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# 5 Port Solenoid Valve
# Base Mounted
# Plug Lead Unit: Single Unit
# *VQZ1000/2000/3000*

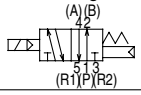
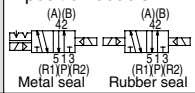
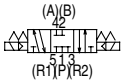
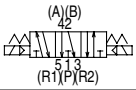
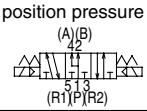
## How to Order Valves

**VQZ** [1] [1] [5] [1] [ ] — [5] [M] [ ] — [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  |
| 2 | 2 position double  Metal seal / Rubber seal |
| 3 | 3 position closed center  |
| 4 | 3 position exhaust center  |
| Note) 5 | 3 position pressure center  |

Note) Except VQZ1000 and metal seal type.

### Body

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

### Seal

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

### Function

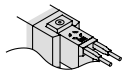
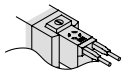
| Symbol | Specifications | DC | AC |
|---|---|---|---|
| Nil | Standard | (1.0 W) ○ | (3) ○ |
| K (1) | High pressure (Metal seal only) | (1.0 W) ○ | — |
| Y | Low wattage type | (0.5 W) ○ | — |
| R (2) | External pilot | ○ | ○ |

Note 1) Option
Note 2) For details about external pilot specifications, refer to page 2-7-60.
Note 3) For power consumption of AC type, refer to page 2-7-37.
Note 4) When two or more symbols are specified, indicate them alphabetically.

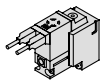
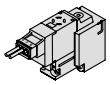
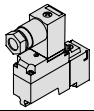
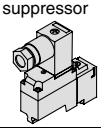
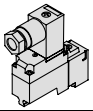
### Port size {4(A), 2(B) port}

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

### Manual override

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

### Electrical entry

| G: Grommet (DC specifications) | L: L plug connector with lead wire | LO: L plug connector without connector | M: M plug connector with lead wire | MO: M plug connector without connector |
|---|---|---|---|---|
|  | With light/ surge voltage suppressor  | With light/ surge voltage suppressor  | With light/ surge voltage suppressor  | With light/ surge voltage suppressor  |
| **Y:** DIN terminal (1) | **YO:** DIN terminal (1) without connector | **YZ:** DIN terminal (1) | **YOS:** DIN terminal (1) without connector | **YS:** DIN terminal (1) |
|  |  | With light/ surge voltage suppressor  | With surge voltage suppressor  | With surge voltage suppressor  |

Note 1) Applicable to VQZ2000 and 3000.
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 (50/60 Hz) |
| 4 | 220 VAC (50/60 Hz) |
| 5 | 24 VDC |
| 6 | 12 VDC |
| 9 Note) | Other |

Note) For the special voltages, please consult with SMC.

Note) For sub-plate part no, refer to page 2-7-61.

## Standard Specifications

| | | | | |
|---|---|---|---|---|
| Valve specifications | Valve construction | | Metal seal | Rubber seal |
| | Fluid | | Air/Inert gas | Air/Inert gas |
| | Maximum operating pressure | | 0.7 MPa (High pressure type: 1.0 MPa) | 0.7 MPa |
| | Min. operating pressure | 2 position single Double | 0.1 MPa only for VQZ3000, 3 position 0.15 MPa | 0.15 MPa |
| | | | | 0.1 MPa |
| | | 3 position | | 0.2 MPa |
| | Ambient and fluid temperature | | –10 to 50°C (1) | –10 to 50°C (1) |
| | Max. operating frequency | 2 position Single, Double | 20 Hz | 5 Hz |
| | | 3 position | 10 Hz | 3 Hz |
| | Pilot valve EXH | | Individual EXH | |
| | Lubrication | | Not required | |
| | Manual override | | Push type/Locking type (Tool required) Option | |
| | Shock/Vibration resistance (2) | | 150/30 m/s$^2$ | |
| | Enclosure | | Dust-protected | |
| Electricity specifications | Coil rated voltage | | 12, 24 VDC and 100,110, 200, 220 VAC | |
| | Allowable voltage fluctuation | | ±10% of rated voltage | |
| | Coil insulation type | | Equivalent to class B | |
| | Power consumption (Current) | 24 VDC | 1 W DC (42 mA), 0.5 W DC (21 mA) | |
| | | 12 VDC | 1 W DC (83 mA), 0.5 W DC (42 mA) | |
| | | 100 VAC | Inrush 0.5 VA (5 mA), Holding 0.5 VA (5 mA) | |
| | | 110 VAC | Inrush 0.55 VA (5 mA), Holding 0.55 VA (5 mA) | |
| | | 200 VAC | Inrush 1.0 VA (5 mA), Holding 1.0 VA (5 mA) | |
| | | 220 VAC | Inrush 1.1 VA (5 mA), Holding 1.1 VA (5 mA) | |

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

Note 2) Impact resistance:
No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)
Vibration resistance:
No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)



## Model

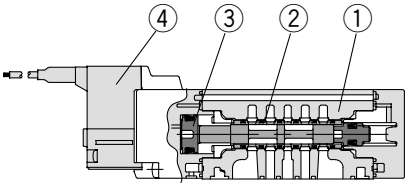
| Series | Configuration | | Model | | Flow characteristics: 1 → 4/2 (P → A/B) C[dm$^3$/(s·bar)] | b | Cv | Flow characteristics: 4/2 → 5/3 (A/B → EA/EB) C[dm$^3$/(s·bar)] | b | Cv | Response time (ms) (1): Standard: 1 W | High pressure: 1 W Low wattage: 0.5 W | AC | Weight (g) (2) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| VQZ1000 | 2 position | Single | Metal seal | VQZ1150 | 0.70 | 0.21 | 0.17 | 0.70 | 0.21 | 0.17 | 12 or less | 15 or less | 29 or less | 37 |
| | | | Rubber seal | VQZ1151 | 1.2 | 0.35 | 0.30 | 1.3 | 0.24 | 0.32 | 12 or less | 15 or less | 34 or less | |
| | | Double | Metal seal | VQZ1250 | 0.70 | 0.21 | 0.17 | 0.70 | 0.21 | 0.17 | 10 or less | 13 or less | 13 or less | 56 |
| | | | Rubber seal | VQZ1251 | 1.2 | 0.35 | 0.30 | 1.3 | 0.24 | 0.32 | 10 or less | 13 or less | 13 or less | |
| | 3 position | Closed center | Metal seal | VQZ1350 | 0.56 | 0.20 | 0.13 | 0.57 | 0.22 | 0.14 | 20 or less | 26 or less | 40 or less | |
| | | | Rubber seal | VQZ1351 | 1.1 | 0.33 | 0.27 | 1.0 | 0.38 | 0.27 | 25 or less | 33 or less | 47 or less | |
| | | Exhaust center | Metal seal | VQZ1450 | 0.56 | 0.20 | 0.13 | 0.70 | 0.21 | 0.17 | 20 or less | 26 or less | 40 or less | |
| | | | Rubber seal | VQZ1451 | 1.1 | 0.33 | 0.27 | 1.3 | 0.24 | 0.32 | 25 or less | 33 or less | 47 or less | |
| | | Pressure center | Rubber seal | VQZ1551 | 1.4 | 0.20 | 0.34 | 1.0 | 0.38 | 0.27 | 25 or less | 33 or less | 47 or less | |
| VQZ2000 | 2 position | Single | Metal seal | VQZ2150 | 1.6 | 0.13 | 0.36 | 1.9 | 0.16 | 0.40 | 14 or less | 18 or less | 34 or less | 60 |
| | | | Rubber seal | VQZ2151 | 2.0 | 0.35 | 0.51 | 2.3 | 0.29 | 0.53 | 15 or less | 20 or less | 36 or less | |
| | | Double | Metal seal | VQZ2250 | 1.6 | 0.13 | 0.36 | 1.9 | 0.16 | 0.40 | 10 or less | 13 or less | 13 or less | 84 |
| | | | Rubber seal | VQZ2251 | 2.0 | 0.35 | 0.51 | 2.3 | 0.29 | 0.53 | 12 or less | 15 or less | 15 or less | |
| | 3 position | Closed center | Metal seal | VQZ2350 | 1.5 | 0.16 | 0.35 | 1.3 | 0.26 | 0.32 | 23 or less | 30 or less | 44 or less | |
| | | | Rubber seal | VQZ2351 | 1.7 | 0.27 | 0.39 | 1.7 | 0.28 | 0.39 | 25 or less | 33 or less | 47 or less | |
| | | Exhaust center | Metal seal | VQZ2450 | 1.5 | 0.16 | 0.35 | 1.9 | 0.16 | 0.40 | 23 or less | 30 or less | 44 or less | |
| | | | Rubber seal | VQZ2451 | 1.7 | 0.27 | 0.39 | 2.3 | 0.29 | 0.53 | 25 or less | 33 or less | 47 or less | |
| | | Pressure center | Metal seal | VQZ2550 | 1.8 | 0.13 | 0.39 | 1.5 | 0.26 | 0.36 | 23 or less | 30 or less | 44 or less | |
| | | | Rubber seal | VQZ2551 | 2.0 | 0.35 | 0.50 | 1.7 | 0.28 | 0.39 | 25 or less | 33 or less | 47 or less | |
| VQZ3000 | 2 position | Single | Metal seal | VQZ3150 | 2.6 | 0.12 | 0.60 | 3.0 | 0.15 | 0.74 | 17 or less | 22 or less | 34 or less | 94 |
| | | | Rubber seal | VQZ3151 | 3.9 | 0.29 | 1.0 | 4.6 | 0.26 | 1.2 | 25 or less | 33 or less | 57 or less | |
| | | Double | Metal seal | VQZ3250 | 2.6 | 0.12 | 0.60 | 3.0 | 0.15 | 0.74 | 10 or less | 13 or less | 13 or less | 119 |
| | | | Rubber seal | VQZ3251 | 3.9 | 0.29 | 1.0 | 4.6 | 0.26 | 1.2 | 15 or less | 20 or less | 20 or less | |
| | 3 position | Closed center | Metal seal | VQZ3350 | 2.4 | 0.12 | 0.58 | 2.8 | 0.16 | 0.65 | 25 or less | 33 or less | 53 or less | |
| | | | Rubber seal | VQZ3351 | 3.1 | 0.33 | 0.82 | 3.6 | 0.35 | 0.97 | 30 or less | 39 or less | 59 or less | |
| | | Exhaust center | Metal seal | VQZ3450 | 2.4 | 0.12 | 0.58 | 3.0 | 0.15 | 0.74 | 25 or less | 33 or less | 53 or less | |
| | | | Rubber seal | VQZ3451 | 3.9 | 0.33 | 0.82 | 4.6 | 0.26 | 1.2 | 30 or less | 39 or less | 59 or less | |
| | | Pressure center | Metal seal | VQZ3550 | 3.0 | 0.12 | 0.69 | 2.9 | 0.16 | 0.65 | 25 or less | 33 or less | 53 or less | |
| | | | Rubber seal | VQZ3551 | 4.4 | 0.27 | 1.1 | 3.6 | 0.35 | 0.97 | 30 or less | 39 or less | 59 or less | |

Note 1) Based on JIS B 8375-1981 (Supply pressure; 0.5 MPa; with indicator light/surge voltage suppressor; clean air),
Response time values will change depending on pressure and air quality. The values at the time of ON are given for double types.

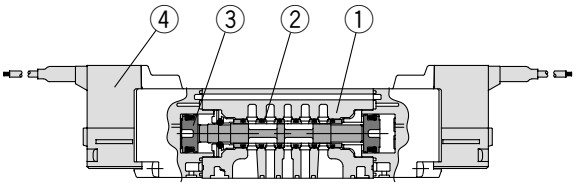
Note 2) Weight without sub-plate

## Construction: VQZ1000/2000/3000

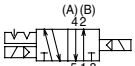
### Metal seal type

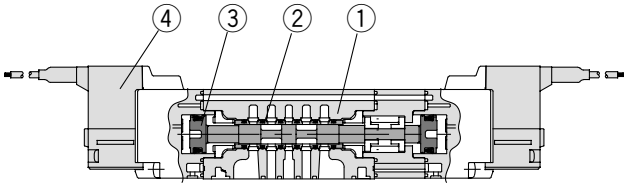



2 position single

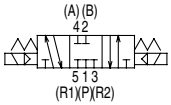




2 position double

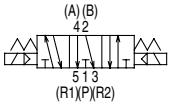


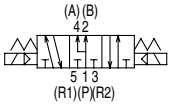

3 position closed center




3 position exhaust center

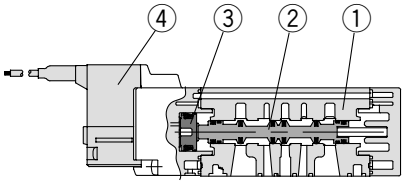



3 position pressure center Note)

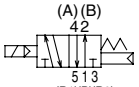


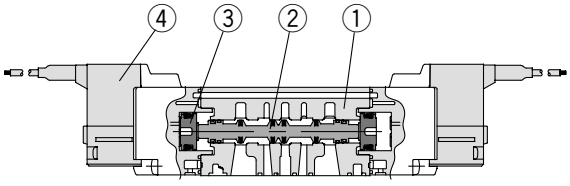

Note) Except VQZ1000 and metal seal type.

### Rubber seal type

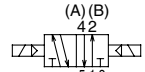


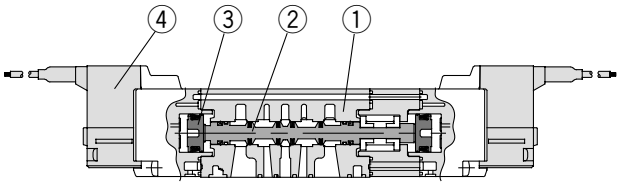

2 position single



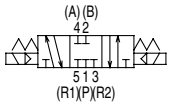




2 position double

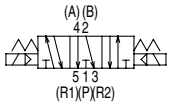


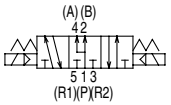

3 position closed center




3 position exhaust center




3 position pressure center




### Component Parts

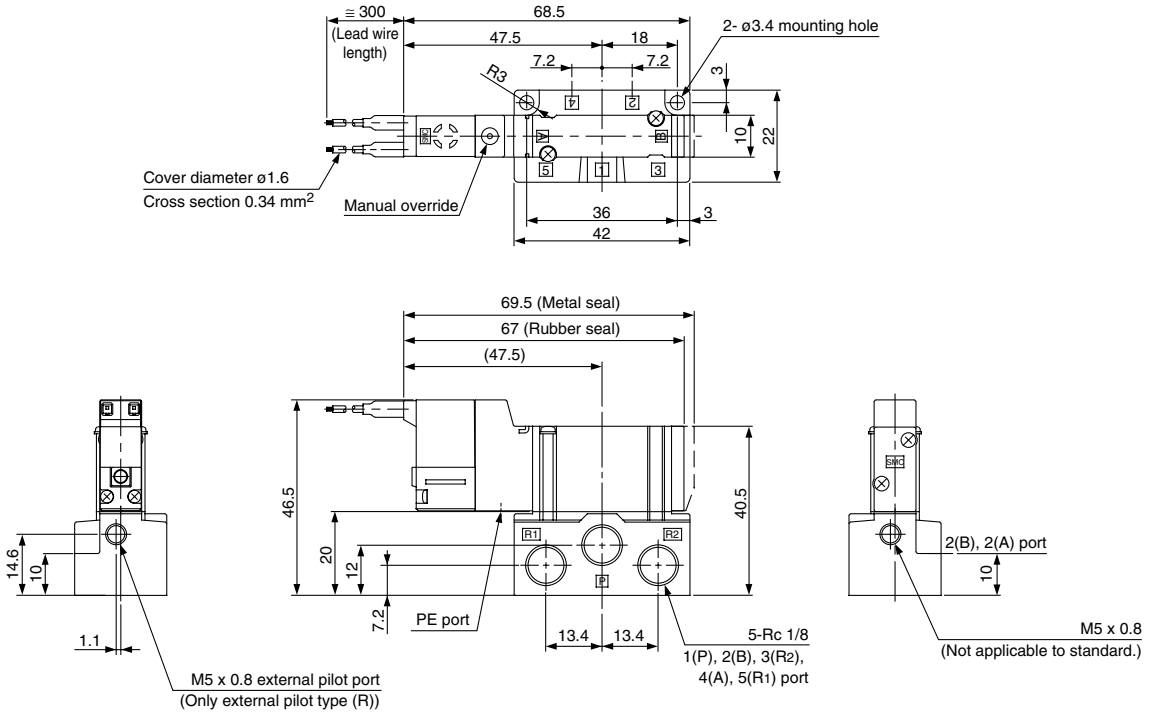
| No. | Description | Material | Note |
|---|---|---|---|
| ① | Body | Aluminum die-casted | |
| ② | Spool/Sleeve | Stainless steel | Metal seal |
| | Spool valve | Aluminum/HNBR | Rubber seal |
| ③ | Piston | Resin | |
| ④ | Pilot valve assembly | — | |

Refer to page 2-7-61 for Pilot Valve Assembly.

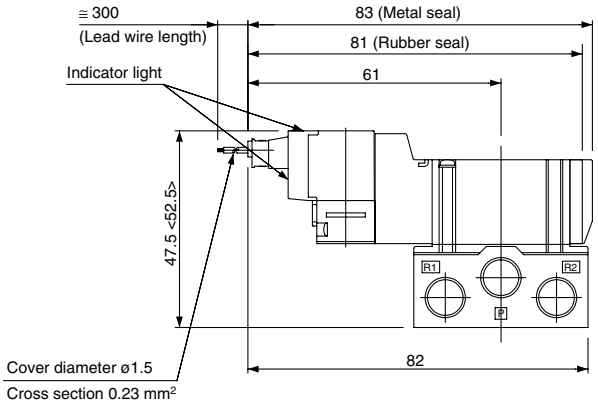
## Dimensions: VQZ1000

### 2 position single

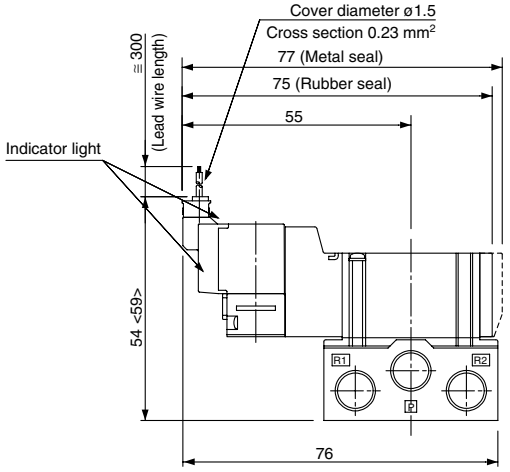
### Grommet (G): VQZ115$^{0}_{1}$(R)-□G□-01




### L plug connector (L): VQZ115$^{0}_{1}$(R)-□L□-01




### M plug connector (M): VQZ115$^{0}_{1}$(R)-□M□-01



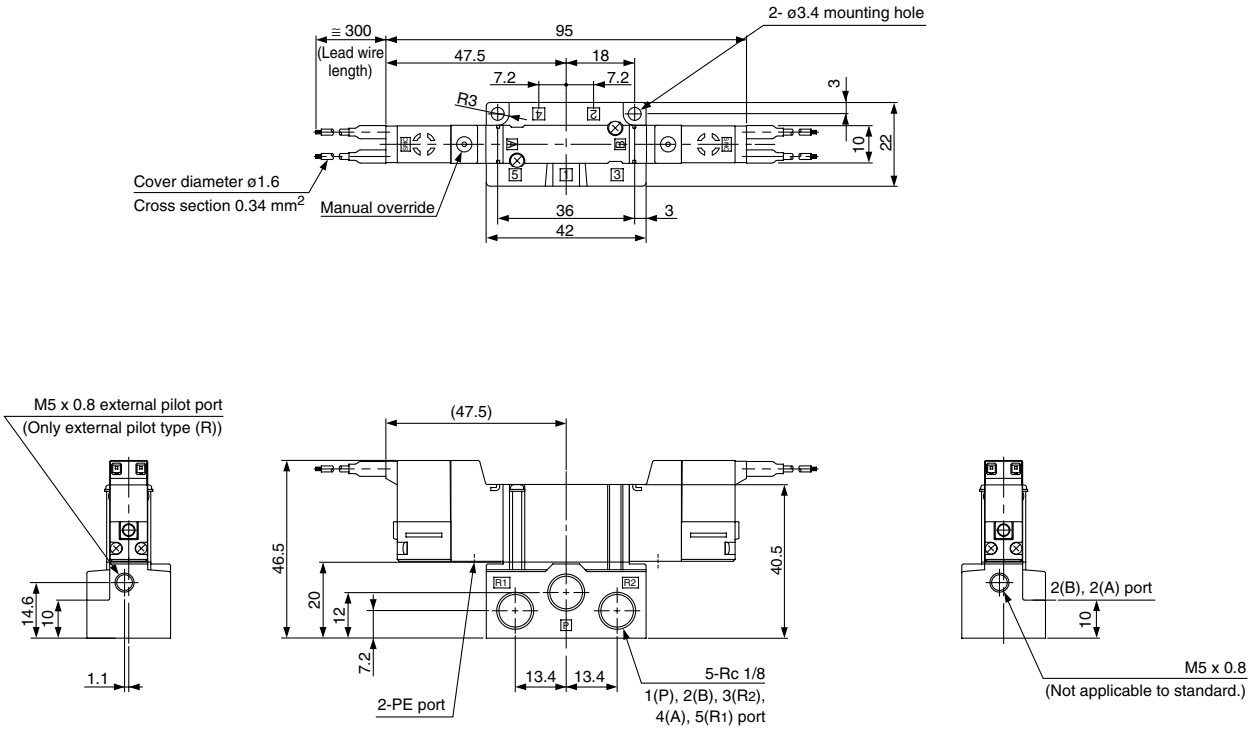

< >: AC

< >: AC

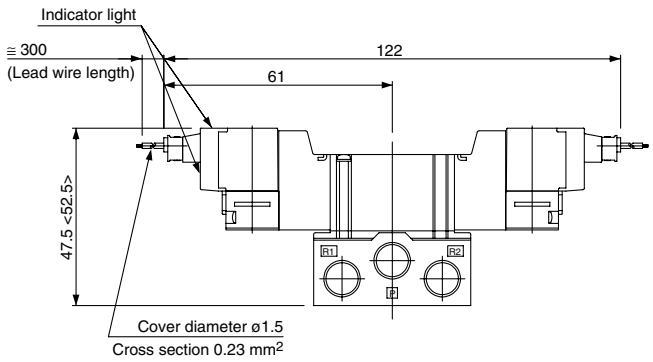
## Dimensions: VQZ1000

### 2 position double

### Grommet (G): VQZ125$^{0}_{1}$(R)-□G□-01

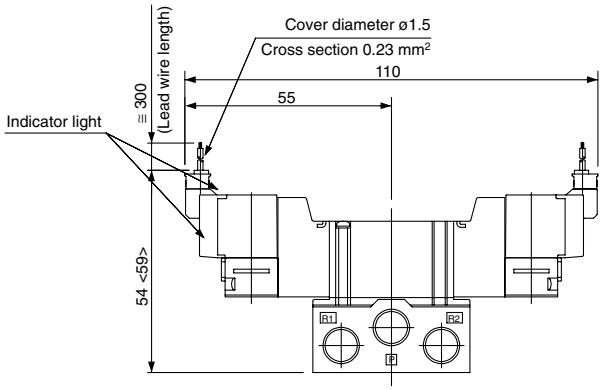



### L plug connector (L): VQZ125$^{0}_{1}$(R)-□L□-01




< >: AC

### M plug connector (M): VQZ125$^{0}_{1}$(R)-□M□-01

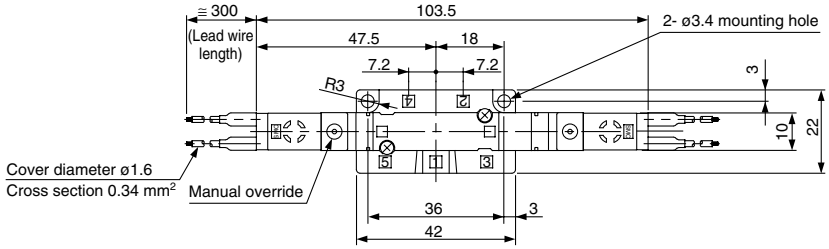


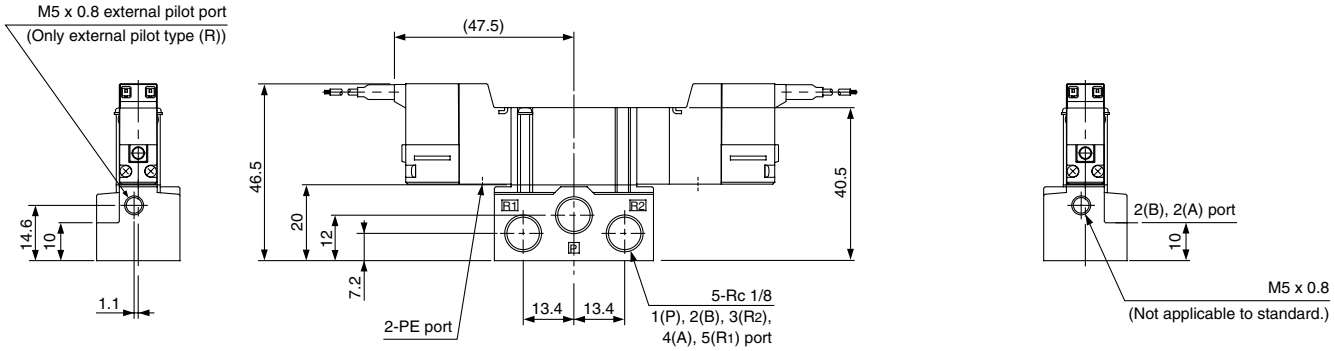

< >: AC

## VQZ1000

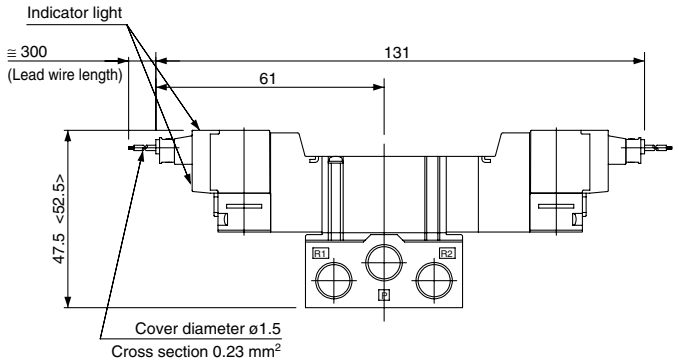
### 3 position closed center/exhaust center/pressure center (Except metal seal type)

### Grommet (G): VQZ1$^{3}_{4}_{5}$ 5$^{0}_{1}$(R)-□G□-01




### L plug connector (L): VQZ1$^{3}_{4}_{5}$ 5$^{0}_{1}$(R)-□L□-01

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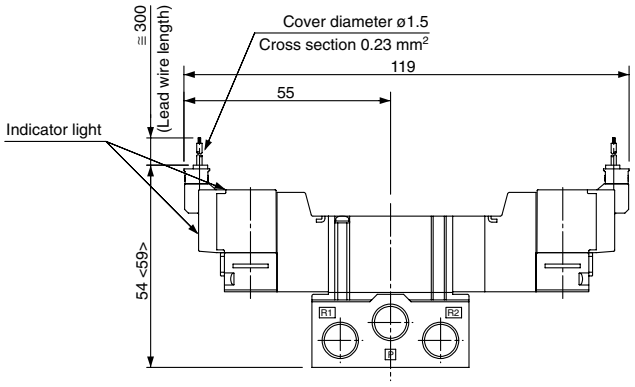
### M plug connector (M): VQZ1$^{3}_{4}_{5}$ 5$^{0}_{1}$(R)-□M□-01

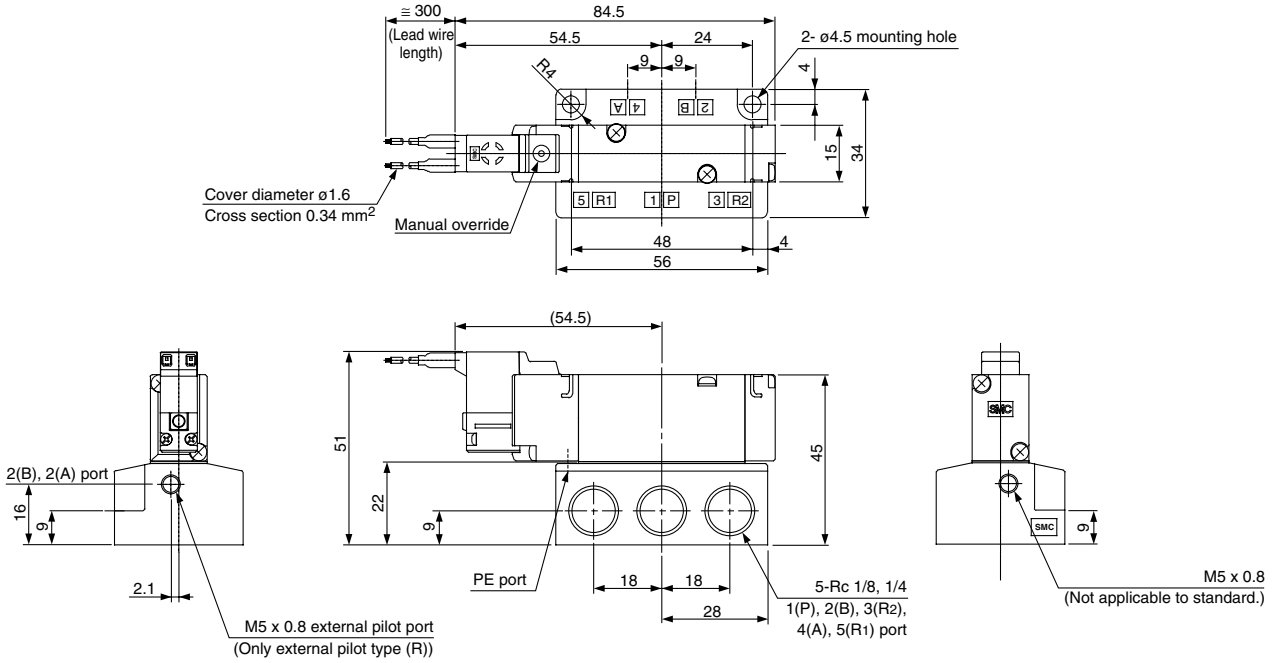



< >: AC

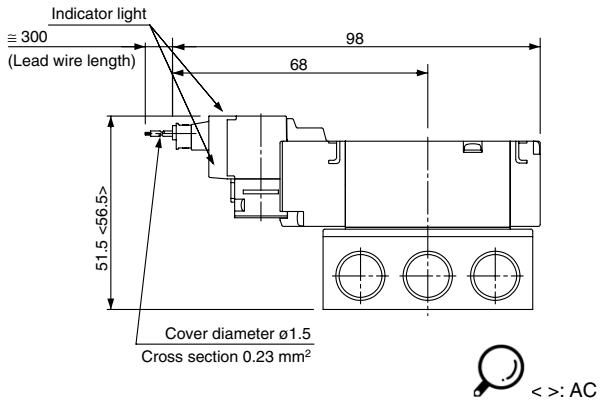
## Dimensions: VQZ2000

### 2 position single

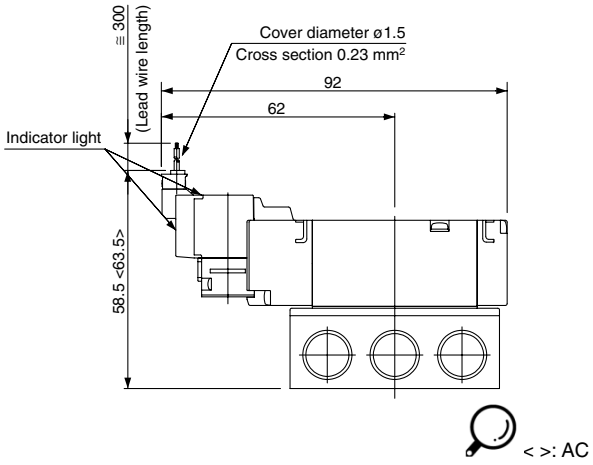
### Grommet (G): VQZ215$^{0}_{1}$(R)-□G□-$^{01}_{02}$



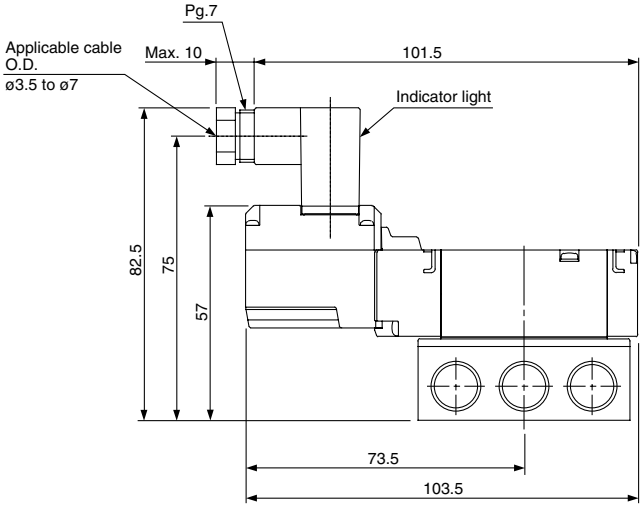

### L plug connector (L): VQZ215$^{0}_{1}$(R)-□L□-$^{01}_{02}$




### M plug connector (M): VQZ215$^{0}_{1}$(R)-□M□-$^{01}_{02}$



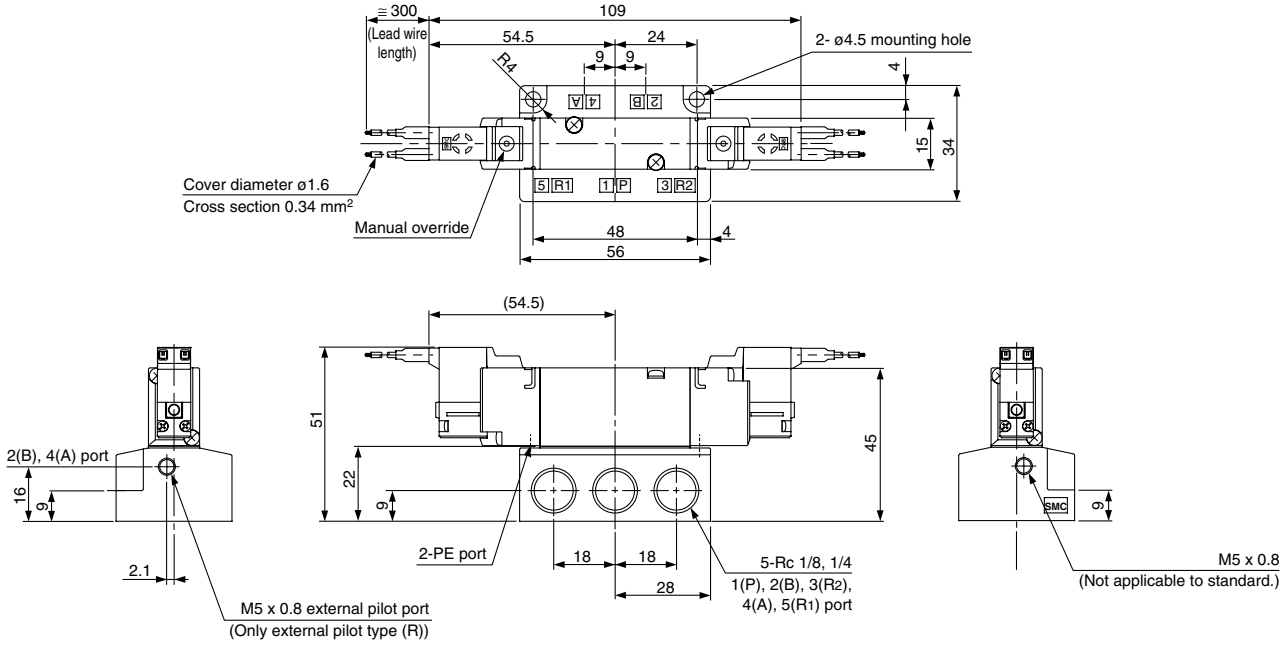

### DIN terminal (Y): VQZ215$^{0}_{1}$(R)-□Y□-$^{01}_{02}$



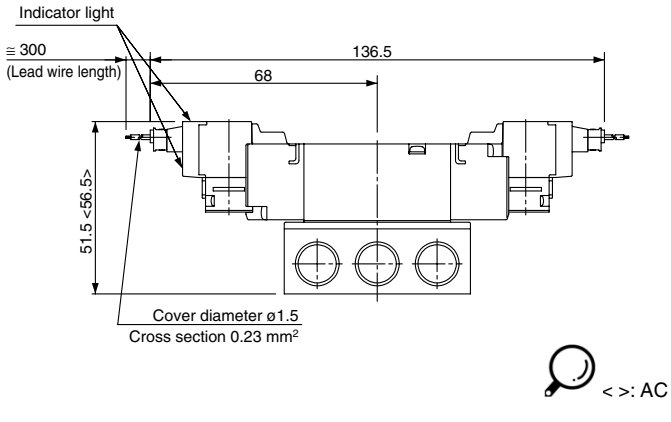
## VQZ2000

### 2 position double

### Grommet (G): VQZ225$^{0}_{1}$(R)-□G□-$^{01}_{02}$

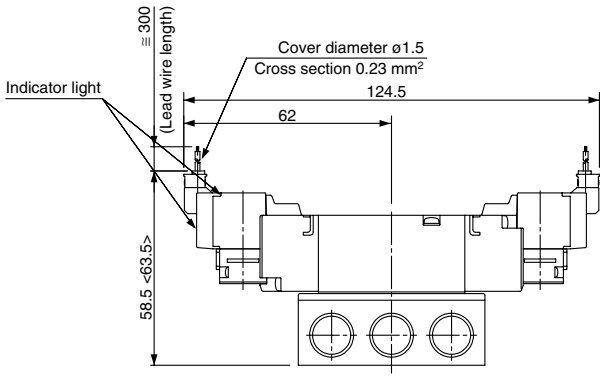



### L plug connector (L): VQZ225$^{0}_{1}$(R)-□L□-$^{01}_{02}$



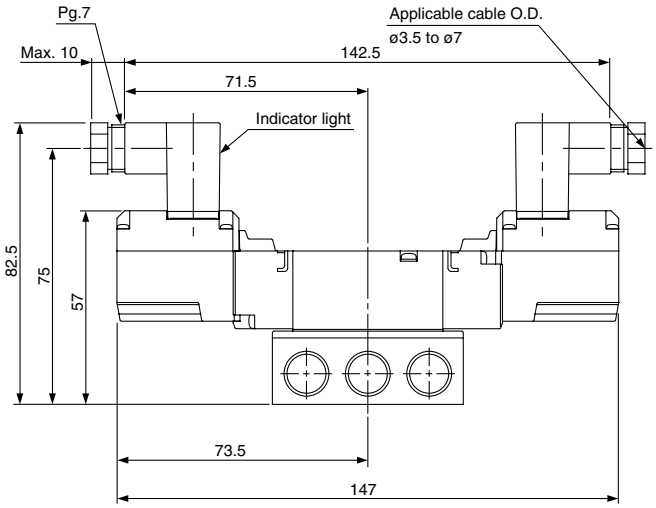

< >: AC

### M plug connector (M): VQZ225$^{0}_{1}$(R)-□M□-$^{01}_{02}$




< >: AC

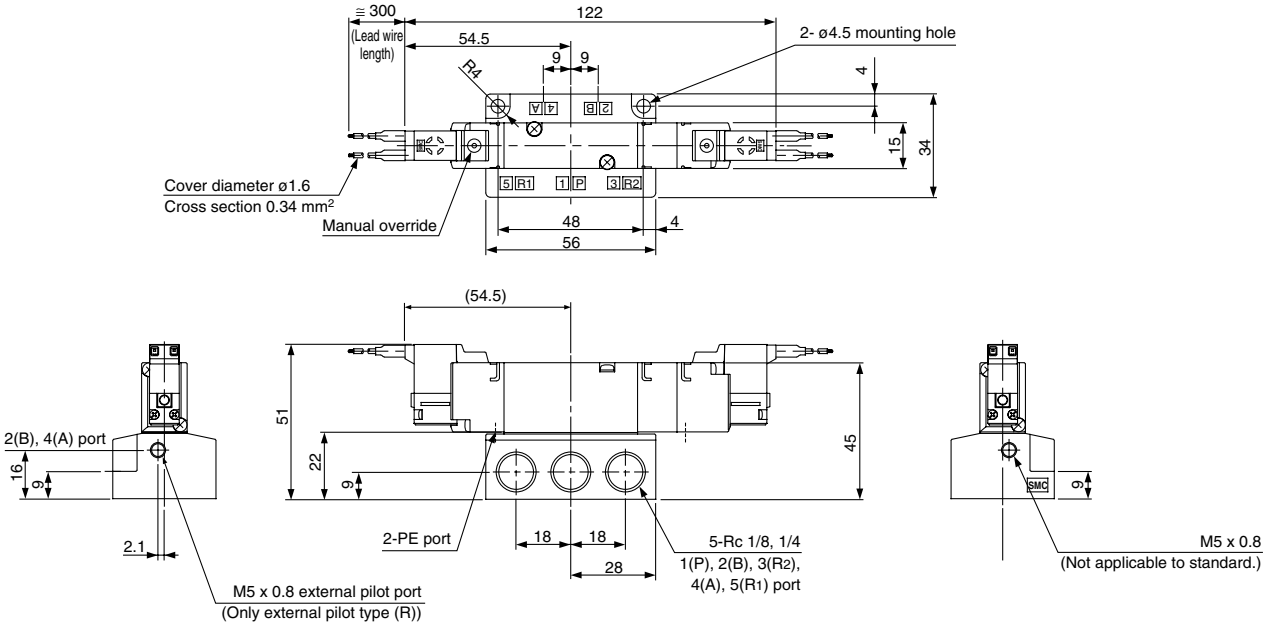
### DIN terminal (Y): VQZ225$^{0}_{1}$(R)-□Y□-$^{01}_{02}$



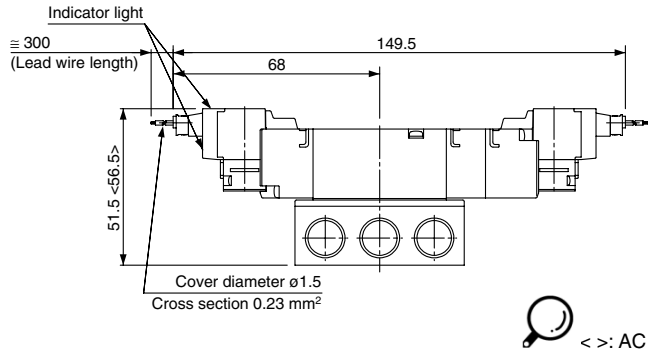
## Dimensions: VQZ2000

### 3 position closed center/exhaust center/pressure center

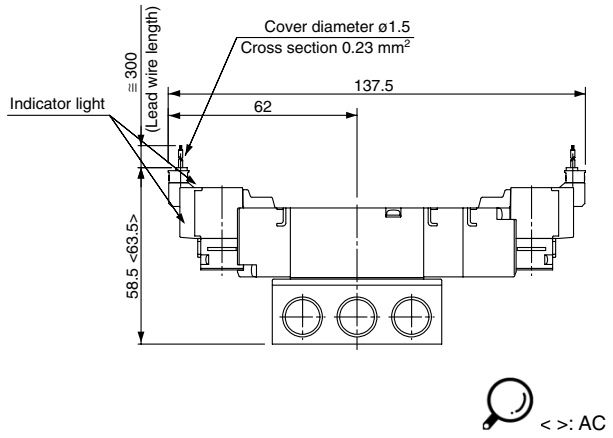
### Grommet (G): VQZ2$^{3}_{4}$5$^{0}_{1}$(R)-□G□-$^{01}_{02}$



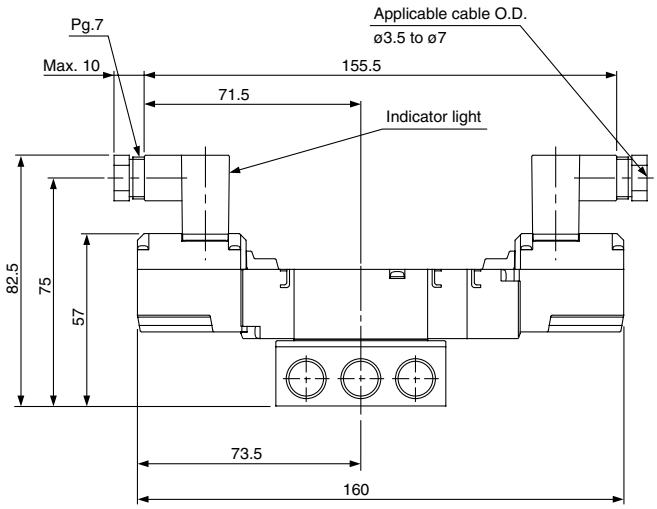

### L plug connector (L): VQZ2$^{3}_{4}$5$^{0}_{1}$(R)-□L□-$^{01}_{02}$




### M plug connector (M): VQZ2$^{3}_{4}$5$^{0}_{1}$ (R)-□M□-$^{01}_{02}$



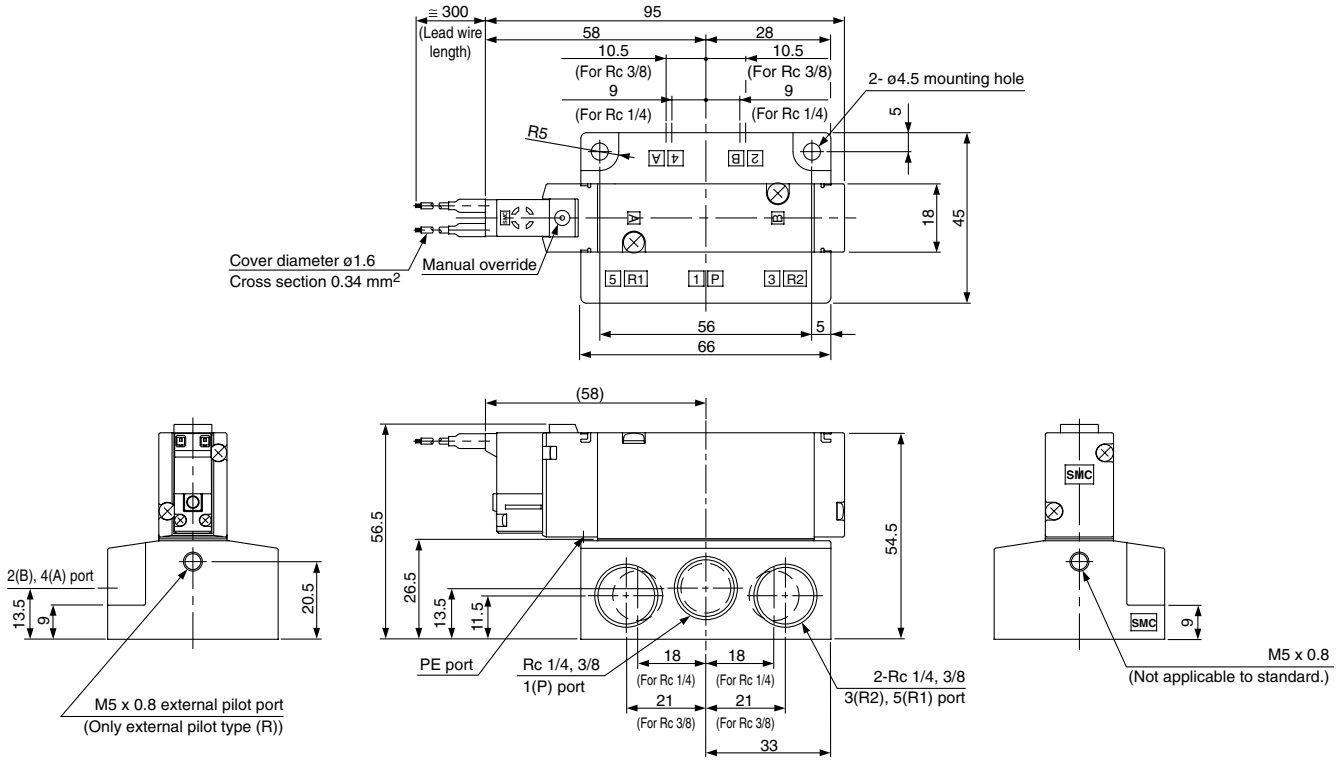

### DIN terminal (Y): VQZ2$^{3}_{4}$5$^{0}_{1}$(R)-□Y□-$^{01}_{02}$



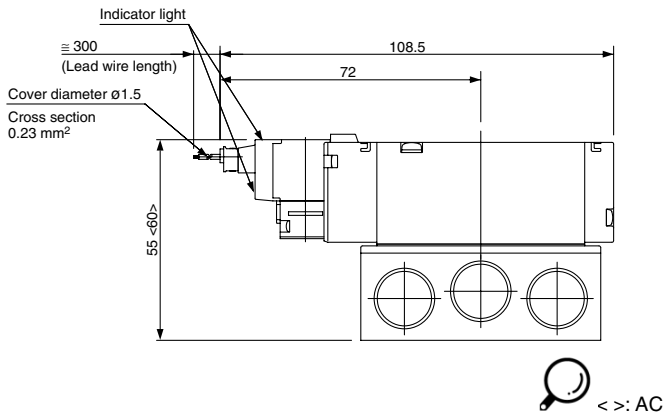
## VQZ3000

### 2 position single

### Grommet (G): VQZ315$^{0}_{1}$(R)-□G□-$^{02}_{03}$

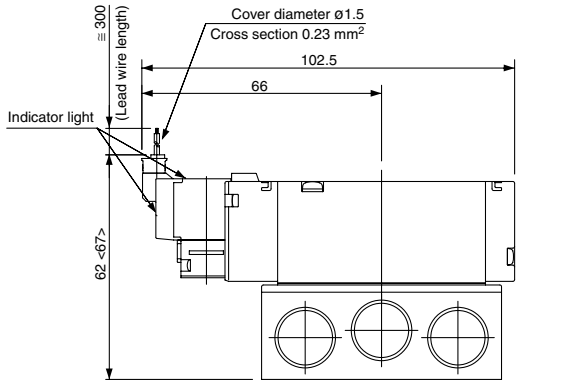



### L plug connector (L): VQZ315$^{0}_{1}$(R)-□L□-$^{02}_{03}$



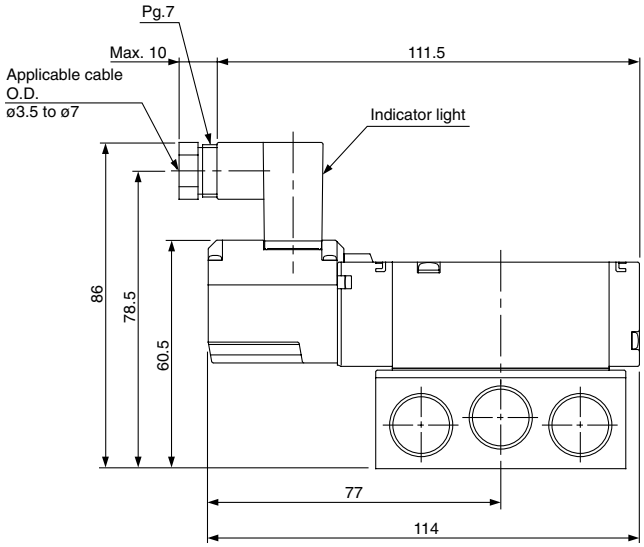

< >: AC

### M plug connector (M): VQZ315$^{0}_{1}$(R)-□M□-$^{02}_{03}$




< >: AC

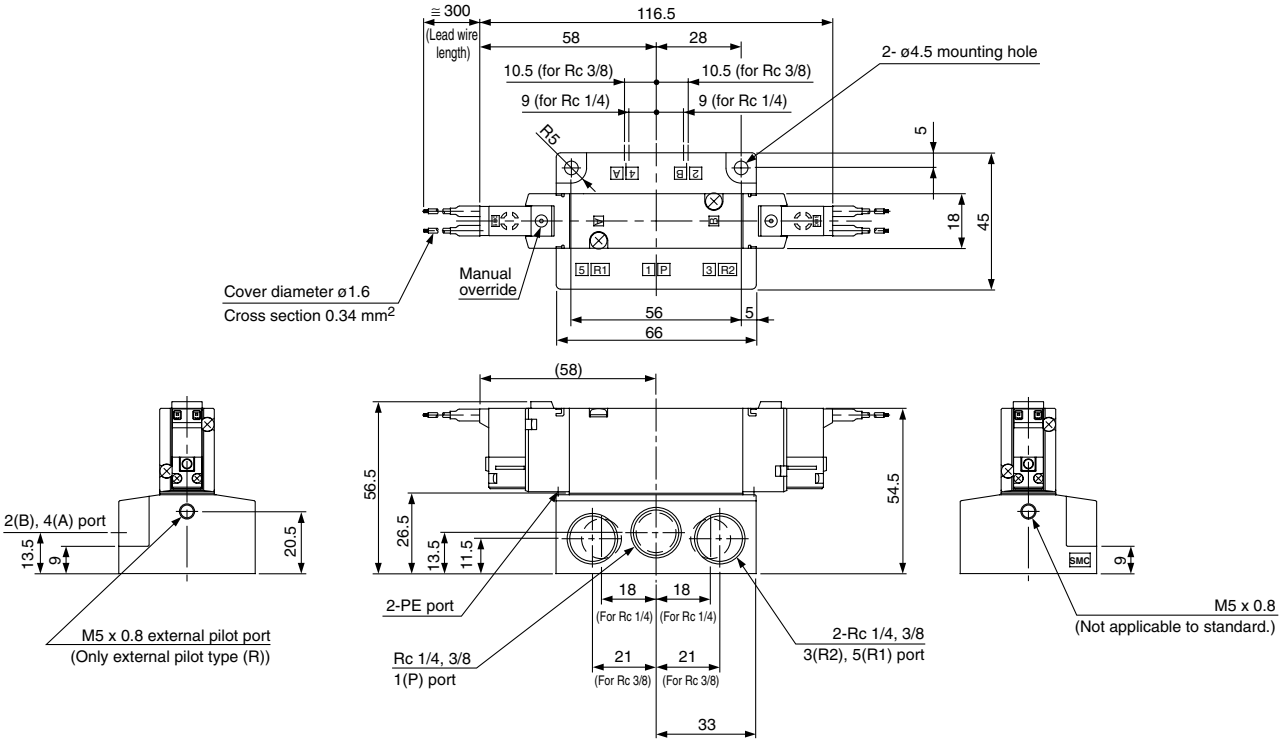
### DIN terminal (Y): VQZ315$^{0}_{1}$(R)-□Y□-$^{02}_{03}$



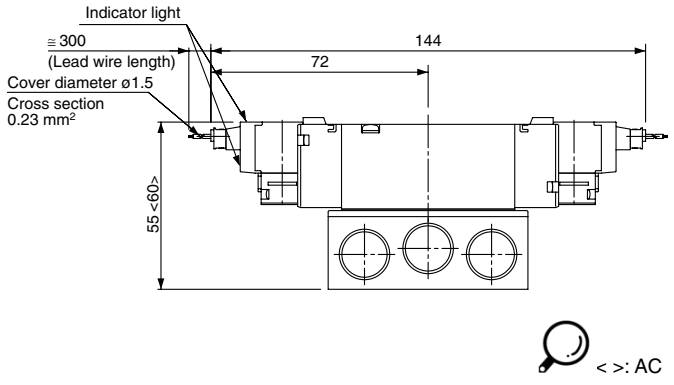
## Dimensions: VQZ3000

### 2 position double

### Grommet (G): VQZ325$^{0}_{1}$(R)-□G□-$^{02}_{03}$

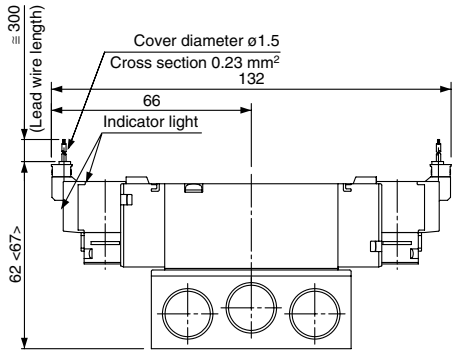



### L plug connector (L): VQZ325$^{0}_{1}$(R)-□L□-$^{02}_{03}$



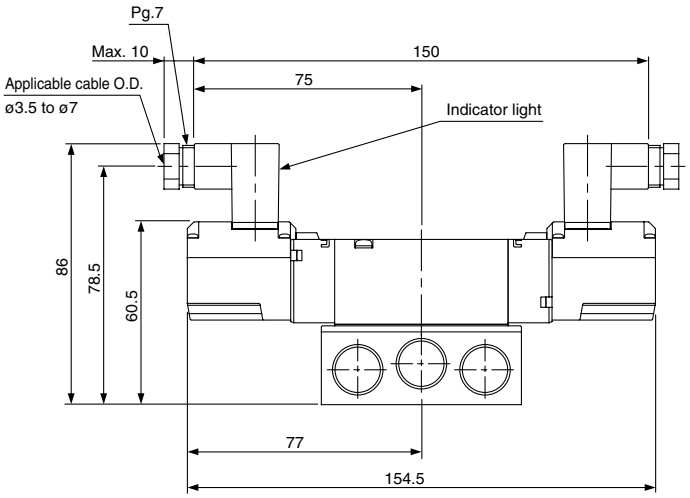

< >: AC

### M plug connector (M): VQZ325$^{0}_{1}$(R)-□M□-$^{02}_{03}$




< >: AC

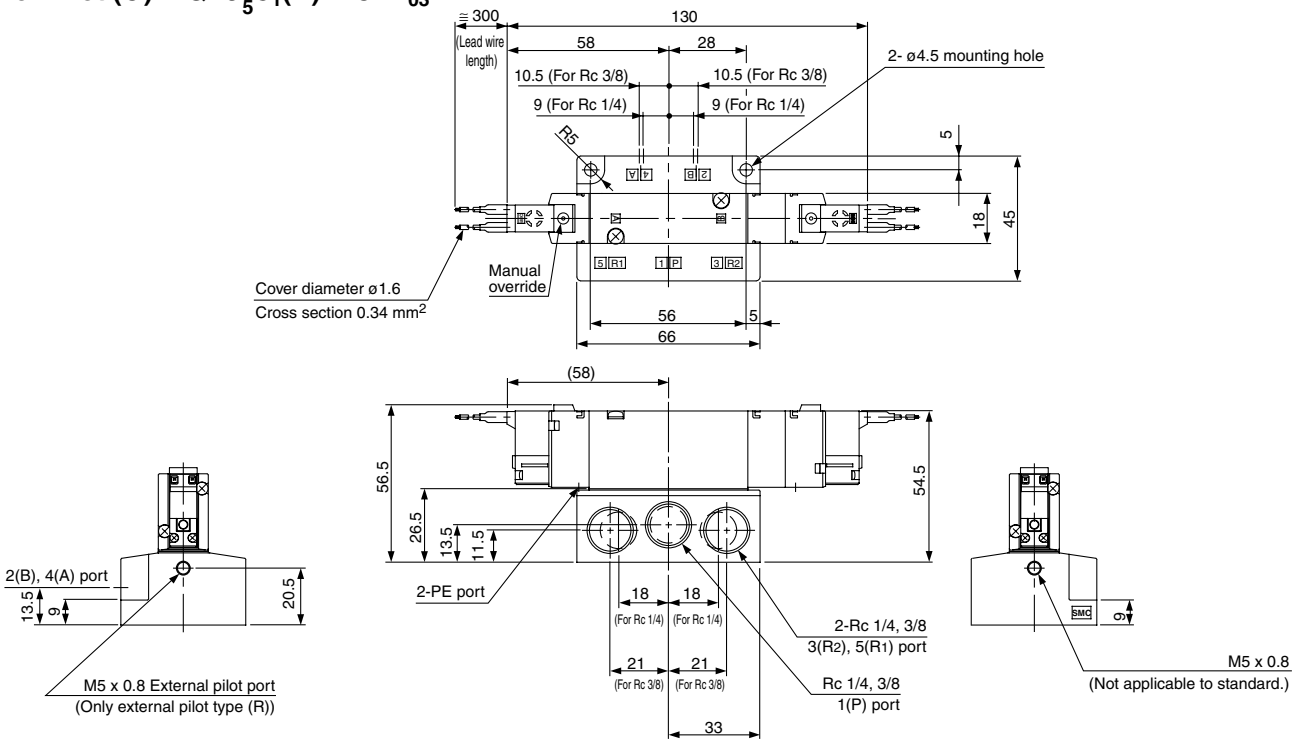
### DIN terminal (Y): VQZ325$^{0}_{1}$(R)-□Y□-$^{02}_{03}$



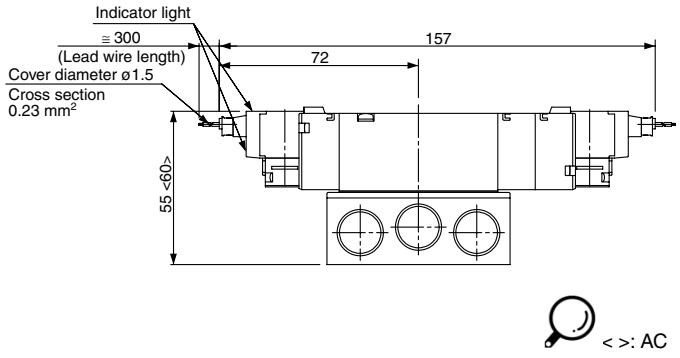
## VQZ3000

### 3 position closed center/exhaust center/pressure center

### Grommet (G): VQZ3$^{3}_{4}$5$^{0}_{1}$(R)-□G□-$^{02}_{03}$

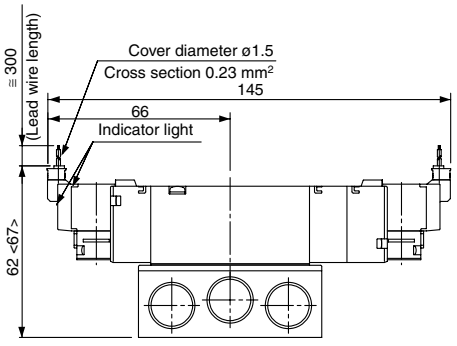



### L plug connector (L): VQZ3$^{3}_{4}$5$^{0}_{1}$(R)-□L□-$^{02}_{03}$



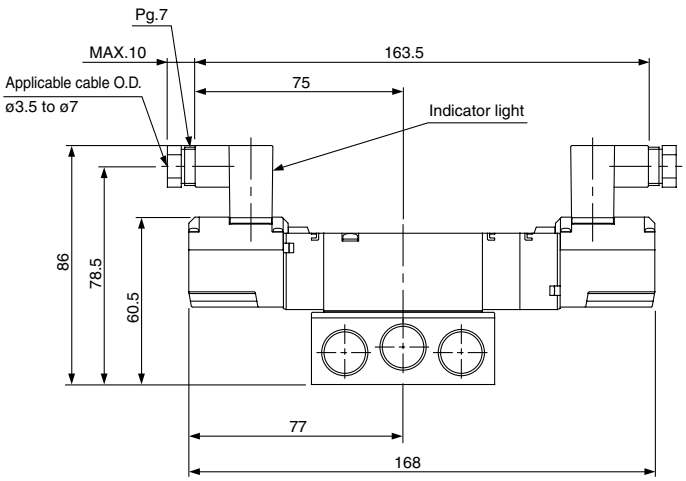

< >: AC

### M plug connector (M): VQZ3$^{3}_{4}$5$^{0}_{1}$(R)-□M□-$^{02}_{03}$




< >: AC

### DIN terminal (Y): VQZ3$^{3}_{4}$5$^{0}_{1}$(R)-□Y□-$^{02}_{03}$



# 5 Port Solenoid Valve
# Base Mounted
# Plug Lead Unit: Manifold (Connector Kit)
# *VQZ1000/2000/3000*

## How to Order Manifold

**VV5QZ** **1** **5** — **08** **C6** **C** — **N**

**Series**

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

**Manifold**

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

**Stations**

| | |
|---|---|
| 02 | 2 stations |
| ⋮ | ⋮ |
| 20 | 20 stations |

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

| Symbol | Port size | VQZ1000 | VQZ2000 | VQZ3000 |
|---|---|---|---|---|
| C3 | One-touch fitting for ø3.2 | ○ | — | — |
| C4 | One-touch fitting for ø4 | ○ | ○ | — |
| C6 | One-touch fitting for ø6 | ○ | ○ | ○ |
| C8 | One-touch fitting for ø8 | — | ○ | ○ |
| C10 | One-touch fitting for ø10 | — | — | ○ |
| M5 | M5 thread | ○ | — | — |
| 01 | Rc 1/8 | — | ○ | — |
| 02 | Rc 1/4 | — | — | ○ |
| CM (1) | Mixture of port sizes | ○ | ○ | ○ |

Note 1) Specify port mixture/with port plug by means of the manifold specification sheet.
Port mixture and port plug are available only for One-touch fitting type.
Note 2) For inch size and One-touch fittings, refer to page 2-7-60.

**Kit type**

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

**Option**

| | |
|---|---|
| Nil | None |
| D | DIN rail mounting style (With DIN rail in standard length) |
| DO (1) | DIN rail mounting style (Without DIN rail ) |
| N (2) | Name plate |
| R | External pilot specifications |

Note 1) Order DIN rail separately.
For DIN rail model number, refer to page 2-7-54.
Note 2) Applicable to VQZ2000 and 3000.

## How to Order Valves

**VQZ** **1** **1** **5** **1** **[ ]** — **5** **M** **[ ]**

**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 Note) | 3 position pressure center |
| 8 | 3 port for mixture mounting N.C. |
| 9 | 3 port for mixture mounting N.O. |

Note) Except VQZ1000 and metal seal type.

**Body**

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

**Seal**

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

**Function**

| Symbol | Specifications | DC | AC |
|---|---|---|---|
| Nil | Standard | (1.0 W) ○ | (3) ○ |
| K (1) | High pressure (Metal seal only) | (1.0 W) ○ | — |
| Y | Low wattage type | (0.5 W) ○ | — |
| R (2) | External pilot | ○ | ○ |

Note 1) Option
Note 2) For details about external pilot specifications, refer to page 2-7-60.
Note 3) For power consumption of AC type, refer to page 2-7-37.
Note 4) When two or more symbols are specified, indicate them alphabetically.

**Coil voltage**

| | |
|---|---|
| 1 | 100 VAC (50/60 Hz) |
| 2 | 200 VAC (50/60 Hz) |
| 3 | 110 VAC (50/60 Hz) |
| 4 | 220 VAC (50/60 Hz) |
| 5 | 24 VDC |
| 6 | 12 VDC |
| 9 Note) | Other |

Note) For the special voltages, please consult with SMC.

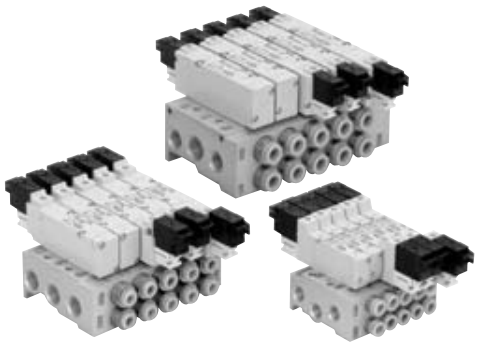
**Manual override**

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

**Electrical entry**

| Symbol | Electrical entry | Light/Surge voltage suppressor |
|---|---|---|
| G | Grommet (DC specifications) | None |
| L | L plug connector with lead wire | Yes |
| LO | L plug terminal without connector | |
| M | M plug connector with lead wire | |
| MO | M plug terminal without connector | |
| Y (1) | DIN terminal | None |
| YO (1) | DIN terminal without connector | |
| YZ (1) | DIN terminal | Yes |
| YS (1) | DIN terminal | Yes (W/o indicator light) |
| YOS (1) | DIN terminal without connector | Yes (W/o indicator light) |

Note 1) Applicable to VQZ2000 and 3000.
Note 2) Standard lead wire length: 300 mm



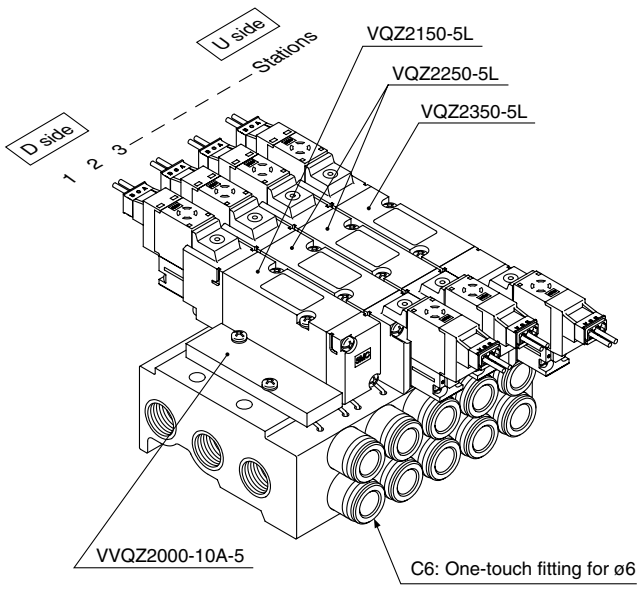
## Manifold Specifications

| Series | Base model | Porting specifications | | | Applicable solenoid valve | Applicable stations | Note) Manifold base weight (g) |
|---|---|---|---|---|---|---|---|
| | | Port location | 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 | 2 stations: 105<br>Addition per/station: 27 |
| **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 | 2 stations: 193<br>Addition per/station: 54 |
| **VQZ3000** | **VV5QZ35-□□□** | Side | 1(P) port Rc 3/8<br>3/5(R) port 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 | 2 stations: 398<br>Addition per/station: 102 |

Note) Threaded port.



## How to Order Valve Manifold Assembly (Example)




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

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

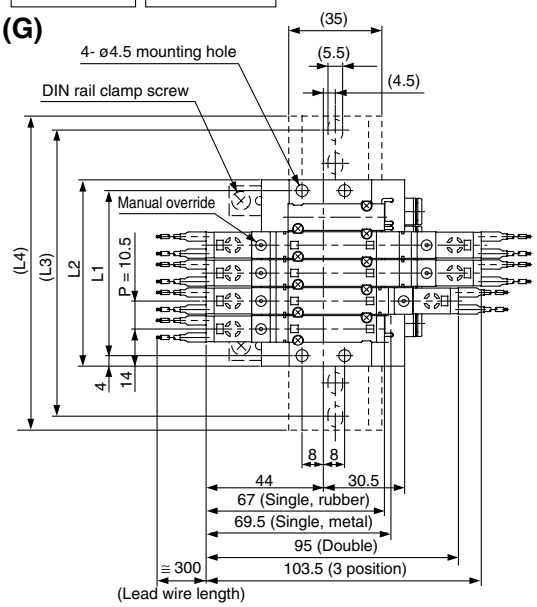
→ Enter in order starting from the first station on the D side.

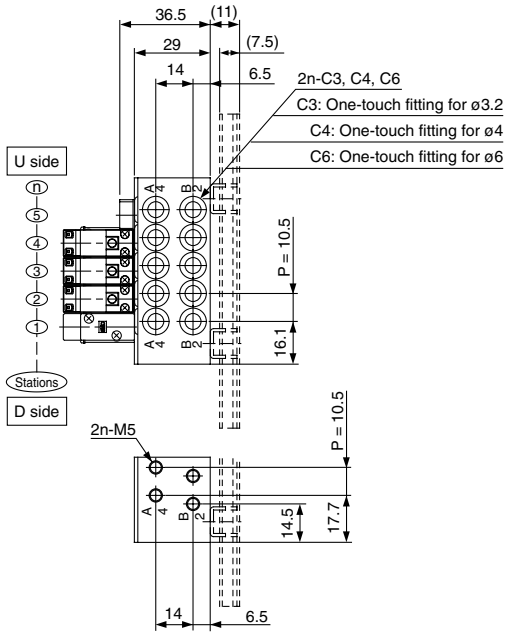
Specify the part numbers for valves and options together beneath the manifold base part number.
When entry of part numbers becomes complicated, indicate on the manifold specification sheet.

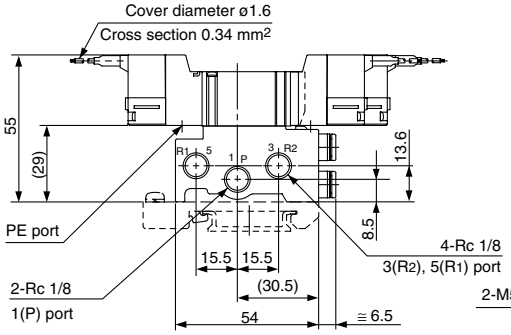
## Dimensions: VQZ1000

### VV5QZ15- Stations Port size C

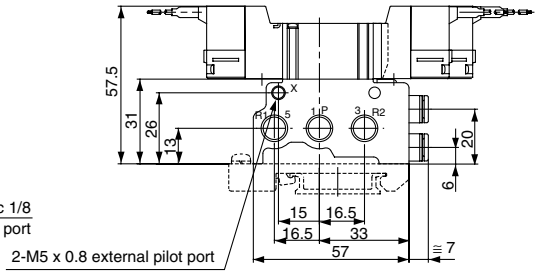
**Grommet (G)**



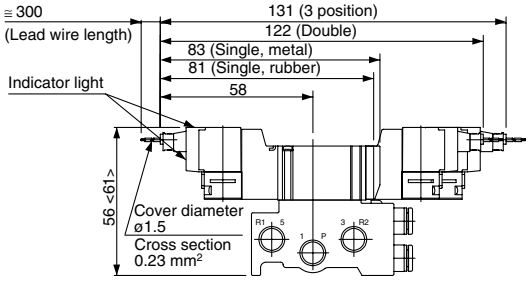

**M5**




**External pilot specifications**

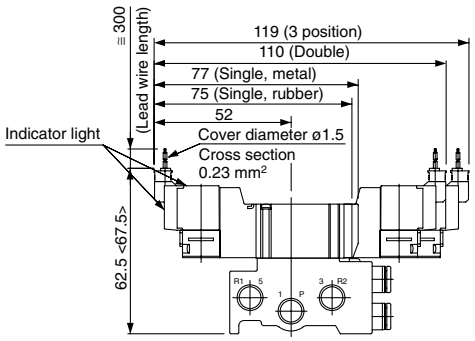
The broken lines indicate the DIN rail mounting style [-D].

### L plug connector (L)




< >: AC

### M plug connector (M)




< >: AC

### Dimensions

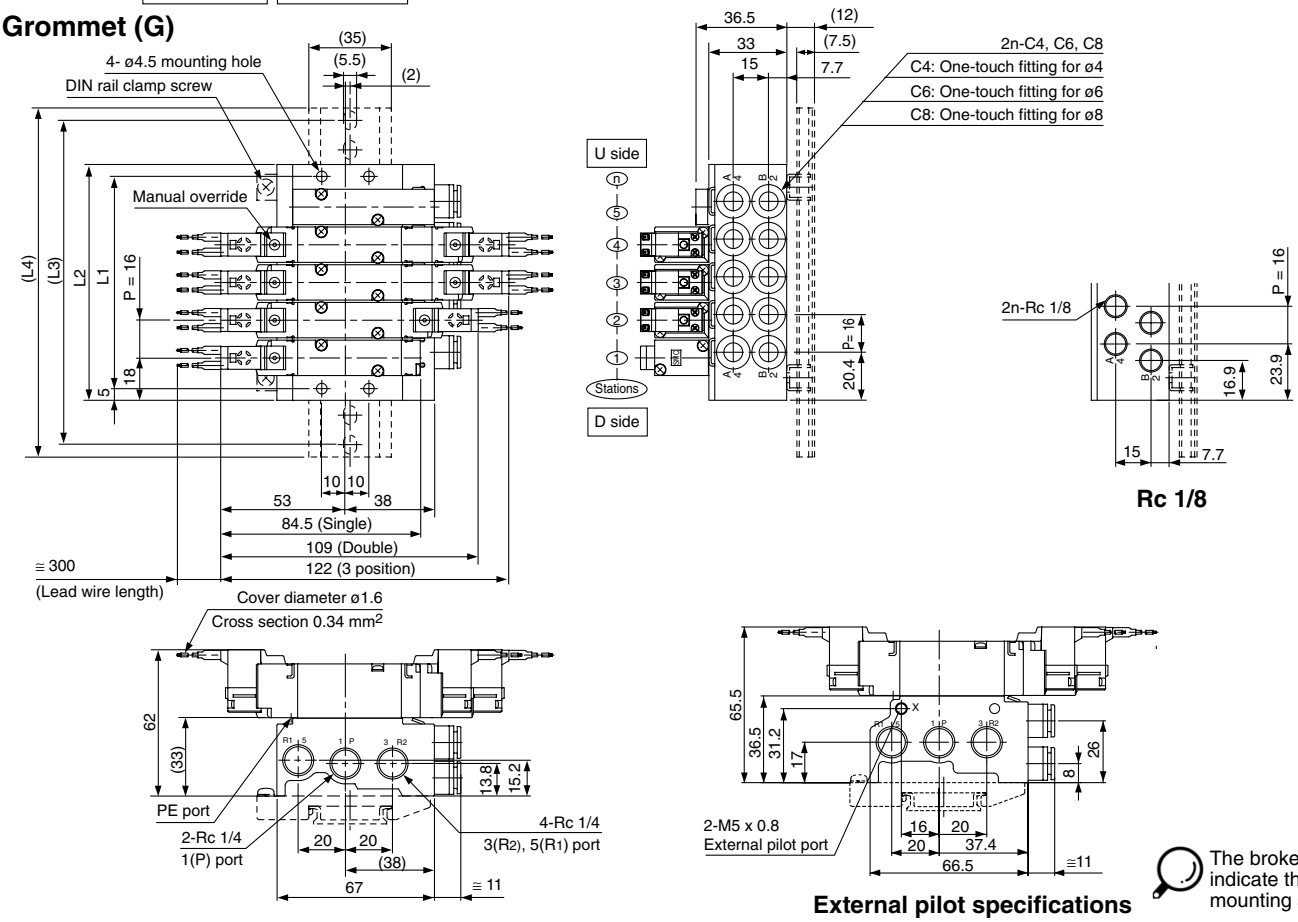
Formula L1 = 10.5n + 9.5, L2 = 10.5n + 17.5 n: Stations (Maximum 20 stations)

| L \ n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 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 |
| **L2** | 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 |
| **L3** | 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 |
| **L4** | 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 |

## VQZ2000

### VV5QZ25- Stations Port size C

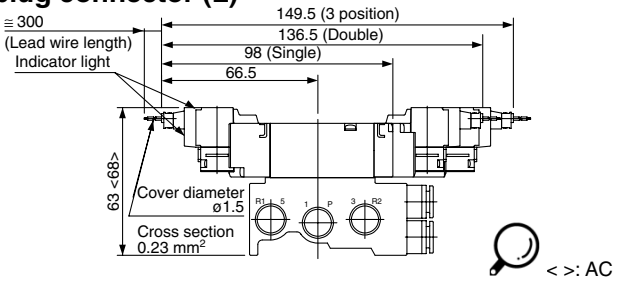
#### Grommet (G)




**External pilot specifications**

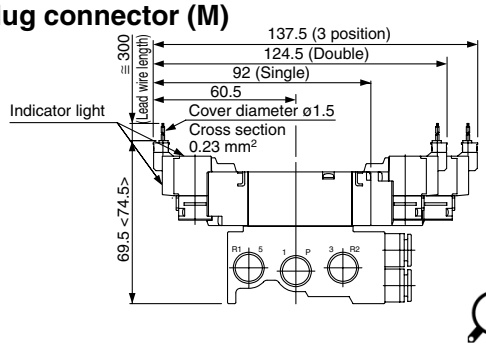
The broken lines indicate the DIN rail mounting style [-D].

#### L plug connector (L)



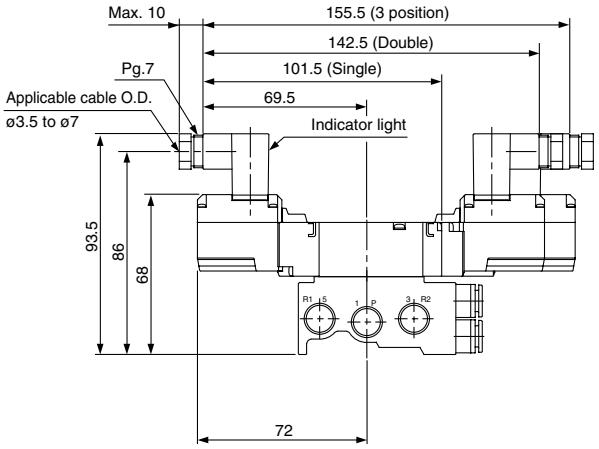

< >: AC

#### M plug connector (M)




< >: AC

#### DIN terminal (Y)




### Dimensions

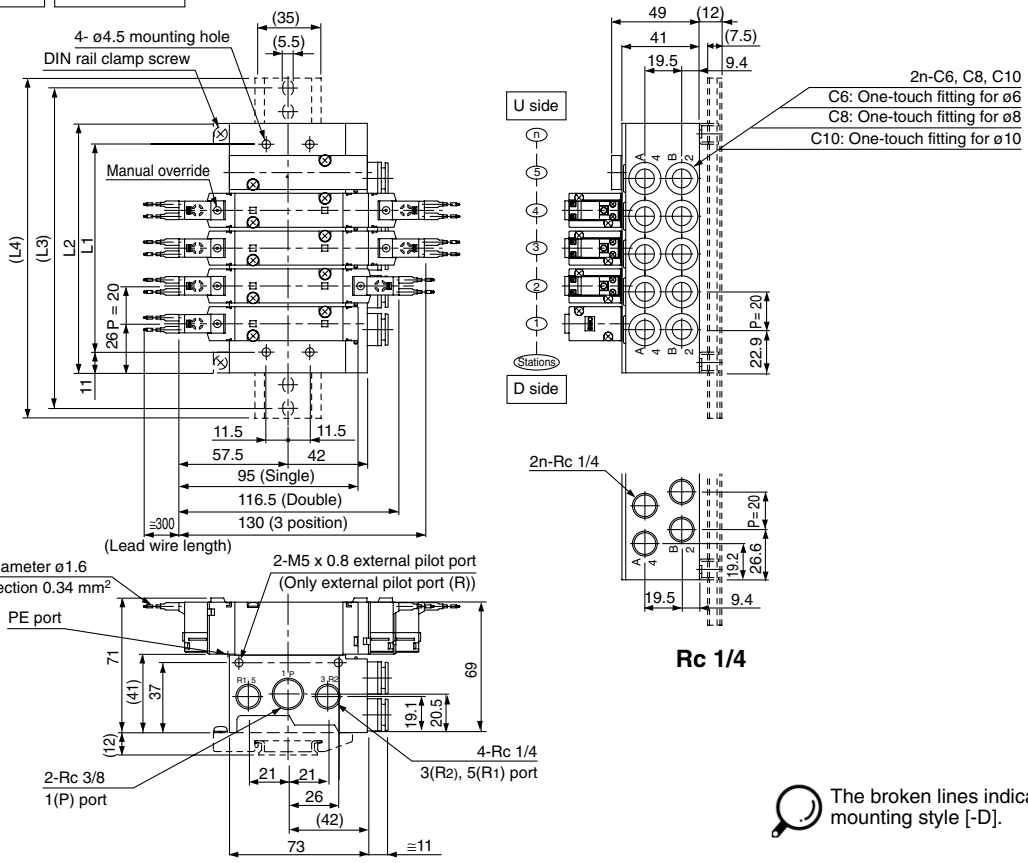
Formula L1 = 16n + 10, L2 = 16n + 20 n: Stations (Maximum 20 stations)

| L \ n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 42 | 58 | 74 | 90 | 106 | 122 | 138 | 154 | 170 | 186 | 202 | 218 | 234 | 250 | 266 | 282 | 298 | 314 | 330 |
| **L2** | 52 | 68 | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 | 260 | 276 | 292 | 308 | 324 | 340 |
| **L3** | 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 |
| **L4** | 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 |

## Dimensions: VQZ3000

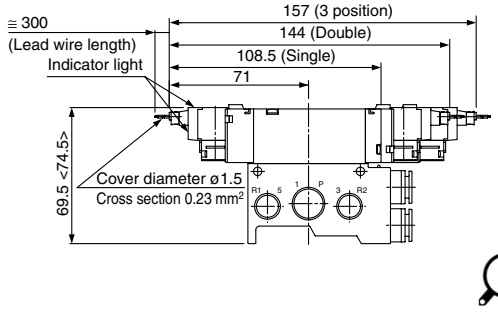
### VV5QZ35- Stations Port size C

**Grommet (G)**



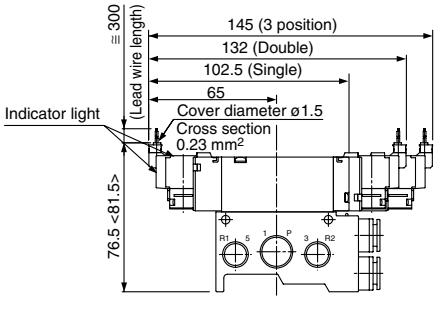

The broken lines indicate the DIN rail mounting style [-D].

### L plug connector (L)



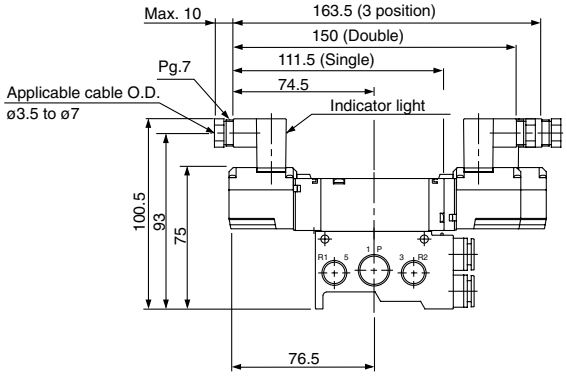

< >: AC

### M plug connector (M)




< >: AC

### DIN terminal (Y)




### Dimensions

Formula L1 = 20n + 10, L2 = 20n + 32 n: Stations (Maximum 20 stations)

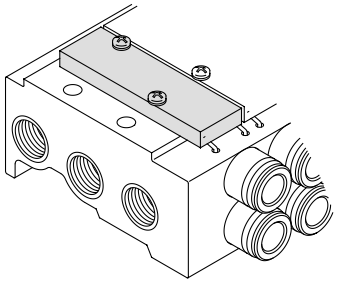
| L \ n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **L1** | 50 | 70 | 90 | 110 | 130 | 150 | 170 | 190 | 210 | 230 | 250 | 270 | 290 | 310 | 330 | 350 | 370 | 390 | 410 |
| **L2** | 72 | 92 | 112 | 132 | 152 | 172 | 192 | 212 | 232 | 252 | 272 | 292 | 312 | 332 | 352 | 372 | 392 | 412 | 432 |
| **L3** | 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 |
| **L4** | 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 |

## Manifold Option

### Blanking plate assembly

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

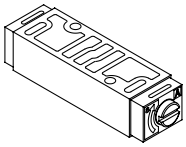
It is used by attaching on the manifold block for being prepared for removing a valve for maintenance reasons or planning to mount a spare valve, etc.

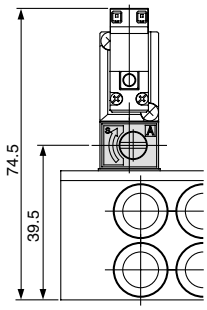


### Throttle valve spacer (For VQZ2000 only)

**VVQZ2000-20A-5**

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

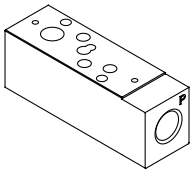


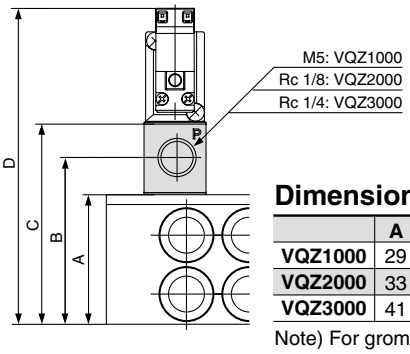



### Individual SUP spacer

**VVQZ1000-P-5-M5 (VQZ1000)**
**VVQZ2000-P-5-01 (VQZ2000)**
**VVQZ3000-P-5-02 (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.




**Dimensions**

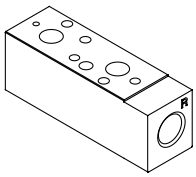
| | A | B | C | D Note) |
|---|---|---|---|---|
| **VQZ1000** | 29 | 35 | 40 | 67 |
| **VQZ2000** | 33 | 43 | 52 | 81 |
| **VQZ3000** | 41 | 52 | 63 | 93 |

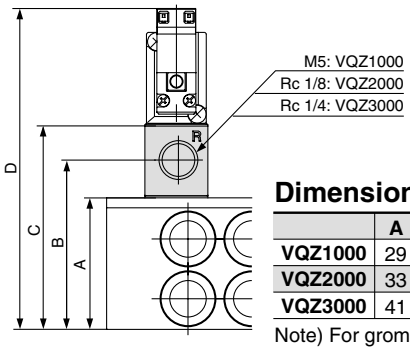
Note) For grommet

### Individual EXH spacer

**VVQZ1000-R-5-M5 (VQZ1000)**
**VVQZ2000-R-5-01 (VQZ2000)**
**VVQZ3000-R-5-02 (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.




**Dimensions**

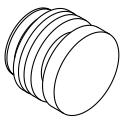
| | A | B | C | D Note) |
|---|---|---|---|---|
| **VQZ1000** | 29 | 35 | 40 | 67 |
| **VQZ2000** | 33 | 43 | 52 | 81 |
| **VQZ3000** | 41 | 52 | 63 | 93 |

Note) For grommet

### Port plug

**VVQZ1000-CP (VQZ1000)**
**VVQZ2000-CP (VQZ2000)**
**VVQZ3000-CP (VQZ3000)**

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



## Manifold Option

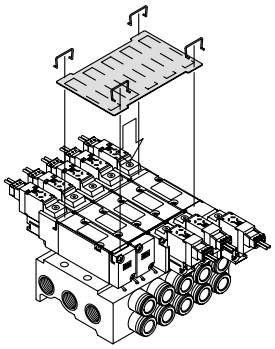
### Name plate [-N] (For VQZ2000 and 3000 only)

**VVQZ2000-N5- Stations (VQZ2000)**
**VVQZ3000-N5- Stations (VQZ3000)**

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

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

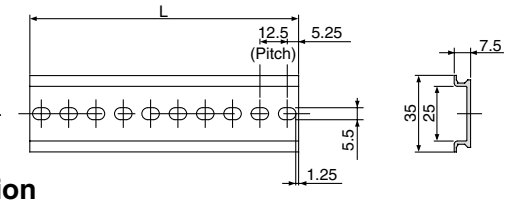
∗ 4 clips are attached for name plate mounting.



### DIN rail

**AXT100-DR-□**

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




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

### L Dimension

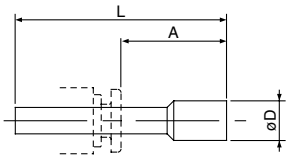
L = 12.5n + 10.5

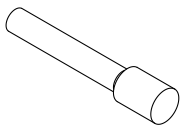
| No. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L dimension | 23 | 35.5 | 48 | 60.5 | 73 | 85.5 | 98 | 110.5 | 123 | 135.5 | 148 | 160.5 | 173 | 185.5 | 198 | 210.5 | 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

**KQP-23-X19**
**KQP-04-X19**
**KQP-06-X19**
**KQP-08-X19**
**KQP-10-X19**
**Color: White**



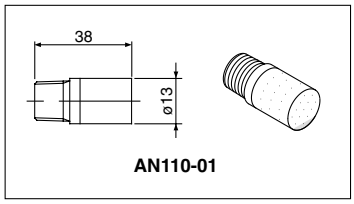



### Dimensions

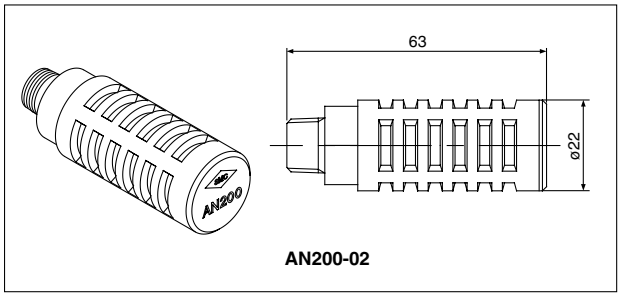
| Applicable fittings size ød | Model | A | L | D |
|---|---|---|---|---|
| 3.2 | **KQP-23-X19** | 16 | 31.5 | 3.2 |
| 4 | **KQP-04-X19** | 16 | 32 | 6 |
| 6 | **KQP-06-X19** | 18 | 35 | 8 |
| 8 | **KQP-08-X19** | 20.5 | 39 | 10 |
| 10 | **KQP-10-X19** | 22 | 43 | 12 |

### Silencer (For Manifold EXH port)

Silencer is installed in the EXH port.




**AN110-01**




**AN200-02**

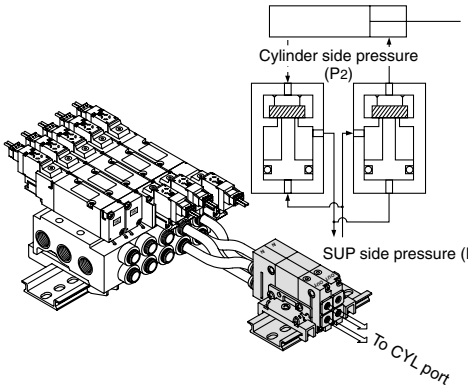
| Model | Silencer P/N |
|---|---|
| **VQZ1000** | AN110-01 |
| **VQZ2000** | AN200-02 |
| **VQZ3000** | AN200-02 |

## Manifold Option

### Double check block (Externally placed downstream): For VQZ1000 only
### VQ1000-FPG-□□

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time. Combining the double check block with a built-in pilot type double check valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time.
The combination of a 2 position single or double solenoid with a double check block will prevent the cylinder from "dropping" at stroke end when residual supply pressure is released.

**<Check valve operation principle>**



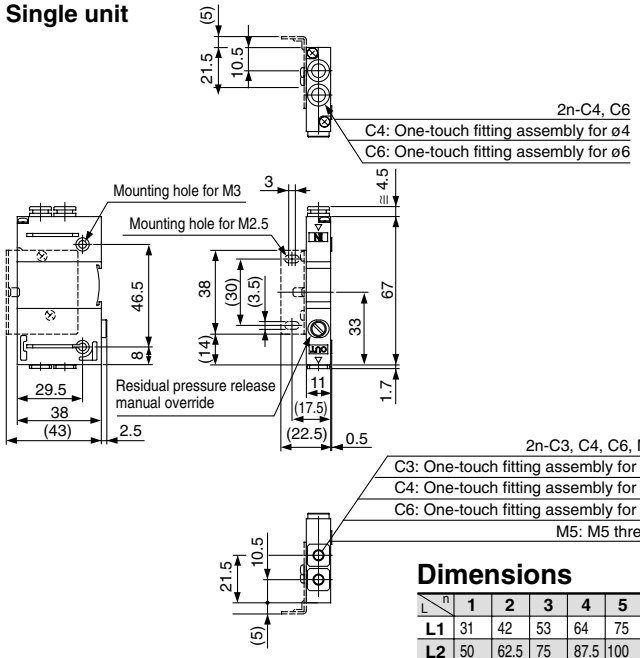

#### Specifications

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

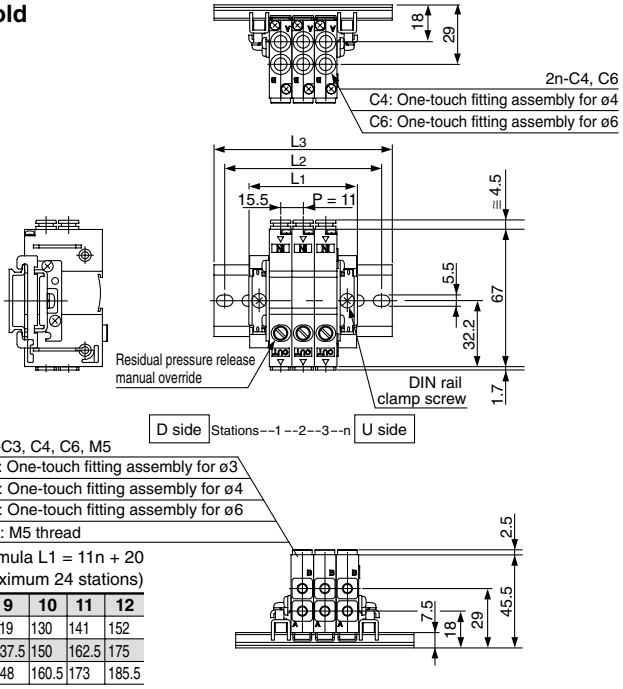
Note) Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa)

## Dimensions

**Single unit**




**Manifold**




Formula L1 = 11n + 20
n: Station (Maximum 24 stations)

**Dimensions**

| L \ n | 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 | 125 | 137.5 | 150 | 162.5 | 175 |
| L3 | 60.5 | 73 | 85.5 | 98 | 110.5 | 123 | 135.5 | 135.5 | 148 | 160.5 | 173 | 185.5 |

| L \ n | 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 | 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 |

## How to Order

### Double check block

**VQ1000-FPG – C4 M5 – F**

**IN side port size**

| | |
|---|---|
| C4 | One-touch fitting for ø4 |
| C6 | One-touch fitting for ø6 |

**OUT side port size**

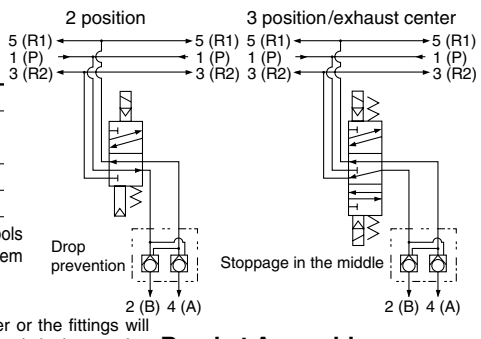
| | |
|---|---|
| M5 | M5 thread |
| C3 | One-touch fitting for ø3.2 |
| C4 | One-touch fitting for ø4 |
| C6 | One-touch fitting for ø6 |

**Option**

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

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

**<Example>**




### Manifold

**VVQ1000-FPG – 06**

**Stations**

| | |
|---|---|
| 01 | 1 station |
| ⋮ | ⋮ |
| 16 | 16 stations |

<Ordering Example>
VVQ1000-FPG-06···· 6stations of manifold
∗VQ1000-FPG-C4M5-D: 3 sets
∗VQ1000-FPG-C6M5-D: 3 sets
} Double check block

## ⚠ 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 double check 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 double After screwing in the fittings, mount the assembly on the double check block. (Tightening torque: 0.8 to 1.2 N·m)
- If exhaust side of double check block is narrowed down too much intermediate stopping accuracy may be decreased.

**Bracket Assembly**

| Part no. | Tightening torque |
|---|---|
| VQ1000-FPG-FB | 0.22 to 0.25 N·m |

Note) It is the tightening torque for mounting a bracket for the double check

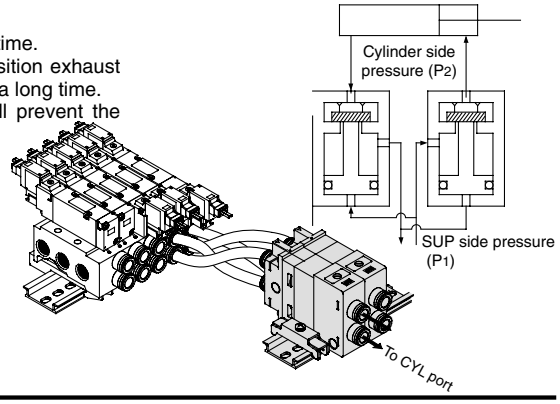
# Manifold Option

## Double check block (Externally placed downstream): For VQZ2000/3000 only

**VQ2000-FPG-□□-□**

It is used on the outlet side piping to keep the cylinder in the intermediate position for a long time.
Combining the double check block with a built-in pilot type double check valve and a 3 position exhaust center solenoid valve will enable the cylinder to stop in the middle or maintain its position for a long time.
The combination of a 2 position single or double solenoid with a double check block will prevent the cylinder from "dropping" at stroke end when residual supply pressure is released.

**<Check valve operation principle>**



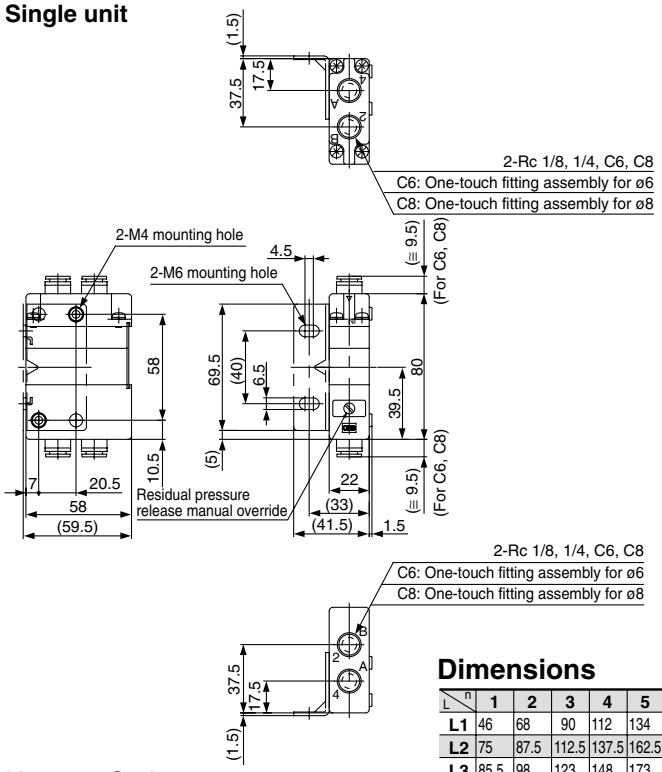

### Specifications

| | |
|---|---|
| Maximum operating pressure | 0.8 MPa |
| Minimum operating pressure | 0.15 MPa |
| Ambient and fluid temperature | –5 to 50°C |
| Flow characteristics: C | 3.0 dm³/(s·bar) |
| Max. operating frequency | 180 c.p.m |

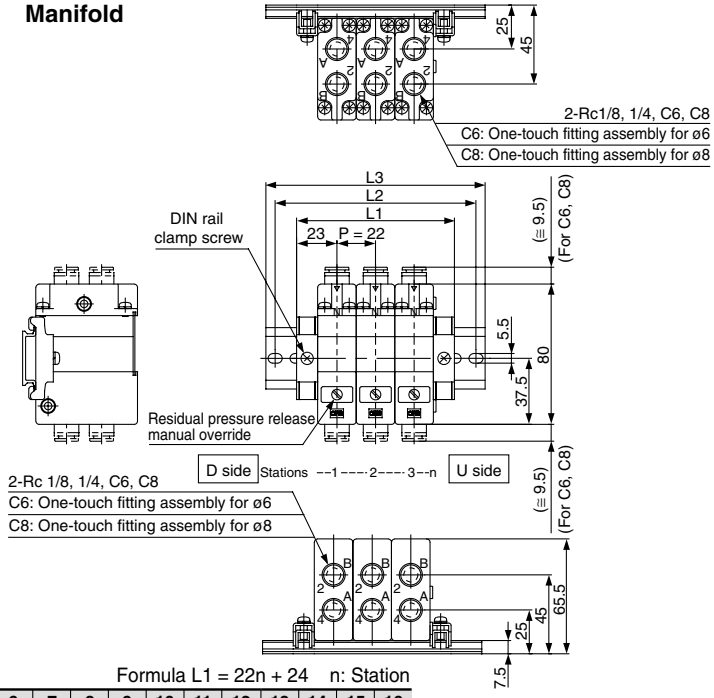
Note) Based on JIS B 8375-1981 (Supply pressure: 0.5 MPa)

## Dimensions

### Single unit




### Manifold



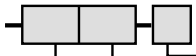

### Dimensions

Formula L1 = 22n + 24 n: Station

| L \ n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 | 46 | 68 | 90 | 112 | 134 | 156 | 178 | 200 | 222 | 244 | 266 | 288 | 310 | 332 | 354 | 376 |
| L2 | 75 | 87.5 | 112.5 | 137.5 | 162.5 | 175 | 200 | 225 | 250 | 262.5 | 287.5 | 312.5 | 337.5 | 362.5 | 375 | 400 |
| L3 | 85.5 | 98 | 123 | 148 | 173 | 185.5 | 210.5 | 235.5 | 260.5 | 273 | 298 | 323 | 348 | 373 | 385.5 | 410.5 |

## How to Order

### Double check block



**IN side port size**

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

**OUT side port size**

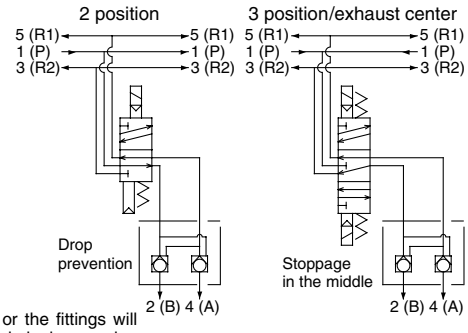
| | |
|---|---|
| 01 | Rc 1/8 |
| 02 | Rc 1/4 |
| C6 | One-touch fitting for ø6 |
| C8 | One-touch fitting for ø8 |

**Option**

| | |
|---|---|
| Nil | None |
| F | With bracket |
| D | DIN rail mount type (for manifold) |
| N | Name plate |

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

**<Example>**




### Manifold VVQ2000-FPG-06

**Stations**

| | |
|---|---|
| 01 | 1 station |
| ⋮ | ⋮ |
| 16 | 16 stations |

<Ordering Example>
VVQ2000-FPG-06····6 stations manifold
∗VQ2000-FPG-C6C6-D: 3 sets } Double check
∗VQ2000-FPG-C8C8-D: 3 sets } block

## ⚠ 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 double check block, proper tightening torque for screws is as shown at the right.

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

- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.
- If exhaust side of double check block is narrowed down too much, intermediate stopping accuracy will be decreased.

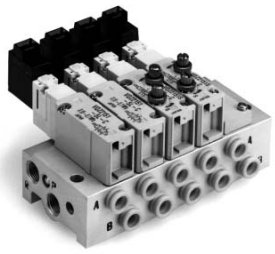
### Bracket Assembly

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

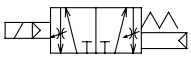
Note) It is the tightening torque for mounting a bracket for the perfect block.

## Compact Body Type with Speed Controller: For VQZ2000 Only

- Speed controllers 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.

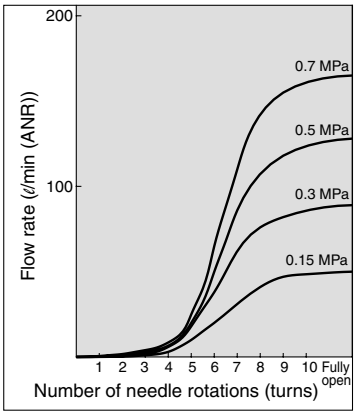


**JIS Symbol**



(Single)

### Flow Characteristics




Note 1) Valve with built-in speed controls 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

| Number of solenoids | | Model | | Flow characteristics 1 → 4/2 (P → A/B) C [dm³/(s·bar)] | b | Cv | Flow characteristics 4/2 → 5/3 (A/B → EA/EB) C [dm³/(s·bar)] | b | Cv | Response time (ms) (1) Standard: 1W | High pressure: 1W Low wattage: 0.5 W | AC | (2) Weight (g) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 position | Single | Metal (Without speed controller) | VQZ2150-□-C | 0.74 | 0.19 | 0.17 | 0.63 | 0.19 | 0.16 | 12 or less | 15 or less | 29 or less | 40 |
| | | Rubber seal (Without speed controller) | VQZ2151-□-C | 1.2 | 0.17 | 0.26 | 1.0 | 0.20 | 0.24 | 15 or less | 20 or less | 36 or less | |
| | | Rubber seal (With speed controller) | VQZ2151S-□-C | 1.2 | 0.13 | 0.27 | 0.40 | 0.25 | 0.10 | 15 or less | 20 or less | 36 or less | 44 |
| | Double | Metal (Without speed controller) | 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 (Without speed controller) | VQZ2251-□-C | 1.2 | 0.17 | 0.26 | 1.0 | 0.20 | 0.24 | 15 or less | 20 or less | 20 or less | |
| | | Rubber seal (With speed controller) | VQZ2251S-□-C | 1.2 | 0.13 | 0.27 | 0.40 | 0.25 | 0.10 | 15 or less | 20 or less | 20 or less | 58 |
| 3 position | Closed center | Metal (Without speed controller) | VQZ2350-□-C | 0.47 | 0.23 | 0.11 | 0.41 | 0.28 | 0.10 | 20 or less | 26 or less | 40 or less | 54 |
| | | Rubber seal (Without speed controller) | VQZ2351-□-C | 0.53 | 0.42 | 0.15 | 0.62 | 0.31 | 0.16 | 25 or less | 33 or less | 47 or less | |
| | | Rubber seal (With speed controller) | VQZ2351S-□-C | 0.59 | 0.33 | 0.15 | 0.35 | 0.28 | 0.09 | 25 or less | 33 or less | 47 or less | 58 |
| | Exhaust center | Metal (Without speed controller) | VQZ2450-□-C | 0.50 | 0.29 | 0.12 | 0.65 | 0.13 | 0.15 | 20 or less | 26 or less | 40 or less | 54 |
| | | Rubber seal (Without speed controller) | VQZ2451-□-C | 0.53 | 0.42 | 0.15 | 1.1 | 0.16 | 0.24 | 25 or less | 33 or less | 47 or less | |
| | | Rubber seal (With speed controller) | VQZ2451S-□-C | 0.53 | 0.34 | 0.13 | 0.42 | 0.35 | 0.10 | 25 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 styles.
Note 2) Weight without sub-plate

## Manifold

**VV5QZ25C — 05 C4 C — D**

**Series**

| | |
|---|---|
| 2 | VQZ2000 |

**Manifold**

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

**Compact body**

**Stations**

| | |
|---|---|
| 02 | 2 stations |
| ⋮ | ⋮ |
| 20 | 20 stations |

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

| | |
|---|---|
| C3 | One-touch fitting for ø3.2 |
| C4 | One-touch fitting for ø4 |
| C6 | One-touch fitting for ø6 |
| 01 | Rc 1/8 |

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

**Option**

| | |
|---|---|
| Nil | None |
| D | DIN rail mounting style (With DIN rail in standard length) |
| DO Note) | DIN rail mounting style (Without DIN rail) |

Note) Order DIN rail separately. For DIN rail model number, refer to page 2-7-54.

## Valve model

**VQZ2 1 5 1 □ □ — 5 M □ — □ — C**

**Symbol**

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

**Body**

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

**Seal**

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

**Throttle valve**

| | |
|---|---|
| Nil | None |
| S Note) | With |

Note) Available with rubber seal valve only.

**Function**

| Symbol | Specifications | DC | AC |
|---|---|---|---|
| Nil | Standard | (1.0 W) ○ | ○ (2) |
| K (1) | High pressure (Metal seal only) | (1.0 W) ○ | — |
| Y | Low wattage type | (0.5 W) ○ | — |

**Coil voltage**

| | |
|---|---|
| 1 | 100 VAC (50/60 Hz) |
| 2 | 200 VAC (50/60 Hz) |
| 3 | 110 VAC (50/60 Hz) |
| 4 | 220 VAC (50/60 Hz) |
| 5 | 24 VDC |
| 6 | 12 VDC |
| 9 Note) | Other |

Note) For the special voltages, please consult with SMC.

**Compact body**

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

| Symbol | Port size |
|---|---|
| Nil | Without sub-plate |
| 01 | Rc 1/8 |

**Manual override**

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

**Electrical entry**

| | |
|---|---|
| G | Grommet (DC specifications) |
| L Note) | L plug connector with lead wire |
| LO Note) | L plug terminal without connector |
| M Note) | M plug connector with lead wire |
| MO Note) | M plug terminal without connector |

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

**Sub-plate Part No.**

VQZ2000C-S-01

**Blanking Plate Assembly**

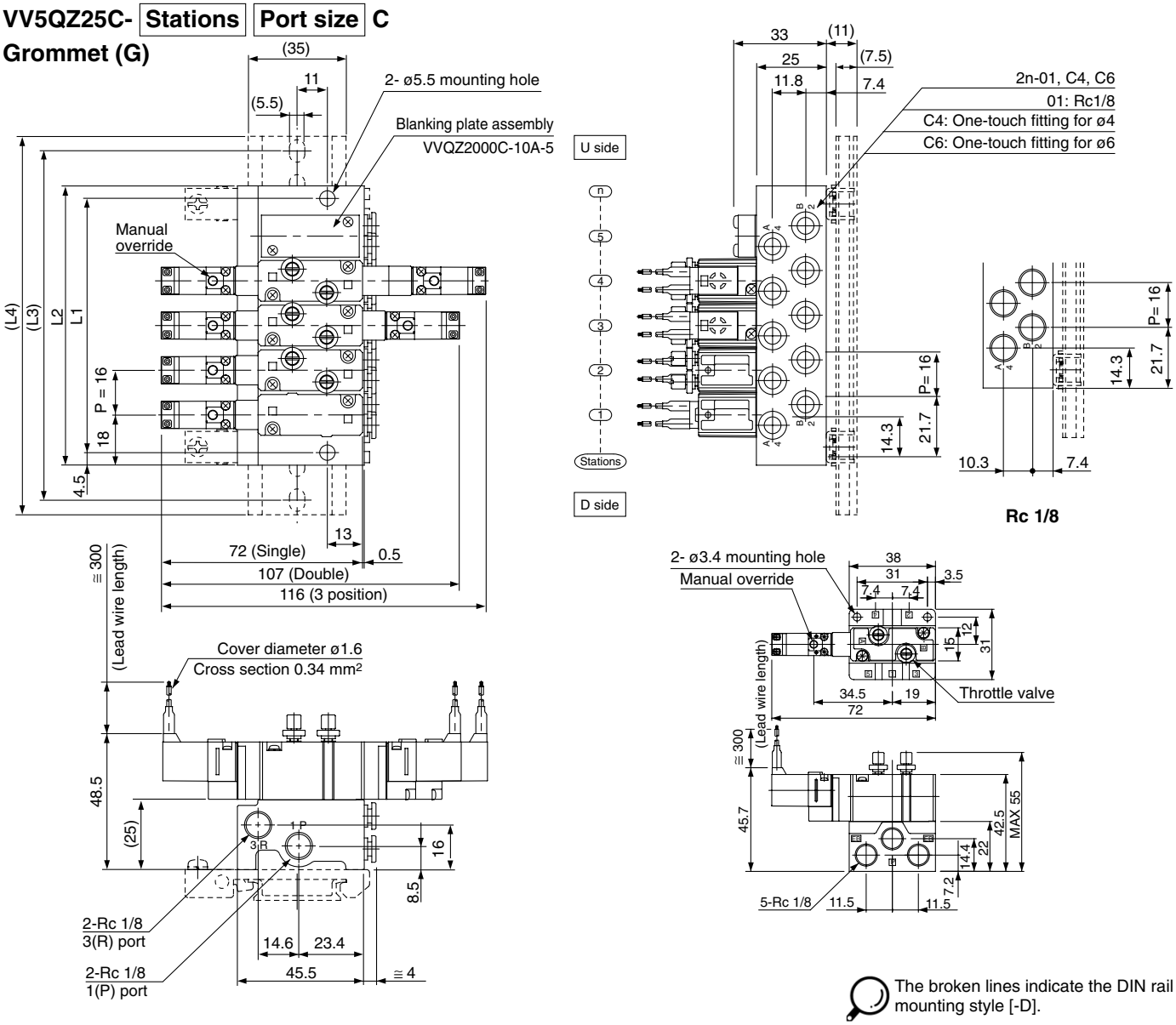
VVQZ2000C-10A-5

Note 1) Option
Note 2) For power consumption of AC type, refer to page 2-7-37.
Note 3) When two or more symbols are specified, indicate them alphabetically.

## Dimensions: VQZ2000

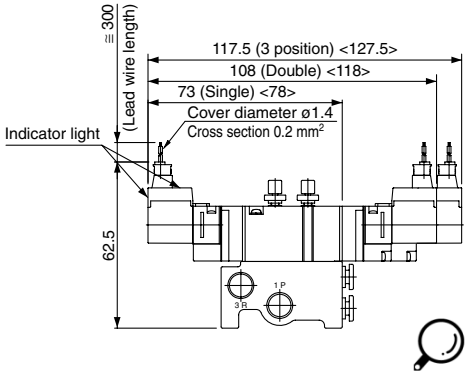
### VV5QZ25C- Stations Port size C

**Grommet (G)**



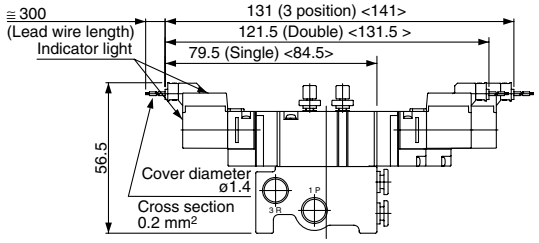

The broken lines indicate the DIN rail mounting style [-D].

### L plug connector (L)




< >: AC

### M plug connector (M)




< >: AC

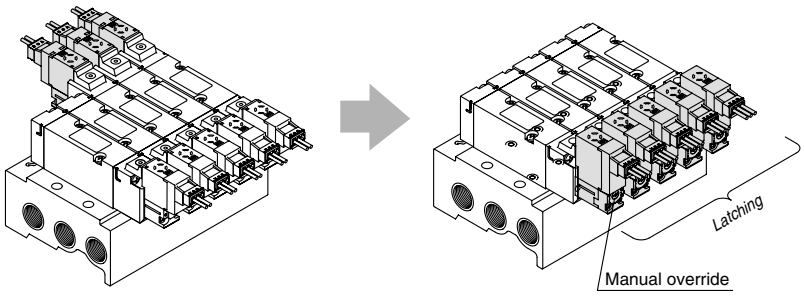
### Dimensions

Formula L1 = 16n + 11, L2 = 16n + 20 n: Stations (Maximum 20 stations)

| L \ n | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| L1 | 43 | 59 | 75 | 91 | 107 | 123 | 139 | 155 | 171 | 187 | 203 | 219 | 235 | 251 | 267 | 283 | 299 | 315 | 331 |
| L2 | 52 | 68 | 84 | 100 | 116 | 132 | 148 | 164 | 180 | 196 | 212 | 228 | 244 | 260 | 276 | 292 | 308 | 324 | 340 |
| L3 | 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 |
| L4 | 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 |

## One Side Solenoid (Latching solenoid)

The standard 2 position double solenoid valve has two solenoids, one on each end of the valve body.
The latching solenoid option (with self holding mechanism) functions in the same manner as a 2 position double solenoid but uses only one solenoid to do the job.




**Existing model** **One side solenoid (Latching solenoid)**



### How to Order Latching Solenoid Valves

**VQZ 1 2 5 0 L — 5 M —**

**Series**

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

**Type of actuation**
**Body**
**Seal**
**Latching**

| | |
|---|---|
| L | Latching double, Positive common specifications |
| LN | Latching double, Negative common specifications |

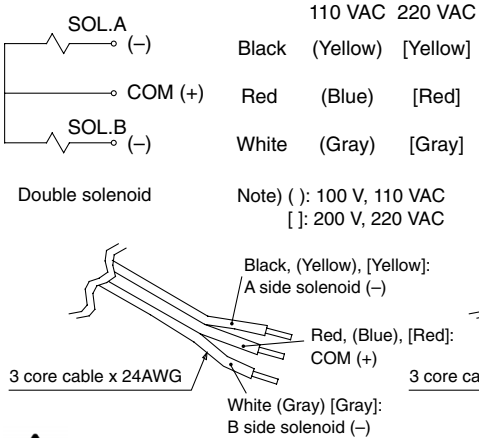
**Function** (2)
**Coil voltage**
**Electrical entry (L, M only)**
**Port size**

Note 1) Specifications are same as standard except for the function.
Note 2) K (High pressure type) and Y (Low wattage type) are not available.

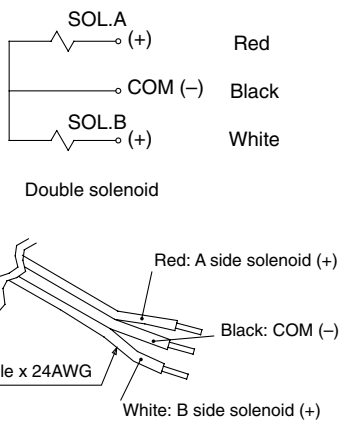
### Wiring

Lead wires are connected to the valve as shown below. Connect them with the power supply.

**Positive common specifications**

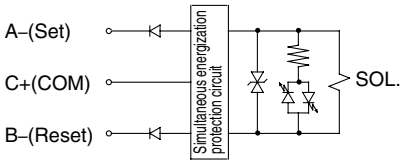



**Negative common specifications**

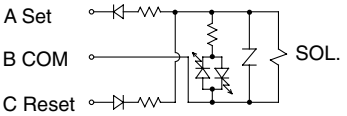



### Electrical Circuit

**Latching solenoid (DC)**




**Latching solenoid (AC)**




Note 1) • Set side in energized state: Lighting (Orange)
• Reset side in energized state: Lighting (Green)
• With miss-wiring preventing function (Stop diode)
• With surge absorption function (ZNR/Surge absorption diode)
Note 2) Flow direction: P → A {A (set) side in energized state}
Flow direction: A → R {B (reset) side in energized state}
Note 3) Negative common specifications is available.

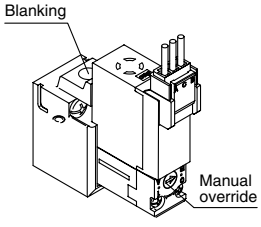
## ⚠Caution

### Cautions for Latching Use

1. Use a circuit in which the ON and OFF signals are not simultaneously energized.
2. Minimum energization time for self holding is 20 ms.
3. Avoid using the latching solenoid valves in environment where impacts or collisions (30/150 m/s² or more) exist. Also, do not use in places where the strong magnetic fields are present.
4. Even though the armature in the solenoid of this valve is held on to B side, ON position (Reset), verify either A side, ON position or B side, ON position by energizing prior to use.
5. Please consult with SMC for extended energization applications.

### Manual Override

The manual override is on the pilot valve for latching solenoid valves. Besides, manual on the main body cannot be used.




- If the manual override is turned by 180° clockwise and the ▶ mark is adjusted to A, then pushed in the direction of an arrow (⬅), it will be locked in the set condition. (passage P → A)
- If the manual override is turned by 180° counterclockwise and the ▶ mark is adjusted to B, then pushed in the direction of an arrow (⬅), it will be back to the reset condition. (passage P → B).
(It is in the reset state at the time of shipment.)

## ⚠Caution

Do not apply excessive torque when turning the locking type manual override. (0.1 N·m or less)

# Option

## External Pilot Specifications

The external pilot specifications are 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 specifications [R] to the part number.

### How to Order Manifold

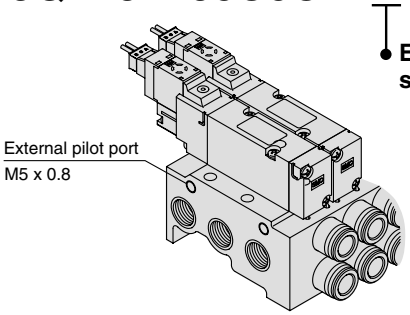
**VQZ2150R—5M—02**

**External pilot specifications**

### How to Order Manifold

**VV5QZ25—06C6C—R**

**External pilot specifications**




### Pressure Specifications

| Series | | VQZ1000/2000/3000 | | |
|---|---|---|---|---|
| | | 2 position single | 2 position double | 3 position |
| External pilot pressure range Note) | Metal seal | 0.1 to 0.7 MPa | Only VQZ3000, 3 position 0.15 to 0.7 MPa | |
| | Rubber seal | 0.15 to 0.7 MPa | 0.1 to 0.7 MPa | 0.2 to 0.7 MPa |
| Operating pressure range Note) | | –100 kPa to 0.7 MPa | | |

Note) In the 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 Option Thread

Inch sizes of One-touch fittings and NPT, NPTF and G thread are available.

### How to Order Manifold

**VV5QZ15—08 N7 T C—N**

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

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

**Cylinder port**

| Symbol | | N1 | N3 | N7 | N9 | N11 | NM(1) | M5 | 01 | 02 |
|---|---|---|---|---|---|---|---|---|---|---|
| Applicable tubing O.D. | | ø1/8" | ø5/32" | ø1/4" | ø5/16" | ø3/8" | Mixed | M5 threads | 1/8 thread | 1/4 thread |
| Cylinder port | VQZ1000 | ● | ● | ● | — | — | ● | ● | — | — |
| | VQZ2000 | — | ● | ● | ● | — | ● | — | ● | — |
| | VQZ3000 | — | — | ● | ● | ● | ● | — | — | ● |

Note 1) Mixing One-touch fittings and thread types is impossible.
Note 2) Matric sizes of One-touch fittings (C□) are also available.

## International Thread Standards Other than Rc

Rc specifications are standard for all ports, however, NPT, NPTF and G are available for international markets.
Add the appropriate symbol following the port size in the standard part number.

### How to Order Valves

**VQZ2151—5M—02 T**

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

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

## Dusttight/Low Jetproof Type (IP65)

DIN terminal is available with Dusttight/Low jetproof (IP65) type.

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

**VQZ3151—5YZB W—03**

**IP65 compliant**

| | |
|---|---|
| Nil | No (Standard) |
| W Note) | Compliant |

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

# Replacement Parts

## One-touch Fitting Assemnly (For cylinder port)

| Model \ Fitting size | C3 | C4 | C6 | C8 | C10 |
|---|---|---|---|---|---|
| **VQZ1000** | VVQ1000-50A-C3 | VVQ1000-50A-C4 | VVQ1000-50A-C6 | — | — |
| **VQZ2000** | — | VVQ1000-51A-C4 | VVQ1000-51A-C6 | VVQ1000-51A-C8 | — |
| **VQZ3000** | — | — | VVQ2000-51A-C6 | VVQ2000-51A-C8 | VVQ2000-51A-C10 |

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

## <Plug connector assembly>

**DC positive common**
• **Single**
**AXT661-14A-** □
• **Latching**
**AXT661-13A-** □
**DC (–COM)**
• **Latching**
**AXT661-13AN-** □
**For 100 V, 110 VAC**
• **Single**
**AXT661-31A-** □
• **Latching**
**AXT661-32A-** □
**For 200 V, 220 VAC**
• **Single**
**AXT661-34A-** □
• **Latching**
**AXT661-35A-** □
**Only connector and sockets (3 pcs.)**
**AXT661-12A**

### Lead wire length

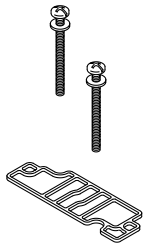
| | |
|---|---|
| **Nil** | 300 mm |
| **6** | 600 mm |
| **10** | 1000 mm |
| **20** | 2000 mm |
| **30** | 3000 mm |
| **50** | 5000 mm |

Standard wire length of valve with plug connector is 300 mm.
When requiring valve with 600 mm length lead wire specify the model number of valve without plug connector and plug connector assembly.

## Gasket and Screw Assembly

| | Part no. |
|---|---|
| **VQZ1000** | VQZ1000-GS-5 |
| **VQZ2000** | VQZ2000-GS-5 |
| **VQZ3000** | VQZ3000-GS-5 |

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



## <Pilot valve assembly>

**VQ11 1 □ — 5 G — □**

### Series

| | |
|---|---|
| **1** | VQZ1000/2000/3000 |
| **0** | Latching type |

### Function

| Symbol | Specifications | DC | AC |
|---|---|---|---|
| **Nil** | Standard | (1.0 W) ○ | ○ |
| **K** (1) | High pressure (Metal seal only) | (1.0 W) ○ | — |
| **Y** | Low wattage type | (0.5 W) ○ | — |
| **L** (3) | Latching type | (1.0 W) ○ | ○ |
| **N** (4) | Negative common type | ○ | — |

Note 1) Option
Note 2) When two or more symbols are specified, indicate them alphabetically.
Note 3) K (High pressure) and Y (Low wattage) are not available. Electrical entry: L/M plug connector only.
Note 4) Applicable to latching type.

### Coil voltage

| | |
|---|---|
| **1** | 100 VAC (50/60 Hz) |
| **2** | 200 VAC (50/60 Hz) |
| **3** | 110 VAC (50/60 Hz) |
| **4** | 220 VAC (50/60 Hz) |
| **5** | 24 VDC |
| **6** | 12 VDC |
| **9** Note) | Other |

Note) For the special voltages, please consult with SMC.

### 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 |

### Electrical entry

| Symbol | Electrical entry | Light/Surge voltage suppressor |
|---|---|---|
| **G** | Grommet (DC specifications) | None |
| **L** | L plug connector with lead wire | Yes |
| **LO** | L plug terminal without connector | |
| **M** | M plug connector with lead wire | |
| **MO** | M plug terminal without connector | |
| **Y** Note) | DIN terminal | None |
| **YO** Note) | DIN terminal without connector | |
| **YZ** Note) | DIN terminal with light/surge voltage suppressor | Yes |
| **YS** Note) | DIN terminal with surge voltage suppressor | Yes (W/o indicator light) |
| **YOS** Note) | DIN terminal with surge voltage suppressor, without connector | Yes (W/o indicator light) |

Note) DIN is applicable to VQZ2000/3000.

## Sub-plate

| Model | Sub-plate part no. |
|---|---|
| **VQZ1000** | VQZ1000-S-01 |
| **VQZ2000** | VQZ2000-S- 01 [Rc 1/8] 02 [Rc 1/4] |
| **VQZ3000** | VQZ3000-S- 02 [Rc 1/4] 03 [Rc 3/8] |