3 Port Solenoid Valve
Pilot Operated Poppet Type
VG342 Series
Rubber Seal

Low power consumption
4 W DC (Standard type)
1.8 W DC (Energy-saving type)

No lubrication required
Possible to use in vacuum or under low pressures
External pilot
Vacuum: Up to –101.2 kPa
Low pressure: 0 to 0.2 MPa

Changeable actuation:
N.C., N.O., or external pilot
Can be used as a selector or divider valve (External pilot)

External Pilot
Use external pilot type in the following cases:
• For vacuum or for low pressure 0.2 MPa or less
• When having P port downsized in diameter
• When using A port as the atmospheric releasing port, e.g. air blower

How to Order

Pilot valve option
Nil Standard type
Y Energy-saving type (DC only)
E Continuous duty type

Passage symbol
Nil External pilot
A N.C. (Normally closed)
B N.O. (Normally open)

Thread type
Nil Rc
G DIN terminal

Port size
04 3/8
06 1/2
10 1

How to Order Pilot Valve Assembly

Pilot valve option
Nil Standard type
Y Energy-saving type (DC only)
E Continuous duty type

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
7 240 VAC, 50/60 Hz

Pilot valve assembly for VG342

Light/Surge voltage suppressor
Nil None
S With surge voltage suppressor (Only grommet type is only available.)
Z With light/surge voltage suppressor (Except grommet type)

Electrical entry
Nil —
G Grommet
D DIN terminal

Note) CE-compliant: For DIN terminal only

Note) Applicable only for DIN terminal type

How to Order Pilot Valve Assembly

Pilot valve option
Nil Standard type
Y Energy-saving type (DC only)
E Continuous duty type

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Pilot valve assembly for VG342

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Nil None
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Electrical entry
Nil —
G Grommet
D DIN terminal
**Caution**

**Light/Surge Voltage Suppressor**

AC, 100 V or more

In the case of indicator light

**Electrical Connection**

In the case of DIN terminal (with light/surge voltage suppressor), the connection is as follows. Connect each to the power supply side.

**How to Change Passage State**

When changing the passage state, confirm that pressure has been removed from the valve. Unscrew the M4 x 0.7 hexagon socket head cap screw in the changeover plate and match the Mark on the adapter plate with the character on the changeover plate. Piping is as follows.

**Mounting Screw Tightening Torques**

M4: 1.4 N·m

**Piping**

*Inlet* → *Outlet*

**Specifications**

<table>
<thead>
<tr>
<th>Type of actuation</th>
<th>In common between N.C. and N.O.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid</td>
<td>Air</td>
</tr>
<tr>
<td>Operation</td>
<td>Internal pilot type</td>
</tr>
<tr>
<td>Operating pressure range</td>
<td>0.2 to 0.9 MPa</td>
</tr>
<tr>
<td>External pilot operating pressure range</td>
<td>—</td>
</tr>
<tr>
<td>Response time (1)</td>
<td>30 ms or less (at the pressure of 0.5 MPa)</td>
</tr>
<tr>
<td>Max. operating frequency</td>
<td>5 c/s (Min. operating frequency: 1 c/30 days based on JIS B 8374-1981)</td>
</tr>
<tr>
<td>Ambient and fluid temperature</td>
<td>−10 to 50°C (No freezing)</td>
</tr>
<tr>
<td>Lubrication</td>
<td>Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)</td>
</tr>
<tr>
<td>Manual override</td>
<td>Push type (Non-locking)</td>
</tr>
<tr>
<td>Mounting orientation</td>
<td>Unrestricted</td>
</tr>
<tr>
<td>Impact/Vibration resistance (m/s²) (2)</td>
<td>Unrestricted</td>
</tr>
<tr>
<td>Weight</td>
<td>1.0 kg</td>
</tr>
</tbody>
</table>

Note 1) Based on dynamic performance test JIS B 8419: 2010. (Coil temperature 20°C, at rated voltage, without surge voltage suppressor)

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

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 1000 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)

**Flow Rate Characteristics**

<table>
<thead>
<tr>
<th>Port size</th>
<th>Effective area (mm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>210</td>
</tr>
<tr>
<td>2</td>
<td>235</td>
</tr>
</tbody>
</table>

**Pilot Valve Assembly Specifications**

<table>
<thead>
<tr>
<th>Electrical entry</th>
<th>Grommet (G), DIN terminal (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead wire color</td>
<td>100 VAC: Blue, 200 VAC: Red, 24 VDC: Red/Black</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Dustlight</td>
</tr>
<tr>
<td>Coil rated voltage (V)</td>
<td>AC (50/60 Hz) 100, 200, 110, 220, 240</td>
</tr>
<tr>
<td></td>
<td>DC 24, 12</td>
</tr>
<tr>
<td>Allowable voltage fluctuation</td>
<td>−15 to +10% of rated voltage</td>
</tr>
<tr>
<td>Apparent power VA (Hz)</td>
<td>AC Inrush 12.7 (50), 10.7 (60)</td>
</tr>
<tr>
<td></td>
<td>Holding 7.6 (50), 5.4 (60)</td>
</tr>
<tr>
<td>Power consumption</td>
<td>DC Without indicator light: 4 W</td>
</tr>
<tr>
<td></td>
<td>With indicator light: 4.2 W</td>
</tr>
</tbody>
</table>

**Energy-saving type: VG342□-□-□-□-□-Y (–Q)**

Use “Energy-saving type” if low power consumption is required for electronic control. DC only

Specifications different from standard are as follows.

Power consumption DC Without indicator light: 1.8 W With indicator light: 2 W

**Continuous duty type: VG342□-□-□-□-□-□-E (–Q)**

Use “Continuous duty type” if energizing the valve for a long time.

Specifications different from standard are as follows.

Apparent power VA (Hz) AC Inrush 7.9 (50), 6.2 (60) Holding 5.8 (50), 3.5 (60)

Power consumption DC Without indicator light: 1.8 W With indicator light: 2 W

**DIN Connector part number**

<table>
<thead>
<tr>
<th>Standard</th>
<th>B1B06-2A</th>
</tr>
</thead>
<tbody>
<tr>
<td>CE-compliant</td>
<td>GM209NJ-B17</td>
</tr>
</tbody>
</table>
3 Port Solenoid Valve
Pilot Operated Poppet Type VG342 Series

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 alloy</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Adapter plate</td>
<td>Resin</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>End plate</td>
<td>Resin</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Retainer</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Poppet valve</td>
<td>Stainless steel</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Piston</td>
<td>Resin</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Spring</td>
<td>Aluminum alloy</td>
<td></td>
</tr>
</tbody>
</table>

Color: Platinum silver

Component Parts

<table>
<thead>
<tr>
<th>No.</th>
<th>Description</th>
<th>Material</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Pilot valve assembly</td>
<td>VO307E-□□□□□□□□-X84-E</td>
<td></td>
</tr>
</tbody>
</table>

Caution

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

How to Use DIN Terminal

1. Disassembly
   1) After loosening the screw ①, then if the housing ② is pulled in the direction of the screw, the connector will be removed from the body of equipment (solenoid, etc.).
   2) Pull the screw ② out of the housing ①.
   3) On the bottom part of the terminal block ③, there's a cut-off part ④. If a small flat head screwdriver is inserted between the opening in the bottom, terminal block ③ will be removed from the cover ②. (Refer to Figure 1.)
   4) Remove the cable gland ④ and plain washer ⑤ and rubber seal ⑥.

2. Wiring
   1) Pass them through the cable ⑦ in the order of cable ground ⑧, washer ⑨, rubber seal ⑥, and then insert into the housing ②.
   2) From the terminal block ③, loosen the screw ③, then pass the lead wire ⑩ through, then again tighten the screw ③.

   Note 1) Tighten within the tightening torque of 0.5 N·m ±15%.
   Note 2) Cable ⑦ outside diameter: ø6 to ø8 mm (ø4.5 to ø7 mm for CE-compliant products)

3. Assembly
   1) Passing through the cable ⑦, the cable gland ④, plain washer ⑤, and rubber seal ⑥, housing ② in this order, and then connect with the terminal block ③. After that, set the terminal block ③ on the housing ②. (Push it down until you hear the click sound.)
   2) Putting rubber seal ⑥, plain washer ⑤, in this order into the cable introducing slit on the housing ②, then further tighten the cable gland ④ securely.
   3) Insert the gasket ⑧ or between the bottom part of terminal block ③ and a plug attached to equipment, and then screw ③ in from the top of the housing ② to tighten it.

   Note 1) Tighten within the tightening torque of 0.5 N·m ±20%.
   Note 2) Connector orientation can be changed by 180 degrees depending on how to assemble the housing ② and the terminal block ③.

Precautions

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

How to Calculate the Flow Rate

For obtaining the flow rate, refer to front matter.

Continuous Duty

If energizing the valve for a long time, use "VG342-□□□□□□□□□□□□□□□-E" (Pilot valve assembly: "VO307E-□□□□□□□□-X84-E").

1. This model is for continuous duty, not for high cycle rates. But even in low cycle rates, if energizing the valve more than once a day, please consult with SMC.
2. Make sure to cycle valve at least once every 30 days.
VG342 Series

Dimensions

Grommet (G)

1/8”
(Pilot exhaust)

2 x ø8.4
(Mounting hole)

Manual override
(Non-locking)

Function plate

1”, 3/4”, 1/2”
2(A) port

1”, 3/4”, 1/2”
3(R) port

1”, 3/4”, 1/2”
1(P) port

1/8”
(External pilot port)
< Internal pilot: Plug

Internal pilot: Plug

≈300

Lead wire length

34

30.5

73.5

87.4

68

54

91.6

43.6

34

57.6

71

68.8

98.6

129.7

91.6

43.6

34
3 Port Solenoid Valve
Pilot Operated Poppet Type VG342 Series

Dimensions

DIN terminal (D)