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

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

Note1) Based on dynamic performance test, JIS B 8419: 2010. (Coil temperature: 20°C, at rated voltage, without surge suppressor)

Note2) 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)

Flow Rate Characteristics/Weight

<table>
<thead>
<tr>
<th>Valve model</th>
<th>Operating pressure range (MPa)</th>
<th>Port size</th>
<th>Flow rate characteristics</th>
<th>Weight (g)</th>
<th>Grommet</th>
</tr>
</thead>
<tbody>
<tr>
<td>VK332</td>
<td>0 to 0.7</td>
<td>M5 × 0.8</td>
<td>1 → 2 (P → A)</td>
<td>0.47</td>
<td>0.44</td>
</tr>
<tr>
<td>VK332Y (For low wattage, 2 W DC)</td>
<td>0 to 0.7</td>
<td>M5 × 0.8</td>
<td>2 → 3 (A → R)</td>
<td>0.47</td>
<td>0.44</td>
</tr>
<tr>
<td>VK332E (Continuous duty type)</td>
<td>0 to 0.7</td>
<td>M5 × 0.8</td>
<td>3 → 3 (R → A)</td>
<td>0.47</td>
<td>0.44</td>
</tr>
<tr>
<td>VK332V (For vacuum)</td>
<td>–101.2 kPa to 0.1</td>
<td>M5 × 0.8</td>
<td>2 → 1 (A → P)</td>
<td>0.45</td>
<td>0.26</td>
</tr>
<tr>
<td>VK332W (Low weight, vacuum)</td>
<td>–101.2 kPa to 0.1</td>
<td>M5 × 0.8</td>
<td>3 → 3 (R → A)</td>
<td>0.65</td>
<td>0.24</td>
</tr>
<tr>
<td>VK334</td>
<td>0 to 0.7</td>
<td>M5 × 0.8</td>
<td>1 → 2 (P → A)</td>
<td>0.65</td>
<td>0.24</td>
</tr>
<tr>
<td>VK334Y (For low wattage, 2 W DC)</td>
<td>0 to 0.7</td>
<td>M5 × 0.8</td>
<td>2 → 3 (A → R)</td>
<td>0.65</td>
<td>0.24</td>
</tr>
<tr>
<td>VK334E (Continuous duty type)</td>
<td>0 to 0.7</td>
<td>M5 × 0.8</td>
<td>3 → 3 (R → A)</td>
<td>0.65</td>
<td>0.24</td>
</tr>
<tr>
<td>VK334V (For vacuum)</td>
<td>–101.2 kPa to 0.1</td>
<td>M5 × 0.8</td>
<td>2 → 1 (A → P)</td>
<td>0.65</td>
<td>0.24</td>
</tr>
<tr>
<td>VK334W (Low weight, vacuum)</td>
<td>–101.2 kPa to 0.1</td>
<td>M5 × 0.8</td>
<td>3 → 3 (R → A)</td>
<td>0.65</td>
<td>0.24</td>
</tr>
</tbody>
</table>

Mounting with VK300

The VK300 series can be mounted on the manifold base VV5K3 of VK 3000 series. Refer to page 1422 for details.
VK300 Series

How to Order

Note) AC-type models that are CE-compliant have DIN terminals only.

<table>
<thead>
<tr>
<th>Port size (A port)</th>
<th>Option</th>
<th>Valve option</th>
</tr>
</thead>
<tbody>
<tr>
<td>M5</td>
<td>Nil</td>
<td>1 G M5</td>
</tr>
<tr>
<td>01</td>
<td>F</td>
<td>1 G 01</td>
</tr>
</tbody>
</table>

Note1) AC-type models that are CE-compliant have DIN terminals only.

Note2) For other rated voltages, please consult with SMC.

Body ported

<table>
<thead>
<tr>
<th>Body ported</th>
<th>VK332</th>
<th>1 G</th>
<th>M5</th>
<th>E</th>
</tr>
</thead>
</table>

Base mounted

<table>
<thead>
<tr>
<th>Base mounted</th>
<th>VK334</th>
<th>1 G</th>
<th>01</th>
<th>E</th>
</tr>
</thead>
</table>

Valve option

- Nil: Standard type
- V: For vacuum
- Y: For low wattage
- W: For vacuum/low wattage
- E: Continuous duty type

Light/Surge voltage suppressor

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

Construction

Symbol

(A)2

(R)3 1(P)

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-cast</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></td>
</tr>
<tr>
<td>6</td>
<td>Molded coil</td>
<td>Resin</td>
<td>Black</td>
</tr>
</tbody>
</table>
**VK300 Series**

**Manifold Specifications**

### Specifications

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

**Piping method**

- Common SUP, Common EXH
- Common SUP, Individual EXH

Note) For 9 stations or more, supply air both sides of P port. The common exhaust type should exhaust from both of the R port.

**CE-compliant**

For DIN terminal only

---

**Common SUP/Common EXH**

**Type 20: Body ported**  
(A port top ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **Option**
  - Nil
  - F: With bracket (Not mounted)

- **P, R port thread type**
  - Nil
  - 00F: F
  - 00N: N
  - 00T: T

- **Applicable solenoid valve**
  - VK332-□□□□□□-M5(-Q)
  - VK332-□□□□□□-01(-Q)

**Type 40: Base mounted**  
(A port bottom ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **Thread type**
  - Nil
  - 00F: F

- **Applicable solenoid valve**
  - VK334-□□□□□□(-Q)

**Type 42: Base mounted**  
(A port side ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **Thread type**
  - Nil
  - 00F: F

- **Applicable solenoid valve**
  - VK334-□□□□□□(-Q)

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

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **Solenoid direction**
  - Nil: Opposite side of A port
  - S: Same side of A port

**Type 21: Body ported**  
(A port top ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **P, R port thread type**
  - Nil
  - 00F: F

**Applicable solenoid valve**

- VK332-□□□□□□-M5(-Q)
- VK332-□□□□□□-01(-Q)

**Applicable blanking plate assembly**

- VK300-42-1A
- Bracket VK300-43-1A

---

**Note**

Applicable only for DIN terminal type

---

**Electrical**

- Nil
- F: With bracket (Not mounted)

---

**Common SUP/Individual EXH**

**Type 21: Body ported**  
(A port top ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **P, R port thread type**
  - Nil
  - 00F: F

**Applicable solenoid valve**

- VK332-□□□□□□-M5(-Q)
- VK332-□□□□□□-01(-Q)

**Applicable blanking plate assembly**

- VK300-42-1A

---

**Type 42: Base mounted**  
(A port side ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **Thread type**
  - Nil
  - 00F: F

**Applicable solenoid valve**

- VK334-□□□□□□(-Q)

**Common SUP/Individual EXH**

- **Applicable blanking plate assembly**
  - VK300-42-1A

---

**Type 40: Base mounted**  
(A port bottom ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **Thread type**
  - Nil
  - 00F: F

---

**Type 20: Body ported**  
(A port top ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **P, R port thread type**
  - Nil
  - 00F: F

---

**Common SUP/Individual EXH**

- **Applicable blanking plate assembly**
  - VK300-42-1A

---

**Type 42: Base mounted**  
(A port side ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **Thread type**
  - Nil
  - 00F: F

---

**Type 20: Body ported**  
(A port top ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **P, R port thread type**
  - Nil
  - 00F: F

---

**Type 42: Base mounted**  
(A port side ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **Thread type**
  - Nil
  - 00F: F

---

**Type 40: Base mounted**  
(A port bottom ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **Thread type**
  - Nil
  - 00F: F

---

**Type 20: Body ported**  
(A port top ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **P, R port thread type**
  - Nil
  - 00F: F

---

**Type 42: Base mounted**  
(A port side ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **Thread type**
  - Nil
  - 00F: F

---

**Type 40: Base mounted**  
(A port bottom ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **Thread type**
  - Nil
  - 00F: F

---

**Type 20: Body ported**  
(A port top ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **P, R port thread type**
  - Nil
  - 00F: F

---

**Type 42: Base mounted**  
(A port side ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **Thread type**
  - Nil
  - 00F: F

---

**Type 40: Base mounted**  
(A port bottom ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **Thread type**
  - Nil
  - 00F: F

---

**Type 20: Body ported**  
(A port top ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **P, R port thread type**
  - Nil
  - 00F: F

---

**Type 42: Base mounted**  
(A port side ported)

- **Valve stations**
  - 01: 1 station
  - 20: 20 stations

- **Thread type**
  - Nil
  - 00F: F
Combinations of Solenoid Valve, Manifold Gasket and Manifold Base

3 port body ported: VK332

3 port base mounted: VK334

Applicable base

<table>
<thead>
<tr>
<th>VK3K3-20 (-Q)</th>
<th>VK3K3-20 (-Q)</th>
<th>VK5K3-20 (-Q)</th>
<th>VK5K3-20 (-Q)</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 (-Q)</td>
<td>21 (-Q)</td>
<td>42 (-Q)</td>
<td>42 (-Q)</td>
</tr>
</tbody>
</table>

Manifold gasket and screw assembly

<table>
<thead>
<tr>
<th>Body ported</th>
<th>Base mounted</th>
</tr>
</thead>
<tbody>
<tr>
<td>VK300-41-1A</td>
<td>VK300-41-2A</td>
</tr>
</tbody>
</table>

Note1) Mounting direction is fixed, do not mount on opposite side.

Note2) The VK300 series can be mounted on the manifold base VV5K3 of VK 3000 series. Refer to page 1422 for details.

Combinations of Blanking Plate Assembly and Manifold Base

Blanking plate assembly: VK300-42-1A

<table>
<thead>
<tr>
<th>M3 x 8</th>
<th>Round head combination screw</th>
</tr>
</thead>
<tbody>
<tr>
<td>VK300-33-3</td>
<td></td>
</tr>
</tbody>
</table>

Manifold gasket for blanking plate

| VK300-41-3 |                          |

Applicable base: In common for all types of VV3K3 models

Caution

Mounting Screw Tightening Torques

M3: 0.6 N·m
**Dimensions: Body Ported**

**Grommet: VK332-□G^M5_01**

![Diagram of Body Ported Grommet]

**DIN terminal: VK332-□D^M5_01**

![Diagram of DIN terminal]

Refer to grommet type for other dimensions.

[ ]: For port size 01

**Dimensions: Base Mounted**

**Grommet: VK334-□G-01**

![Diagram of Base Mounted Grommet]

**DIN terminal: VK334-□D-01**

![Diagram of DIN terminal]

Refer to grommet type for other dimensions.

---

**3 Port Solenoid Valve**

Direct Operated Poppet Type

**VK300 Series**
VK300 Series

Type 20 Manifold/Body Ported (Top ported)

VV3K3-20- Stations

Grommet: G

DIN terminal: D

Manual override
(Non-locking)

Applicable cable O.D: ø3.5 to ø7

(Applicable cable O.D: ø3.5 to ø7)

L Dimension

<table>
<thead>
<tr>
<th>n: Stations</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>35</td>
<td>54</td>
<td>73</td>
<td>92</td>
<td>111</td>
<td>130</td>
<td>149</td>
<td>168</td>
<td>187</td>
<td>206</td>
<td>225</td>
<td>244</td>
<td>263</td>
<td>282</td>
<td>301</td>
<td>320</td>
<td>339</td>
<td>358</td>
<td>377</td>
<td>396</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>
<tr>
<td>L3</td>
<td>13</td>
<td>32</td>
<td>51</td>
<td>70</td>
<td>89</td>
<td>108</td>
<td>127</td>
<td>146</td>
<td>165</td>
<td>184</td>
<td>203</td>
<td>222</td>
<td>241</td>
<td>260</td>
<td>279</td>
<td>298</td>
<td>317</td>
<td>336</td>
<td>355</td>
<td>374</td>
</tr>
</tbody>
</table>
Type 21 Manifold/Body Ported (Top ported)

**VV3K3-21** - Stations

- **Manual override (Non-locking)**
  - Station 1
  - Station n

**L Dimension**

<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>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>

- **Grommet: G**
- **DIN terminal: D**

- **Applicable cable O.D:** ø3.5 to ø7
  - Max.10
  - Pg7
  - 2 x Rc 1/8 (P port)

- **n1 = Number of VK300**
Type 42 Manifold/Base Mounted (Side ported)

**VV3K3-42- Stations -01**

- Grommet: G
- DIN terminal: D

- Max. 10
- Applicable cable O.D: ø3.5 to ø7

**Solenoid at A port side:**

**VV3K3-S42- Stations -□**

- Manual override (Non-locking)
- (Pitch) P = 19.14

- (Station n) ........................... (Station 1)

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

- Manual override (Non-locking)
- (Pitch) P = 19.14

- (Station 1) ........................... (Station n)

- 2 x ø4.5 (Mounting hole)

- (Pitch) P = 19.14

- 4 x Rc 1/8 (P, R port)

- 4 x ø4.5 (Mounting hole)

- n x One-touch fitting
  - C4: Applicable tubing T0425
  - C6: Applicable tubing T0604

- (A port)

Refer to the above drawing for other dimensions.
VK300 Series
Specific Product 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 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 cable.

**Change of electrical entry (Orientation)**
After separating terminal block and housing, the cable entry direction can be changed by attaching the housing in the desired direction (4 directions in 90 increments).
- In the case of w/ indicator light, avoid damaging the light with lead wire.

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

**Applicable cable**
0.5 mm² 2 core and 3 core wires equivalent (Reference)

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

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>Voltage symbol</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 V AC</td>
<td>100V</td>
<td>VK300-82-2-01</td>
</tr>
<tr>
<td>110 V AC</td>
<td>110V</td>
<td>VK300-82-2-03</td>
</tr>
<tr>
<td>200 V AC</td>
<td>200V</td>
<td>VK300-82-2-02</td>
</tr>
<tr>
<td>220 V AC</td>
<td>220V</td>
<td>VK300-82-2-04</td>
</tr>
<tr>
<td>240 V AC</td>
<td>240V</td>
<td>VK300-82-2-07</td>
</tr>
<tr>
<td>6 V DC</td>
<td>6V</td>
<td>VK300-82-4-51</td>
</tr>
<tr>
<td>12 V DC</td>
<td>12V</td>
<td>VK300-82-4-06</td>
</tr>
<tr>
<td>24 V DC</td>
<td>24VD</td>
<td>VK300-82-3-05</td>
</tr>
<tr>
<td>48 V DC</td>
<td>48VD</td>
<td>VK300-82-3-53</td>
</tr>
</tbody>
</table>

**Circuit with indicator light**
- AC circuit diagram
- 12 VDC or less circuit diagram
- 24 VDC or more circuit diagram

**Light/Surge Voltage Suppressor**

<table>
<thead>
<tr>
<th>Rated voltage</th>
<th>Grommet (G)</th>
<th>DIN terminal (D)</th>
<th>Part no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>W/O indicator light</td>
<td>No.1</td>
<td>LED (G, GS)</td>
</tr>
<tr>
<td></td>
<td>Red (+)</td>
<td>No.2</td>
<td>(D, DS)</td>
</tr>
<tr>
<td>24 V DC</td>
<td>Red (+)</td>
<td>No.2</td>
<td>(D, DS)</td>
</tr>
<tr>
<td>48 V DC</td>
<td>Red (+)</td>
<td>No.2</td>
<td>(D, DS)</td>
</tr>
<tr>
<td>DC</td>
<td>Black (–)</td>
<td>No.2</td>
<td>(D, DS)</td>
</tr>
</tbody>
</table>

Precautions on connection of 24 V or more DC
- DIN terminal type
- Grommet type should be connected as following; Red lead wire for (+) side, Black lead wire for (–) side respectively.
- With the DIN terminal, connect the positive (+) side to the connector’s no. 1 terminal, and the negative (–) side to the no. 2 terminal. [Refer to the marks on the terminal board.]
- For 12 VDC or below, there is no positive (+) or negative (–) directionality.

**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 1413 to 1417 for external dimensions in mounting.

**Vacuum Spec. Type: VK33□□V (VK33□□W)**

In contrast to the standard product, this vacuum specification valve has less air leakage at low pressures, a feature that should be taken into consideration when using this valve for vacuum applications.

**Continuous Duty Type: VK33□□E**
Recommended for continuous duty with long time loading.

**Caution**
- 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.
- Energizing solenoid should be done at least once in 30 days.

**How to Calculate the Flow Rate**
For obtaining the flow rate, refer to front matter.