Selectable power consumption!

0.4 w
[Low wattage specification]

0.55 w 1.55 w
[With power saving circuit] [Standard]
[Starting 1.55 W, Holding 0.55 W] + Current model: 2.0 W With DC light

Power consumption is reduced by power saving circuit.
Power consumption is decreased by approx. 1/3 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 40 ms at 24 VDC.) Refer to electrical power waveform as shown below.

- **Built-in full-wave rectifier** (AC)
  - **Noise reduction**
    Noise is considerably reduced by changing it to DC mode with a full-wave rectifier.
  - **Reduced apparent power**
    Current 5.6 VA → 1.55 VA [Standard]

- **Longer life expectancy: 50 million cycles or more**
  (Current: 20 million cycles) * Based on SMC test conditions.

- **Built-in strainer in the pilot valve**
  Unexpected troubles due to foreign matter can be prevented. Note) Be sure to mount an air filter on the inlet side.

Rubber material: HNBR
Ozone-resistant specification
* The pilot valve poppet is made of FKM.
## VP300/500/700 Series
### Model Selection by Operating Conditions

#### Solenoid Valve: Single Unit

<table>
<thead>
<tr>
<th>Series</th>
<th>Port size</th>
<th>Voltage</th>
<th>Electrical entry</th>
<th>Light/surge voltage suppressor</th>
<th>Manual override</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP300</td>
<td>1/8</td>
<td>12 VDC</td>
<td>DIN terminal</td>
<td>DC</td>
<td>Non-locking push type</td>
</tr>
<tr>
<td></td>
<td>1/4</td>
<td>24 VDC</td>
<td></td>
<td>With surge voltage suppressor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/4</td>
<td>24 VAC</td>
<td></td>
<td>With light/surge voltage suppressor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1/2</td>
<td>100 VAC</td>
<td></td>
<td>With surge voltage suppressor (Non-polar)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>220 VAC</td>
<td>200 VAC</td>
<td></td>
<td>With light/surge voltage suppressor (Non-polar)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>240 VAC</td>
<td>110 VAC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VP500</td>
<td>3/8</td>
<td>DIN (EN1753 01-803) terminal</td>
<td></td>
<td>DC</td>
<td>Push-turn locking slotted type</td>
</tr>
<tr>
<td></td>
<td>1/2</td>
<td>12 VDC</td>
<td></td>
<td>With surge voltage suppressor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 VDC</td>
<td>24 VDC</td>
<td></td>
<td>With light/surge voltage suppressor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 VAC</td>
<td>24 VAC</td>
<td></td>
<td>With surge voltage suppressor (Non-polar)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100 VAC</td>
<td>110 VAC</td>
<td></td>
<td>With light/surge voltage suppressor (Non-polar)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>220 VAC</td>
<td>220 VAC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VP700</td>
<td>3/8</td>
<td>DIN terminal</td>
<td></td>
<td>DC</td>
<td>Push-turn locking lever type</td>
</tr>
<tr>
<td></td>
<td>1/2</td>
<td>12 VDC</td>
<td></td>
<td>With surge voltage suppressor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 VDC</td>
<td>24 VDC</td>
<td></td>
<td>With light/surge voltage suppressor</td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 VAC</td>
<td>24 VAC</td>
<td></td>
<td>With surge voltage suppressor (Non-polar)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>100 VAC</td>
<td>110 VAC</td>
<td></td>
<td>With light/surge voltage suppressor (Non-polar)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>220 VAC</td>
<td>220 VAC</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Series
- VP300
- VP500
- VP700

### Port size
- 1/8
- 1/4
- 3/8
- 1/2

### Voltage
- 12 VDC
- 24 VDC
- 24 VAC
- 100 VAC
- 200 VAC
- 110 VAC
- 220 VAC
- 240 VAC

### Electrical entry
- DIN terminal
- DC
- AC

### Low wattage specification
- Power consumption: 0.35 W (Without light) 0.4 W (With light)
### VP300/500/700 Series

#### Model Selection by Operating Conditions

**Solenoid Valve: Manifold**

<table>
<thead>
<tr>
<th>Series</th>
<th>EXH port type</th>
<th>Manifold base model</th>
<th>Applicable stations Note)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP300</td>
<td>Common EXH</td>
<td>VV3P3-41</td>
<td>2 to 20 stations</td>
</tr>
<tr>
<td></td>
<td>Individual EXH</td>
<td>VV3P3-42</td>
<td></td>
</tr>
<tr>
<td>VP500</td>
<td>Common EXH</td>
<td>VV3P5-41</td>
<td>2 to 20 stations</td>
</tr>
<tr>
<td></td>
<td>Individual EXH</td>
<td>VV3P5-42</td>
<td></td>
</tr>
<tr>
<td>VP700</td>
<td>Common EXH</td>
<td>VV3P7-41</td>
<td>2 to 20 stations</td>
</tr>
<tr>
<td></td>
<td>Individual EXH</td>
<td>VV3P7-42</td>
<td></td>
</tr>
</tbody>
</table>

Note) Supply pressure to 1(P) ports and exhaust air from 3(R) ports on both sides for 10 stations or more.
Rubber Seal
3 Port/Pilot Poppet Type
Body Ported/Single Unit

VP300/500/700 Series

How to Order

Body ported

Series [ ] VP 3 4 2 [ ] - 5 G [ ] 1-01 [ ] A - - -

Pilot type [ ] Nil [ ] Internal pilot [ ] External pilot

Pressure specification [ ] Nil [ ] Standard (0.7 MPa) [ ] high-pressure type (1.0 MPa)

Coil specification [ ] Nil [ ] Standard [ ] With power saving circuit (DC only)

Note) Be sure to select the power saving circuit type when it is continuously energized for a long time.
(Red to page 1296 for details.)

Thread type [ ] Nil [ ] Rc [ ] F [ ] G [ ] N [ ] NPT [ ] T [ ] NPTF

Bracket [ ] Nil [ ] Without bracket [ ] With bracket

Type of actuation [ ] A [ ] N.C. (Normally closed) [ ] B [ ] N.O. (Normally open)

Rated voltage

DC [ ] 5 [ ] 24 VDC [ ] 6 [ ] 12 VDC

AC (50/60 Hz) [ ] 1 [ ] 100 VAC [ ] 2 [ ] 200 VAC [ ] 3 [ ] 110 VAC (115 VAC) [ ] 4 [ ] 220 VAC (230 VAC) [ ] 7 [ ] 240 VAC

Electrical entry

Grommet

L-type plug connector [ ] G [ ] Lead wire length 300 mm [ ] H [ ] Lead wire length 600 mm

M-type plug connector [ ] L: With lead wire (length 300 mm) [ ] M: With lead wire (length 300 mm) [ ] D: With connector [ ] Y: With connector

DIN terminal [ ] (IP65 compatible) [ ] (IP65 compatible) [ ] (IP65 compatible)

Conduit terminal

Made to Order

Type of actuation

X500 Pilot exhaust port with piping thread (M3) specification (Refer to page 1291).

X505 Interchangeable specification with the previous valve mounting hole pitch type (Refer to page 1291).

X600 Triac output specification (Refer to page 1291).

Manual override

Nil: Non-locking push type [ ] D: Push-turn locking slotted type [ ] E: Push-turn locking lever type

Light/surge voltage suppressor

DC [ ] AC

Note) There is no S option for AC mode, since a rectifier prevents surge voltage generation.
(R In the DIN terminal type, when a light is installed in the connector, DOZ, DOU, YOZ, YOU are not available.

Caution

When using the surge voltage suppressor type, residual voltage will remain. Refer to page 1300 for details.

Note) Only DIN and conduit terminal types are available for AC mode. Refer to the electrical entry for details.
Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of actuation</td>
<td>N.C. or N.O. (Convertible)</td>
</tr>
<tr>
<td>Internal pilot</td>
<td>Standard</td>
</tr>
<tr>
<td>Operating pressure range (MPa)</td>
<td>High-pressure type</td>
</tr>
<tr>
<td></td>
<td>0.2 to 1.0</td>
</tr>
<tr>
<td>External pilot</td>
<td>Standard</td>
</tr>
<tr>
<td>Operating pressure range (MPa)</td>
<td>High-pressure type</td>
</tr>
<tr>
<td></td>
<td>–100 kPa to 1.0</td>
</tr>
<tr>
<td>Pilot pressure range</td>
<td>Same as operating pressure (Min. 0.2 MPa)</td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>–10 to 50 (No freezing)</td>
</tr>
<tr>
<td>Max. operating frequency (Hz)</td>
<td>5</td>
</tr>
<tr>
<td>Manual override</td>
<td>Non-locking push type</td>
</tr>
<tr>
<td>Pilot exhaust type</td>
<td>Individual exhaust</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Unrestricted</td>
</tr>
<tr>
<td>Impact/Vibration resistance (m/s²)</td>
<td>300/50</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dust-tight (IP65 for D, Y, T)</td>
</tr>
</tbody>
</table>

Note: Impact resistance: No malfunction occurred when it is tested 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)

Solenoid Specifications

<table>
<thead>
<tr>
<th>Power consumption (W)</th>
<th>DC With power saving circuit</th>
<th>AC With power saving circuit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot poppet type</td>
<td>0.55 (With light: 1.55)</td>
<td>1.5 (With light: 1.75)</td>
</tr>
<tr>
<td>Apparent power (VA)</td>
<td>1.5 (With light: 1.55)</td>
<td>1.5 (With light: 1.75)</td>
</tr>
</tbody>
</table>

Surge voltage suppressor: Diode (Non-polar type: Varistor)
Indicator light: LED (Neon bulb is used for AC mode of D, Y, T.)

* It is in common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.
* Allowable voltage fluctuation is –15% to +5% of the rated voltage from 115 VAC or 230 VAC.
* Since voltage drops due to the internal circuit in S, Z, T types (with power saving circuit), the allowable voltage fluctuation should be within the following range:
  - 24 VDC: –7% to +10%
  - 12 VDC: –4% to +10%

Note: Refer to page 1290 for details.

Response Time

<table>
<thead>
<tr>
<th>Model</th>
<th>Pressure specifications</th>
<th>Response time ms (at 0.5 MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP342</td>
<td>Standard (0.2 to 0.7)</td>
<td>13 or less</td>
</tr>
<tr>
<td></td>
<td>High-pressure type (0.2 to 1.0)</td>
<td>17 or less</td>
</tr>
<tr>
<td>VP542</td>
<td>Standard (0.2 to 0.7)</td>
<td>14 or less</td>
</tr>
<tr>
<td></td>
<td>High-pressure type (0.2 to 1.0)</td>
<td>18 or less</td>
</tr>
<tr>
<td>VP742</td>
<td>Standard (0.2 to 0.7)</td>
<td>19 or less</td>
</tr>
<tr>
<td></td>
<td>High-pressure type (0.2 to 1.0)</td>
<td>22 or less</td>
</tr>
</tbody>
</table>

Note: Based on dynamic performance test, JIS B 8419: 2010. (Coil temperature: 20°C, at rated voltage)
### Application Example

1. **Blow-off valve**
   ![Blow-off valve](image1)

2. **Pressure release valve**
   ![Pressure release valve](image2)

3. **Selector valve**
   ![Selector valve](image3)

4. **Valve for vacuum**
   ![Valve for vacuum](image4)

5. **Divider valve**
   ![Divider valve](image5)

6. **Single-acting cylinder drive**
   ![Single-acting cylinder drive](image6)

7. **Double-acting cylinder drive (Exhaust center)**
   ![Double-acting cylinder drive](image7)

### Construction

#### Body ported

**Symbol**
- **Internal pilot**
  - N.C.: ![Internal N.C. symbol](image8)
  - N.O.: ![Internal N.O. symbol](image9)
- **External pilot**
  - ![External symbol](image10)

#### Component Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum die-casted</td>
<td>White</td>
</tr>
<tr>
<td>2</td>
<td>Adapter plate</td>
<td>Resin</td>
<td>Gray</td>
</tr>
<tr>
<td>3</td>
<td>End plate</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>4</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Poppet valve</td>
<td>Aluminum/HNBR</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Retainer</td>
<td>Resin</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Spring</td>
<td>Stainless steel</td>
<td></td>
</tr>
</tbody>
</table>

#### Bracket Assembly Part No.

<table>
<thead>
<tr>
<th>Description</th>
<th>Model</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bracket (With 2 screws)</td>
<td>VP342</td>
<td>VP300-227-1A</td>
</tr>
<tr>
<td></td>
<td>VP542</td>
<td>VP500-227-1A</td>
</tr>
<tr>
<td></td>
<td>VP742</td>
<td>VP700-227-1A</td>
</tr>
</tbody>
</table>

#### Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Pilot valve assembly</td>
<td>Refer to “How to Order Pilot Valve Assembly” on page 1267.</td>
<td>Built-in strainer</td>
</tr>
</tbody>
</table>
How to Order Pilot Valve Assembly

⚠️ Caution
When only the pilot valve assembly is replaced, it is not possible to change from V211 (Grommet or L/M-type) to V212 (DIN or Conduit type), or vice versa.

Valve model: **VP [ ] [ ] [ ] [ ] - 5 [G][Z] [ ] [ ] - 1 [ ] [ ]
* Select from the below in accordance with the valve used.

#### Grommet or L/M-type

<table>
<thead>
<tr>
<th>V211 Pilot valve assembly</th>
</tr>
</thead>
</table>

#### DIN or Conduit type

<table>
<thead>
<tr>
<th>DIN connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Refer to page 1296.)</td>
</tr>
</tbody>
</table>

| V212 Pilot valve assembly |

#### Pressure specification

<table>
<thead>
<tr>
<th>Nil</th>
<th>Standard (0.7 MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>K</td>
<td>High-pressure type (1.0 MPa)</td>
</tr>
</tbody>
</table>

#### Light/surge voltage suppressor

<table>
<thead>
<tr>
<th>Nil</th>
<th>Without light/surge voltage suppressor</th>
</tr>
</thead>
<tbody>
<tr>
<td>S</td>
<td>With surge voltage suppressor (Non-polar)</td>
</tr>
<tr>
<td>Z</td>
<td>With surge voltage suppressor (Non-polar)</td>
</tr>
<tr>
<td>R</td>
<td>With surge voltage suppressor,的标准 (Non-polar)</td>
</tr>
<tr>
<td>U</td>
<td>With surge voltage suppressor,的标准,的标准 (Non-polar)</td>
</tr>
</tbody>
</table>

Note) There is no S option for AC mode, since a rectifier prevents surge voltage generation. When T is selected, only Z type of light/surge voltage suppressor is available.

#### Caution
When using the surge voltage suppressor type, residual voltage will remain. Refer to page 1300 for details.

#### Electrical entry

<table>
<thead>
<tr>
<th>DC</th>
<th>AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td></td>
</tr>
<tr>
<td>H</td>
<td></td>
</tr>
<tr>
<td>L</td>
<td></td>
</tr>
<tr>
<td>LN</td>
<td></td>
</tr>
<tr>
<td>LO</td>
<td></td>
</tr>
<tr>
<td>M</td>
<td></td>
</tr>
<tr>
<td>MN</td>
<td></td>
</tr>
<tr>
<td>MO</td>
<td></td>
</tr>
</tbody>
</table>

* LN and MN types are with 2 sockets.
* Refer to page 1294 when different length of lead wire for L/M-type plug connector is required.

#### Coil specification

<table>
<thead>
<tr>
<th>T</th>
<th>With power saving circuit (DC only)</th>
</tr>
</thead>
</table>
* T type is only available for DC mode.

#### Rated voltage

<table>
<thead>
<tr>
<th>DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AC (50/60 Hz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>7</td>
</tr>
<tr>
<td>B</td>
</tr>
</tbody>
</table>

#### Caution
For V212 (DIN or Conduit type), the coil specification and voltage (including light/surge voltage suppressor) cannot be changed by changing the pilot valve assembly.

⚠️ Caution
Tightening torque of the pilot valve assembly mounting screw M2.5: 0.32 Nm

---

**VP300/500/700 Series**

**Pilot Poppet Type**
**Body Ported/SINGLE UNIT**

---

© SMC Corp.
VP300 Series/Body Ported/Dimensions

Grommet (G)

Approx. 300 (Lead wire length)

1/8, 1/4
2(A) port
2 x ø3.2
(For mounting)

Grommet (G)
DC without light/surge voltage suppressor

(Applicable cable O.D.
ø4.5 to ø7)

L-type plug connector (L)

M-type plug connector (M)

DIN terminal (D, Y)

Conduit terminal (T)

Unless otherwise indicated, dimensions are the same as Grommet (G).
VP500 Series/Body Ported/Dimensions

Grommet (G)

Approx. 300 (Lead wire length)

1/4, 3/8
2(A) port

2 x ø4.2
(For mounting)

1/8
External pilot port
(External pilot specification: R)

Metal O-rings

83.8
122.3

(9)

89.2 [79.2]
79.2 [69.2]

Max. 10

Pg9

Applicable cable O.D.
ø4.5 to ø7

(vp500 series body ported dimensions)

L-type plug connector (L)

M-type plug connector (M)

DIN terminal (D, Y)

Conduit terminal (T)

* Refer to page 1291 separately when piping to PE port is required.

Unless otherwise indicated, dimensions are the same as Grommet (G).
VP300/500/700 Series

VP700 Series/Body Ported/Dimensions

Grommet (G)

Applicable cable O.D. ø4.5 to ø7

External pilot port (External pilot specification: R)

Approx. 300 (Lead wire length)

Grommet (G)
DC without light/surge voltage suppressor

Unless otherwise indicated, dimensions are the same as Grommet (G).
## Rubber Seal
### 3 Port/Pilot Poppet Type
#### Base Mounted/Single Unit
### VP300/500/700 Series

#### How to Order

**Base mounted**

<table>
<thead>
<tr>
<th>Series</th>
<th>3 VP300</th>
<th>4 VP500</th>
<th>4 VP700</th>
</tr>
</thead>
</table>

**Pilot type**

- Nil: Internal pilot
- R: External pilot

**Pressure specification**

- Nil: Standard (0.7 MPa)
- K: High-pressure type (1.0 MPa)

#### Type of actuation

- A: N.C. (Normally closed)
- B: N.O. (Normally open)

#### Thread type

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

#### Made to Order

**Port size (Sub-plate)**

- Dell: Without sub-plate

**Symbol**

- X500: Pilot exhaust port with piping thread (M3) specification (Refer to page 1291).
- X600: Triac output specification (Refer to page 1291).

#### Electrical entry

**Grommet**

- G: Lead wire length 300 mm
- H: Lead wire length 600 mm

**L-type plug connector**

- L: With lead wire (length 300 mm)
- M: With lead wire (length 600 mm)

**M-type plug connector**

- N: Without lead wire
- MN: Without lead wire

**DIN (EN175301-803) terminal**

**Conduit terminal**

**Rated voltage**

- DC
  - 5: 24 VDC
  - 6: 12 VDC

- AC (50/60 Hz)
  - 1: 100 VAC
  - 2: 200 VAC
  - 3: 110 VAC (115 VAC)
  - 4: 220 VAC (230 VAC)
  - 7: 240 VAC
  - 8: 24 VAC

#### Manual override

- Nil: Non-locking push type
- D: Push-turn locking slotted type
- E: Push-turn locking lever type

#### Light/surge voltage suppressor

- DC
- AC

**Note**

- LN and MN types are with 2 sockets.
- Refer to page 1294 when different length of lead wire for L/M-type plug connector is required.
- Refer to page 1295 for details on the DIN (EN175301-803) terminal.

**Caution**

- LN and MN types are with 2 sockets.
- Refer to page 1294 when different length of lead wire for L/M-type plug connector is required.
- Refer to page 1295 for details on the DIN (EN175301-803) terminal.

**Note**

- CE compliant
- With a gasket and two mounting bolts.

---

* LN and MN types are with 2 sockets.
* Refer to page 1294 when different length of lead wire for L/M-type plug connector is required.
* Refer to page 1295 for details on the DIN (EN175301-803) terminal.

**Note**

With the same specifications as the DC type, all lead wire entries for the 24 VAC type are CE marking compliant.
VP300/500/700 Series

Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of actuation</td>
<td>N.C. or N.O. (Convertible)</td>
</tr>
<tr>
<td>Internal pilot</td>
<td>Standard</td>
</tr>
<tr>
<td>Operating pressure range (MPa)</td>
<td>0.2 to 0.7</td>
</tr>
<tr>
<td>External pilot</td>
<td>Standard</td>
</tr>
<tr>
<td>Operating pressure range (MPa)</td>
<td>–100 kPa to 1.0</td>
</tr>
<tr>
<td>Pilot pressure range</td>
<td>Same as operating pressure (Min. 0.2 MPa)</td>
</tr>
<tr>
<td>Ambient and fluid temperature (°C)</td>
<td>–10 to 50 (No freezing)</td>
</tr>
<tr>
<td>Max. operating frequency (Hz)</td>
<td>5</td>
</tr>
<tr>
<td>Manual override</td>
<td>Non-locking push type</td>
</tr>
<tr>
<td>Pilot exhaust type</td>
<td>Individual exhaust</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required</td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Unrestricted</td>
</tr>
<tr>
<td>Impact/Vibration resistance (m/s²)</td>
<td>300/50</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dust-tight (IP65 for D, Y, T)</td>
</tr>
</tbody>
</table>

Note) Impact resistance:
No malfunction occurred when it is tested 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)

Solenoid Specifications

<table>
<thead>
<tr>
<th>Electrical entry</th>
<th>Grommet (G), (H)</th>
<th>DIN terminal (D)</th>
<th>L-type plug connector (L)</th>
<th>DIN (EN175301-803) terminal (Y)</th>
<th>M-type plug connector (M)</th>
<th>Conduit terminal (T)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coil rated voltage (V)</td>
<td>DC (50/60 Hz)</td>
<td>24, 12</td>
<td>24, 100, 110, 200, 220, 240</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>
<td></td>
<td></td>
</tr>
<tr>
<td>Power consumption (W)</td>
<td>DC</td>
<td>1.5 (With light: 1.55)</td>
<td>1.5 (With light: 1.75)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AC</td>
<td>0.55 Note) (With light only)</td>
<td>0.75 Note) (With light only)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>24 V</td>
<td>1.5 (With light: 1.55)</td>
<td>1.5 (With light: 1.75)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>100 V</td>
<td>1.55 (With light: 1.65)</td>
<td>1.55 (With light: 1.7)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>110 V [115 V]</td>
<td>16 or less</td>
<td>16 or less</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>200 V</td>
<td>13 or less</td>
<td>13 or less</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>220 V</td>
<td>38 or less</td>
<td>38 or less</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>240 V</td>
<td>39 or less</td>
<td>39 or less</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Surge voltage suppressor</td>
<td>Diode (Non-polar type: Varistor)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicator light</td>
<td>LED (Neon bulb is used for AC mode of D, Y, T.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note) Impact resistance:
No malfunction occurred when it is tested 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)

Response Time

<table>
<thead>
<tr>
<th>Model</th>
<th>Pressure specifications</th>
<th>Response time ms (at 0.5 MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP344</td>
<td>Standard (0.2 to 0.7)</td>
<td>Response time ms (at 0.5 MPa)</td>
</tr>
<tr>
<td></td>
<td>High-pressure type (0.2 to 1.0)</td>
<td>Without light/surge voltage suppressor</td>
</tr>
<tr>
<td></td>
<td>17 or less</td>
<td>S, Z type</td>
</tr>
<tr>
<td></td>
<td>14 or less</td>
<td>13 or less</td>
</tr>
<tr>
<td>VP544</td>
<td>Standard (0.2 to 0.7)</td>
<td>42 or less</td>
</tr>
<tr>
<td></td>
<td>High-pressure type (0.2 to 1.0)</td>
<td>17 or less</td>
</tr>
<tr>
<td></td>
<td>18 or less</td>
<td>39 or less</td>
</tr>
<tr>
<td>VP744</td>
<td>Standard (0.2 to 1.0)</td>
<td>43 or less</td>
</tr>
<tr>
<td></td>
<td>High-pressure type (0.2 to 1.0)</td>
<td>43 or less</td>
</tr>
<tr>
<td></td>
<td>22 or less</td>
<td>44 or less</td>
</tr>
</tbody>
</table>

Note) Based on dynamic performance test, JIS B 8374-1981. (Coil temperature: 20°C, at rated voltage)
Flow Rate Characteristics/Weight

<table>
<thead>
<tr>
<th>Model</th>
<th>Port size</th>
<th>1 ↔ 2 (P ↔ A)</th>
<th>2 ↔ 3 (A ↔ R)</th>
<th>Weight (g) Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP344</td>
<td>1/8</td>
<td>3.6 0.22 0.8</td>
<td>3.5 0.24 0.8</td>
<td>216 (149) 252 (185)</td>
</tr>
<tr>
<td>VP544</td>
<td>1/4</td>
<td>3.9 0.22 0.9</td>
<td>3.8 0.14 0.9</td>
<td>211 (149) 247 (185)</td>
</tr>
<tr>
<td>VP744</td>
<td>3/8</td>
<td>7.5 0.16 1.7</td>
<td>7.3 0.20 1.7</td>
<td>370 (245) 406 (281)</td>
</tr>
<tr>
<td>VP744</td>
<td>3/8</td>
<td>8.8 0.07 2.0</td>
<td>8.8 0.13 2.0</td>
<td>362 (245) 396 (281)</td>
</tr>
</tbody>
</table>

Note) ( ) Values without sub-plate

Application Example

(1) Blow-off valve
(2) Pressure release valve
(3) Selector valve
(4) Valve for vacuum

Construction

Base mounted

Symbol

- External pilot
- Internal pilot

Component Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Body</td>
<td>Aluminum die-casted</td>
<td>White</td>
</tr>
<tr>
<td>2</td>
<td>Adapter plate</td>
<td>Resin</td>
<td>Gray</td>
</tr>
<tr>
<td>3</td>
<td>End plate</td>
<td>Resin</td>
<td>White</td>
</tr>
<tr>
<td>4</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Poppet valve</td>
<td>Aluminum/HNBR</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Retainer</td>
<td>Resin</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Spring</td>
<td>Stainless steel</td>
<td></td>
</tr>
</tbody>
</table>

Replacement Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Part no.</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>Pilot valve assembly</td>
<td>VP344, VP544, VP744</td>
<td>Built-in strainer</td>
</tr>
<tr>
<td>9</td>
<td>Gasket</td>
<td>VP300-217-1, VP500-217-1, VP700-217-1</td>
<td>HNBR</td>
</tr>
<tr>
<td>10</td>
<td>Sub-plate</td>
<td>VP300-202-C, VP500-202-C, VP700-202-C</td>
<td>Aluminum die-casted</td>
</tr>
<tr>
<td></td>
<td>Hexagon socket head bolt (1 pc)</td>
<td>VP300-224-1 (M3 x 36), VP500-224-1 (M4 x 46), VP700-224-1 (M5 x 66)</td>
<td>For valve mounting</td>
</tr>
</tbody>
</table>

How to Order Sub-plate

Parser Error: Inconsistent ordering of sub-plate part numbers

1273
How to Order Pilot Valve Assembly

⚠️ Caution
When only the pilot valve assembly is replaced, it is not possible to change from V211 (Grommet or L/M-type) to V212 (DIN or Conduit type), or vice versa.

Valve model: VP □□□□ - 5GZ □□ - 1
* Select from the below in accordance with the valve used.

<table>
<thead>
<tr>
<th>Grommet or L-type</th>
<th>V 2 1 1 - 5GZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light/surge voltage suppressor</td>
<td>DC</td>
</tr>
<tr>
<td>Nil</td>
<td>Without light/surge voltage suppressor</td>
</tr>
<tr>
<td>S</td>
<td>With surge voltage suppressor</td>
</tr>
<tr>
<td>Z</td>
<td>With light/surge voltage suppressor</td>
</tr>
<tr>
<td>R</td>
<td>With surge voltage suppressor (Non-polar)</td>
</tr>
<tr>
<td>U</td>
<td>With light/surge voltage suppressor (Non-polar)</td>
</tr>
</tbody>
</table>

Note) There is no S option for AC mode, since a rectifier prevents surge voltage generation. When T is selected, only Z type of light/surge voltage suppressor is available.

⚠️ Caution
When using the surge voltage suppressor type, residual voltage will remain. Refer to page 1300 for details.

Electrical entry

| Grommet (Lead wire length 300 mm) |
| Grommet (Lead wire length 600 mm) |
| L-type plug connector | With lead wire |
| LN | Without lead wire |
| LO | Without connector |
| M-type plug connector | With lead wire |
| MN | Without lead wire |
| MO | Without connector |

* LN and MN types are with 2 sockets.
* Refer to page 1294 when different length of lead wire for L/M-type plug connector is required.

⚠️ Caution
For V212 (DIN or Conduit type), the coil specification and voltage (including light/surge voltage suppressor) cannot be changed by changing the pilot valve assembly.

⚠️ Caution
Tightening torque of the pilot valve assembly mounting screw
M2.5: 0.32 N·m
VP300 Series/Base Mounted/Dimensions

Grommet (G)

(Approx. 300)

(Pg9)

(Applicable cable O.D.: ø4.5 to ø7)

(Indicator light)

* Refer to page 1291 separately when piping to PE port is required.

L-type plug connector (L)

M-type plug connector (M)

DIN terminal (D, Y)

Conduit terminal (T)

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

SMC
Grommet (G)

VP300/500/700 Series

VP500 Series/Base Mounted/Dimensions

Grommet (G)

DC without light/surge voltage suppressor

* Refer to page 1291 separately when piping to PE port is required.

Unless otherwise indicated, dimensions are the same as Grommet (G).
VP700 Series/Base Mounted/Dimensions

Grommet (G)

Approx. 300 (Lead wire length)

- Refer to page 1291 separately when piping to PE port is required.

L-type plug connector (L)

M-type plug connector (M)

DIN terminal (D, Y)

Conduit terminal (T)

Unless otherwise indicated, dimensions are the same as Grommet (G).
## Low Wattage Specification
### VP300/500 Series

### How to Order Valve

**VP 3 4 2 R Y - 5 D Z E 1-02 TA - F**

#### Series
- 3: VP300
- 5: VP500

#### Body type
- 2: Body ported
- 4: Base mounted

#### Mountable manifold
- 41: Without bracket
- 42: With bracket

#### Bracket
- Nil: Without bracket
- F: With bracket

#### Type of actuation
- A: N.C. (Normally closed)
- B: N.O. (Normally open)

#### Pilot type
- Nil: Internal pilot
- R: External pilot

#### Low wattage type
- **Nil**: Without light/surge voltage suppressor
- **R**: With surge voltage suppressor (DC only, Non-polar)
- **U**: With light/surge voltage suppressor (DC only, Non-polar)
- **S**: With surge voltage suppressor (DC only)
- **Z**: With light/surge voltage suppressor

#### Rated voltage
- 1: 100 VAC
- 2: 200 VAC
- 3: 110 VAC
- 4: 220 VAC
- 5: 24 VDC
- 6: 12 VDC

#### Electrical entry

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Port size</th>
<th>VP300</th>
<th>VP500</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>1/8</td>
<td>○</td>
<td>—</td>
</tr>
<tr>
<td>02</td>
<td>1/4</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>03</td>
<td>3/8</td>
<td>—</td>
<td>○</td>
</tr>
</tbody>
</table>

#### Light/Surge voltage suppressor and common specifications

<table>
<thead>
<tr>
<th>Nil</th>
<th>Without light/surge voltage suppressor</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>With surge voltage suppressor (DC only, Non-polar)</td>
</tr>
<tr>
<td>U</td>
<td>With light/surge voltage suppressor (DC only, Non-polar)</td>
</tr>
<tr>
<td>S</td>
<td>With surge voltage suppressor (DC only)</td>
</tr>
<tr>
<td>Z</td>
<td>With light/surge voltage suppressor (DC only)</td>
</tr>
</tbody>
</table>

* LN and MN types are with 2 sockets.
* Y type DIN terminal complies with EN-175301-803C (former DIN 43650C). Refer to page 1299 for details.
* When using IP65, select the main/pilot valve common exhaust type. (Except VF1000)

---

**Note**
- Only DIN and conduit terminal types are available for AC mode. Refer to the electrical entry for details.
- CE-compliant
- RoHS
## Specifications

<table>
<thead>
<tr>
<th>Fluid</th>
<th>Type of actuation</th>
<th>Internal pilot operating pressure range (MPa)</th>
<th>External pilot operating pressure range (MPa)</th>
<th>Ambient and fluid temperature (°C)</th>
<th>Max. operating frequency (Hz)</th>
<th>Manual override</th>
<th>Pilot exhaust type</th>
<th>Lubrication</th>
<th>Mounting orientation</th>
<th>Impact/Vibration resistance (m/s²)</th>
<th>Enclosure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>0.2 to 0.7</td>
<td>−100 KPa to 0.7</td>
<td>−10 to 50 (No freezing)</td>
<td>5</td>
<td>Non-locking push type</td>
<td>Individual exhaust</td>
<td>Not required</td>
<td>Unrestricted</td>
<td>150/300</td>
<td>Dustproof (IP65 for D and Y)</td>
</tr>
</tbody>
</table>

### Note
- Impact resistance: No malfunction occurred when it is tested 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)

## Solenoid Specifications

### Electrical entry

<table>
<thead>
<tr>
<th>Voltage (V)</th>
<th>Standard</th>
<th>DC</th>
<th>0.24</th>
<th>0.12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.24</td>
<td>24</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0.12</td>
<td>100, 110, 200, 220</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Apparent power (VA)

<table>
<thead>
<tr>
<th>Voltage (V)</th>
<th>100 V</th>
<th>110 V</th>
<th>200 V</th>
<th>220 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC</td>
<td>0.78</td>
<td>0.86</td>
<td>1.18</td>
<td>1.30</td>
</tr>
<tr>
<td></td>
<td>(With light: 0.81)</td>
<td>(With light: 0.89)</td>
<td>(With light: 1.22)</td>
<td>(With light: 1.34)</td>
</tr>
</tbody>
</table>

### Surge voltage suppressor

- Diode (DIN terminal, Non-polar type: Varistor)
- LED (Neon bulb is used for AC mode of D and Y.)

### Impact/Vibration resistance

- 24 VDC: −7% to +10%
- 12 VDC: −4% to +10%

### Mounting orientation

- Unrestricted

### Valve Pressure

<table>
<thead>
<tr>
<th>Series</th>
<th>Type of actuation</th>
<th>Without light/surge voltage suppressor</th>
<th>With light/surge voltage suppressor</th>
<th>AC type</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP300</td>
<td>VP342Y</td>
<td>16</td>
<td>40</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>VP344Y</td>
<td>16</td>
<td>40</td>
<td>21</td>
</tr>
<tr>
<td>VP500</td>
<td>VP542Y</td>
<td>31</td>
<td>45</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>VP544Y</td>
<td>31</td>
<td>45</td>
<td>36</td>
</tr>
</tbody>
</table>

### Response time

<table>
<thead>
<tr>
<th>Series</th>
<th>Type of actuation</th>
<th>Without light/surge voltage suppressor</th>
<th>With light/surge voltage suppressor</th>
<th>AC type</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP300</td>
<td>VP342Y</td>
<td>16</td>
<td>40</td>
<td>21</td>
</tr>
<tr>
<td></td>
<td>VP344Y</td>
<td>16</td>
<td>40</td>
<td>21</td>
</tr>
<tr>
<td>VP500</td>
<td>VP542Y</td>
<td>31</td>
<td>45</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>VP544Y</td>
<td>31</td>
<td>45</td>
<td>36</td>
</tr>
</tbody>
</table>

### Note
- Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage)
VP300/500 Series

Dimensions
VP342Y

L-type plug connector (L)  M-type plug connector (M)  DIN terminal (D,Y)

G: Approx. 300  H: Approx. 600
(Lead wire length)
Rubber Seal/3 Port/Pilot Poppet Type Manifold
Common Exhaust Type 41/Individual Exhaust Type 42
VP300/500/700 Series

How to Order Manifold

**Type 41/Common exhaust**

<table>
<thead>
<tr>
<th>Series</th>
<th>VP300</th>
<th>VP500</th>
<th>VP700</th>
</tr>
</thead>
</table>

**Pilot type**

- Nil
- R External pilot

Note: When the external pilot type manifold is selected, external pilot type valves are mounted.

**Thread type**

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

**Port size**

- Symbol: 02, 03, 04
- Port size: 1/4, 3/8, 1/2
- Applicable series: VP300, VP500, VP700

**Stations**

- 02 2 stations
- 20 20 stations

**Type 42/Individual exhaust**

<table>
<thead>
<tr>
<th>Series</th>
<th>VP300</th>
<th>VP500</th>
<th>VP700</th>
</tr>
</thead>
</table>

**Pilot type**

- Nil
- R External pilot

Note: When the external pilot type manifold is selected, external pilot type valves are mounted.

**Thread type**

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

**Port size**

- Symbol: 02, 03, 04
- Port size: 1/4, 3/8, 1/2
- Applicable series: VP300, VP500, VP700

**Stations**

- 02 2 stations
- 20 20 stations
How to Order Valve (With a gasket and two mounting bolts)

**VP 3 4 4 5 G 1 A**

**Series**
- 3: VP300
- 5: VP500
- 7: VP700

**Pilot type**
- Nil: Internal pilot
- R: External pilot

**Pressure specification**
- Nil: Standard (0.7 MPa)
- K: High-pressure type (1.0 MPa)

**Coil specification**
- Nil: Standard
- T: With power saving circuit (DC only)

Note: Be sure to select the power saving circuit type when it is continuously energized for a long time. (Refer to page 1296 for details.)

- T type is only available for DC mode. When T is selected, only Z type of light/surge voltage suppressor is available.

(Note that when the electrical entry of DIN terminal type without connector is selected, only DOS and YOS are available.)

**Rated voltage**
- DC: 5. 24 VDC, 6. 12 VDC
- AC (50/60 Hz): 1. 100 VAC, 2. 200 VAC, 3. 110 VAC (115 VAC), 4. 220 VAC (230 VAC), 7. 240 VAC, 8. 24 VAC

**Light/surge voltage suppressor**
- DC: Nil, S, Z, R, U
- AC: Nil

Note: There is no S option for AC mode, since a rectifier prevents surge voltage generation.

- In the DIN terminal type, since a light is installed in the connector, DOZ, DOU, YOZ, YOU are not available.

**Caution**

When using the surge voltage suppressor type, residual voltage will remain. Refer to page 1300 for details.

**Made to Order**
- Nil
- X500: Pilot exhaust port with piping thread (M3) specification
- X600: Triac output specification (Refer to page 1291)

**Electrical entry**

<table>
<thead>
<tr>
<th>Grommet</th>
<th>L-type plug connector</th>
<th>M-type plug connector</th>
<th>DIN terminal</th>
<th>DIN (EN175301-803) terminal</th>
<th>Conduit terminal</th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>Without lead wire</td>
<td>Without lead wire</td>
<td>[IP65 compatible]</td>
<td>[IP65 compatible]</td>
<td>[IP65 compatible]</td>
</tr>
<tr>
<td>H</td>
<td>Lead wire length 300 mm</td>
<td>Lead wire length 600 mm</td>
<td>[IP65 compatible]</td>
<td>[IP65 compatible]</td>
<td>[IP65 compatible]</td>
</tr>
<tr>
<td>L</td>
<td>Without lead wire</td>
<td>Without lead wire</td>
<td>[IP65 compatible]</td>
<td>[IP65 compatible]</td>
<td>[IP65 compatible]</td>
</tr>
<tr>
<td>M</td>
<td>Without lead wire</td>
<td>Without lead wire</td>
<td>[IP65 compatible]</td>
<td>[IP65 compatible]</td>
<td>[IP65 compatible]</td>
</tr>
<tr>
<td>V</td>
<td>Without connector</td>
<td>With connector</td>
<td>[IP65 compatible]</td>
<td>[IP65 compatible]</td>
<td>[IP65 compatible]</td>
</tr>
<tr>
<td>Y</td>
<td>Without connector</td>
<td>With connector</td>
<td>[IP65 compatible]</td>
<td>[IP65 compatible]</td>
<td>[IP65 compatible]</td>
</tr>
<tr>
<td>T</td>
<td>Conduit terminal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CE-compliant**
- DC: ✅ ✅ ✅ ✅ ✅ ✅ ✅ ✅
- AC: ✅ ✅ ✅ ✅ ✅ ✅ ✅ ✅

Note: LN and MN types are with 2 sockets.

- Refer to page 1294 when different length of lead wire for L/M-type plug connector is required.
- Refer to page 1295 for details on the DIN (EN175301-803) terminal.

Note) With the same specifications as the DC type, all lead wire entries for the 24 VAC type are CE marking compliant.
Piping is concentrated on the base side.
All external pilots are gathered in the base.
Common external pilot port allows one piping.
2 types of exhaust ports
Common or individual exhaust type are available. For individual exhaust type, exhaust can be restricted.
Easy to change between N.C. and N.O.
Type of actuation can be easily changed from normally closed to normally open by changing the direction of a valve and end-plate only 180°.

Note) Supply pressure to 1(P) ports and exhaust pressure from 3(R) ports on both sides for 10 stations or more.

### Manifold Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>Base model</th>
<th>Piping specifications</th>
<th>Applicable valve</th>
<th>Applicable stations Note)</th>
<th>Manifold base Weight: W [g] Stations: n</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP300</td>
<td>VV3P3-41</td>
<td>Common 1P (SUP) port type</td>
<td>1/4</td>
<td>VP344</td>
<td>2 to 20 stations W = 110n + 90</td>
</tr>
<tr>
<td></td>
<td>VV3P3-42</td>
<td>Individual 3R (EXH) port type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VP500</td>
<td>VV3P5-41</td>
<td>Common 1P (SUP) port type</td>
<td>3/8</td>
<td>VP544</td>
<td>2 to 20 stations W = 190n + 150</td>
</tr>
<tr>
<td></td>
<td>VV3P5-42</td>
<td>Individual 3R (EXH) port type</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VP700</td>
<td>VV3P7-41</td>
<td>Common 1P (SUP) port type</td>
<td>1/2</td>
<td>VP744</td>
<td>2 to 20 stations W = 410n + 380</td>
</tr>
<tr>
<td></td>
<td>VV3P7-42</td>
<td>Individual 3R (EXH) port type</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note) Supply pressure to 1(P) ports and exhaust pressure from 3(R) ports on both sides for 10 stations or more.

### Manifold Option

<table>
<thead>
<tr>
<th>Description</th>
<th>Part no.</th>
<th>Applicable manifold base model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blanking plate assembly (With a gasket and two mounting bolts)</td>
<td>VP300-25-1A</td>
<td>VV3P3</td>
</tr>
<tr>
<td></td>
<td>VP500-25-1A</td>
<td>VV3P5</td>
</tr>
<tr>
<td></td>
<td>VP700-25-1A</td>
<td>VV3P7</td>
</tr>
</tbody>
</table>

### How to Order Manifold Assembly (Example)

Ordering example (VV3P3-41)

<table>
<thead>
<tr>
<th>VP300-25-1A</th>
<th>VV3P3-41-051-02</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP344-5GZ1-A</td>
<td>VV3P5-42-053-03</td>
</tr>
<tr>
<td>VP344-5GZ1-B</td>
<td>VV3P5-42-053-03</td>
</tr>
</tbody>
</table>

- Indicate the valves to be attached below the manifold part number, in order starting from station 1 as shown in the drawing.
- The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.
VP300 Series/Dimensions

Type 41/Common exhaust: VV3P3-41 Stations 1-02
Grommet (G)

M5 x 0.8
Common external pilot port
(External pilot specification: R)

Approx. 300 (Lead wire length)

Grommet (G)
DC without light/surge voltage suppressor

L-type plug connector (L)
M-type plug connector (M)
DIN terminal (D, Y)
Conduit terminal (T)

Unless otherwise indicated, dimensions are the same as Grommet (G).
VP300 Series/Dimensions

Type 42/Individual exhaust: VV3P3-42□-□Stations□-□02
Grommet (G)

L-type plug connector (L)

M-type plug connector (M)

DIN terminal (D, Y)

Conduit terminal (T)

Grommet (G)
DC without light/surge voltage suppressor

Unless otherwise indicated, dimensions are the same as Grommet (G).
VP500 Series/Dimensions

Type 41/Common exhaust: VV3P5-41
Grommet (G)

L-type plug connector (L)

M-type plug connector (M)

DIN terminal (D, Y)

Conduit terminal (T)

Grommet (G)
DC without light/surge voltage suppressor

Unless otherwise indicated, dimensions are the same as Grommet (G).
VP500 Series/Dimensions

Type 42/Individual exhaust: VV3P5-42□-[Stations]3-03

Grommet (G)

Common external pilot port (External pilot specification: R)

N.O.  N.C.

Manual override

2 x ø7.2  (For mounting)

M5 x 0.8

PE port*  
ø3.8

PE port

* Refer to page 1291 separately when piping to PE port is required.

Grommet (G)

DC without light/surge voltage suppressor

L-type plug connector (L)

M-type plug connector (M)

DIN terminal (D, Y)

Conduit terminal (T)

Unless otherwise indicated, dimensions are the same as Grommet (G).
VP700 Series/Dimensions

Type 41/Common exhaust: VV3P7-41—Stations 1-04

Grommet (G)

Unless otherwise indicated, dimensions are the same as Grommet (G).
VP700 Series/Dimensions

Type 42/Individual exhaust: VV3P7-42□-□Stations□3-04

Grommet (G)

<table>
<thead>
<tr>
<th>Ltype</th>
<th>Mtype</th>
<th>DIN terminal (D, Y)</th>
<th>Conduit terminal (T)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Applicable cable O.D.</td>
<td>160.2 [150.2]</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ø4.5 to Ø7</td>
<td>Ø4.5 to Ø7</td>
</tr>
</tbody>
</table>

Unless otherwise indicated, dimensions are the same as Grommet (G).
1 Pilot Exhaust Port with Piping Thread (M3) Specification

In this specification, piping to the pilot exhaust port (PE port) is available when the valve is used in an environment where the exhaust from the pilot valve is not allowable, or intrusion of ambient dust should be prevented.

How to Order Valve

VP\textsubscript{5}4\textsubscript{2} - \textsubscript{7}4\textsubscript{2} - X500

- Entry is the same as standard products.
- The specifications, performance and external dimensions are the same as those of standard models.

2 Body Ported Interchangeable Specification with the Previous Valve Mounting Hole Pitch Type

The mounting hole has been changed to the long type in order to provide interchangeability with the previous VP300/500 series.

How to Order Valve

VP\textsubscript{5}42 - X505

- Entry is the same as standard products.
- The specifications, performance and external dimensions are the same as those of standard models.

Note) VP742 is not available because the mounting hole pitch is the same as the previous type.

3 TRIAC Output Specification

For AC type valve, use this specification when the pilot valve is not recovered even though valve power supply is turned OFF at the equipment using output unit with large leakage voltage over 8% of the rated voltage (TRIAC output such as PLC or SSR, etc.). Combination with low wattage specification is not possible.

How to Order Valve

VP\textsubscript{5}4\textsubscript{2} - 1 - X600

- Entry is the same as standard products.
  Note) Rated voltage: AC type only
Rubber Seal
3 Port/Pilot Poppet Type
VP300/500/700 Series

How to Order

30 - VP 3 4 4 - 1 D B - 01 A

Conforming to CSA standard
VP series solenoid valve

Body size
3 1/4 standard
5 3/8 standard
7 1/2 standard

Type of actuation
4 In common between N.C. and N.O. (Pilot type)

Body type
4 Base mounted

Valve option
Nil Standard (Internal pilot)
R * External pilot

Rated voltage
5 24 VDC
6 * 12 VDC

Passage symbol
A Normally closed
B Normally open

Thread type
Nil Rc
F G
N NPT
T NPTF

Port size
Symbol Port size Re(PT) VP344 VP544 VP744
Nil * Without sub-plate ● ● ●
01 1/8 ● ●
02 1/4 ● ●

Manual override
Nil Push type
B * Locking slotted type
C * Locking lever type

Electrical entry
D DIN terminal (With connector)
DO DIN terminal (Without connector)

Caution
For safety instructions, specific product precautions, product specifications, dimensions, and model selection, refer to the individual product catalog (discontinued products). However, note that the DIN connector differs from the standard product.
VP Series
Specific Product Precautions 1

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

![Manual Override]

**Warning**
Without an electric signal for the solenoid valve the manual override is used for switching the main valve. Connected actuator is started by manual operation. Use the manual override after confirming that there is no danger.

- **Non-locking push type**
  - Push down on the manual override button with a small screwdriver until it stops. Release the screwdriver and the manual override will return.

- **Push-turn locking slotted type**
  - Push the manual override button with a small flat head screwdriver until it stops. Turn it in the clockwise direction at 90° to lock the manual. Turn it counterclockwise to release it.

- **Push-turn locking lever type**
  - After pushing down, turn in the direction of the arrow. If it is not turned, it can be operated the same way as the non-locking type.

![How to Use L/M-Type Plug Connector]

**Caution**
When locking the manual override with the push-turn locking type (D or E type), be sure to push it down before turning. Turning without first pushing it down can cause damage to the manual override and other trouble such as air leakage, etc. Do not apply excessive torque when turning the locking type manual override. (0.1 N·m)

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

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

3. **Attaching and detaching sockets with lead wire**
   - **Attaching**
     - Insert the sockets into the square holes of the connector (indication), and continue to push the sockets all the way in until they lock by hooking into the seats in the connector. (When they are pushed in, their hooks open and they are locked automatically.) Then, confirm that they are locked by pulling lightly on the lead wires.
   - **Detaching**
     - To detach a socket from a connector, pull out the lead wire while pressing the socket’s hook with a stick having a thin tip (approx. 1 mm). If the socket will be used again, first spread the hook outward.
**VP Series**  
Specific Product Precautions 2

Be sure to read this before handling the products.  
Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

---

### Plug Connector Lead Wire Length

**Caution**
Plug connector lead wires have a standard length of 300 mm, however, the following lengths are also available.

<table>
<thead>
<tr>
<th>Lead wire length</th>
<th>Nil</th>
<th>300 mm</th>
<th>600 mm</th>
<th>1000 mm</th>
<th>1500 mm</th>
<th>2000 mm</th>
<th>2500 mm</th>
<th>3000 mm</th>
<th>5000 mm</th>
</tr>
</thead>
</table>

### How to Order Connector Assembly

- **DC**: V200-30-4A
- **100 VAC**: V200-30-1A
- **200 VAC**: V200-30-2A
- **AC other voltages**: V200-30-3A
- **Without lead wire**: V200-30-A  
  (With connector and 2 pcs. of socket)

### How to Use DIN Terminal

The DIN terminal type with an IP65 enclosure is protected against dust and water, however, it must not be used in water.

**Caution**
- **Connection**
  1. Loosen the set screw and pull the connector out of the solenoid valve terminal block.
  2. After removing the set screw, insert a flat head screwdriver, etc. into the notch on the bottom of the terminal block and pry it open, separating the terminal block and the housing.
  3. Loosen the terminal screws on the terminal block, insert the core of the lead wire into the terminal, and attach securely with the terminal screws.
  4. Tighten the ground nut to secure the wire.

- **Precautions**
  - Plug in and pull out the connector vertically without tilting to one side.
  - Make sure not to damage elements, etc., with the lead wires of the cord.

- **Applicable cable**
  - Cable O.D.: ø4.5 to ø7  
  - Reference: 0.5 mm² to 1.5 mm², 2-core or 3-core, equivalent to JIS C 3306

- **Applicable crimped terminal**
  - O terminal: R1.25-4M that is specified in JIS C 2805
  - Y terminal: 1.25-3L, which is released by JST Mfg. Co., Ltd.
  - Stick terminal: Size 1.5 or shorter
**DIN (EN175301-803) Terminal**

Y type DIN terminal corresponds to the DIN connector with terminal pitch 10 mm, which complies with EN175301-803B. Since the terminal pitch is different from the D type DIN connector, these two types are not interchangeable.

<table>
<thead>
<tr>
<th>Y type</th>
<th>D type</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Y type diagram" /></td>
<td><img src="image2.png" alt="D type diagram" /></td>
</tr>
</tbody>
</table>

**How to Use Conduit Terminal**

**Caution**

Connection

1) Loosen the set screw and remove the terminal block cover from the terminal block.

2) Loosen the terminal screws on the terminal block, insert the core of the lead wire or crimped terminal into the terminal, and attach securely with the terminal screws. In addition, when using the DC mode type with a surge voltage suppressor (polar: S and Z types), connect wires to terminal 1 and 2 corresponding to the polarity (+ or –) as shown on the right figure.

3) Secure the cord by fastening the ground nut.

In the case of connecting wires, select cabtire cords carefully because if those out of the specified range (ø4.5 to ø7) are used, it will not be able to satisfy IP65 (enclosure). Tighten the ground nut and set screw within the specified range of torque.

**Applicable cable**

Cable O.D.: ø4.5 to ø7 (Reference) 0.5 mm² to 1.5 mm², 2-core or 3-core, equivalent to JIS C 3306

**Applicable crimped terminal**

O terminal: Equivalent to R1.25-3 that is specified in JIS C 2805

Y terminal: Equivalent to 1.25-3, which is released by JST Mfg. Co., Ltd.

* Use O terminal when a ground terminal is used.

---

**How to Order DIN Connector**

- **Without indicator light**
  - DC, AC, Other voltages: V200-\(-1\)

- **With indicator light**
  - DC
  - Polar type (\(\square Z\)): V200-\(-3\)
  - Non-polar type (\(\square U\)): V200-\(-5\)

  ![Connector specification diagram](image3.png)

- **AC (\(\square Z\))**
  - Connector specification: V200-\(-7\)
  - Rated voltage:
    - 01: 100/110 VAC [115 VAC]
    - 02: 200/220 VAC [230 VAC]
    - 07: 240 VAC

  Note) Order no. for 24 VAC specification is V200-61-5-B.

**Circuit with indicator light (Built-in connector)**

- **DC (\(\square U\)) circuit**
  - LED: Light emitting diode, R: Resistor

- **AC (\(\square Z\)) circuit**
  - NL: Neon bulb, R: Resistor

Note) The 24 VAC specifications are the same as those in the DC (\(\square U\)) circuit diagram.
VP Series
Specific Product Precautions 4

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

---

**Caution**

<DC>

- **Polar type**
  - With surge voltage suppressor (□S)
    - LED
      - Polarity protection diode
    - Black (–)
    - Red (+)

- Grommet or L/M-type plug connector
  - With light/surge voltage suppressor (□Z)
    - LED
      - Polarity protection diode
    - Black (–)
    - Red (+)

- DIN or Conduit terminal
  - With light/surge voltage suppressor (□Z)
    - LED
      - For DIN type, installed in the connector
      - Polarity protection diode
    - Black (–)
    - Red (+)

- **Non-polar type**
  - With surge voltage suppressor (□R)
    - (+, –)
    - Varistor
    - Black (–)
    - Red (+)

- Grommet or L/M-type plug connector
  - With light/surge voltage suppressor (□U)
    - (+, –)
    - Varistor
    - Black (–)
    - Red (+)

- DIN or Conduit terminal
  - With light/surge voltage suppressor (□U)
    - (+, –)
    - LED
      - For DIN type, installed in the connector

- **With power saving circuit**
  - Power consumption is decreased by approx. 1/3 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 40 ms at 24 VDC.) Refer to the electrical power waveform as shown below.

<Electrical power waveform of energy saving type>

- Since the voltage will drop by approx. 0.5 V due to the transistor, pay attention to the allowable voltage fluctuation. (For details, refer to the solenoid specifications of each type of valve.)

<AC>

There is no S option, since a rectifier prevents surge voltage generation.

- Grommet or L/M-type plug connector
  - With light/surge voltage suppressor (□Z)

- DIN or Conduit terminal
  - With light/surge voltage suppressor (□Z)

Note) LED for 24 VAC.

---

Caution: Please connect correctly the lead wires to + (positive) and – (negative) indications on the connector. (For non-polar type, the lead wires can be connected to either one.)

- When the valve with polarity protection diode is used, the voltage will drop by approx. 1 V. Therefore, pay attention to the allowable voltage fluctuation. (For details, refer to the solenoid specification of each type of valve).
- Solenoids, whose lead wires have been pre-wired: + (positive) side red and – (negative) side black.
Low Wattage Specification *(VP300/500)*

**Specific Product Precautions 5**

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

### Manual Override

**Warning**

1. **Non-locking push type [Standard]**
   Press in the direction of the arrow.

2. **Push-turn locking slotted type [D type]**
   After pushing down, turn in the direction of the arrow. If it is not turned, it can be operated in the same way as the non-locking push type.

3. **Push-turn locking lever type [E type]**
   After pushing down, turn in the direction of the arrow. If it is not turned, it can be operated in the same way as the non-locking push type.

**Caution**

When operating the D type, use a watchmaker’s screwdriver and turn lightly.
[Torque: Less than 0.1 N·m]

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

**Warning**

**Caution**

1. **Connector attachment/detachment**
   - 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.

2. **Crimping lead wire and socket connection**
   Strip 3.2 to 3.7 mm at the end of the lead wires, insert the ends of the core wires evenly into the sockets, and then crimp with a crimping tool. When this is done, take care that the coverings of the lead wires do not enter the core wire crimping area.
   (Please contact SMC for the dedicated crimping tools.)

3. **Socket with lead wire attachment/detachment**
   **Attachment**
   Insert the sockets into the square holes of the connector (with 🌟, 🎁 indication), and continue to push the sockets all the way in until they lock by hooking into the seats in the connector.
   (When they are pushed in, their hooks open and they are locked automatically.) Then, confirm that they are locked by pulling lightly on the lead wires.

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

### Solenoid Valve for 200/220 VAC Specification

**Warning**

AC specification solenoid valves with grommet or L/M-type plug connector have a built-in rectifier circuit in the pilot section to operate the DC coil. With 200/220 VAC specification pilot valves, this built-in rectifier generates heat when energized. The surface may become hot depending on the energized condition; therefore, do not touch the solenoid valves.
Low Wattage Specification (VP300/500)
Specific Product Precautions 6

Be sure to read this before handling the products. Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

**Plug Connector Lead Wire Length**

**Caution**
Plug connector lead wires have a standard length of 300 mm, however, the following lengths are also available.

**How to Order Connector Assembly**

<table>
<thead>
<tr>
<th>DC:</th>
<th>AC:</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP342Y-5LO1-01</td>
<td>SY100-30-4A-20</td>
</tr>
<tr>
<td>VP342Y-1LO1-01</td>
<td>SY100-30-1A-20</td>
</tr>
</tbody>
</table>

**Light/Surge Voltage Suppressor**

**Caution**

**Grommet or L/M-type plug connector**

- Polar type
  - With surge voltage suppressor (S)
  - Polarity protection diode
  - Red (+)  
  - Black (−)

- With light/surge voltage suppressor (Z)
  - Polarity protection diode
  - Red (+)
  - Black (−)

**Non-polar type**

- With surge voltage suppressor (R)
- With light/surge voltage suppressor (U)
- DIN terminal
- Built-in connector
Light/Surge Voltage Suppressor

⚠️ Caution

<AC>
S type is not available, since a rectifier prevents surge voltage generation.

● Grommet or L/M-type plug connector

With light/surge voltage suppressor (Z)

- LED

- Varistor

- (-)

- Coil

- (-)

● DIN terminal

With light/surge voltage suppressor (Z)

- NL: Neon bulb

- (-)

- Built-in connector

- (-)

Note) LED for 24 VAC.

Residual voltage of the surge voltage suppressor

Note) If a varistor or diode surge voltage suppressor is used, there is some residual voltage to the protection element and rated voltage. Therefore, refer to the table below and pay attention to the surge voltage protection on the controller side. Also, since the response time does change, refer to the specifications on pages 1265 and 1272.

Residual Voltage

<table>
<thead>
<tr>
<th>Surge voltage suppressor</th>
<th>DC 24</th>
<th>DC 12</th>
<th>AC 24</th>
<th>AC 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diode</td>
<td>Approx. 1 V</td>
<td>—</td>
<td>Approx. 1 V</td>
<td>—</td>
</tr>
<tr>
<td>Varistor</td>
<td>Approx. 47 V</td>
<td>Approx. 32 V</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>
How to Use DIN Connector

1. **ISO#:** Conforming to EN-175301-803C (former DIN 43650C)
   (Distance between pins: 8 mm)

   The DIN terminal type with an IP65 (enclosure) is protected against dust and water, however, it must not be used in water.

2. **Connection**
   1) Loosen the set screw and pull the connector out of the solenoid valve terminal block.
   2) After removing the set screw, insert a flat head screwdriver, etc. into the notch on the bottom of the terminal block and pry it open, separating the terminal block and the housing.
   3) Loosen the terminal screws (slotted head screw) on the terminal block, insert the core of the lead wire into the terminal according to wiring connection, and attach securely with the terminal screws.
   4) Tighten the ground nut to secure the wire.

3. **Changing the entry direction**
   After separating the terminal block and housing, the cord entry direction can be changed by attaching the housing in a different direction (four directions at 90° intervals).
   * Make sure not to damage a light, etc., with the lead wires of the cord.

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

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

---

DIN Connector Part No.

<table>
<thead>
<tr>
<th>DIN terminal (D)</th>
<th>Without indicator light</th>
<th>SY100-61-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>Voltage symbol</td>
<td>Part no.</td>
</tr>
<tr>
<td>24 VDC</td>
<td>24 V</td>
<td>SY100-61-3-05</td>
</tr>
<tr>
<td>12 VDC</td>
<td>12 V</td>
<td>SY100-61-3-06</td>
</tr>
<tr>
<td>100 VAC</td>
<td>100 V</td>
<td>SY100-61-2-01</td>
</tr>
<tr>
<td>200 VAC</td>
<td>200 V</td>
<td>SY100-61-2-02</td>
</tr>
<tr>
<td>110 VAC</td>
<td>110 V</td>
<td>SY100-61-2-03</td>
</tr>
<tr>
<td>220 VAC</td>
<td>220 V</td>
<td>SY100-61-2-04</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIN terminal (Y)</th>
<th>Without indicator light</th>
<th>SY100-61-1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated voltage</td>
<td>Voltage symbol</td>
<td>Part no.</td>
</tr>
<tr>
<td>Common to all voltages</td>
<td>None</td>
<td>SY100-82-1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>With indicator light</th>
<th>Rated voltage</th>
<th>Voltage symbol</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 VDC</td>
<td>24 V</td>
<td>SY100-62-3-05</td>
<td></td>
</tr>
<tr>
<td>12 VDC</td>
<td>12 V</td>
<td>SY100-62-3-06</td>
<td></td>
</tr>
<tr>
<td>100 VAC</td>
<td>100 V</td>
<td>SY100-62-2-01</td>
<td></td>
</tr>
<tr>
<td>200 VAC</td>
<td>200 V</td>
<td>SY100-62-2-02</td>
<td></td>
</tr>
<tr>
<td>110 VAC (115 VAC)</td>
<td>110 V</td>
<td>SY100-62-2-03</td>
<td></td>
</tr>
<tr>
<td>220 VAC (230 VAC)</td>
<td>220 V</td>
<td>SY100-62-2-04</td>
<td></td>
</tr>
</tbody>
</table>

**Circuit diagram with light**

**AC circuit diagram**
- NL: Neon light
- R: Resistor

**DC circuit diagram**
- LED: Light emitting diode
- R: Resistor

**Pilot Valve**

The mounting of the low wattage type pilot valve is not interchangeable with that of the standard type. Additionally, be aware that the pilot valve cannot be replaced.
Be sure to read this before handling the products.
Refer to back page 50 for Safety Instructions and pages 3 to 9 for 3/4/5 Port Solenoid Valve Precautions.

**Warning**

When changing the actuation or restarting the valve after the change, make sure that safety is fully assured and pay great attention.

Example: Changing from N.C. to N.O.

1) Base mounted

1. Remove the body from the sub-plate and reset the “▼” mark on the body corresponding to the “N.O.” mark on the sub-plate as shown in the figure above.
2. Remove the end plate from the body and rotate the end plate by 180° so that the “N.O.” mark on the end plate is at the top of the valve.
   * It is not necessary to change the piping when this is done.

2) Body ported

1. Remove the end plate from the body and rotate the end plate by 180° to correspond the “N.O.” mark on the end plate to the top of the valve.
   * Piping should be arranged as follows.

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>Port 1P</th>
<th>Port 2A</th>
<th>Port 3R</th>
</tr>
</thead>
<tbody>
<tr>
<td>N.C.</td>
<td>Inlet</td>
<td>Exhaust</td>
<td>Exhaust</td>
</tr>
<tr>
<td>N.O.</td>
<td>Exhaust</td>
<td>Outlet</td>
<td>Inlet</td>
</tr>
</tbody>
</table>

**Caution**

When replacing the built-in valve with the new VP series if the old VP series uses the external pilot manifold, be aware that the valve selection becomes different.

<table>
<thead>
<tr>
<th>Manifold model no.</th>
<th>Mounting valve</th>
</tr>
</thead>
<tbody>
<tr>
<td>VV3P</td>
<td>Internal pilot</td>
</tr>
<tr>
<td>VP(A)300</td>
<td>Internal pilot</td>
</tr>
<tr>
<td>VP(A)500</td>
<td>Internal pilot</td>
</tr>
<tr>
<td>VP(A)700</td>
<td>Internal pilot</td>
</tr>
<tr>
<td>VV3P(A)5</td>
<td>Internal pilot</td>
</tr>
<tr>
<td>VV3P(A)7</td>
<td>Internal pilot</td>
</tr>
</tbody>
</table>

<How to distinguish the external pilot manifold>

When the piping is connected to the external pilot port, this manifold is the external pilot manifold.

**Caution**

When fittings are used, they may interfere with one another depending on their types and sizes. Therefore, the dimensions of the fittings to be used should first be confirmed in their respective catalogs.

Fittings whose compliance with the VP series is already confirmed are stated below. If the fitting within the applicable range is selected, there will not be any interference.

**Applicable Fittings: KQ2H, KQ2S series**

<table>
<thead>
<tr>
<th>Series</th>
<th>Piping port</th>
<th>Port size</th>
<th>Applicable tubing O.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>VP(A)300</td>
<td>X</td>
<td>M5</td>
<td>ø3.2 ø4 ø6 ø8 ø10 ø12 ø16</td>
</tr>
<tr>
<td>VP(A)500</td>
<td>X</td>
<td>1/4, 3/8</td>
<td>M5</td>
</tr>
<tr>
<td>VP(A)700</td>
<td>X</td>
<td>1/8</td>
<td>M5</td>
</tr>
<tr>
<td>VV3P(A)3</td>
<td>X</td>
<td>1/4</td>
<td>M5</td>
</tr>
<tr>
<td>VV3P(A)5</td>
<td>X</td>
<td>3/8</td>
<td>M5</td>
</tr>
<tr>
<td>VV3P(A)7</td>
<td>X</td>
<td>1/2</td>
<td>M5</td>
</tr>
</tbody>
</table>

**Precautions when replacing the old VP series with new VP series**