3 Port Solenoid Valve
Direct Operated Poppet Type
Series VK300
Rubber Seal

Universal porting
Available for N.C. valve, N.O. valve, divider valve, selector valve, etc.
C: 0.80 dm³/(s·bar)
(Passage 2 → 3)
Compact: Width 18 x Length 63 (mm)
Low power consumption
4 W DC (Standard type)
2 W DC (Low wattage type)
Suitable for use in vacuum applications –101.2 kPa
Suitable for use in copper-free applications
The portions that come in contact with fluids do not contain copper, thus enabling the standard product to be used as is.

Specifications

- **Type of actuation**: Direct operated type 2 position single solenoid
- **Fluid**: Air
- **Ambient and fluid temperature**: –5 to 50°C (No freezing. Refer to page 5.)
- **Response time (at 0.5 MPa)**: 10 ms or less (Standard), 15 ms or less (Low power consumption type)
- **Manual override**: Non-locking push type
- **Lubrication**: Not required (Use turbine oil Class 1 ISO VG32, if lubricated.)
- **Mounting orientation**: Universal porting
- **Shock/Vibration resistance**: 300/50 m/s²
- **Enclosure**: Dustproof

Note 1) Based on dynamic performance test, JIS B 8374-1981. (Coil temperature: 20°C, at rated voltage, without surge 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 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**: Grommet (G), DIN terminal (D)
- **Rated voltage (V)**:
  - AC: 100, 110, 200, 220, 240
  - DC: 12, 24
- **Allowable voltage fluctuation**: ±10% of rated voltage
- **Apparent power (AC)***:
  - Standard type
    - Inrush: 9.5 VA/50 Hz, 8 VA/60 Hz
    - Holding: 7 VA/50 Hz, 5 VA/60 Hz
  - Continuous duty type
    - Inrush: 3.5 VA/50 Hz, 3.3 VA/60 Hz
    - Holding: 3 VA/50 Hz, 2.8 VA/60 Hz
- **Power consumption (DC)***:
  - Without indicator light
    - 4 W (Standard), 2 W (Low power consumption type)
  - With indicator light
    - 4.3 W (Standard), 2.3 W (Low power consumption type)
- **Surge voltage suppressor**:
  - AC: Varistor
  - DC: Diode (Varistor for 12 VDC or less)
- **Indicator light**:
  - AC: Neon bulb
  - DC: LED

- **Mass (g)**: 80, 120

Flow Characteristics/Mass

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Operating pressure range (MPa)</th>
<th>Flow characteristics</th>
<th>Mass (g)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VK332</td>
<td>0 to 0.7</td>
<td></td>
<td>80</td>
</tr>
<tr>
<td>VK332Y</td>
<td>0.5 to 0.8</td>
<td></td>
<td>120</td>
</tr>
<tr>
<td>VK332V</td>
<td>–101.2 kPa to 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VK34</td>
<td>0 to 0.7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VK34Y</td>
<td>0.5 to 0.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VK34W</td>
<td>–101.2 kPa to 0.1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mounting with VK300

Series VK300 can be mounted on the manifold base VV5K3 of VK 3000 series. Refer to page 1592 for details.
Series VK300

How to Order

- Electrical entry
  - G: Grommet (Lead wire length: 300 mm)
  - H: Grommet (Lead wire length: 600 mm)
  - D: DIN terminal
  - DO: DIN terminal (Without connector)
  - For the connector part number, refer to page 1588.

- Port size (A port)
  - M5 x 0.8
    - P, R port: M5

- Thread type
  - Nil
    - Rc
  - F: For bracket (Not assembled)
  - G: With bracket

- Option
  - Nil
    - None

- Option Part No.
  - Description
  - Part no.
  - Note
  - Bracket
    - VK300-43-2A
    - With screw

- Rated voltage
  - 100 VAC, 50/60 Hz
  - 200 VAC, 50/60 Hz
  - 110 VAC, 50/60 Hz
  - 220 VAC, 50/60 Hz
  - 24 VDC
  - 12 VDC
  - 240 VAC, 50/60 Hz

- Port size
  - Nil
    - Without sub-plate
  - 01
    - Hc 1/4 (With sub-plate)

- Light/Surge voltage suppressor
  - Nil
    - None
  - S: With surge voltage suppressor
  - Z: With light/surge voltage suppressor (Type D only)

- Valve option
  - Nil: Standard type
  - G: For vacuum
  - W: For vacuum/low wattage
  - E: Continuous duty type

- CE-compliant
  - Nil
    - —
  - G: CE-compliant

- Construction

JIS Symbol

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>Platinum silver</td>
</tr>
<tr>
<td>2</td>
<td>Cover</td>
<td>Resin</td>
<td>Black</td>
</tr>
<tr>
<td>3</td>
<td>End cover</td>
<td>Resin</td>
<td>Black</td>
</tr>
<tr>
<td>4</td>
<td>Spool valve assembly</td>
<td>Aluminum, NBR</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Return spring</td>
<td>Stainless steel</td>
<td>Black</td>
</tr>
<tr>
<td>6</td>
<td>Molded coil</td>
<td>Resin</td>
<td>Black</td>
</tr>
</tbody>
</table>
Series VK300
Manifold Specifications

Specifications

<table>
<thead>
<tr>
<th>Valve stations</th>
<th>Piping method</th>
<th>1 to 20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common SUP, Common EXH</td>
<td>Body ported, Base mounted</td>
<td></td>
</tr>
<tr>
<td>Common SUP, Individual EXH</td>
<td>Body ported</td>
<td></td>
</tr>
</tbody>
</table>

Common SUP/Common EXH

Type 20: Body ported
(A port top ported)

How to Order

VV3K3 - 20 - 05 - 01

Option
Nil

Thread type

Applicable solenoid valve
VK332/L50132-M5(-Q)
VK332/L50132-01(-Q)

Applicable blanking plate assembly
VK300-42-1A
Bracket
VK300-43-1A

CE-compliant
Nil

Nil
Q

Type 40: Base mounted
(A port bottom ported)

How to Order

VV3K3 - 40 - 05 - 01

Option
Nil

Thread type

Applicable solenoid valve
VK334/L50132(-Q)

Applicable blanking plate assembly
VK300-42-1A
Bracket
VK300-43-1A

CE-compliant
Nil

Nil
Q

Type 42: Base mounted
(A port side ported)

How to Order

VV3K3 - 42 - 05 - 01

Option
Nil

Thread type

Applicable solenoid valve
VK334/L50132(-Q)

Applicable blanking plate assembly
VK300-42-1A

CE-compliant
Nil

Nil
Q

Type S42
(Solenoids on the same side of A port)

How to Order

VV3K3 - S42 - 05 - 01

Option
Nil

Thread type

CE-compliant
Nil

Nil
Q

Common SUP/Individual EXH

Type 21: Body ported
(A port top ported)

How to Order

VV3K3 - 21 - 05 - 01

Option
Nil

Thread type

Applicable solenoid valve
VK332/L50132-M5(-Q)
VK332/L50132-01(-Q)

Applicable blanking plate assembly
VK300-42-1A

CE-compliant
Nil

Nil
Q

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com
**Series VK300**

**Combinations of Solenoid Valve, Manifold Gasket and Manifold Base**

<table>
<thead>
<tr>
<th>Manifold gasket and screw assembly</th>
<th>Body ported</th>
<th>Base mounted</th>
</tr>
</thead>
<tbody>
<tr>
<td>VK300-41-1A</td>
<td>VK300-41-1A</td>
<td>VK300-41-2A</td>
</tr>
</tbody>
</table>

**Applicable base**

- VV3K3-20 (-Q)
- 21 (-Q)
- VV5K3-20 (-Q)
- 21 (-Q)

**Applicable base (2)**

- VK300-45-1 Sub-plate
- VV3K3-40 (-Q)
- 42 (-Q)
- VV5K3-40 (-Q)
- Manifold base
- 41 (-Q)
- 42 (-Q)

**Caution**

**Mounting Screw Tightening Torques**

- M3: 0.6 N·m

**Note 1** Mounting direction is fixed, do not mount on opposite side.

**Note 2** Series VK300 can be mounted on the manifold base VV5K3 of VK 3000 series. Refer to page 1592 for details.

**Combinations of Blanking Plate Assembly and Manifold Base**

**Blanking plate assembly: VK300-42-1 A**

**Caution**

**Mounting Screw Tightening Torques**

- M3: 0.6 N·m

Applicable base: in common for all types of VV3K3 models
3 Port Solenoid Valve
Direct Operated Poppet Type Series VK300

Dimensions: Body Ported
Grommet: VK332-G-M5

Dimensions: Base Mounted
Grommet: VK334-G-01

DIN terminal: VK332-D-M5

Refer to grommet type for other dimensions.

DIN terminal: VK334-D-01

Refer to grommet type for other dimensions.
Series VK300

Type 20 Manifold/Body Ported (Top ported)

VV3K-20- Stations

Grommet: G

DIN terminal: D

Applicable cable O.D: ø3.5 to ø7

L Dimension

<table>
<thead>
<tr>
<th>n: Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>6</td>
</tr>
</tbody>
</table>
Type 21 Manifold/Body Ported (Top ported)

**VV3K3-21- Stations**

**Grommet: G**

**DIN terminal: D**

<table>
<thead>
<tr>
<th>L Dimension</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>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>38</td>
<td>57</td>
<td>76</td>
<td>95</td>
<td>114</td>
<td>133</td>
<td>152</td>
<td>171</td>
<td>190</td>
<td>209</td>
<td>228</td>
<td>247</td>
<td>266</td>
<td>285</td>
<td>304</td>
<td>323</td>
<td>342</td>
<td>361</td>
<td>380</td>
<td>399</td>
</tr>
<tr>
<td>L2</td>
<td>27</td>
<td>46</td>
<td>65</td>
<td>84</td>
<td>103</td>
<td>122</td>
<td>141</td>
<td>160</td>
<td>179</td>
<td>198</td>
<td>217</td>
<td>236</td>
<td>255</td>
<td>274</td>
<td>293</td>
<td>312</td>
<td>331</td>
<td>350</td>
<td>369</td>
<td>388</td>
</tr>
</tbody>
</table>
Series VK300

Type 40 Manifold/Base Mounted (Bottom ported)

VV3K3-40- Stations-01

Grommet: G

DIN terminal: D

<table>
<thead>
<tr>
<th>L Dimension</th>
<th>n: Stations</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>37 56 75 94 113 132 151 170 189 208 227 246 265 284 303 322 341 360 379 398</td>
</tr>
<tr>
<td>L2</td>
<td>27 46 65 84 103 122 141 160 179 198 217 236 255 274 293 312 331 350 369 388</td>
</tr>
<tr>
<td>L3</td>
<td>13 32 51 70 89 108 127 146 165 184 203 222 241 260 279 298 317 336 355 374</td>
</tr>
</tbody>
</table>
3 Port Solenoid Valve
Direct Operated Poppet Type Series VK300

Type 42 Manifold/Base Mounted (Side ported)

VV3K3-42- Stations -01

Grommet: G

DIN terminal: D

Applicable cable O.D: ø3.5 to ø7

Built-in One-touch fitting: VV3K3-42- Stations -C4, C6

Solenoid at A port side:

VV3K3-S42- Stations -

Refer to the above drawing for DIN terminal dimensions.

Refer to the above drawing for other dimensions.

<table>
<thead>
<tr>
<th>n</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>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
<th>15</th>
<th>16</th>
<th>17</th>
<th>18</th>
<th>19</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>L1</td>
<td>38</td>
<td>57</td>
<td>76</td>
<td>95</td>
<td>114</td>
<td>133</td>
<td>152</td>
<td>171</td>
<td>190</td>
<td>209</td>
<td>228</td>
<td>247</td>
<td>266</td>
<td>285</td>
<td>304</td>
<td>323</td>
<td>342</td>
<td>361</td>
<td>380</td>
<td>399</td>
</tr>
<tr>
<td>L2</td>
<td>28</td>
<td>47</td>
<td>66</td>
<td>85</td>
<td>104</td>
<td>123</td>
<td>142</td>
<td>161</td>
<td>180</td>
<td>199</td>
<td>218</td>
<td>237</td>
<td>256</td>
<td>275</td>
<td>294</td>
<td>313</td>
<td>332</td>
<td>351</td>
<td>370</td>
<td>389</td>
</tr>
</tbody>
</table>

Courtesy of Steven Engineering, Inc.-230 Ryan Way, South San Francisco, CA 94080-6370-Main Office: (650) 588-9200-Outside Local Area: (800) 258-9200-www.stevenengineering.com
Series VK300
Specific Product Precautions

Be sure to read before handling. Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Caution
How to Wire DIN Terminal

- **Connection**
  1. Loosen the set screw and pull out the connector from the terminal block of the solenoid.
  2. Remove screw and insert screwdriver into the slit area near the bottom of terminal block to separate block and housing.
  3. Loosen the terminal screws (slotted 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**
  - Use caution in wiring because it will not meet the IP55 (enclosure) standard if you use the other cord than prescribed heavy-duty cord of the terminal block.
  - Other precautions are to be taken when using this valve for vacuum applications.

- **Applicable cable**
  - O.D.: 0.3 to 0.7 mm² core and 3 core wires equivalent to JIS C 3306

- **Connector part no.:** VK300-82-1

- **Part no. of connector with indicator light**
  - Part no. of connector with indicator light
    - Rated voltage [V, W]: Part no.
      - 100 VAC: VK300-82-2-01
      - 110 VAC: VK300-82-2-03
      - 200 VAC: VK300-82-2-02
      - 220 VAC: VK300-82-2-04
      - 240 VAC: VK300-82-2-07
      - 6 VDC: VK300-82-4-51
      - 12 VDC: VK300-82-4-06
      - 24 VDC: VK300-82-3-05
      - 48 VDC: VK300-82-3-53

- **Circuit with indicator light**
  - AC circuit diagram: 12 VDC or less circuit diagram
  - LED: Light emitting diode
  - R: Resister

- **Grommet type**
  - Red (+) for positive, Black (–) for negative

- **DIN terminal type**
  - Indicator light (Built-in connector)
  - Surge voltage suppressor (Built-in terminal)

Warning
Valve Mounting Direction

When mounting a valve on the manifold base or sub-plate, etc., the mounting orientation is already decided. If mounted in a wrong direction, the equipment to be connected may result in malfunction. Refer to pages 1583 to 1587 for external dimensions in mounting.

- **Vacuum Spec. Type:** VK33E (VK33W)

Precautions on connection of 24 V or more DC
Grommet type should be connected as following: Red lead wire for (+) side, Black lead wire for (–) side respectively.

- **Precautions on connection of 24 V or more DC**

When connecting the terminal block and housing, the cord entry direction can be changed by attaching the housing in the desired direction (4 directions in 90 increments).

- **Change of electrical entry (Orientation)**

Precautions
Plug a connector in or out vertically, never at an angle.

- **Applicable cable**
  - O.D.: 0.3 to 0.7 mm² core and 3 core wires equivalent to JIS C 3306