3 Port Solenoid Valve
Series VQ100

Outstandingly high speed, stable response, and long service life.
ON: 3.5 ms, OFF: 2 ms, Dispersion accuracy ±1 ms
(With light/surge voltage suppressor; supply pressure 0.5 MPa)
200 million cycles or more (Factors determined in a life test by SMC)

Compact yet provides a large flow capacity
Body width: 9.8 mm
C: 0.055 dm³/(s·bar) (Standard, high pressure type)
C: 0.14 dm³/(s·bar) (Large flow type)

Option
External non-leak
Latching
Negative COM
AC
Normally open
Vacuum

Copper-free
The fluid contacting section is copper-free and the standard style can be used as it is.

Wide variations of wiring
Manifold
Plug-in unit manifold
Plug lead unit manifold
Single Valve Unit
L plug connector
M plug connector
Grommet
**Precautions**

Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 4-18-2.

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### Manual Override Operation

<table>
<thead>
<tr>
<th>Warning</th>
</tr>
</thead>
<tbody>
<tr>
<td>If the manual override is manipulated, since any connected equipment will be activated, make sure to be done only after no danger is confirmed.</td>
</tr>
</tbody>
</table>

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

![Image of non-locking push type]

- It is turned ON by pushing the button in the direction indicated by the arrow until it hits the end and is turned OFF by releasing the button.

- **Locking type (Tool required) <Option>**

![Image of locking type]

- If the manual override is turned clockwise and the ▲ mark is adjusted to 1, it will be locked in the ON state.
- If the manual override is turned counterclockwise and ▲ mark is adjusted to 0, locking will be released and the manual override will return.

Note) Ensure the locking type manual override is unlocked before using.

- **Push-locking type (Tool required) <Latching type>**

![Image of push-locking type]

- If the manual override is turned clockwise and the ▲ mark is adjusted to 1, it will be backed to the reset condition. (Passage P → A)
- If the manual override is turned counterclockwise and ▲ mark is adjusted to 0, it will be back to the reset condition. (Passage A → R) (Reset state at the time of shipment.)

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### Caution

**Attaching and detaching connectors**

- To attach a connector, hold the lever and connector unit between your fingers and insert straight onto the pins of the solenoid valve so that the lever's pawl is pushed into the groove and locks.
- To detach a connector, remove the pawl from the groove by pushing the lever downward with your thumb, and pull the connector straight out.

Note) GENTLY pull the lead wire, otherwise it may cause contact failure or disconnection.

**Crimping of lead wires and sockets**

Peel 3.2 to 3.7 mm of the tip of lead wire, enter the core wires neatly into a socket and crimp it with a special crimp tool. Be careful so that the cover of lead wire does not enter into the crimping part. (Crimping tool part no.: DXT170-75-1)

![Image of crimping]

**Attaching and detaching lead wires with sockets**

- **Attaching**
  - Insert the sockets into the square holes of the connector (with A, C, and B indication) and continue to push the sockets all the way in until the 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**
  - Pull and detach the lead wire, pressing in on the end of the hook of the socket through the side hole using a stick with thin end (about 1 mm). To reuse the socket, extend the hook outward.

---

**Warning**

- It is turned ON by pushing the button in the direction indicated by the arrow until it hits the end and is turned OFF by releasing the button.

---

**Caution**

- If the manual override is turned clockwise and ▲ mark is adjusted to 1, it will be locked in the ON state.
- If the manual override is turned counterclockwise and ▲ mark is adjusted to 0, locking will be released and the manual override will return.

- If the manual override is turned clockwise and ▲ mark is adjusted to 1, it will be backed to the reset condition. (Passage P → A)
- If the manual override is turned counterclockwise and ▲ mark is adjusted to 0, it will be back to the reset condition. (Passage A → R) (Reset state at the time of shipment.)

---

**Important Note:**

Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 4-18-2.

---

**Warning**

- The manual override is manipulated, since any connected equipment will be activated, make sure to be done only after no danger is confirmed.

---

**Caution**

- Gently pull the lead wire, otherwise it may cause contact failure or disconnection.

---

**Warning**

- It is turned ON by pushing the button in the direction indicated by the arrow until it hits the end and is turned OFF by releasing the button.

---

**Caution**

- It is turned ON by pushing the button in the direction indicated by the arrow until it hits the end and is turned OFF by releasing the button.

---

**Warning**

- It is turned ON by pushing the button in the direction indicated by the arrow until it hits the end and is turned OFF by releasing the button.

---

**Caution**

- Gently pull the lead wire, otherwise it may cause contact failure or disconnection.
Wiring specifications

- Lead wires are connected as follows. Connect them to the power supply side.

**DC positive common**

- A (–) Black
- (+) Red

**DC negative common**

- (–) Black
- (+) Red

**AC**

- (+) Red
- (–) White

**Note** Single type: No polarity

---

**How to order connector assembly**

**DC positive common**

- Single
  - AXT661-14A-
  - Latching
  - AXT661-13A-

**DC negative common**

- Single
  - AXT661-13AN-
  - Latching
  - AXT661-31A-
  - AXT661-32A-
  - 200 VAC
    - Single
      - AXT661-34A-
      - Latching
        - AXT661-35A-
  - Only connector and sockets (3 pcs.)
    - AXT661-12A

**Lead wire length**

- Nil
- 300 mm
- 600 mm
- 1000 mm
- 2000 mm
- 3000 mm

**Plug connector lead wire length**

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

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**Precautions**

Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 4-18-2.

**Caution**

**How to Use Plug Connector**

**Light/Surge Voltage Suppressor**

**Caution**

For latching type, set energizing side and reset the energizing side are indicated with orange and green respectively.

+ ( ) and the broken line: Large flow type

**Note** Single type:

- No polarity

**Note 1)** Single: No polarity

- ON: Orange light lights.

**Note 2)** Setting side energizing: Orange light lights.

- Resetting side energizing: Green light lights.

- With wrong wiring preventing ability (stop diode)

- With surge voltage suppressor (ZNR/Surge absorbing diode)

**Note 3)** A (set) side energizing: A → L

**Note 4)** Negative common specifications is applicable.

**Latching Type**

The latching solenoid is equipped with a self-holding mechanism, which permits a movable iron core in the solenoid to hold the "set" position. Therefore there is no need to energize continuously.

**Special Cautions for Latching Solenoid**

1. Make sure ON and OFF signals are not energized simultaneously.
2. 10 ms energizing time is necessary for self-holding.
3. Please consult with SMC if using in a place with high vibrations (10 G or more) or high magnetic fields.
4. Even though this valve is held on to reset position (passage: A → R), it may switch to the set position during transportation or due to impact when mounting valves, etc. Therefore, check the initial position by means of power supply or manual override prior to use.

**Latching Type**

- Single
  - A (–) set
  - (+) A
  - (–) R
  - B (–) Reset

- Latching
  - A (+) COM
  - (–) Black
  - (+) White
  - B (–) Reset

- Only connector and sockets (3 pcs.)
  - AXT661-12A

**Passage**

- A-C
  - ON (Set): P → A
  - ON (Reset): A → R

**Indicator light**

- A-C ON
  - P → A: Orange
  - OFF: A → R: —

**Series VQ100**
**Precautions**

Be sure to read before handling. For Safety Instructions and Solenoid Valve Precautions, refer to page 4-18-2.

### How to Use Circular Connector

(For plug-in manifold: For VV3Q11)

**Caution**

1. Attaching and detaching connectors

If the manual override is manipulated, since any connected equipment will be activated, make sure to be done only after no danger is confirmed.

![Circular Connector Diagram](image)

#### 2. Wiring specifications

**Multi-connector pin arrangement**

<table>
<thead>
<tr>
<th>Pin no.</th>
<th>Positioning key</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>COM</td>
</tr>
<tr>
<td>2</td>
<td>COM</td>
</tr>
<tr>
<td>3</td>
<td>S0L</td>
</tr>
<tr>
<td>4</td>
<td>S0L</td>
</tr>
<tr>
<td>5</td>
<td>S0L</td>
</tr>
<tr>
<td>6</td>
<td>S0L</td>
</tr>
<tr>
<td>7</td>
<td>S0L</td>
</tr>
<tr>
<td>8</td>
<td>S0L</td>
</tr>
<tr>
<td>9</td>
<td>S0L</td>
</tr>
<tr>
<td>10</td>
<td>S0L</td>
</tr>
<tr>
<td>11</td>
<td>S0L</td>
</tr>
<tr>
<td>12</td>
<td>S0L</td>
</tr>
<tr>
<td>13</td>
<td>S0L</td>
</tr>
<tr>
<td>14</td>
<td>S0L</td>
</tr>
<tr>
<td>15</td>
<td>S0L</td>
</tr>
<tr>
<td>16</td>
<td>S0L</td>
</tr>
<tr>
<td>17</td>
<td>S0L</td>
</tr>
<tr>
<td>18</td>
<td>S0L</td>
</tr>
<tr>
<td>19</td>
<td>COM</td>
</tr>
<tr>
<td>20</td>
<td>COM</td>
</tr>
</tbody>
</table>

**Terminal No./Lead Wire Color**

<table>
<thead>
<tr>
<th>Terminal no.</th>
<th>Lead wire color</th>
<th>Dot marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>—</td>
</tr>
<tr>
<td>2</td>
<td>Brown</td>
<td>—</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>—</td>
</tr>
<tr>
<td>4</td>
<td>Orange</td>
<td>—</td>
</tr>
<tr>
<td>5</td>
<td>Yellow</td>
<td>—</td>
</tr>
<tr>
<td>6</td>
<td>Pink</td>
<td>—</td>
</tr>
<tr>
<td>7</td>
<td>Blue</td>
<td>—</td>
</tr>
<tr>
<td>8</td>
<td>Purple</td>
<td>White</td>
</tr>
<tr>
<td>9</td>
<td>Gray</td>
<td>Black</td>
</tr>
<tr>
<td>10</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>11</td>
<td>White</td>
<td>Red</td>
</tr>
<tr>
<td>12</td>
<td>Yellow</td>
<td>Red</td>
</tr>
<tr>
<td>13</td>
<td>Orange</td>
<td>Red</td>
</tr>
<tr>
<td>14</td>
<td>Yellow</td>
<td>Black</td>
</tr>
<tr>
<td>15</td>
<td>Pink</td>
<td>Black</td>
</tr>
<tr>
<td>16</td>
<td>Blue</td>
<td>White</td>
</tr>
<tr>
<td>17</td>
<td>Purple</td>
<td>—</td>
</tr>
<tr>
<td>18</td>
<td>Gray</td>
<td>—</td>
</tr>
<tr>
<td>19</td>
<td>Orange</td>
<td>Black</td>
</tr>
<tr>
<td>20</td>
<td>Red</td>
<td>White</td>
</tr>
</tbody>
</table>

### How to Connect/Disconnect DIN Rail

**Caution**

Removal

1. Loosen the clamp screw of the end plate on both sides.
2. Lift the (a) side of the manifold off the DIN rail and slide it in the direction of the (2) side.

![DIN Rail Diagram](image)

Mounting

1. Hook side (b) of the manifold base on the DIN rail.
2. Press down side (a) and mount the end plate on the DIN rail. Tighten the clamp screw on the side.

Proper tightening torque of thread: 0.8 to 1.2 N·m

### How to Calculate the Flow Rate

For obtaining the flow rate, refer to page 4-1-6.
How to Order Valves

Series VQ 3 port valve

Series VQ

Type of actuation

1 N.C. (Normally closed)
2 N.O. (Normally open)

Note) Normally open type is available only with standard type. (1 W)

Function

<table>
<thead>
<tr>
<th>Nil</th>
<th>Standard type (1 W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>High pressure type (1.5 W)</td>
</tr>
<tr>
<td>Y</td>
<td>Low wattage type (0.5 W)</td>
</tr>
<tr>
<td>L</td>
<td>Latching type, Positive COM</td>
</tr>
<tr>
<td>N</td>
<td>Latching type, Negative COM</td>
</tr>
<tr>
<td>U</td>
<td>Large flow type</td>
</tr>
</tbody>
</table>

* Option

Note) Except latching and large flow type.

Coil rated voltage

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

For the special voltages, please consult with SMC.

Manual override

<table>
<thead>
<tr>
<th>Nil</th>
<th>Non-locking push type (Tool required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Latching type: Push-locking type (Tool required)</td>
</tr>
</tbody>
</table>

* Option

Note) Latching manual override: Push-locking type only.

Electrical entry

| F   | Plug-in, With light/surge voltage suppressor (Only for plug-in manifold) |
| L   | L plug connector, With lead wire With light/surge voltage suppressor |
| LO  | L plug connector, Without connector With light/surge voltage suppressor |
| M   | M plug connector, With lead wire With light/surge voltage suppressor |
| MO  | M plug connector, Without connector With light/surge voltage suppressor |
| G   | Grommet |

Note) Grommet: No latching type, AC and large flow

For details about the applicable products conforming to international standards, visit us at www.smcworld.com.

Note) Normally open type is available only with standard type. (1 W)
### Standard Specifications

<table>
<thead>
<tr>
<th>Item</th>
<th>Type</th>
<th>Standard type (1 W)</th>
<th>High pressure type (1.5 W)</th>
<th>Low wattage type (0.5 W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve construction</td>
<td>3 port direct operated poppet (NC)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluid</td>
<td>Air/Inert gas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum operating pressure</td>
<td>0.7 MPa</td>
<td>0.8 MPa</td>
<td>0.7 MPa</td>
<td></td>
</tr>
<tr>
<td>Minimum operating pressure</td>
<td>0 MPa (–0.1 MPa)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow characteristics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 → 2</td>
<td>C(\text{dm}^3/\text{(s·bar)})</td>
<td>0.055</td>
<td>0.042</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>0.22</td>
<td>0.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cv</td>
<td>0.014</td>
<td>0.011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 → 3</td>
<td>C(\text{dm}^3/\text{(s·bar)})</td>
<td>0.083</td>
<td>0.045</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>0.28</td>
<td>0.28</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cv</td>
<td>0.021</td>
<td>0.012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Response time (1)</td>
<td>ON: 3.5 ms, OFF: 2 ms</td>
<td>ON: 3.5 ms, OFF: 2.5 ms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>–10 to 50°C (1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual override</td>
<td>Non-locking push type/Locking type (Tool required)(2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Unrestricted</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shock/Vibration resistance (4)</td>
<td>150/30 m/s²</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dustproof</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>12.6 g (L/M plug connector, Without sub-plate)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coil rated voltage</td>
<td>DC 24 V, 12 V</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allowable voltage fluctuation</td>
<td>±10% of rated voltage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coil insulation type</td>
<td>Class B or equivalent</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power consumption (Current)</td>
<td>DC 1 W (42 mA) 1.5 W (63 mA) 0.5 W (21 mA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electrical entry</td>
<td>Grommet Plug-in, L plug connector, M plug connector (With light/surge voltage suppressor)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Clean Series**

Clean series is available for both standard and option specifications.

**How to order manifold**

10-VQ110

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**Notes**

1) Based on JIS B 8374-1993. With light/surge voltage suppressor (Use clean air), Dispersion accuracy ±1 ms
2) Use dry air to prevent condensation when operating at low temperatures.
3) Locking style: Option
4) 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)
5) 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)

In vacuum applications, use 10- Clean Series which can use with 3 (R) port vacuum and 1 (P) port vacuum release pressure. (Differential pressure between 3 (P) and 1 (P) is up to the maximum operating pressure for each type.)
## Option

<table>
<thead>
<tr>
<th>Item</th>
<th>Type</th>
<th>Latching type</th>
<th>AC type</th>
<th>Large flow type</th>
<th>Normally open type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>VQ110L-□</td>
<td>VQ110□</td>
<td>VQ110U-□</td>
<td>VQ120-□</td>
<td></td>
</tr>
<tr>
<td>Maximum operating pressure</td>
<td>0.7 MPa</td>
<td>0.6 MPa</td>
<td>0.5 MPa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>0 MPa (---100 MPa)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flow characteristics</td>
<td>b</td>
<td>0.27</td>
<td>0.26</td>
<td>0.11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cv</td>
<td>0.011</td>
<td>0.036</td>
<td>0.009</td>
<td></td>
</tr>
<tr>
<td>1 → 2 (3 → 2)</td>
<td>C(3)(10b)</td>
<td>0.042</td>
<td>0.14</td>
<td>0.04</td>
<td></td>
</tr>
<tr>
<td>Response time (3)</td>
<td>5 ms or less</td>
<td>15 ms or less</td>
<td>5 ms or less</td>
<td>5 ms or less</td>
<td></td>
</tr>
<tr>
<td>Power consumption (Current)</td>
<td>24 VDC</td>
<td>1 W (42 mA)</td>
<td>—</td>
<td>0.7 W (29 mA)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 VDC</td>
<td>1 W (83 mA)</td>
<td>—</td>
<td>0.7 W (88 mA)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100 VAC</td>
<td>0.6 VA (6 mA)</td>
<td>0.5 VA (5 mA)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td></td>
<td>110 VAC</td>
<td>0.65 VA (5.9 mA)</td>
<td>0.55 VA (5 mA)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td></td>
<td>200 VAC</td>
<td>1.2 VA (6 mA)</td>
<td>1.0 VA (5 mA)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td></td>
<td>220 VAC</td>
<td>1.3 VA (5.9 mA)</td>
<td>1.1 VA (5 mA)</td>
<td>—</td>
<td></td>
</tr>
<tr>
<td>Electrical entry (4)</td>
<td>Plug-in, L plug connector, M plug connector (With light/surge voltage suppressor)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Note:**
- **Note 1:** Grommet is available only for normally open type (without light/surge voltage suppressor).
- **Note 2:** Normally open type is available only with 1 W DC specifications.
- **Note 3:** Rated voltage is 100 VAC, 200 VAC, 220 VAC.
- **Note 4:** In vacuum applications, use 1 W DC specifications.
- **Note 5:** In the case of 1 (P) port vacuum, and 3 (R) port vacuum release, use VQ120 (Normally open type). In this case, 10- is not required.
- **Note 6:** ( ) values inside denote the air passage for normally open type.
**Construction**

![Diagram of a 3 Port Solenoid Valve Series VQ100](image)

**(For N.C. valve)**

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### Component Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Solenoid coil</td>
<td>Resin</td>
</tr>
<tr>
<td>2</td>
<td>Body</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>3</td>
<td>Fixed iron core</td>
<td>Stainless steel, Resin</td>
</tr>
<tr>
<td>4</td>
<td>Movable iron core assembly</td>
<td>Stainless steel, Resin</td>
</tr>
<tr>
<td>5</td>
<td>Return spring</td>
<td>Stainless steel</td>
</tr>
<tr>
<td>6</td>
<td>Poppet</td>
<td>NBR</td>
</tr>
<tr>
<td>7</td>
<td>Round head combination screw</td>
<td>Carbon steel</td>
</tr>
<tr>
<td>8</td>
<td>Interface gasket</td>
<td>NBR</td>
</tr>
</tbody>
</table>

### Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Sub-plate</td>
<td>ZDC</td>
<td>AXT662-1-1 (1: M5, 2: M3)</td>
</tr>
</tbody>
</table>

Optional parts
- Gasket, screw: VQ100-GS-5

Note) 1 set includes: 1 gasket and 2 screws.

Purchasing order is available in units of 10 pieces.
Series VQ100

How to Order Valves

VQ1 1 0 5 L M5

Series VQ
Compact 3 port valve
Type of actuation
1 N.C. (Normally closed)
2 N.O. (Normally open)
Note) Normally open type is available only with standard type. (1 W)

Dimensions

Grommet
VQ1□□□G□□-M5 (M3)

Note)
- ( ): M3
- Broken line: Locking type manual override
### Dimensions

#### L plug connector

**VQ1-0-□□□□□L□-M5 (M3)**

- **Lead wire color:** Black
- **Lead wire color:** Red

![Diagram of L plug connector]

- **2-ø2.7 Mounting hole**
- **Latching, AC, Large flow type**
- **Manual override**
- **Locking type manual override**

#### M plug connector

**VQ1-0-□□□□□M□-M5 (M3)**

- **Mounting hole**
- **Latching, AC, Large flow type**
- **Manual override**
- **Locking type manual override**

![Diagram of M plug connector]

- **( )**: M3
- **Broken line:** Latching, AC and large flow capacity
- **One dot chain line:** Locking type manual override and push-locking type manual override (latching)

---

**3 Port Solenoid Valve Series VQ100**

**V100**

**SY**

**SYJ**

**VK**

**VZ**

**VT**

**VP**

**VG**

**VP**

**S070**

**VQ**

**VRF**

**VQZ**

**VZ**

**VS**

**VFN**
**How to Order Manifold**

**Series VQ100**

**Applicable solenoid valve** (Plug-in type)  
VQ100

**Manifold base model no.**

- Plug-in unit

**Stations**

- 02: 2 stations
- 18: 18 stations

**Electrical entry**

- C: Multi-connector

**Lead wire entry direction**

- U: Top entry
- S: Side entry

**Cable length**

- 0: Without cable
- 1: With cable (1.5 m)
- 2: With cable (3 m)
- 3: With cable (5 m)

**Option**

- D: DIN rail mounted (With standard length of DIN rail)
- DO: DIN rail mounting style (Without DIN rail)

**Note:** Normally closed and normally open style cannot be mounted on the same manifold.

**Applicable solenoid valve (Plug-in type)**

- VQ100

**Series VQ100**

**How to Order Valves**

**Series VQ**

**Compact 3 port valve**

**Type of actuation**

- 1: Normally closed
- 2: Normally open

**Function**

- Nil: Standard type (1 W)
- H: High pressure type (1.5W)
- Y: Low wattage type (0.5 W)
- U: Large flow type

**Manual override**

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

**Electrical entry**

- F: Plug-in
t

**Coil rated voltage**

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

**Note:** Except large flow type.

**For the special voltages,** please consult with SMC.

---

**How to Order Manifold Assembly**

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

**Example:**

Plug-in unit manifold with cable (3 m)

- VV3Q11-05CU2--1 set Manifold base part no.
- VQ110-5F-----4 set Valve part no.

- VVQ100-10A-1--1 set Blanking plate part no.

**Note:**

- Prefix the asterisk to the part nos. of the solenoid valve, etc.
- Enter in order starting from the first station on the D side.

**For DIN rail model number, refer to page 4-12-12.**
3 Port Solenoid Valve Series VQ100

Plug-in Unit (VV3Q11) Manifold with Multi-connector

The broken line indicates DIN rail mounting style (-D) and side entry connection (S).

### Dimensions

<table>
<thead>
<tr>
<th>L</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>52</td>
<td>62</td>
<td>72</td>
<td>82</td>
<td>92</td>
<td>102</td>
<td>112</td>
<td>122</td>
<td>132</td>
<td>142</td>
<td>152</td>
<td>162</td>
<td>172</td>
<td>182</td>
<td>192</td>
<td>202</td>
<td>212</td>
</tr>
<tr>
<td>L2</td>
<td>63</td>
<td>73</td>
<td>83</td>
<td>93</td>
<td>103</td>
<td>113</td>
<td>123</td>
<td>133</td>
<td>143</td>
<td>153</td>
<td>163</td>
<td>173</td>
<td>183</td>
<td>193</td>
<td>203</td>
<td>213</td>
<td>223</td>
</tr>
<tr>
<td>(L3)</td>
<td>83</td>
<td>93</td>
<td>103</td>
<td>113</td>
<td>123</td>
<td>133</td>
<td>143</td>
<td>153</td>
<td>163</td>
<td>173</td>
<td>183</td>
<td>193</td>
<td>203</td>
<td>213</td>
<td>223</td>
<td>233</td>
<td>243</td>
</tr>
<tr>
<td>(L4)</td>
<td>112.5</td>
<td>112.5</td>
<td>125</td>
<td>137.5</td>
<td>150</td>
<td>162.5</td>
<td>162.5</td>
<td>175</td>
<td>187.5</td>
<td>200</td>
<td>212.5</td>
<td>212.5</td>
<td>225</td>
<td>237.5</td>
<td>250</td>
<td>262.5</td>
<td>262.5</td>
</tr>
<tr>
<td>(L5)</td>
<td>123</td>
<td>123</td>
<td>135.5</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
<td>173</td>
<td>185.5</td>
<td>198</td>
<td>210.5</td>
<td>223</td>
<td>223</td>
<td>235.5</td>
<td>248</td>
<td>260.5</td>
<td>273</td>
<td>273</td>
</tr>
</tbody>
</table>

Formula: \( L1 = 10n + 32 \)
\( L2 = 10n + 43 \)

n: Stations (Maximum 18 stations)
**Series VQ100**

### How to Order Manifold

#### Applicable solenoid valve

(Plugs lead type)

<table>
<thead>
<tr>
<th>Series VQ100</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

#### Manifold base model no.

<table>
<thead>
<tr>
<th>Stations</th>
<th>02</th>
<th>2 stations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>20 stations</td>
</tr>
</tbody>
</table>

#### Port size and thread

<table>
<thead>
<tr>
<th>Nil</th>
<th>M5, Rc 1/8</th>
</tr>
</thead>
<tbody>
<tr>
<td>01N</td>
<td>NPT 1/8</td>
</tr>
<tr>
<td>01T</td>
<td>NPTF 1/8</td>
</tr>
<tr>
<td>01F</td>
<td>PF 1/8</td>
</tr>
</tbody>
</table>

* Only thread port size 1/8 type, (Type 2U, P/E port) has choice of thread.

### How to Order Manifold Assembly

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

<Example>

<table>
<thead>
<tr>
<th>Plug-in unit manifold</th>
</tr>
</thead>
<tbody>
<tr>
<td>VVQ100-05---------------1 set</td>
</tr>
<tr>
<td>VVQ100-05-10A-1 (7)-----4 set</td>
</tr>
<tr>
<td>VVQ100-10A-2 (5)-------1 set</td>
</tr>
</tbody>
</table>

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

### How to Order Valves

#### Series VQ

Compact 3 port valve

#### Type of actuation

| 1 | N.C. (Normally closed) |
| 2 | N.O. (Normally open) |

* Note) Normally open type is available only with standard type. (1 W)

#### Function

- **Nil**: Standard type (1 W)
- **H**: High pressure type (1.5 W)
- **V** (VAC): Low wattage type (0.5 W)
- **L**: Latching type, Positive COM
- **N**: Latching type, Negative COM
- **U**: Large flow type

* Option

Note) Except latching and large flow type.

#### Coil rated voltage

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

* For the special voltages, please consult with SMC.

#### Electrical entry

- **L**: L plug connector, With lead wire
  - With light/surge voltage suppressor
- **LO**: L plug connector, Without connector
  - With light/surge voltage suppressor
- **M**: M plug connector, With lead wire
  - With light/surge voltage suppressor
- **MO**: M plug connector, Without connector
  - With light/surge voltage suppressor

#### Note

- **G**: Grommet

* Note) Grommet: No latching type, AC and large flow
Plug Lead Unit Manifold (VV3Q12)

Dimensions

| L | n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| L1 | 23 | 33 | 43 | 53 | 63 | 73 | 83 | 93 | 103 | 113 | 123 | 133 | 143 | 153 | 163 | 173 | 183 | 193 | 203 | 213 |
| L2 | 17 | 27 | 37 | 47 | 57 | 67 | 77 | 87 | 97 | 107 | 117 | 127 | 137 | 147 | 157 | 167 | 177 | 187 | 197 | 207 |

Formula: L1 = 10n + 13, L2 = 10n + 7, n: Station (Maximum 20 stations)

Plug Lead Unit, Type U (Large Flow Type) Mounted Manifold (VV3Q12U)

Dimensions

| L | n | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| L1 | 31 | 41 | 51 | 61 | 71 | 81 | 91 | 101 | 111 | 121 | 131 | 141 | 151 | 161 | 171 | 181 | 191 | 201 | 211 | 221 |
| L2 | 17 | 27 | 37 | 47 | 57 | 67 | 77 | 87 | 97 | 107 | 117 | 127 | 137 | 147 | 157 | 167 | 177 | 187 | 197 | 207 |

Type L

<table>
<thead>
<tr>
<th>L1</th>
<th>n-M5 A port</th>
</tr>
</thead>
</table>

Type M

<table>
<thead>
<tr>
<th>L1</th>
<th>n-M5 x 0.8 A port</th>
</tr>
</thead>
</table>

For latching and AC

Type L

<table>
<thead>
<tr>
<th>W</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>35.1</td>
<td>43.5</td>
</tr>
<tr>
<td>44.8</td>
<td>38.9</td>
</tr>
</tbody>
</table>

Type M

<table>
<thead>
<tr>
<th>W</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>32.4</td>
<td>39.8</td>
</tr>
<tr>
<td>43.3</td>
<td>37.2</td>
</tr>
</tbody>
</table>

Latching type

| 100 VAC or more |
|---|---|
| 32.4 | 39.8 |
| 43.3 | 37.2 |

Voltage requirement
Series VQ100

Manifold Option

**Plug Assembly**

VQ100-12A-1

- **Part no.** VQ100-12A-1
- **L dimension** 1.5 m

- **Part no.** VQ100-12A-2
- **L dimension** 3 m

- **Part no.** VQ100-12A-3
- **L dimension** 5 m

**Cable Length**

<table>
<thead>
<tr>
<th>Part no.</th>
<th>L dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>VQ100-12A-1</td>
<td>1.5 m</td>
</tr>
<tr>
<td>VQ100-12A-2</td>
<td>3 m</td>
</tr>
<tr>
<td>VQ100-12A-3</td>
<td>5 m</td>
</tr>
</tbody>
</table>

**Blanking Plate Assembly**

VQ100-10A-1

Plug-in unit (VV3Q11) for manifold with multiple connectors

- **Part no.** VQ100-10A-1
- **L dimension** 1.5 m

VQ100-10A-2

Plug lead unit (VV3Q12) for manifold

- **Part no.** VQ100-10A-2
- **L dimension** 3 m

- **Part no.** VQ100-10A-3
- **L dimension** 5 m

**RVF 0.2 mm² 20 core**

- **Part no.** RP13A-12PS-20SC
- **Plug** RP13A-12PS-20SC
- **Female contact** RP19-SC-222
- **Vinyl multi-core Cable** VVRF 0.2 mm² 20 core

**VV3Q11 for Manifold with Multi-connector**

**<D side end plate assembly>**

- **Part no.** VVQ100-3A
- **Option**
  - Standard type
  - DIN rail mounting

**<U side end plate assembly>**

- **Part no.** VVQ100-2A
- **Option**
  - Standard type
  - DIN rail mounting

**<DIN rail mounting bracket assembly>**

- **Part no.** AXT802-1A
- **Mounting direction**
  - D side mounting
  - U side mounting

**Note) The number of manifold stations cannot be changed.**

**How to Order Only DIN Rail**

**DIN rail part no.: AXT100-DR**

- **L Dimension**
  - **L = 12.5n + 10.5**

<table>
<thead>
<tr>
<th>No.</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>L dimension</td>
<td>23</td>
<td>35.5</td>
<td>48</td>
<td>60.5</td>
<td>73</td>
<td>85.5</td>
<td>98</td>
<td>110.5</td>
<td>123</td>
<td>135.5</td>
</tr>
<tr>
<td>No.</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
<td>16</td>
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<td>20</td>
</tr>
<tr>
<td>L dimension</td>
<td>148</td>
<td>160.5</td>
<td>173</td>
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<td>210.5</td>
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<td>260.5</td>
</tr>
<tr>
<td>No.</td>
<td>21</td>
<td>22</td>
<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
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<td>28</td>
<td>29</td>
<td>30</td>
</tr>
<tr>
<td>L dimension</td>
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<td>285.5</td>
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<td>310.5</td>
<td>323</td>
<td>335.5</td>
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<td>360.5</td>
<td>373</td>
<td>385.5</td>
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<tr>
<td>No.</td>
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<td>35</td>
<td>36</td>
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<td>40</td>
</tr>
<tr>
<td>L dimension</td>
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<td>448</td>
<td>460.5</td>
<td>473</td>
<td>485.5</td>
<td>498</td>
<td>510.5</td>
</tr>
</tbody>
</table>

- **Refer to DIN rail dimension table below and put number into □ to order DIN rail.**
- **Refer to the manifold dimensions on page 4-12-13 to determine L dimension.**