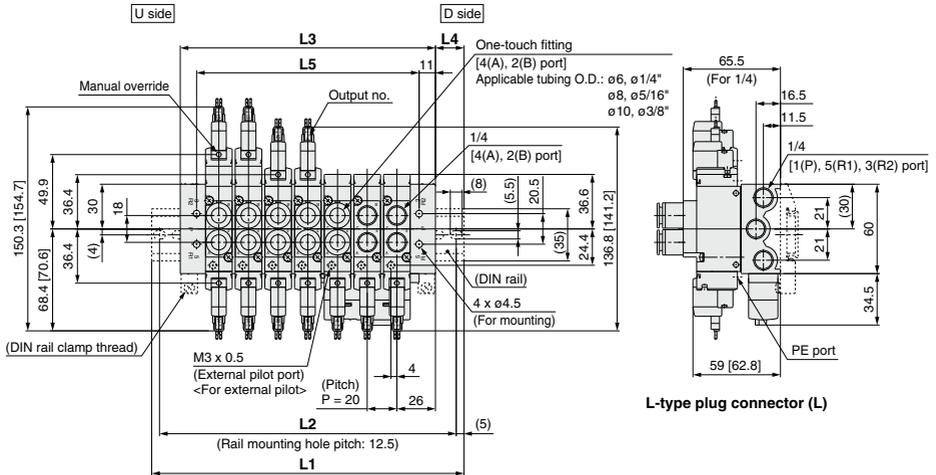
Max. 16 stations

| L  | n | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
|----|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1 |   | 135.5 | 135.5 | 135.5 | 135.5 | 160.5 | 173   | 185.5 | 210.5 | 223   | 248   | 260.5 | 273   | 298   | 310.5 | 323   |
| L2 |   | 125   | 125   | 125   | 125   | 150   | 162.5 | 175   | 200   | 212.5 | 237.5 | 250   | 262.5 | 287.5 | 300   | 312.5 |
| L3 |   | 104   | 104   | 104   | 104   | 121   | 138   | 155   | 172   | 189   | 206   | 223   | 240   | 257   | 274   | 291   |
| L4 |   | 16    | 16    | 16    | 16    | 20    | 17.5  | 15.5  | 19.5  | 17    | 21    | 19    | 16.5  | 20.5  | 18.5  | 16    |
| L5 |   | 94    | 94    | 94    | 94    | 111   | 128   | 145   | 162   | 179   | 196   | 213   | 230   | 247   | 264   | 281   |

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.

# VQZ1000/2000/3000 Series

## Dimensions: VQZ3000-SA□: EX510 Gateway-type 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).  
[ ]: AC

### Dimensions

Max. 16 stations

| L         | n     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16 |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| <b>L1</b> | 123   | 123   | 148   | 173   | 185.5 | 210.5 | 223   | 248   | 273   | 285.5 | 310.5 | 323   | 348   | 373   | 385.5 |    |
| <b>L2</b> | 112.5 | 112.5 | 137.5 | 162.5 | 175   | 200   | 212.5 | 237.5 | 262.5 | 275   | 300   | 312.5 | 337.5 | 362.5 | 375   |    |
| <b>L3</b> | 92    | 92    | 112   | 132   | 152   | 172   | 192   | 212   | 232   | 252   | 272   | 292   | 312   | 332   | 352   |    |
| <b>L4</b> | 15.5  | 15.5  | 18    | 20.5  | 17    | 19.5  | 15.5  | 18    | 20.5  | 17    | 19.5  | 15.5  | 18    | 20.5  | 17    |    |
| <b>L5</b> | 70    | 70    | 90    | 110   | 130   | 150   | 170   | 190   | 210   | 230   | 250   | 270   | 290   | 310   | 330   |    |

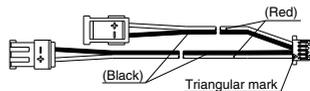
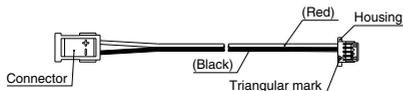
Note) The L dimension of 2 to 6 stations is the same. Valves are numbered from the D side according up to the number of stations.

## Manifold Options

### Connector assembly

Single solenoid (SY3000-37-81A-□-□)

Double solenoid (SY3000-37-81A-□-□)



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

| Model   | Part no.          | Connector mounting position            |
|---------|-------------------|--|
| VV5QZ12 | SY3000-37-81A-3-N | Single: for 1 to 4 stations            |
|         | SY3000-37-81A-3-6 | Double/3 position: for 1 to 4 stations |
|         | SY3000-37-81A-2-N | Single: for 5 to 8 stations            |
| VV5QZ22 | SY3000-37-81A-3-6 | Double/3 position: for 5 to 8 stations |
|         | SY3000-37-81A-3-N | Single: for 1 to 8 stations            |
| VV5QZ32 | SY3000-37-81A-3-6 | Double/3 position: for 1 to 8 stations |
|         | SY3000-37-81A-3-N | Single: for 1 to 4 stations            |
|         | SY3000-37-81A-4-N | Single: for 5 to 8 stations            |
|         | SY3000-37-81A-4-7 | Double/3 position: for 5 to 8 stations |

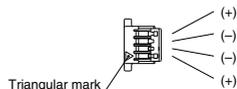
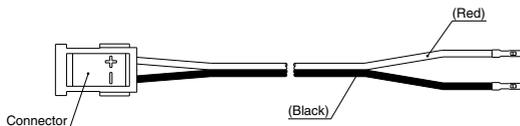
Note) There are no part nos. on the connectors of connector assemblies.

### Connector assembly

SY3000-37-80A-□

### Housing (1 set: 8 pieces)

SY3000-44-3A



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

| Model   | Assembly part no. | Connector mounting position |
|---------|-------------------|-----------------------------|
| VV5QZ12 | SY3000-37-80A-3   | A side                      |
|         | SY3000-37-80A-6   | B side                      |
|         | SY3000-37-80A-4   | A side                      |
|         | SY3000-37-80A-7   | B side                      |
| VV5QZ22 | SY3000-37-80A-3   | A side                      |
|         | SY3000-37-80A-6   | B side                      |
|         | SY3000-37-80A-7   | A side                      |
|         | SY3000-37-80A-9   | B side                      |
| VV5QZ32 | SY3000-37-80A-4   | A side                      |
|         | SY3000-37-80A-7   | B side                      |
|         | SY3000-37-80A-8   | A side                      |
|         | SY3000-37-80A-11  | B side                      |

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

# VQZ1000/2000/3000 Series

## Single Unit



[Option]  
Note) AC-type models that are CE-compliant have DIN terminals only.

### How to Order Valve



Made to Order  
(For details, refer to page 75.)

VQZ 1 1 5 1 — 5 M — 1 — 01 —

**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         | 4 | 3 position exhaust center  |
|   | 2 position double         |   | 3 position pressure center |
| 2 | Metal seal<br>Rubber seal | 5 | 3 position closed center   |
|   |                           |   |                            |
| 3 | 3 position closed 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 |

**Function**

| Symbol               | Specifications   | DC               | AC |
|----------------------|--|------------------|----|
| <b>Nil</b>           | Standard   | (0.35 W) Note 3) |    |
| <b>B</b> Note 1)     | High speed response type                                 | (0.9 W)          | —  |
| <b>K</b> Note 1)     | High pressure type (Metal seal type only)                | (0.9 W)          | —  |
| <b>R</b> Note 1, 2)  | External pilot type                                      | ○                | ○  |
| <b>BR</b> Note 1, 2) | High speed response/External pilot type                  | (0.9 W)          | —  |
| <b>KR</b> Note 1, 2) | High pressure/External pilot type (Metal seal type only) | (0.9 W)          | —  |

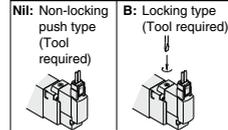
Note 1) Semi-standard  
Note 2) For details on external pilot type, refer to page 742.  
Note 3) For AC specification power consumption, refer to page 719.

**IP65 compliant**

|                |           |
|----------------|-----------|
| <b>Nil</b>     | —         |
| <b>W</b> Note) | Compliant |

Note) VQZ2000/3000 DIN terminal rubber seal only (except external pilot). For details on IP65 enclosure, refer to page 742.

**Manual override**



**Port size**

| Symbol     | Port size         | VQZ1000 | VQZ2000 | VQZ3000 |
|------------|-------------------|---------|---------|---------|
| <b>Nil</b> | Without sub-plate | ○       | ○       | ○       |
| <b>01</b>  | Rc 1/8            | ○       | ○       | —       |
| <b>02</b>  | Rc 1/4            | —       | ○       | ○       |
| <b>03</b>  | Rc 3/8            | —       | —       | ○       |

Note) For inch sizes, refer to page 742.

**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        |
|------------------|-------------------------------------|---|---|--|--|
|                  | With light/surge voltage suppressor | With light/surge voltage suppressor               | With light/surge voltage suppressor         | With light/surge voltage suppressor                                    | With light/surge voltage suppressor                |
|                  |                                     |   |   |  |  |
| CE-<br>compliant | AC<br>—                             | —   | —   | —  | —  |
|                  | DC<br>—                             | —   | —   | —  | —  |
|                  | <b>Y:</b> DIN terminal Note 1)      | <b>YO:</b> DIN terminal without connector Note 1) | <b>YZ:</b> DIN terminal Note 1)             | <b>YOS:</b> DIN terminal with out connector (DC specification) Note 1) | <b>YS:</b> DIN terminal (DC specification) Note 1) |
|                  | With light/surge voltage suppressor | With light/surge voltage suppressor               | With light/surge voltage suppressor         | With surge voltage suppressor  | With surge voltage suppressor                      |
|                  |                                     |   |   |  |  |
| CE-<br>compliant | AC<br>●                             | ●   | ●   | —  | —  |
|                  | DC<br>●                             | ●   | ●   | ●  | ●  |

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

**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 sub-plate part no., refer to page 743.  
Note) When ordering the base mounted type solenoid valve as a single unit, the manifold mounting screw and gasket are included.



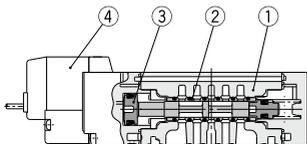
**Caution**  
Use standard (DC) specification for continuous duty.



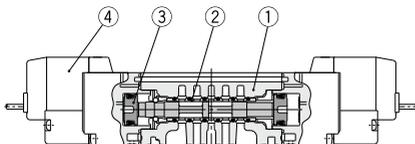
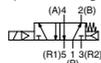
# VQZ1000/2000/3000 Series

## Construction: VQZ1000/2000/3000

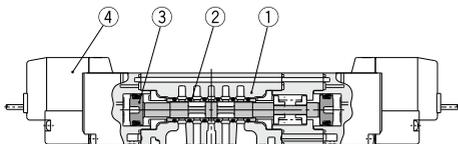
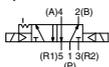
### Metal seal type



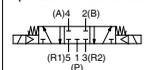
2 position single



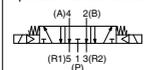
2 position double



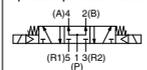
3 position closed center



3 position exhaust center

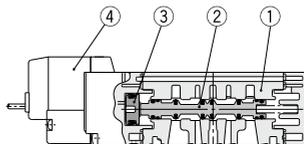


3 position pressure center

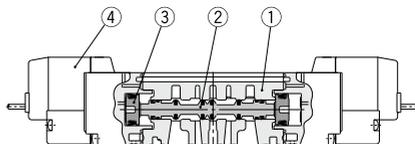
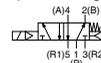


Note) Except metal seal type of the VQZ1000.

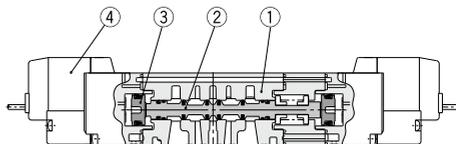
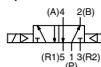
### Rubber seal type



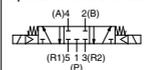
2 position single



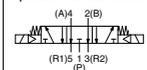
2 position double



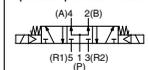
3 position closed center



3 position exhaust center



3 position pressure center



### Component Parts

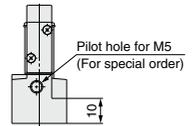
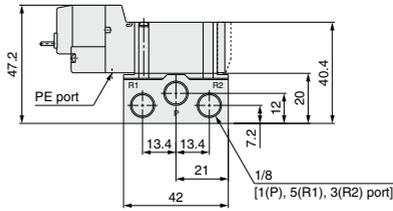
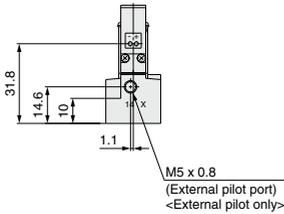
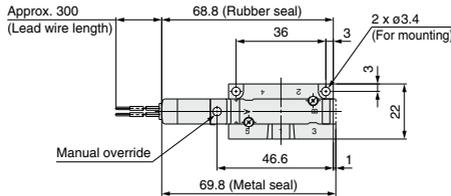
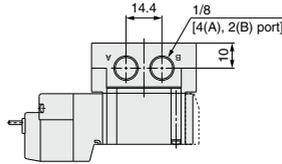
| No. | Description                 | Material            | Note        |
|-----|-----------------------------|---------------------|-------------|
| 1   | <b>Body</b>                 | Aluminum die-casted |             |
| 2   | <b>Spool, Sleeve</b>        | Stainless steel     | Metal seal  |
|     | <b>Spool valve</b>          | Aluminum/HNBR       | Rubber seal |
| 3   | <b>Piston</b>               | Resin               |             |
| 4   | <b>Pilot valve assembly</b> | —                   |             |

Note) For "How to Order Pilot Valve Assembly", refer to page 743.

## Dimensions: VQZ1000

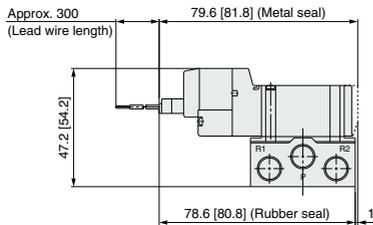
### 2 Position Single

Grommet (G): VQZ115<sup>Q</sup>(R)-□G□1-01

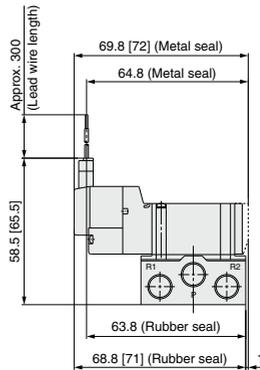


|         |
|---------|
| SV      |
| SYJ     |
| SZ      |
| VF      |
| VP4     |
| VQ 1/2  |
| VQ 4/5  |
| VQC 1/2 |
| VQC 4/5 |
| VQZ     |
| SQ      |
| VFS     |
| VFR     |
| VQ7     |

### L-type plug connector (L): VQZ115<sup>Q</sup>(R)-□L□1-01



### M-type plug connector (M): VQZ115<sup>Q</sup>(R)-□M□1-01



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

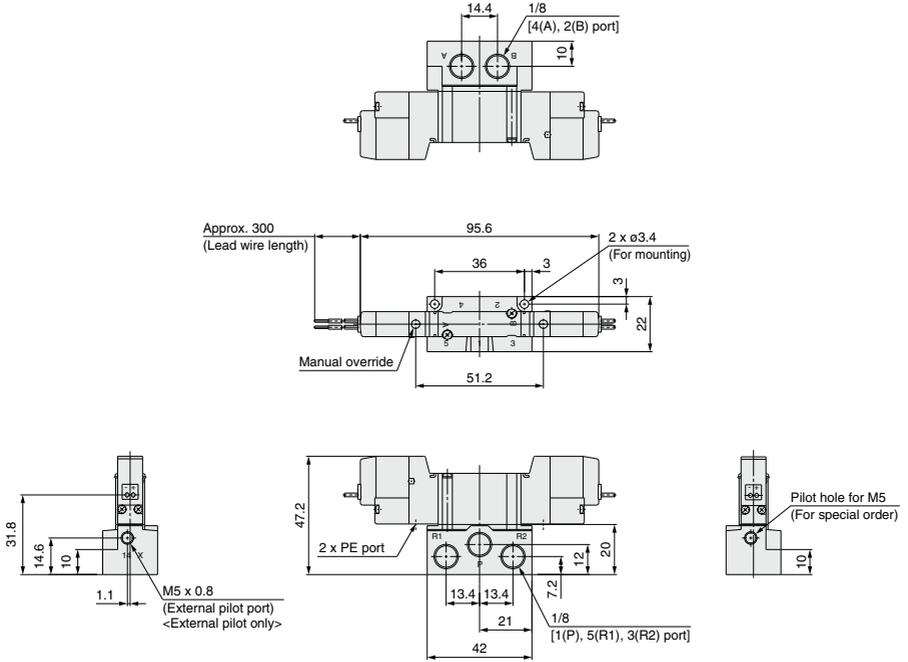
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

# VQZ1000/2000/3000 Series

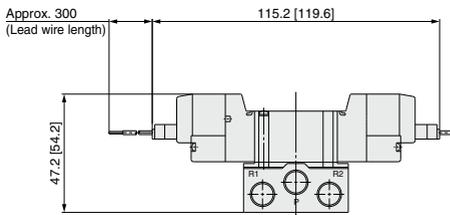
## Dimensions: VQZ1000

### 2 Position Double

Grommet (G): VQZ125 ♀ (R)-□G□1-01

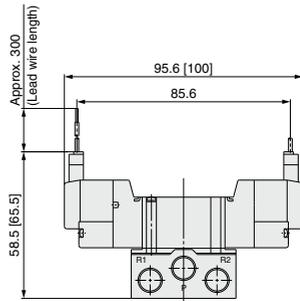


### L-type plug connector (L): VQZ125 ♀ (R)-□L□1-01



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

### M-type plug connector (M): VQZ125 ♀ (R)-□M□1-01

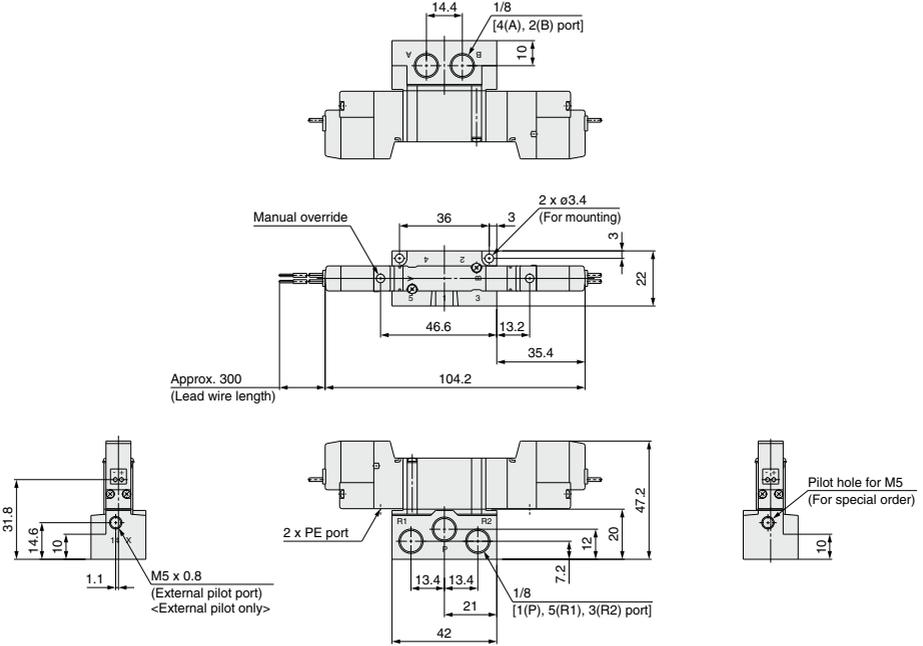


Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

**Dimensions: VQZ1000**

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

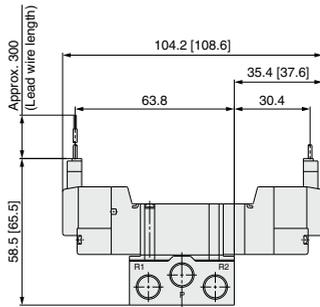
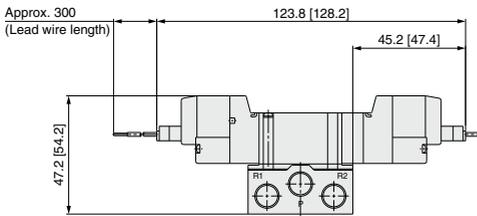
Grommet (G): VQZ1  $\frac{3}{5}$  5  $\frac{0}{1}$  (R)-□G□1-01



|            |
|------------|
| SV         |
| SYJ        |
| SZ         |
| VF         |
| VP4        |
| VQ 1/2     |
| VQ 4/5     |
| VQC 1/2    |
| VQC 4/5    |
| <b>VQZ</b> |
| SQ         |
| VFS        |
| VFR        |
| VQ7        |

**L-type plug connector (L):** VQZ1  $\frac{3}{5}$  5  $\frac{0}{1}$  (R)-□L□1-01

**M-type plug connector (M):** VQZ1  $\frac{3}{5}$  5  $\frac{0}{1}$  (R)-□M□1-01



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

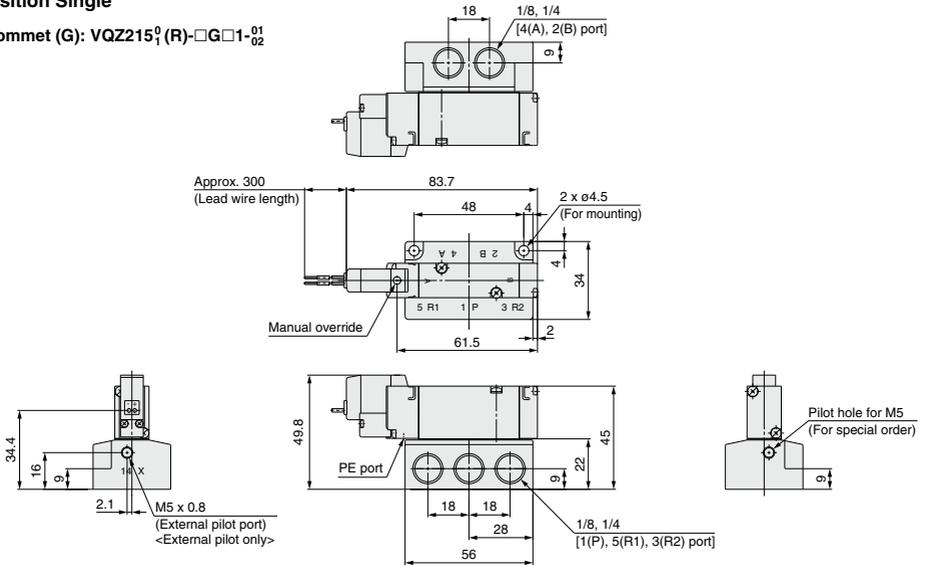
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

# VQZ1000/2000/3000 Series

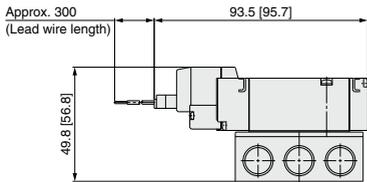
## Dimensions: VQZ2000

### 2 Position Single

Grommet (G): VQZ215<sup>0</sup><sub>1</sub> (R)-□G□1-<sup>01</sup><sub>02</sub>

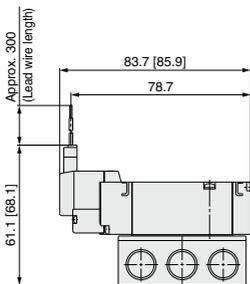


L-type plug connector (L): VQZ215<sup>0</sup><sub>1</sub> (R)-□L□1-<sup>01</sup><sub>02</sub>



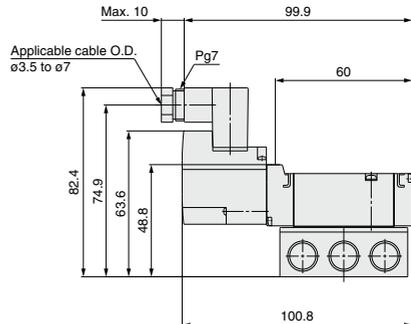
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

M-type plug connector (M): VQZ215<sup>0</sup><sub>1</sub> (R)-□M□1-<sup>01</sup><sub>02</sub>



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

DIN terminal (Y): VQZ215<sup>0</sup><sub>1</sub> (R)-□Y□1-<sup>01</sup><sub>02</sub>

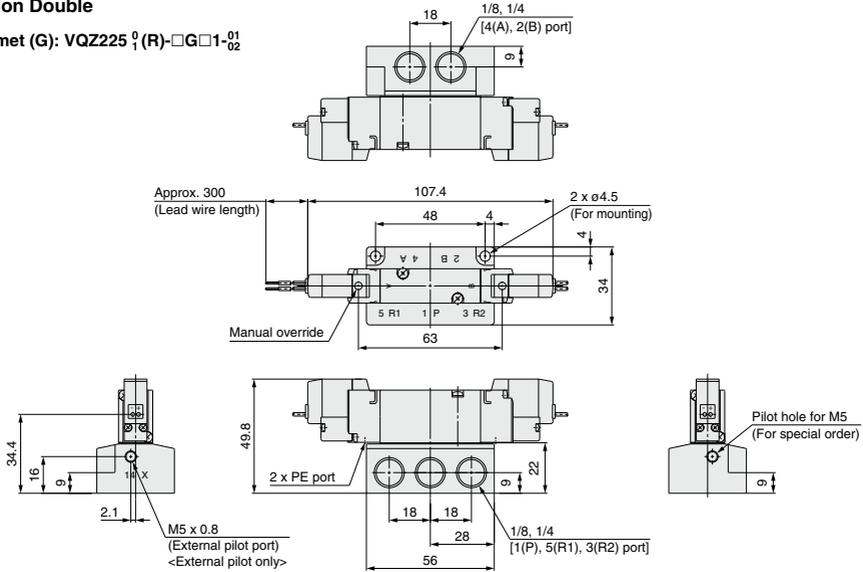


Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

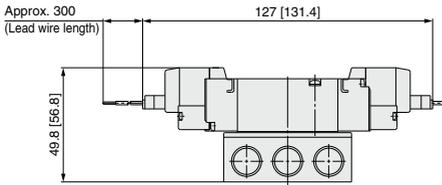
## Dimensions: VQZ2000

### 2 Position Double

Grommet (G): VQZ225  $\frac{0}{1}$  (R)-□G□1- $\frac{01}{02}$

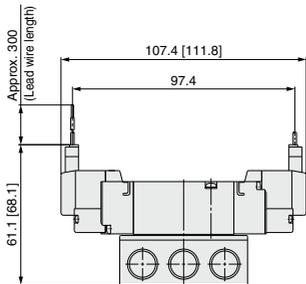


L-type plug connector (L): VQZ225  $\frac{0}{1}$  (R)-□L□1- $\frac{01}{02}$



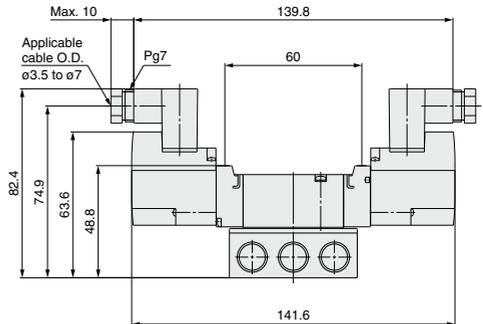
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

M-type plug connector (M): VQZ225  $\frac{0}{1}$  (R)-□M□1- $\frac{01}{02}$



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

DIN terminal (Y): VQZ225  $\frac{0}{1}$  (R)-□Y□1- $\frac{01}{02}$



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

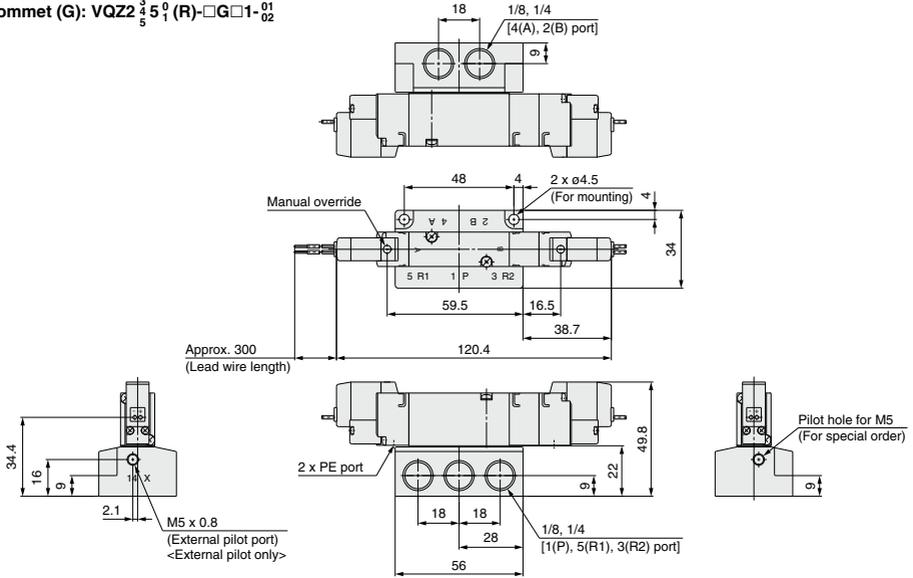
|         |
|---------|
| SV      |
| SYJ     |
| SZ      |
| VF      |
| VP4     |
| VQ 1/2  |
| VQ 4/5  |
| VQC 1/2 |
| VQC 4/5 |
| VQZ     |
| SQ      |
| VFS     |
| VFR     |
| VQ7     |

# VQZ1000/2000/3000 Series

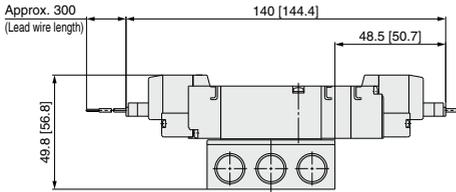
## Dimensions: VQZ2000

### 3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G): VQZ2  $\frac{3}{5}$   $\frac{0}{1}$  (R)-□G□1- $\frac{01}{02}$

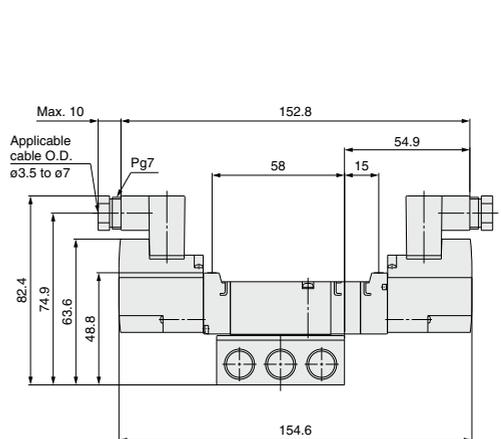


L-type plug connector (L): VQZ2  $\frac{3}{5}$   $\frac{0}{1}$  (R)-□L□1- $\frac{01}{02}$



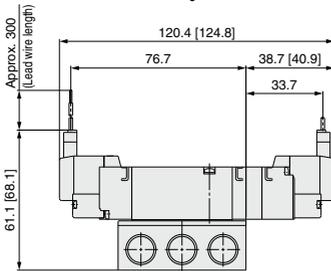
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

DIN terminal (Y): VQZ2  $\frac{3}{5}$   $\frac{0}{1}$  (R)-□Y□1- $\frac{01}{02}$



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

M-type plug connector (M): VQZ2  $\frac{3}{5}$   $\frac{0}{1}$  (R)-□M□1- $\frac{01}{02}$

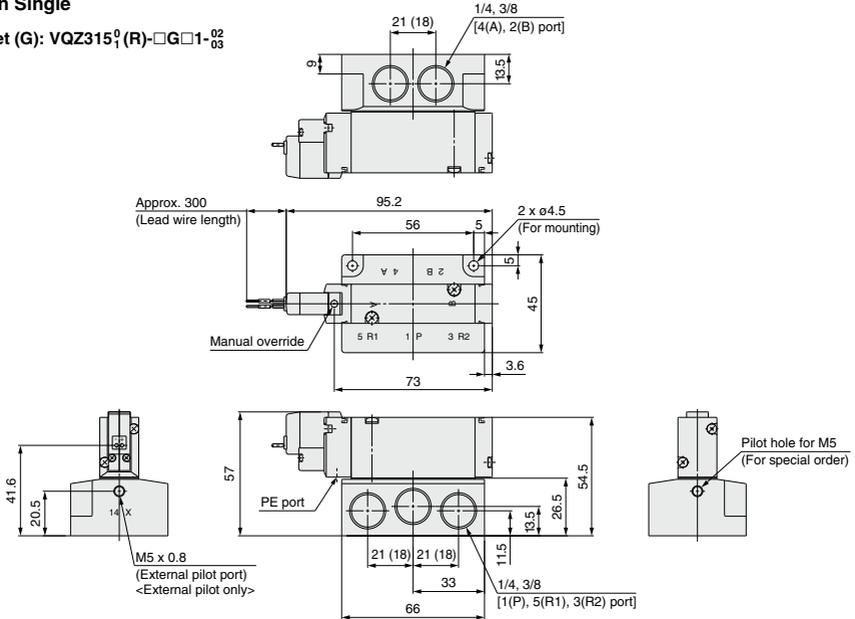


Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

## Dimensions: VQZ3000

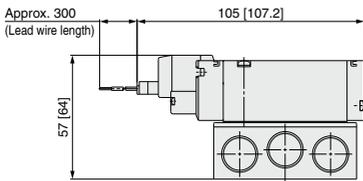
### 2 Position Single

Grommet (G): VQZ315<sup>0</sup> (R)-□G□1-02<sub>03</sub>



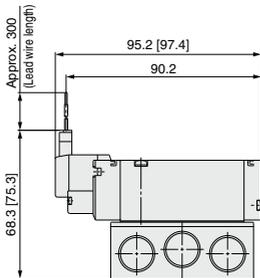
( ): VQZ315□-□G□1-02

L-type plug connector (L): VQZ315<sup>0</sup> (R)-□L□1-02<sub>03</sub>



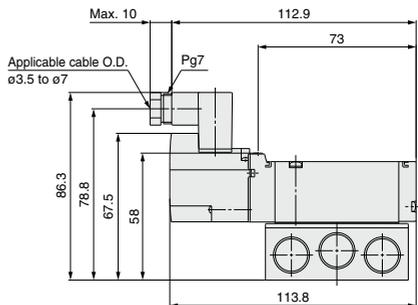
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

M-type plug connector (M): VQZ315<sup>0</sup> (R)-□M□1-02<sub>03</sub>



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

DIN terminal (Y): VQZ315<sup>0</sup> (R)-□Y□1-02<sub>03</sub>



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

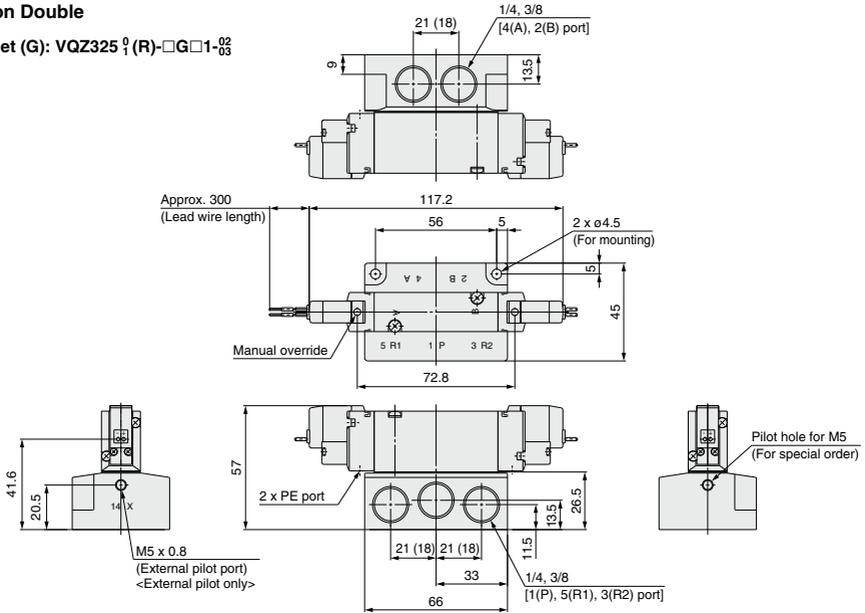
|            |
|------------|
| SV         |
| SYJ        |
| SZ         |
| VF         |
| VP4        |
| VQ<br>1/2  |
| VQ<br>4/5  |
| VQC<br>1/2 |
| VQC<br>4/5 |
| VQZ        |
| SQ         |
| VFS        |
| VFR        |
| VQ7        |

# VQZ1000/2000/3000 Series

## Dimensions: VQZ3000

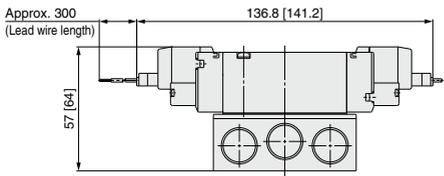
### 2 Position Double

Grommet (G): VQZ325<sup>0</sup>(R)-□G□1-<sup>02</sup>/<sub>03</sub>



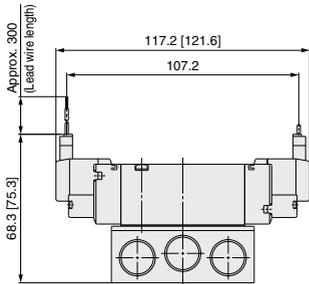
( ): VQZ325□-□G□1-02

L-type plug connector (L): VQZ325<sup>0</sup>(R)-□L□1-<sup>02</sup>/<sub>03</sub>



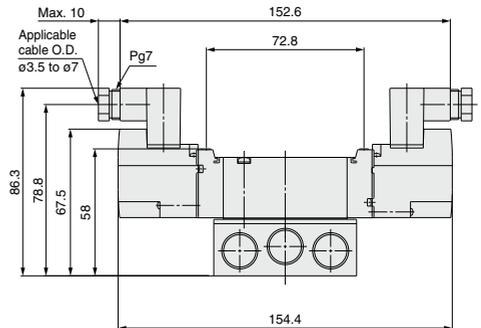
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ]: AC

M-type plug connector (M): VQZ325<sup>0</sup>(R)-□M□1-<sup>02</sup>/<sub>03</sub>



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ]: AC

DIN terminal (Y): VQZ325<sup>0</sup>(R)-□Y□1-<sup>02</sup>/<sub>03</sub>

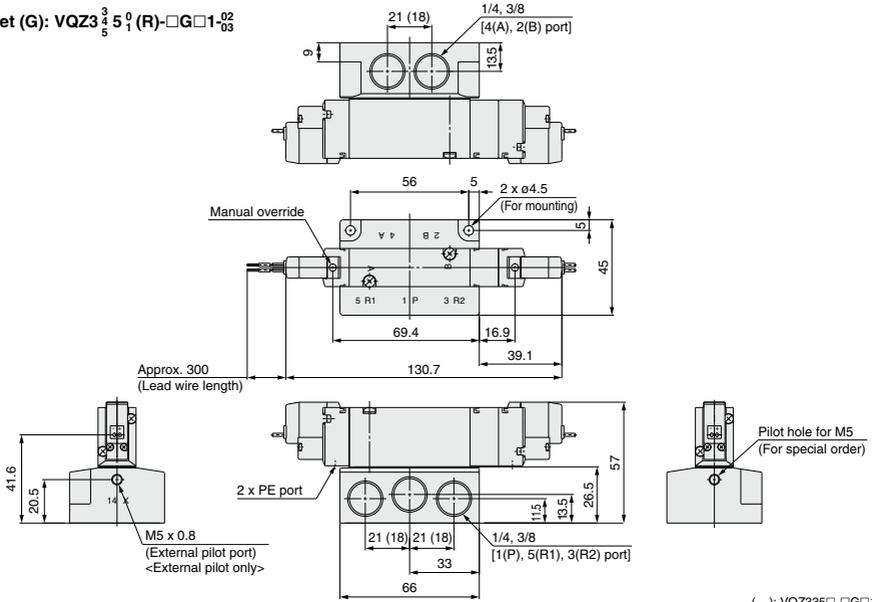


Unless otherwise indicated, dimensions are the same as Grommet (G).

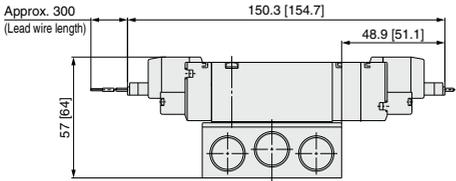
## Dimensions: VQZ3000

### 3 Position Closed Center/Exhaust Center/Pressure Center

Grommet (G): VQZ3 $\frac{3}{5}$  5 $\frac{0}{1}$  (R)-□G□1- $\frac{02}{03}$

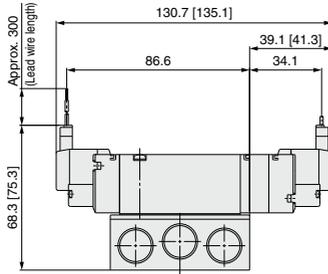


L-type plug connector (L): VQZ3 $\frac{3}{5}$  5 $\frac{0}{1}$  (R)-□L□1- $\frac{02}{03}$



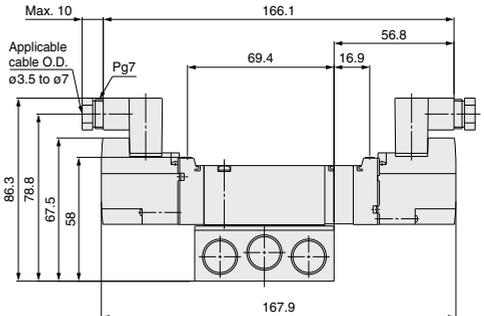
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

M-type plug connector (M): VQZ3 $\frac{3}{5}$  5 $\frac{0}{1}$  (R)-□M□1- $\frac{02}{03}$



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

DIN terminal (Y): VQZ3 $\frac{3}{5}$  5 $\frac{0}{1}$  (R)-□Y□1- $\frac{02}{03}$



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

|            |
|------------|
| SV         |
| SYJ        |
| SZ         |
| VF         |
| VP4        |
| VQ 1/2     |
| VQ 4/5     |
| VQC 1/2    |
| VQC 4/5    |
| <b>VQZ</b> |
| SQ         |
| VFS        |
| VFR        |
| VQ7        |

Base Mounted  
Plug Lead Unit

# 5 Port Solenoid Valve

## VQZ1000/2000/3000 Series

### Manifold Connector Kit



[Option]  
(Note) AC-type models that are CE-compliant have DIN terminals only.

### How to Order Manifold



Made to Order  
(For details, refer to page 751.)

VV5QZ 1 5 - 08 C6 C - N -

**Series**

|   |         |
|---|---------|
| 1 | VQZ1000 |
| 2 | VQZ2000 |
| 3 | VQZ3000 |

**Stations**

|    |             |
|----|-------------|
| 02 | 2 stations  |
| :  | :           |
| 20 | 20 stations |

**Manifold type**

|   |              |
|---|--------------|
| 5 | Base mounted |
|---|--------------|

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

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

| 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  | —       | —       | ○       |
| M5     | M5 thread              | ○       | —       | —       |
| 01     | Rc 1/8                 | —       | ○       | —       |
| 02     | Rc 1/4                 | —       | —       | ○       |
| CM     | Mixture of port sizes  | ○       | ○       | ○       |

Note 1) Specify port mixture/with port plug by the manifold specification sheet.  
Port mixture and port plug are available only for One-touch fitting type.  
Note 2) For inch size One-touch fittings, refer to page 742.

**Option** (Note 1)

|     |   |
|-----|---|
| Nil | None  |
| D   | DIN rail mounting (With standard DIN rail length) |
| DO  | DIN rail mounting (Without DIN rail)              |
| N   | Name plate (Except VQZ1000)                       |
| R   | External pilot type                               |

Note 1) Order DIN rail separately.  
For DIN rail part no., refer to page 736.  
Note 2) For details on options and external pilot type, refer to page 742.  
Note 3) When two or more symbols are specified, indicate them alphabetically.  
Note 4) When mounting the blanking plate at the end of the manifold, the name plate cannot be mounted. In this case, the name plate comes with the manifold. When mounting the name plate on only the mounted solenoid valve, please order the name plate separately. (Refer to page 736.)

**Kit type**

|   |           |
|---|-----------|
| C | Connector |
|---|-----------|

### How to Order Valve

VQZ 1 1 5 1 - 5 M - 1 -

**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        |
| 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.

**Body type**

|   |              |
|---|--------------|
| 5 | Base mounted |
|---|--------------|

**Seal type**

|   |             |
|---|-------------|
| 0 | Metal seal  |
| 1 | Rubber seal |

**Function**

| Symbol | Specifications   | DC       | DC       | AC       |
|--------|--|----------|----------|----------|
| Nil    | Standard   | (0.35 W) | (0.35 W) | (Note 3) |
| B      | High speed response type                                 | (0.9 W)  | —        | —        |
| K      | High pressure type (Metal seal type only)                | (0.9 W)  | —        | —        |
| R      | External pilot type                                      | ○        | ○        | —        |
| BR     | High speed response/ External pilot type                 | (0.9 W)  | —        | —        |
| KR     | High pressure/External pilot type (Metal seal type only) | (0.9 W)  | —        | —        |

Note 1) Semi-standard  
Note 2) For details on external pilot type, refer to page 742.  
Note 3) For AC specification power consumption, refer to page 719.

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

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

**Manual override**

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

**Electrical entry**

| Symbol | Electrical entry                                  | Light/surge voltage suppressor | CE-compliant |    |
|--------|---|--------------------------------|--------------|----|
|        |   |                                | AC           | DC |
| G      | Grommet (DC specification)                        | None                           | —            | ●  |
| L      | L-type plug connector with lead wire              | —                              | —            | ●  |
| LO     | L-type plug connector without connector           | —                              | —            | ●  |
| M      | M-type plug connector with lead wire              | Yes                            | —            | ●  |
| MO     | M-type plug connector without connector           | —                              | —            | ●  |
| Y      | DIN terminal                                      | —                              | ●            | ●  |
| YO     | DIN terminal without connector                    | None                           | —            | ●  |
| YZ     | DIN terminal                                      | Yes                            | ●            | ●  |
| YS     | DIN terminal (DC specification)                   | Yes                            | —            | ●  |
| YOS    | DIN terminal without connector (DC specification) | (Without light)                | —            | ●  |

Note 1) Applicable to the VQZ2000/3000. 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

**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                       |

**IP65 compliant**

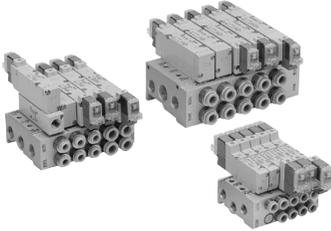
|     |           |
|-----|-----------|
| Nil | —         |
| W   | Compliant |

Note) VQZ2000/3000 DIN terminal rubber seal only (except external pilot). For details on IP65 enclosure, refer to page 742.



**Caution**  
Use standard (DC) specification for continuous duty.

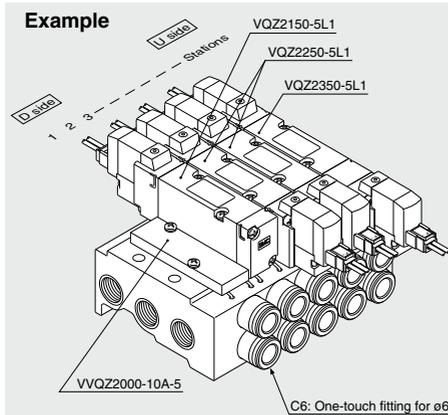
## Manifold Specifications



| Series  | Base model  | Piping specifications |  | Applicable solenoid valve                                     | Applicable stations | Note)<br>Manifold base weight (g)            |            |
|---------|-------------|-----------------------|--|---|---------------------|--|------------|
|         |             | Piping direction      | Port size                                    |   |                     |  |            |
|         |             |                       | 1(P), 3/5(R)                                 |   |                     |  | 4(A), 2(B) |
| VQZ1000 | VV5QZ15-□□□ | Side                  | Rc1/8  | C3 (for ø3.2)<br>C4 (for ø4)<br>C6 (for ø6)<br>M5 (M5 thread) | VQZ1□50<br>VQZ1□51  | 2 to 20 stations<br>Addition per station: 27 |            |
| VQZ2000 | VV5QZ25-□□□ | Side                  | Rc1/4  | C4 (for ø4)<br>C6 (for ø6)<br>C8 (for ø8)<br>Rc 1/8           | VQZ2□50<br>VQZ2□51  | 2 to 20 stations<br>Addition per station: 54 |            |
| VQZ3000 | VV5QZ35-□□□ | Side                  | 1(P) port<br>Rc 3/8<br>3/5(R) port<br>Rc 1/4 | C6 (for ø6)<br>C8 (for ø8)<br>C10 (for ø10)<br>Rc 1/4         | VQZ3□50<br>VQZ3□51  | 2 stations: 398<br>Addition per station: 102 |            |

Note) Weight without sub-plate.

## How to Order Manifold Assembly (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.

SV

SYJ

SZ

VF

VP4

VQ  
1/2

VQ  
4/5

VQC  
1/2

VQC  
4/5

VQZ

SQ

VFS

VFR

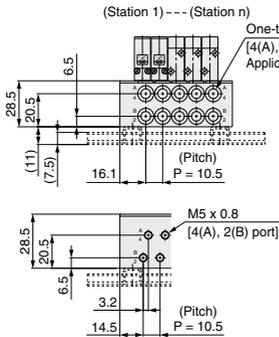
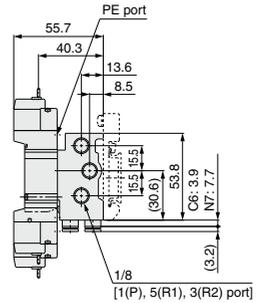
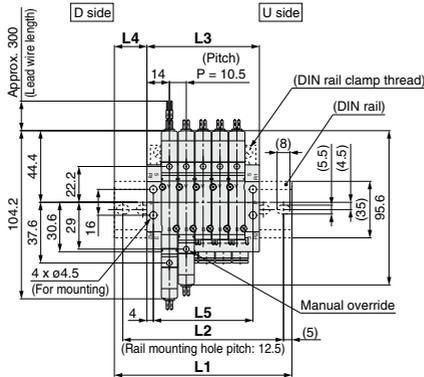
VQ7

# VQZ1000/2000/3000 Series

## Dimensions: VQZ1000

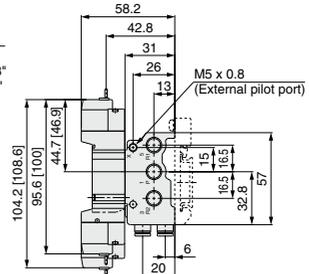
### VV5QZ15- Stations Port size C

#### Grommet (G)



#### M5

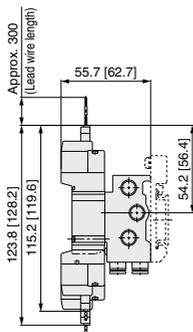
One-touch fitting  
[4(A), 2(B) port]  
Applicable tubing O.D.: ø3.2, ø1/8"  
ø4, ø5/32"  
ø6, ø1/4"



#### External pilot

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

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

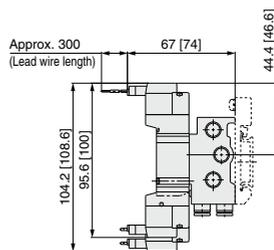


The dashed lines indicate the DIN rail mounting [-D].

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

[ ] : AC

#### 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

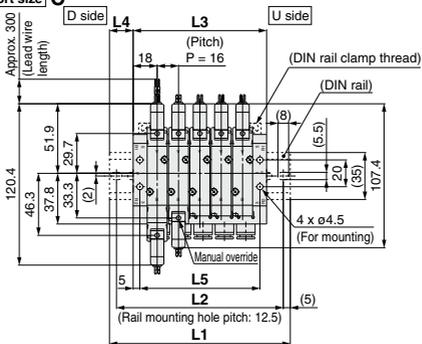
| n  | 2    | 3    | 4    | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    |
|----|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| L1 | 73   | 85.5 | 98   | 110.5 | 110.5 | 123   | 135.5 | 148   | 160.5 | 173   | 185.5 | 185.5 | 198   | 210.5 | 223   | 235.5 | 248   | 248   | 260.5 |
| L2 | 62.5 | 75   | 87.5 | 100   | 100   | 112.5 | 125   | 137.5 | 150   | 162.5 | 175   | 175   | 187.5 | 200   | 212.5 | 225   | 237.5 | 237.5 | 250   |
| L3 | 38.5 | 49   | 59.5 | 70    | 80.5  | 91    | 101.5 | 112   | 122.5 | 133   | 143.5 | 154   | 164.5 | 175   | 185.5 | 196   | 206.5 | 217   | 227.5 |
| L4 | 17.5 | 18.5 | 19.5 | 20.5  | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 16    | 17    | 18    | 19    | 20    | 21    | 15.5  | 16.5  |
| L5 | 30.5 | 41   | 51.5 | 62    | 72.5  | 83    | 93.5  | 104   | 114.5 | 125   | 135.5 | 146   | 156.5 | 167   | 177.5 | 188   | 198.5 | 209   | 219.5 |

n: Stations (Max. 20 stations)

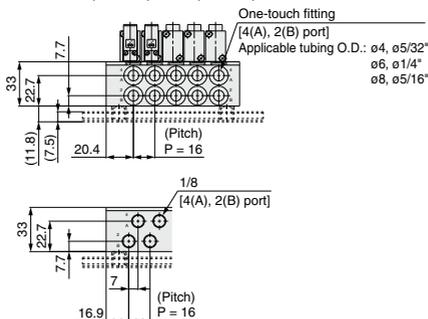
## Dimensions: VQZ2000

VV5QZ25- Stations Port size C

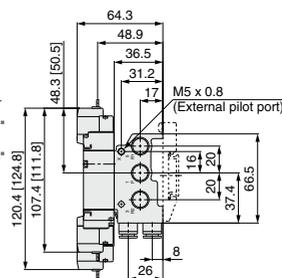
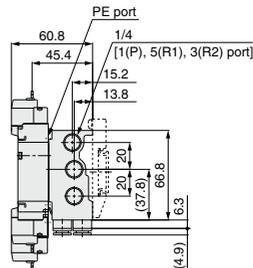
Grommet (G)



(Station 1) ---- (Station n)



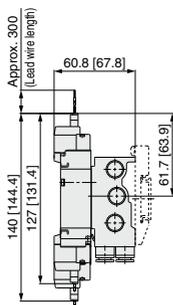
1/8



External pilot

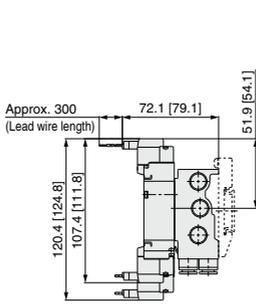
The dashed lines indicate the DIN rail mounting [-D].

### L-type plug connector (L)



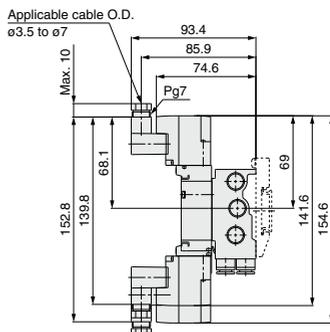
The dashed lines indicate the DIN rail mounting [-D].  
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

### 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

### DIN terminal (Y)



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 | 85.5 | 98   | 123   | 135.5 | 148   | 173   | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5 | 285.5 | 298   | 310.5 | 323   | 348   | 360.5 | 373   |
| L2 | 75   | 87.5 | 112.5 | 125   | 137.5 | 162.5 | 175   | 187.5 | 200   | 225   | 237.5 | 250   | 275   | 287.5 | 300   | 312.5 | 337.5 | 350   | 362.5 |
| L3 | 52   | 68   | 84    | 100   | 116   | 132   | 148   | 164   | 180   | 196   | 212   | 228   | 244   | 260   | 276   | 292   | 308   | 324   | 340   |
| L4 | 17   | 15   | 19.5  | 18    | 16    | 20.5  | 19    | 17    | 15.5  | 20    | 18    | 16.5  | 21    | 19    | 17.5  | 15.5  | 20    | 18.5  | 16.5  |
| L5 | 42   | 58   | 74    | 90    | 106   | 122   | 138   | 154   | 170   | 186   | 202   | 218   | 234   | 250   | 266   | 282   | 298   | 314   | 330   |

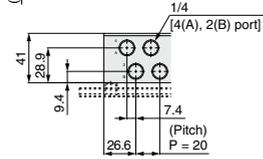
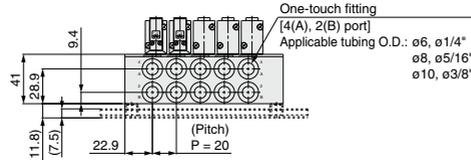
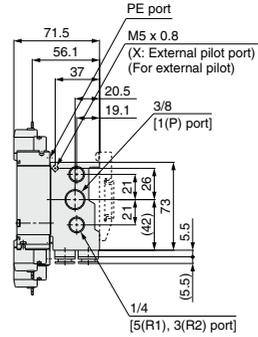
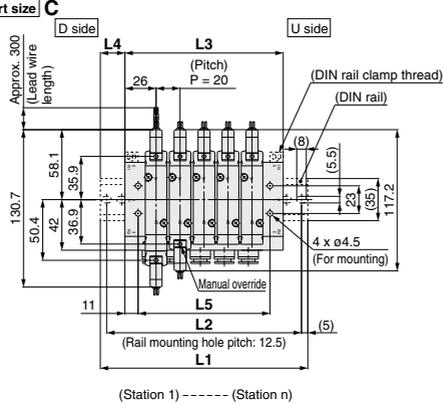
n: Stations (Max. 20 stations)

# VQZ1000/2000/3000 Series

## Dimensions: VQZ3000

VV5QZ35- Stations Port size C

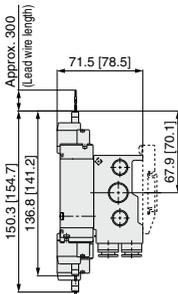
### Grommet (G)



1/4

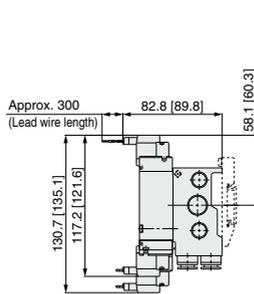
The dashed lines indicate the DIN rail mounting [-D].

### L-type plug connector (L)



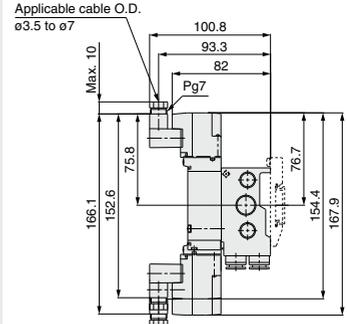
The dashed lines indicate the DIN rail mounting [-D].  
Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ]: AC

### 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

### DIN terminal (Y)



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

### Dimensions

|    | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20 |
|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| L1 | 110.5 | 123   | 148   | 173   | 185.5 | 210.5 | 223   | 248   | 273   | 285.5 | 310.5 | 323   | 348   | 373   | 385.5 | 410.5 | 423   | 448   | 473   |    |
| L2 | 100   | 112.5 | 137.5 | 162.5 | 175   | 200   | 212.5 | 237.5 | 262.5 | 275   | 300   | 312.5 | 337.5 | 362.5 | 375   | 400   | 412.5 | 437.5 | 462.5 |    |
| L3 | 72    | 92    | 112   | 132   | 152   | 172   | 192   | 212   | 232   | 252   | 272   | 292   | 312   | 332   | 352   | 372   | 392   | 412   | 432   |    |
| L4 | 19.5  | 15.5  | 18    | 20.5  | 17    | 19.5  | 15.5  | 18    | 20.5  | 17    | 19.5  | 15.5  | 18    | 20.5  | 17    | 19.5  | 15.5  | 18    | 20.5  |    |
| L5 | 50    | 70    | 90    | 110   | 130   | 150   | 170   | 190   | 210   | 230   | 250   | 270   | 290   | 310   | 330   | 350   | 370   | 390   | 410   |    |

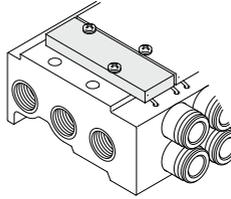
n: Stations (Max. 20 stations)

## Manifold Options

### Blanking plate assembly

- VVQZ1000-10A-5 (for VQZ1000)**
- VVQZ2000-10A-5 (for VQZ2000)**
- VVQZ3000-10A-5 (for VQZ3000)**

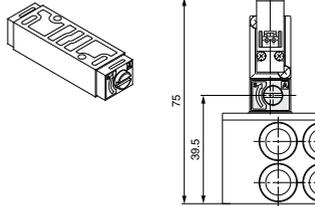
It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.



### Restrictor spacer (Applicable to VQZ2000)

#### VVQZ2000-20A-5

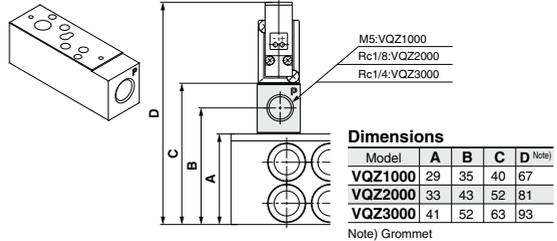
Mount a restrictor spacer between manifold base and valve, and thus making it possible to control cylinder speed by meter-out.



### Individual SUP spacer

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

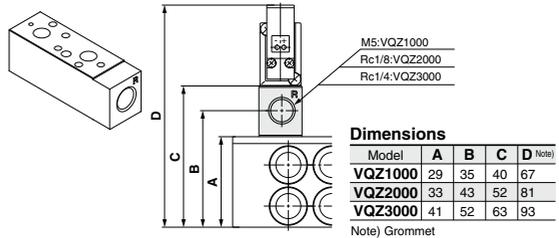
Supply port can be installed individually by mounting an individual supply spacer onto the manifold block. It's used for such cases that the different pressure should be supplied into each valve, etc.



### Individual EXH spacer

- VVQZ1000-R-5-M5 (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.



- SV
- SYJ
- SZ
- VF
- VP4
- VQ 1/2
- VQ 4/5
- VQC 1/2
- VQC 4/5
- VQZ
- SQ
- VFS
- VFR
- VQ7

# VQZ1000/2000/3000 Series

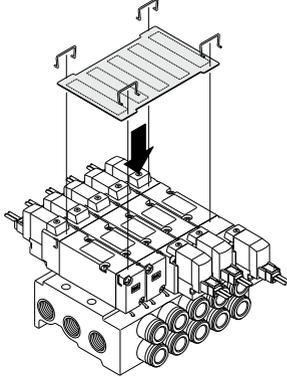
## Manifold Options

### 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.

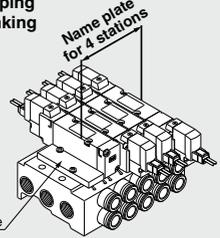
- To order a manifold with nameplate already attached, insert "N" at the end of the manifold number.

\* 4 clips are attached for name plate mounting.



When shipping the manifold with the name plate attached, please order using the manifold option symbol [-N]. However, when mounting the blanking plate at the end of the manifold, the name plate cannot be mounted. In this case, the name plate comes with the manifold. If you want to ship the manifold with the name plate attached to only the mounted solenoid valve, do not order using the manifold option symbol [-N]. Put an asterisk (\*) mark at the top of the name plate part no. for necessary stations and write the manifold part no. along with it to place your order. (\*VVQZ2000-N5-4, etc.)

### Order example when shipping the manifold with the blanking plate mounted at the end and the name plate attached



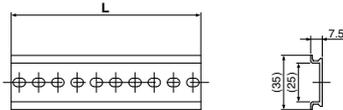
- VV5QZ25-05C6C .....1set (C kit 5-station manifold base part no.)
- VVQZ2000-10A-5 .....1set (Blanking plate assembly part no.)
- VQZ2150-5L1 .....1set (Single type part no.)
- VQZ2250-5L1 .....2set (Double type part no.)
- VQZ2350-5L1 .....1set (3 position type part no.)
- VVQZ2000-N5-4

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.

## 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.

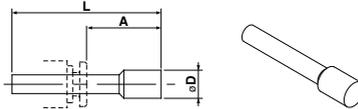


### L Dimension

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

## Blanking plug

- KQ2P-23
- KQ2P-04
- KQ2P-06
- KQ2P-08
- KQ2P-10

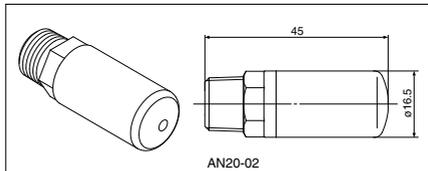
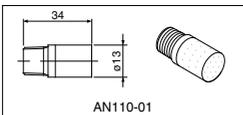


### Dimensions

| Applicable fitting size øD | Model   | A    | L    | D  |
|----------------------------|---------|------|------|----|
| 3.2                        | KQ2P-23 | 16   | 31.5 | 5  |
| 4                          | KQ2P-04 | 16   | 32   | 6  |
| 6                          | KQ2P-06 | 18   | 35   | 8  |
| 8                          | KQ2P-08 | 20.5 | 39   | 10 |
| 10                         | KQ2P-10 | 22   | 43   | 12 |

## Silencer (for manifold EXH port)

Silencer is installed in the manifold EXH port.



| Model   | Silencer part no. |
|---------|-------------------|
| VQZ1000 | AN110-01          |
| VQZ2000 | AN20-02           |
| VQZ3000 | AN20-02           |

## Manifold Options

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

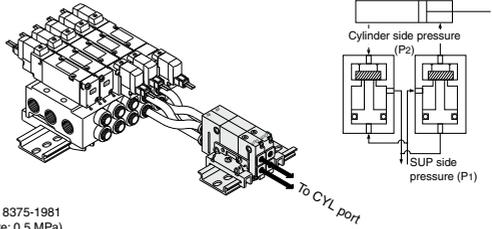
It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the perfect block with a built-in pilot type perfect valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long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

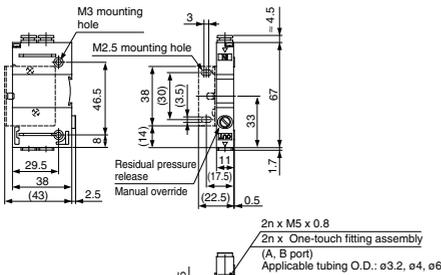
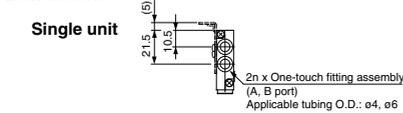
|                               |                               |
|-------------------------------|-------------------------------|
| Maximum operating pressure    | 0.8 MPa                       |
| Minimum operating pressure    | 0.15 MPa                      |
| Ambient and fluid temperature | -5 to 50°C                    |
| Flow rate characteristics: C  | 0.60 dm <sup>3</sup> /(s-bar) |
| Max. operating frequency      | 180 c.p.m                     |

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

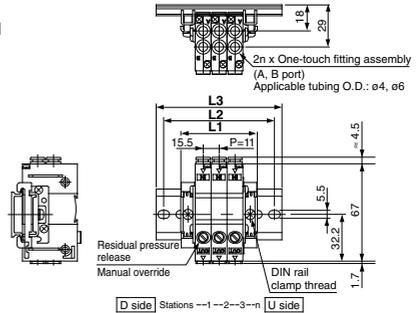
#### <Check valve operating principle>



## Dimensions



### Manifold



| Dimensions |       | n: Station (Maximum 24 stations) |       |       |       |       |       |       |       |       |       |     |  |  |  |  |  |  |  |  |  |  |  |
|------------|-------|----------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|--|--|--|--|--|--|--|--|--|--|--|
| L1         | 31    | 42                               | 53    | 64    | 75    | 86    | 97    | 108   | 119   | 130   | 141   | 152 |  |  |  |  |  |  |  |  |  |  |  |
| L2         | 50    | 62.5                             | 75    | 87.5  | 100   | 112.5 | 125   | 137.5 | 150   | 162.5 | 175   |     |  |  |  |  |  |  |  |  |  |  |  |
| L3         | 60.5  | 73                               | 85.5  | 98    | 110.5 | 123   | 135.5 | 148   | 160.5 | 173   | 185.5 |     |  |  |  |  |  |  |  |  |  |  |  |
| L4         | 13    | 14                               | 15    | 16    | 17    | 18    | 19    | 20    | 21    | 22    | 23    | 24  |  |  |  |  |  |  |  |  |  |  |  |
| L1         | 163   | 174                              | 185   | 196   | 207   | 218   | 229   | 240   | 251   | 262   | 273   | 284 |  |  |  |  |  |  |  |  |  |  |  |
| L2         | 187.5 | 187.5                            | 200   | 212.5 | 225   | 237.5 | 250   | 262.5 | 275   | 287.5 | 300   |     |  |  |  |  |  |  |  |  |  |  |  |
| L3         | 198   | 198                              | 210.5 | 223   | 235.5 | 248   | 260.5 | 273   | 285.5 | 298   | 310.5 |     |  |  |  |  |  |  |  |  |  |  |  |

## How to Order

### Perfect block

VQ1000-FPG-**C4** **M5** - **F**

#### IN side port size

|           |                      |
|-----------|----------------------|
| <b>C4</b> | ø4 One-touch fitting |
| <b>C6</b> | ø6 One-touch fitting |

#### OUT side port size

|           |                        |
|-----------|------------------------|
| <b>M5</b> | M5 thread              |
| <b>C3</b> | ø3.2 One-touch fitting |
| <b>C4</b> | ø4 One-touch fitting   |
| <b>C6</b> | ø6 One-touch fitting   |

#### Option

|            |                                  |
|------------|----------------------------------|
| <b>Nil</b> | None                             |
| <b>D</b>   | DIN rail mounting (For manifold) |
| <b>F</b>   | With bracket                     |
| <b>N</b>   | Name plate                       |

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

### Manifold (DIN rail mounting type)

VVQ1000-FPG-**06**

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

#### Stations

|           |             |
|-----------|-------------|
| <b>01</b> | 1 station   |
| ...       | ...         |
| <b>16</b> | 16 stations |

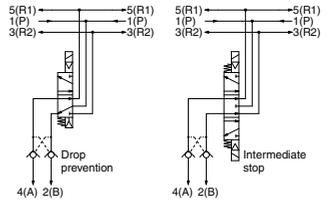
<Ordering Example>

- VVQ1000-FPG-06 .... 6 stations of manifold
- VQ1000-FPG-C4M5-D, 3 sets } Perfect block
- VQ1000-FPG-C6M5-D, 3 sets }

#### Caution

- 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 (with M5 thread) 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.
- A M5 fitting assembly is attached, without being incorporated in the perfect block. After screwing in the fittings, mount the assembly on the perfect block. (Tightening torque: 0.8 to 1.2 N·m)
- If exhaust side of perfect block is narrowed down too much, intermediate stopping accuracy will be decreased.

#### <Example>



#### <Bracket assembly>

|                      |                                    |
|----------------------|------------------------------------|
| Part no.             | Tightening torque <sup>Note)</sup> |
| <b>VQ1000-FPG-FB</b> | 0.22 to 0.25 N·m                   |

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





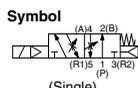
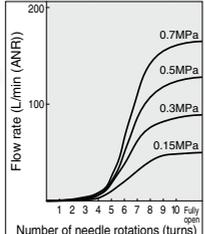
## Compact Body Type with Restrictor: For VQZ2000

Note) For CE-compliant models, DC-type only. **[Option]**

- 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 Rate Characteristics**



- Note 1) Valve with restrictors is available on rubber seal models only.
- Note 2) Since the body (of this type) is made compact, there is no interchangeability with the standard VQZ2000.
- Note 3) Tightening torque of needle valve lock nut should not exceed 0.3 N·m.

## Specifications

| Configuration | Model          | Flow rate characteristics     |             |                     |      |                   |                      | Response time (ms) <sup>Note 1)</sup> |      | Weight (g) |            |            |    |
|---------------|----------------|-------------------------------|-------------|---------------------|------|-------------------|----------------------|---------------------------------------|------|------------|------------|------------|----|
|               |                | 1→4/2 (P→A/B)                 |             | 4/2→5/3 (A/B→EA/EB) |      | Stand-ard: 0.35 W | High pressure: 0.9 W | AC                                    |      |            |            |            |    |
| 2 position    | Single         | Metal (Without restrictor)    | VQZ2150-□-C | 0.74                | 0.19 | 0.17              | 0.63                 | 0.19                                  | 0.16 | 16 or less | 15 or less | 28 or less | 40 |
|               |                | Rubber seal (With restrictor) | VQZ2151-□-C | 1.2                 | 0.17 | 0.26              | 1.0                  | 0.20                                  | 0.24 | 20 or less | 20 or less | 36 or less | 44 |
|               | Double         | Metal (Without restrictor)    | VQZ2250-□-C | 0.74                | 0.19 | 0.17              | 0.63                 | 0.19                                  | 0.16 | 10 or less | 13 or less | 13 or less | 54 |
|               |                | Rubber seal (With restrictor) | VQZ2251-□-C | 1.2                 | 0.17 | 0.26              | 1.0                  | 0.20                                  | 0.24 | 15 or less | 20 or less | 20 or less | 58 |
| 3 position    | Closed center  | Metal (Without restrictor)    | VQZ2350-□-C | 0.47                | 0.23 | 0.11              | 0.41                 | 0.28                                  | 0.10 | 25 or less | 26 or less | 40 or less | 54 |
|               |                | Rubber seal (With restrictor) | VQZ2351-□-C | 0.53                | 0.42 | 0.15              | 0.62                 | 0.31                                  | 0.16 | 30 or less | 33 or less | 47 or less | 58 |
|               | Exhaust center | Metal (Without restrictor)    | VQZ2450-□-C | 0.50                | 0.29 | 0.12              | 0.65                 | 0.13                                  | 0.15 | 25 or less | 26 or less | 40 or less | 54 |
|               |                | Rubber seal (With restrictor) | VQZ2451-□-C | 0.53                | 0.42 | 0.15              | 1.1                  | 0.16                                  | 0.24 | 30 or less | 33 or less | 47 or less | 58 |

- Note 1) Based on JIS B 8375-1981 (Value for supply pressure of 0.5 MPa, with light/surge voltage suppressor, when using 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.
- Note 2) Weight without sub-plate

## Manifold Part No.

**VV5QZ25C-05 C4 C-D**

**Series**  
2 VQZ2000

**Compact body**

**Manifold type**  
5 Base mounted

**Stations**  
02 2 stations  
20 20 stations

**Port size [4(A), 2(B) port]**  
C3 ø3.2 One-touch fitting  
C4 ø4 One-touch fitting  
C6 ø6 One-touch fitting  
O1 Rc 1/8

**Option**  
Nil None  
D DIN rail mounting (With standard DIN rail length)  
D0 DIN rail mounting (Without DIN rail)

**CE-compliant**  
Nil —  
Q CE-compliant

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 742.

Note) Order DIN rail separately. For DIN rail part no., refer to page 736.

## Valve Part No.

**VQZ2 1 5 1 - 5 M 1 - C**

**Type of actuation**  
1 2 position single  
2 2 position double  
3 3 position closed center  
4 3 position exhaust center

**Body type**  
5 Base mounted

**Seal type**  
0 Metal seal  
1 Rubber seal

**Restrictor**  
Nil None  
S With

**Function**  
Nil None  
K High pressure type (Metal seal type only)

**Port size**  
Nil Without sub-plate  
O1 Rc 1/8

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

**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

**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

**CE-compliant**  
Nil —  
Q CE-compliant

Note) Available with rubber seal valve only.  
Note) For CE-compliant models, DC type only.

Note) With light/surge voltage suppressor for L, LO, M, MO

**Sub-plate Part No.**  
VQZ2000C-S-01 (-Q)

**Blanking Plate Assembly**  
VQZ2000C-10A-5

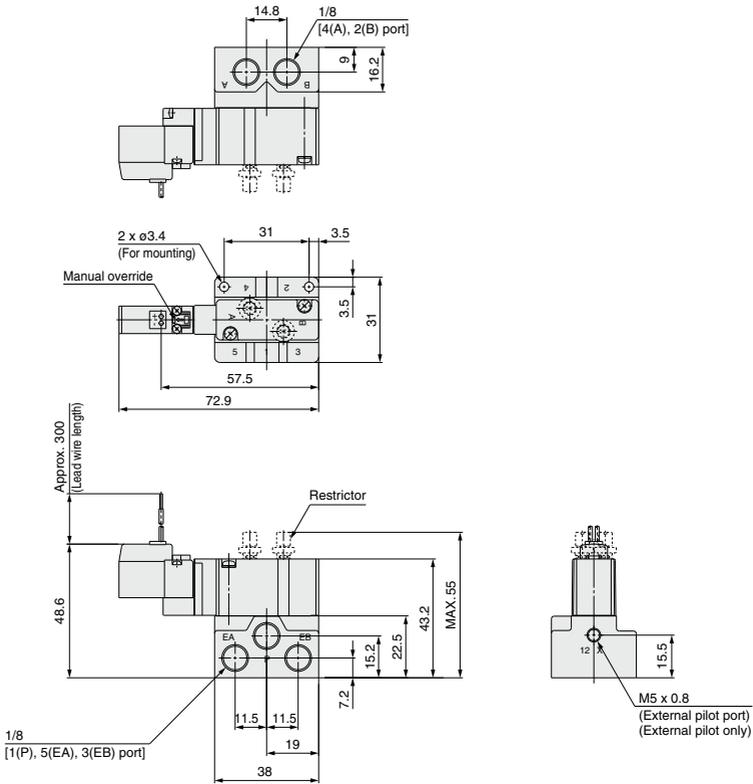
- \* Thread type
- Note) When ordering the base mounted type solenoid valve as a single unit, the manifold mounting screw and gasket are included.

# VQZ1000/2000/3000 Series

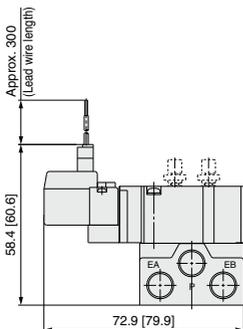
## Dimensions: VQZ2000 (Compact Body Type: Single Unit)

VQZ2□5□□□-□G□1-01-C-□

Grommet (G)

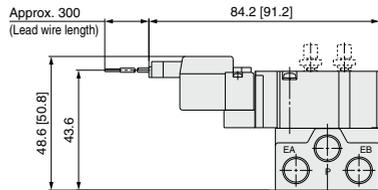


### L-type plug connector (L)



Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

### M-type plug connector (M)

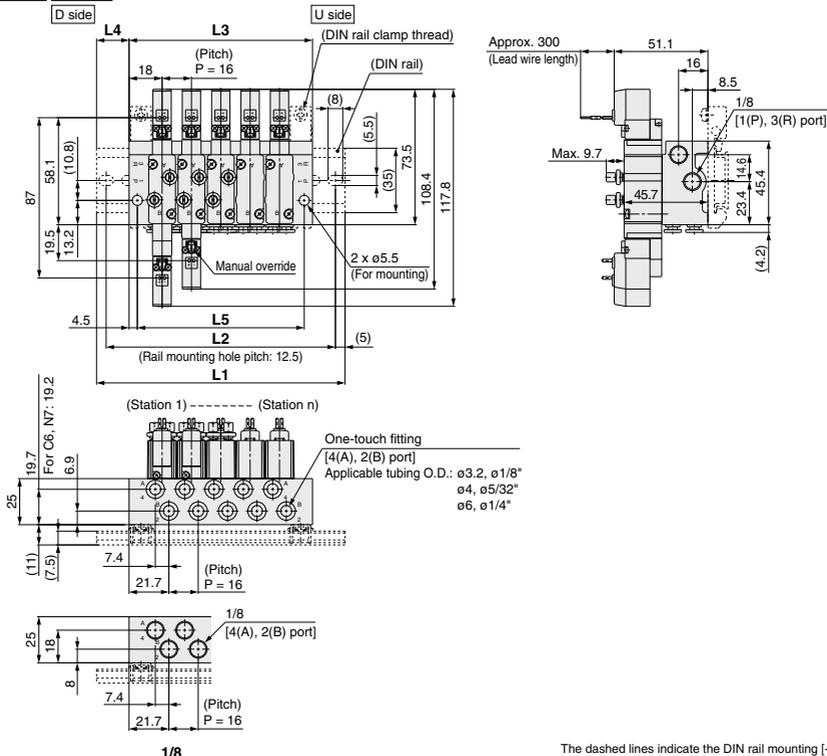


Unless otherwise indicated, dimensions are the same as Grommet (G).  
[ ] : AC

## Dimensions: VQZ2000 (Compact Body Type: Manifold)

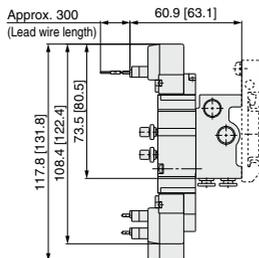
VV5QZ25C- Stations Port size C

Grommet (G)



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

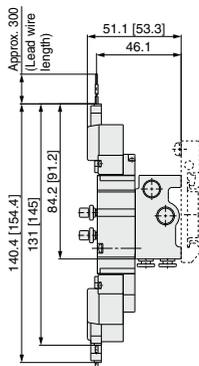
### L-type plug connector (L)



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

Unless otherwise indicated, dimensions are the same as Grommet (G).  
 [ ] : AC

### 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

n: Stations (Max. 20 stations)

| n         | 2    | 3    | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    | 20    |
|-----------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>L1</b> | 85.5 | 98   | 123   | 135.5 | 148   | 173   | 185.5 | 198   | 210.5 | 235.5 | 248   | 260.5 | 285.5 | 298   | 310.5 | 323   | 348   | 360.5 | 373   |
| <b>L2</b> | 75   | 87.5 | 112.5 | 125   | 137.5 | 162.5 | 175   | 187.5 | 200   | 225   | 237.5 | 250   | 275   | 287.5 | 300   | 312.5 | 337.5 | 350   | 362.5 |
| <b>L3</b> | 52   | 68   | 84    | 100   | 116   | 132   | 148   | 164   | 180   | 196   | 212   | 228   | 244   | 260   | 276   | 292   | 308   | 324   | 340   |
| <b>L4</b> | 17   | 15   | 19.5  | 18    | 16    | 20.5  | 19    | 17    | 15.5  | 20    | 18    | 16.5  | 21    | 19    | 17.5  | 15.5  | 20    | 18.5  | 16.5  |
| <b>L5</b> | 43   | 59   | 75    | 91    | 107   | 123   | 139   | 155   | 171   | 187   | 203   | 219   | 235   | 251   | 267   | 283   | 299   | 315   | 331   |

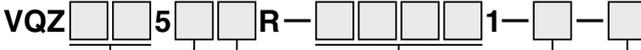
- SV
- SYJ
- SZ
- VF
- VP4
- VQ 1/2
- VQ 4/5
- VQC 1/2
- VQC 4/5
- VQZ**
- SQ
- VFS
- VFR
- VQ7

# Semi-standard Specifications

## 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.

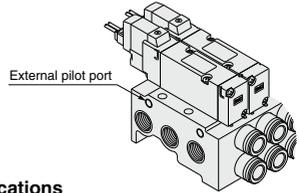
Valve Part No.



• Entry is the same as standard products.

CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |



Manifold Part No.



• Entry is the same as standard products.

## Pressure Specifications

| Series  | VQZ1000/2000/3000  |                   |            |
|---|--|-------------------|------------|
|   | 2 position single  | 2 position double | 3 position |
| External pilot pressure range <sup>(Note)</sup> | 0.1 to 0.7 MPa (VQZ3000, 3 position only)<br>0.15 to 0.7 MPa |                   |            |
| Operating pressure range <sup>(Note)</sup>      | -100 kPa to 0.7 MPa  |                   |            |

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.



• Entry is the same as standard products.

• Cylinder port

| Symbol                 | N1                | N3     | N7    | N9     | N11   | Nil <sup>(Note 1)</sup> | M5        | O1         | O2         |
|------------------------|-------------------|--------|-------|--------|-------|-------------------------|-----------|------------|------------|
| Applicable tubing O.D. | ø1/8"             | ø5/32" | ø1/4" | ø5/16" | ø3/8" | Mixed                   | M5 thread | 1/8 thread | 1/4 thread |
| Cylinder port          | VQZ1000           | ●      | ●     | ●      | —     | ●                       | ●         | —          | —          |
|                        | VQZ2000           | —      | ●     | ●      | ●     | —                       | —         | ●          | —          |
|                        | VQZ2000 (Compact) | ●      | ●     | —      | —     | —                       | —         | ●          | —          |
|                        | VQZ3000           | —      | —     | ●      | ●     | ●                       | —         | —          | ●          |

Note 1) Mixing One-touch fittings and thread types is impossible.  
Note 2) Metric size one-touch fittings (C□) are also available.

CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

• Thread type (Cylinder port and 1(P), 3(R2), 5(R1) ports)

|     |      |
|-----|------|
| Nil | Rc   |
| N   | NPT  |
| T   | NPTF |
| F   | G    |

Valve Part No.



• Entry is the same as standard products.

CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

• Thread type (Cylinder port and 1(P), 3(R2), 5(R1) ports)

|     |      |
|-----|------|
| Nil | Rc   |
| N   | NPT  |
| T   | NPTF |
| F   | G    |

## 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)



• Entry is the same as standard products.

CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

Note) The pilot exhaust IP65 valves is common with main valve exhaust. (The standard valve has an individual exhaust for the pilot valve.)

# VQZ Series Base Mounted

## Replacement Parts

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

| Fitting size   | C3             | C4             | C6             | C8             | C10             |
|----------------|----------------|----------------|----------------|----------------|-----------------|
| <b>VQZ1000</b> | VVQ1000-50A-C3 | VVQ1000-50A-C4 | VVQ1000-50A-C6 | —              | —               |
| <b>VQZ2000</b> | —              | VVQ1000-51A-C4 | VVQ1000-51A-C6 | VVQ1000-51A-C8 | —               |
| <b>VQZ3000</b> | —              | —              | VVQ2000-51A-C6 | VVQ2000-51A-C8 | VVQ2000-51A-C10 |

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-□

Without lead wire: SY100-30-A  
(with connector and 2 sockets only)

#### Lead wire length\*

| Lead wire length | Part no. |
|------------------|----------|
| Nil              | 300 mm   |
| 6                | 600 mm   |
| 10               | 1000 mm  |
| 15               | 1500 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) In case of 2000 mm of lead wire

| DC              | AC              |
|-----------------|-----------------|
| VQZ1150-5LO1-M5 | VQZ1150-1LO1-M5 |
| SY100-30-4A-20  | SY100-30-1A-20  |

#### <Gasket and screw assembly>

| Model          | Part no.     |
|----------------|--------------|
| <b>VQZ1000</b> | VQZ1000-GS-5 |
| <b>VQZ2000</b> | VQZ2000-GS-5 |
| <b>VQZ3000</b> | VQZ3000-GS-5 |

Note) The above part numbers are for 10 valves (a set of 10 gaskets and 20 screws).

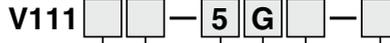


#### <Sub-plate>

| Model          | Sub-plate part no. |                         |
|----------------|--------------------|-------------------------|
|                | For internal pilot | For external pilot      |
| <b>VQZ1000</b> | VQZ1000-S-01□ (-Q) | VQZ1000-S-01□ (-R (-C)) |
| <b>VQZ2000</b> | VQZ2000-S-02□ (-Q) | VQZ2000-S-02□ (-R (-C)) |
| <b>VQZ3000</b> | VQZ3000-S-03□ (-Q) | VQZ3000-S-03□ (-R (-C)) |

\* Thread type

#### <Pilot valve assembly>



#### Function

| Symbol          | Specifications                            | DC         | AC |
|-----------------|---|------------|----|
| <b>Nil</b>      | Standard                                  | (0.35 W) ○ | ○  |
| <b>B</b> (Note) | High speed response type                  | (0.9 W) ○  | —  |
| <b>K</b> (Note) | High pressure type (Metal seal type only) | (0.9 W) ○  | —  |

Note) Semi-standard

#### With or without manual override\*

| Symbol     | Specifications  |
|------------|---|
| <b>Nil</b> | Without manual override (For VQZ1000, 2000, 3000 standard type) |
| <b>M</b>   | With manual override (For VQZ2000 compact body 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                       |

#### Manual override (For VQZ2000 compact body type)

|            |                       |
|------------|-----------------------|
| <b>Nil</b> | Non-locking push type |
| <b>B</b>   | Locking type          |

#### Applicable model (Length of screws attached from each other.)

| Symbol     | Specifications   |
|------------|--|
| <b>Nil</b> | VQZ2000/3000   |
| 4          | A and B side of VQZ1000 single, double solenoid type<br>A side of VQZ1000 3 position |
| 5          | B side of VQZ1000 3 position   |

#### Electrical entry\*

| Symbol     | DC         | AC | Electrical entry                        | Light/surge voltage suppressor |
|------------|------------|----|---|--------------------------------|
| <b>G</b>   | —          | —  | Grommet (DC specification)              | None                           |
| <b>LU</b>  | <b>LZ</b>  | —  | L-type plug connector with lead wire    | —                              |
| <b>LOU</b> | <b>LOZ</b> | —  | L-type plug connector without connector | —                              |
| <b>MU</b>  | <b>MZ</b>  | —  | M-type plug connector with lead wire    | Yes                            |
| <b>MOU</b> | <b>MOZ</b> | —  | M-type plug connector without connector | —                              |

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



#### Function

| Symbol          | Specifications                            | DC         | AC |
|-----------------|---|------------|----|
| <b>Nil</b>      | Standard                                  | (0.35 W) ○ | ○  |
| <b>B</b> (Note) | High speed response type                  | (0.9 W) ○  | —  |
| <b>K</b> (Note) | High pressure type (Metal seal type only) | (0.9 W) ○  | —  |

Note) Semi-standard

#### 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\*

| Symbol     | Electrical entry   | Light/surge voltage suppressor |
|------------|--|--------------------------------|
| <b>Y</b>   | DIN terminal   | None                           |
| <b>YO</b>  | DIN terminal without connector   | None                           |
| <b>YZ</b>  | DIN terminal with light/surge voltage suppressor                                 | Yes                            |
| <b>YS</b>  | DIN terminal with surge voltage suppressor (DC specification)                    | Yes (Without light)            |
| <b>YOS</b> | DIN terminal with surge voltage suppressor, without connector (DC specification) | Yes (Without light)            |

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

### ⚠ 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-type Serial Transmission System VQZ1000/2000/3000 Series Base Mounted Manifold



## How to Order Manifold

**VV5QZ 1 5 - SA 08 C4**

**Series**

|   |         |
|---|---------|
| 1 | VQZ1000 |
| 2 | VQZ2000 |
| 3 | VQZ3000 |

**SI unit**

|     |                  |
|-----|------------------|
| Nil | NPN output +COM. |
| N   | PNP output -COM. |

**Stations**

| Symbol | No. of stations |
|--------|-----------------|
| 02     | 2 stations      |
| ⋮      | ⋮               |
| 08     | 8 stations      |

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

**CE-compliant**

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

**Option** (Note 3)

|     |   |
|-----|---|
| Nil | None  |
| D   | With DIN rail (Rail length: Standard)               |
| DO  | Without DIN rail (With bracket)                     |
| N   | Name plate (Except VQZ1000)                         |
| K   | Special wiring specification (Except double wiring) |
| R   | External pilot type (Except VQZ1000)                |

Note 1) Order DIN rail separately.  
For DIN rail part no., refer to page 736.  
Note 2) For details on options and external pilot type, refer to page 742.  
Note 3) When two or more symbols are specified, indicate them alphabetically.  
Note 4) When mounting the blanking plate at the end of the manifold, the name plate cannot be mounted. In this case, the name plate comes with the manifold. When mounting the name plate on only the mounted solenoid valve, please order the name plate separately. (Refer to page 736.)

**Thread type**

|     |      |
|-----|------|
| Nil | Rc   |
| N   | NPT  |
| T   | NPTF |
| F   | G    |

**A, B port size**

**Thread piping**

| Symbol | Port size | VQZ1000 | VQZ2000 | VQZ3000 |
|--------|-----------|---------|---------|---------|
| M5     | M5 x 0.8  | ○       | —       | —       |
| 01     | 1/8       | —       | ○       | —       |
| 02     | 1/4       | —       | —       | ○       |

## How to Order Valve Manifold Assembly (Example)

**Example**

**VV5QZ25-SA07C6** ⋯ 1 set (Type SA, 7-station manifold base part no.)

- \* VQZ2150-5LO1 ⋯ 2 sets (Single solenoid part no.)
- \* VQZ2250-5LO1 ⋯ 3 sets (Double solenoid part no.)
- \* VQZ2350-5LO1 ⋯ 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.

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.

## A, B port size

### Thread piping

| Symbol | Port size | VQZ1000 | VQZ2000 | VQZ3000 |
|--------|-----------|---------|---------|---------|
| M5     | M5 x 0.8  | ○       | —       | —       |
| 01     | 1/8       | —       | ○       | —       |
| 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  | —       | —       | ○       |
| CM     | Mixture of port sizes  | ○       | ○       | ○       |

### One-touch fitting (Inch size)

| Symbol | Port size                | VQZ1000 | VQZ2000 | VQZ3000 |
|--------|--------------------------|---------|---------|---------|
| N1     | ø1/8" One-touch fitting  | ○       | —       | —       |
| N3     | ø5/32" One-touch fitting | ○       | ○       | —       |
| N7     | ø1/4" One-touch fitting  | ○       | ○       | ○       |
| N9     | ø5/16" One-touch fitting | —       | ○       | ○       |
| N11    | ø3/8" One-touch fitting  | —       | —       | ○       |
| NM     | Mixture of port sizes    | ○       | ○       | ○       |

### SI Unit Part No.

| Symbol | SI unit spec.      | SI unit part no. |
|--------|--------------------|------------------|
| Nil    | NPN output (+COM.) | EX510-S001       |
| N      | PNP output (-COM.) | EX510-S101       |

Refer to Best Pneumatics No. 1-1 and the Operation Manual for the details of EX510 Gateway-type Serial Transmission System. Please download the Operation Manual via our website, <http://www.smccworld.com>

# VQZ1000/2000/3000 Series



## 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 <sup>Note)</sup> | 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  | (0.35 W)<br>○ |
| B <sup>Note 1)</sup>     | High speed response type                                    | (0.9 W)<br>○  |
| K <sup>Note 1)</sup>     | High pressure type<br>(Metal seal type only)                | (0.9 W)<br>○  |
| R <sup>Note 1, 2)</sup>  | External pilot type   | ○             |
| BR <sup>Note 1, 2)</sup> | High speed response/External pilot type                     | (0.9 W)<br>○  |
| KR <sup>Note 1, 2)</sup> | High pressure/External pilot type<br>(Metal seal type only) | (0.9 W)<br>○  |

Note 1) Semi-standard

Note 2) For details on external pilot type, refer to page 742.

### CE-compliant

|     |              |
|-----|--------------|
| Nil | —            |
| Q   | CE-compliant |

### 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

Rated voltage: 24 VDC



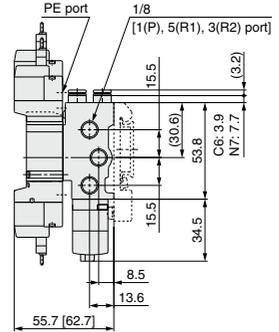
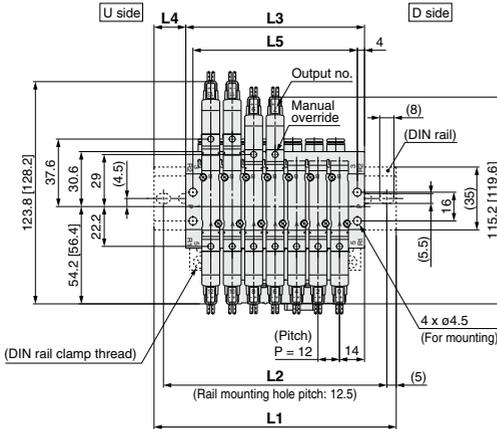
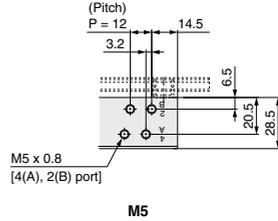
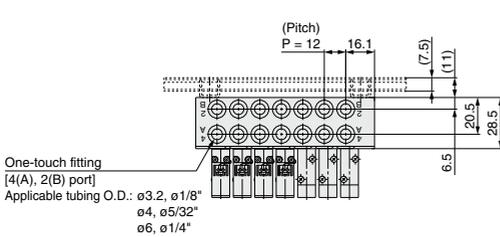
**Made to Order**  
(For details, refer to page 751.)

| Symbol | Description                |
|--------|----------------------------|
| X30    | Pilot valve common exhaust |
| X90    | Main valve fluororubber    |
| X113   | All fluororubber           |

Note) When ordering the base mounted type solenoid valve as a single unit, the manifold mounting screw and gasket are included.

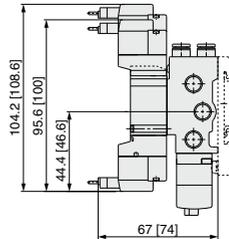
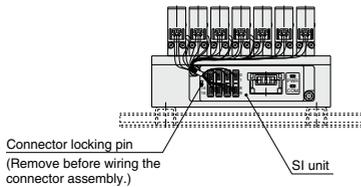
# EX510 Gateway-type Serial Transmission System **VQZ1000/2000/3000 Series**

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



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

(Station n) ----- (Station 1)



**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

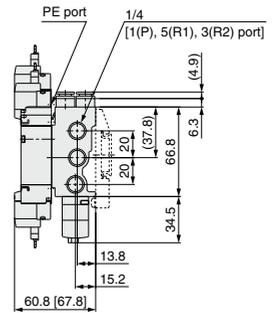
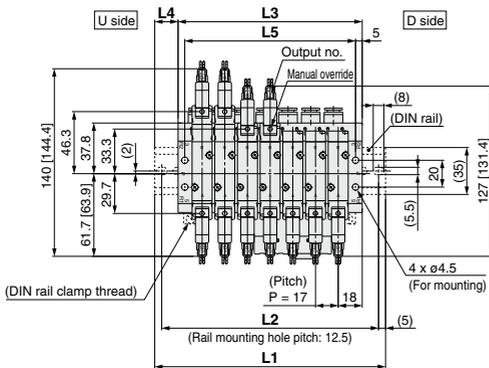
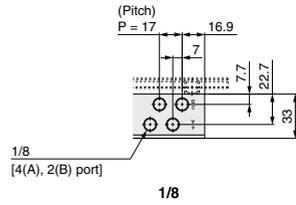
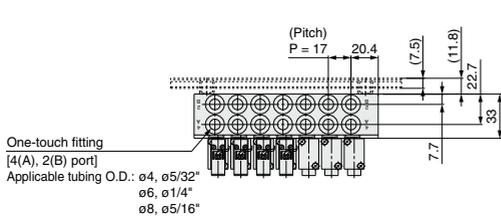
### Dimensions

| L         | n     | Max. 16 stations |       |       |       |       |       |       |       |       |       |       |       |       |       |    |  |
|-----------|-------|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|--|
|           |       | 2                | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16 |  |
| <b>L1</b> | 123   | 123              | 123   | 123   | 123   | 135.5 | 148   | 160.5 | 173   | 185.5 | 198   | 210.5 | 223   | 235.5 | 248   |    |  |
| <b>L2</b> | 112.5 | 112.5            | 112.5 | 112.5 | 112.5 | 125   | 137.5 | 150   | 162.5 | 175   | 187.5 | 200   | 212.5 | 225   | 237.5 |    |  |
| <b>L3</b> | 88    | 88               | 88    | 88    | 88    | 100   | 112   | 124   | 136   | 148   | 160   | 172   | 184   | 196   | 208   |    |  |
| <b>L4</b> | 17.5  | 17.5             | 17.5  | 17.5  | 17.5  | 17.5  | 18    | 18.5  | 18.5  | 19    | 19    | 19.5  | 19.5  | 20    | 20    |    |  |
| <b>L5</b> | 80    | 80               | 80    | 80    | 80    | 92    | 104   | 116   | 128   | 140   | 152   | 164   | 176   | 188   | 200   |    |  |

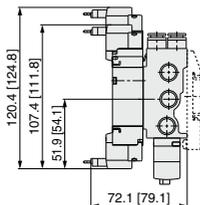
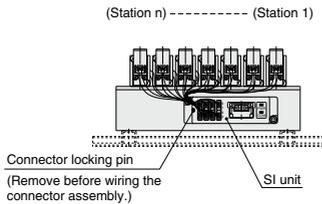
Note) The L dimension of 2 to 6 stations is the same. Valves are numbered from the D side according to the number of stations.

# VQZ1000/2000/3000 Series

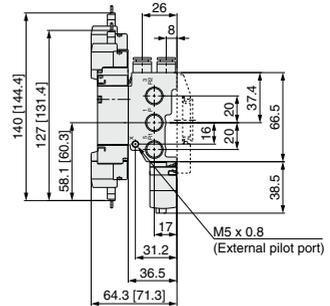
## Dimensions: VQZ2000-SA□: EX510 Gateway-type Serial Transmission System



L-type plug connector (L)



M-type plug connector (M)



External pilot

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

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

[ ]: AC

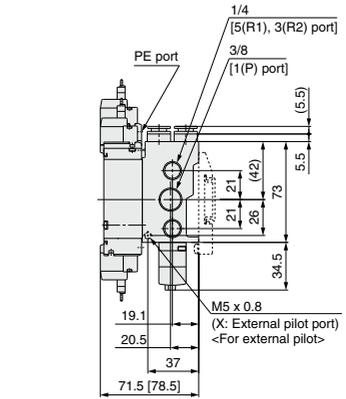
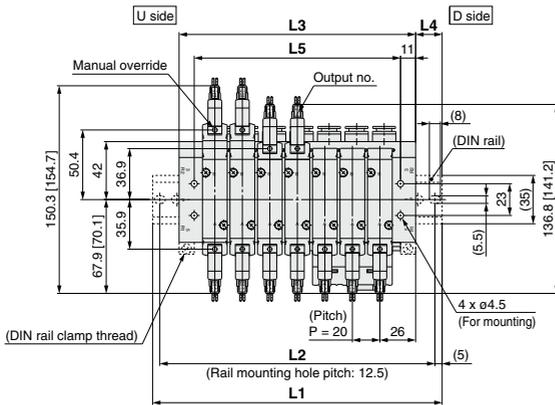
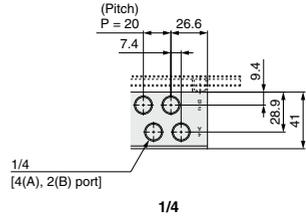
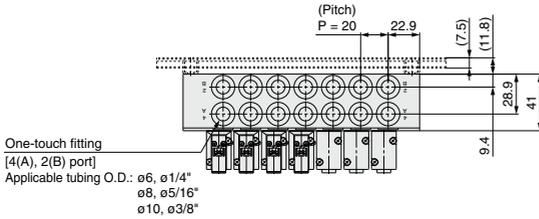
### Dimensions

| L \ n | Max. 16 stations |       |       |       |       |       |       |       |       |       |       |       |       |       |       |  |
|-------|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
|       | 2                | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |  |
| L1    | 135.5            | 135.5 | 135.5 | 135.5 | 160.5 | 173   | 185.5 | 210.5 | 223   | 248   | 260.5 | 270   | 298   | 310.5 | 323   |  |
| L2    | 125              | 125   | 125   | 125   | 150   | 162.5 | 175   | 200   | 212.5 | 237.5 | 250   | 259.5 | 287.5 | 300   | 312.5 |  |
| L3    | 104              | 104   | 104   | 104   | 121   | 138   | 155   | 172   | 189   | 206   | 223   | 240   | 257   | 274   | 291   |  |
| L4    | 16               | 16    | 16    | 16    | 20    | 17.5  | 15.5  | 19.5  | 17    | 21    | 19    | 16.5  | 20.5  | 18.5  | 16    |  |
| L5    | 94               | 94    | 94    | 94    | 111   | 128   | 145   | 162   | 179   | 196   | 213   | 230   | 247   | 264   | 281   |  |

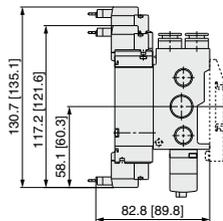
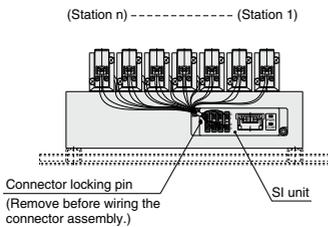
Note) The L dimension of 2 to 5 stations is the same. Valves are numbered from the D side according up to the number of stations.

# EX510 Gateway-type Serial Transmission System **VQZ1000/2000/3000 Series**

## Dimensions: VQZ3000-SA□: EX510 Gateway-type Serial Transmission System



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

| L \ n     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>L1</b> | 123   | 123   | 148   | 173   | 185.5 | 210.5 | 223   | 248   | 273   | 285.5 | 310.5 | 323   | 348   | 373   | 385.5 |
| <b>L2</b> | 112.5 | 112.5 | 137.5 | 162.5 | 175   | 200   | 212.5 | 237.5 | 262.5 | 275   | 300   | 312.5 | 337.5 | 362.5 | 375   |
| <b>L3</b> | 92    | 92    | 112   | 132   | 152   | 172   | 192   | 212   | 232   | 252   | 272   | 292   | 312   | 332   | 352   |
| <b>L4</b> | 15.5  | 15.5  | 18    | 20.5  | 17    | 19.5  | 15.5  | 18    | 20.5  | 17    | 19.5  | 15.5  | 18    | 20.5  | 17    |
| <b>L5</b> | 70    | 70    | 90    | 110   | 130   | 150   | 170   | 190   | 210   | 230   | 250   | 270   | 290   | 310   | 330   |

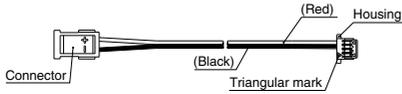
Note) The L dimension of 2 to 3 stations is the same. Valves are numbered from the D side according to the number of stations.

# VQZ1000/2000/3000 Series

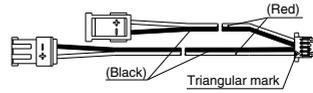
## Manifold Options

### Connector assembly

Single solenoid (SY3000-37-81A-□-□)



Double solenoid (SY3000-37-81A-□-□)



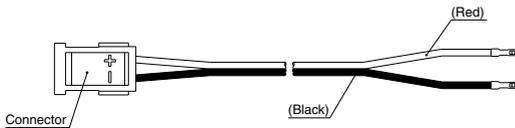
### Connector Assembly Part No. (for a manifold with 8 stations or less with an unspecified layout) Bar Stock Type

| Model   | Part no.          | Connector mounting position            |
|---------|-------------------|--|
| VV5QZ15 | SY3000-37-81A-3-N | Single: for 1 to 4 stations            |
|         | SY3000-37-81A-3-6 | Double/3 position: for 1 to 4 stations |
|         | SY3000-37-81A-2-N | Single: for 5 to 8 stations            |
| VV5QZ25 | SY3000-37-81A-3-6 | Double/3 position: for 5 to 8 stations |
|         | SY3000-37-81A-3-N | Single: for 1 to 8 stations            |
| VV5QZ35 | SY3000-37-81A-3-6 | Double/3 position: for 1 to 8 stations |
|         | SY3000-37-81A-3-N | Single: for 1 to 4 stations            |
|         | SY3000-37-81A-3-6 | Double/3 position: for 1 to 4 stations |
|         | SY3000-37-81A-4-N | Single: for 5 to 8 stations            |
|         | SY3000-37-81A-4-7 | Double/3 position: for 5 to 8 stations |

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

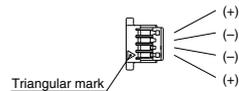
### Connector assembly

SY3000-37-80A-□



### Housing (1 set: 8 pieces)

SY3000-44-3A



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

| Model   | Part no.         | Connector mounting position |
|---------|------------------|-----------------------------|
| VV5QZ15 | SY3000-37-80A-3  | A side                      |
|         | SY3000-37-80A-6  | B side                      |
|         | SY3000-37-80A-4  | A side                      |
|         | SY3000-37-80A-7  | B side                      |
| VV5QZ25 | SY3000-37-80A-3  | A side                      |
|         | SY3000-37-80A-6  | B side                      |
|         | SY3000-37-80A-7  | A side                      |
|         | SY3000-37-80A-9  | B side                      |
| VV5QZ35 | SY3000-37-80A-4  | A side                      |
|         | SY3000-37-80A-7  | B side                      |
|         | SY3000-37-80A-8  | A side                      |
|         | SY3000-37-80A-11 | B side                      |

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.

# VQZ1000/2000/3000 Series

## Made to Order

Please contact SMC for detailed dimensions, specifications and lead times.



[Option]



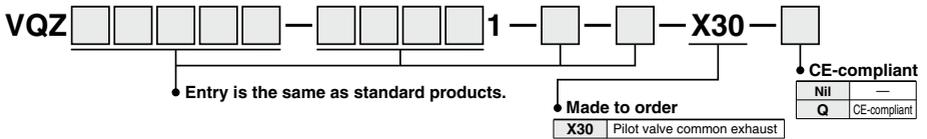
### 1 Pilot Valve Common Exhaust Specification

Pilot exhaust is exhausted through the main R port.

- \* Not designed to prevent leakage to outside.
- \* A combination of external pilots is not available.
- \* A combination of metal seal and 2 position double 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



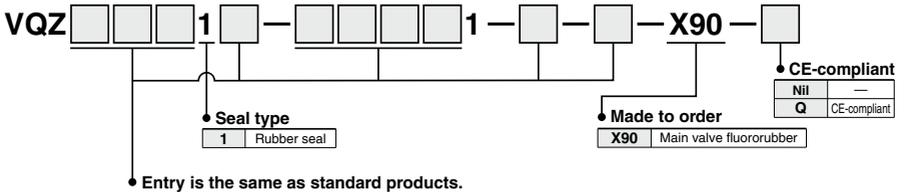
### 2 Main Valve Fluororubber Specification

The seal material, the part of the main valve in contact with fluid, is made of fluororubber.

- \* "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



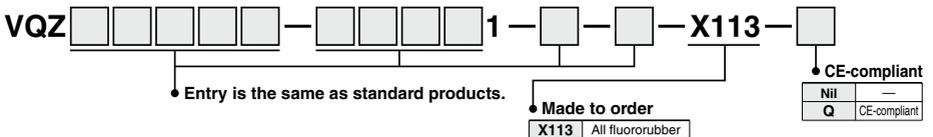
### 3 All Fluororubber Specification

The rubber material of the part in contact with fluid, is made of fluororubber.

- \* "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



SV

SYJ

SZ

VF

VP4

VQ 1/2

VQ 4/5

VQC 1/2

VQC 4/5

VQZ

SQ

VFS

VFR

VQ7



# VQZ Series

## Specific Product Precautions 1

Be sure to read this before handling the products.

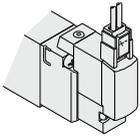
Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

### Manual Override

#### ⚠ Caution

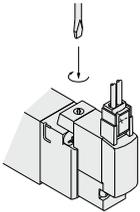
Without an electric signal for the solenoid valve the manual override is used for switching the main valve. Push type is standard. Locking type (Tool required) is available as an option.

#### 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.

#### Locked position



#### Precautions

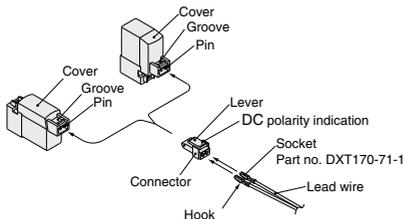
When operating with a screwdriver, turn it gently using a watchmaker's screwdriver. (Torque: less than 0.1 N·m)

### 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.

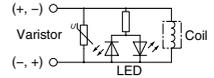


### Light/Surge Voltage Suppressor

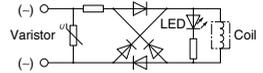
#### ⚠ Caution

#### 1. L/M-type plug connector

<DC>



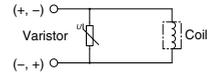
<AC>



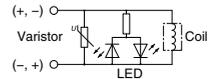
#### 2. DIN terminal

<DC>

With light/surge voltage suppressor (YS, YOS)

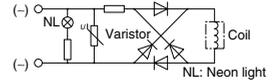


Light/surge voltage suppressor (YZ)



<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.



# VQZ Series

## Specific Product Precautions 2

Be sure to read this before handling the products.

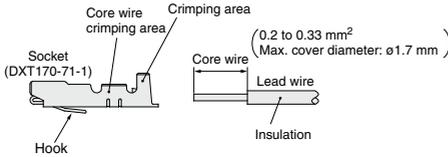
Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

### 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.



Please contact SMC for the dedicated crimping tools.

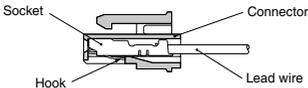
##### 2. Attaching and detaching sockets with lead wires

###### Attaching

Insert the sockets into the square holes of the connector (⊕, ⊖ 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.



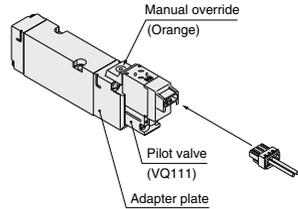
### Valve and Pilot Valve Replacement

#### ⚠ Caution

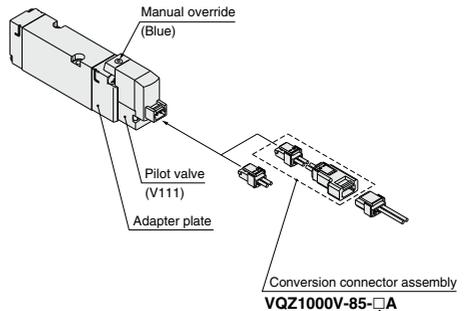
##### 1. When replacing a current type valve with a new type for maintenance or other reasons, a "conversion connector assembly" is necessary to convert the connector from 3 terminals to 2 terminals and must be ordered separately. (When ordering, refer to the below part nos.)

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

[Current]



[New]



| Coil voltage |                   |
|--------------|-------------------|
| 1            | 24/12 VDC         |
| 2            | 100 VAC           |
| 3            | 200 VAC           |
| 4            | Other AC voltages |

|         |
|---------|
| SV      |
| SYJ     |
| SZ      |
| VF      |
| VP4     |
| VQ 1/2  |
| VQ 4/5  |
| VQC 1/2 |
| VQC 4/5 |
| VQZ     |
| SQ      |
| VFS     |
| VFR     |
| VQ7     |



# VQZ Series

## Specific Product Precautions 3

Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

### 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

- Loosen the holding screw and pull the connector out of the solenoid valve terminal block.
- 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.
- 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.
- 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).

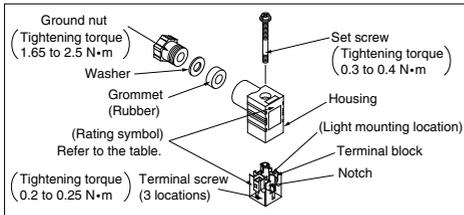
\* When equipped with a light, be careful not to damage the light with the cord's lead wires.

#### 4. Precautions

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

#### 5. Compatible cable

Cable O.D.:  $\phi 3.5$  to  $\phi 7$   
(Reference) 0.5 mm<sup>2</sup>, 2-core or 3-core, equivalent to JIS C 3306



### DIN Connector Part No.

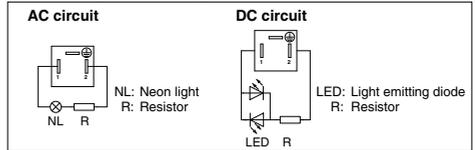
#### Without light

| Rated voltage | Voltage symbol | Part no.   |
|---------------|----------------|------------|
| All voltages  | None           | SY100-82-1 |

#### With light

| Rated voltage     | Voltage symbol | Part no.      |
|-------------------|----------------|---------------|
| 24 VDC            | 24 V           | SY100-82-3-05 |
| 12 VDC            | 12 V           | SY100-82-3-06 |
| 100 VAC           | 100 V          | SY100-82-2-01 |
| 200 VAC           | 200 V          | SY100-82-2-02 |
| 110 VAC (115 VAC) | 110 V          | SY100-82-2-03 |
| 220 VAC (230 VAC) | 220 V          | SY100-82-2-04 |

#### Circuit diagram with light

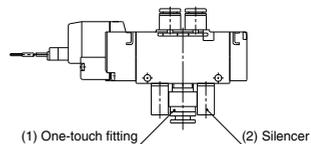


### Fitting and Silencer Part No. for P, R Ports When Using Valve as an Individual Unit

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

| Series  | (1) One-touch fitting for 1(P) port | (2) For 3(R2, R) port, 5(R1) port |                            |
|---------|-------------------------------------|-----------------------------------|----------------------------|
|         | Silencer                            | One-touch fitting                 |                            |
| VQZ1000 | KQ2H06-M5A                          | AN120-M5                          | KQ2S04-M5A                 |
| VQZ2000 | KQ2S06-01AS                         | INA-25-46                         | IN-457-32L (for $\phi 6$ ) |
| VQZ3000 | KQ2H08-02AS                         | AN101-01                          | KQ2H06-01AS                |

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





# VQZ Series

## Specific Product Precautions 4

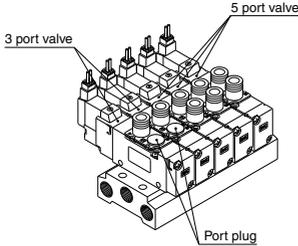
Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

### 3 Port Valve for Mixture Mounting

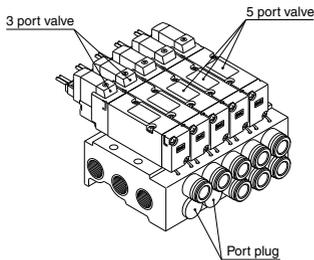
#### 1. Body ported (VQZ $\frac{1}{3}$ 82 $\frac{0}{1}$ , N.C./VQZ $\frac{1}{3}$ 92 $\frac{0}{1}$ , N.O.)

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.



#### 2. Base mounted (VQZ $\frac{1}{3}$ 85 $\frac{0}{1}$ , N.C./VQZ $\frac{1}{3}$ 95 $\frac{0}{1}$ , 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.



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.

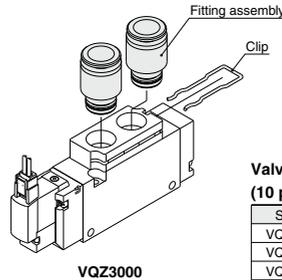
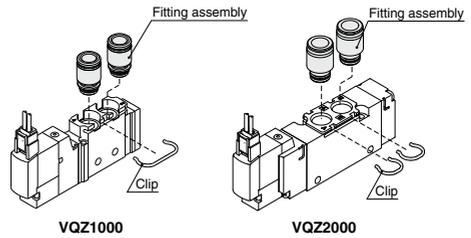
### One-touch Fittings Replacement

#### ⚠ 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.

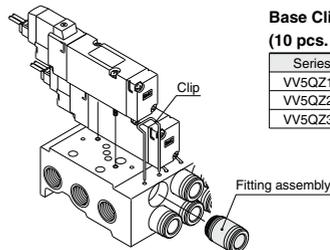
#### ■ Valve



#### Valve Clip Part No. (10 pcs. included)

| Series  | Part number  |
|---------|--------------|
| VQZ1000 | VQZ1000-2-FC |
| VQZ2000 | VQZ2000-2-FC |
| VQZ3000 | VQZ3000-2-FC |

#### ■ Manifold base



#### Base Clip Part No. (10 pcs. included)

| Series  | Part number  |
|---------|--------------|
| VV5QZ15 | VQZ1000-5-FC |
| VV5QZ25 | VQZ2000-5-FC |
| VV5QZ35 | VQZ3000-5-FC |

#### Precautions

When pulling the fitting assembly away from the valve base, remove the clip, then connect a tube or plug (KQP-□□) with the One-touch fitting and pull it out holding the tube or plug. Do not hold the release bushing to avoid damage.

SV

SYJ

SZ

VF

VP4

VQ  
1/2

VQ  
4/5

VQC  
1/2

VQC  
4/5

VQZ

SQ

VFS

VFR

VQ7



## VQZ Series

# Specific Product Precautions 5

Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

### DIN Rail Removal/Mounting

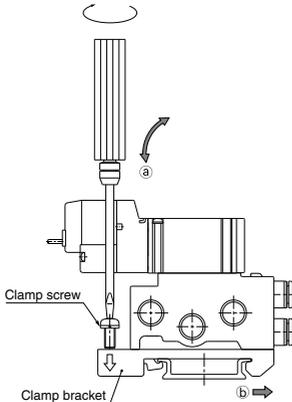
#### ⚠ Caution

##### 1. Removing

- 1) Loosen the clamp screw on the (a) side of both ends of the manifold.
- 2) Lift the (a) side → of the manifold off the DIN rail and slide it in the direction of the (b) side.

##### 2. Mounting

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

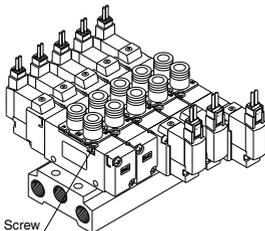


### Valve Mounting

#### ⚠ 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.

| Model   | Proper tightening torque |
|---------|--------------------------|
| VQZ1000 | 0.18 to 0.25 N·m         |
| VQZ2000 | 0.25 to 0.35 N·m         |
| VQZ3000 | 0.5 to 0.7 N·m           |



### Serial Wiring EX510 Precautions

### Design and Selection

#### ⚠ 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.



# VQZ Series

## Specific Product Precautions 6

Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 3 to 9 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.

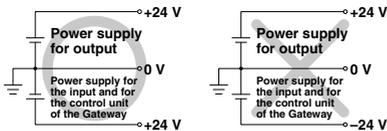
- 1) Controlled voltage current circuit conforming to UL508  
Circuit uses the secondary coil of an isolated transformer as the power supply, satisfying the following conditions.
  - Max. voltage (with no load): 30 Vrms (42.4 V peak) or less
  - Max. current: (1) 8 A or less (including shorts), and (2) 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                 |
|                          | Peak voltage value  |

- 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 conforming to UL1310, or a class 2 transformer conforming 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.

##### 5. Do not use in direct sunlight.

Do not use in direct sunlight. It may cause malfunction or damage.

##### 6. Do not use in places where there is radiated heat around it.

Such a place is likely to cause malfunction.

#### 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.

SV

SYJ

SZ

VF

VP4

VQ

1/2

VQ

4/5

VQC

1/2

VQC

4/5

VQZ

SQ

VFS

VFR

VQ7



## VQZ Series

# Specific Product Precautions 7

Be sure to read this before handling the products.

Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

### Serial Wiring EX510 Precautions

#### Operating Environment

#### 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 effected.

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.

#### Adjustment and Operation

#### Warning

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

If a load is short-circuited, excessive can cause damage to the connected devices. The fuse of the input unit will melt and below. 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.**

#### Maintenance

#### 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.