


# 3 Port Solenoid Valve

## Direct Operated Poppet Type

# Series VKF300

### How to Order Valves



**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 |
| 9   | Other             |

\* Option

**Electrical entry**

|   |   |                        |   |
|---|---|------------------------|---|
| <b>G:</b> Grommet<br>(Lead wire length: 300 mm) | <b>H:</b> Grommet<br>(Lead wire length: 600 mm) | <b>D:</b> DIN terminal | <b>DO:</b> DIN terminal*<br>(Without connector) |
|---|---|------------------------|---|

**Body ported (Single type)**


**Body ported (For manifold)**

**Base mounted**

**Thread type**

|     |      |
|-----|------|
| Nil | RC   |
| F   | G    |
| N   | NPT  |
| T   | NPTF |

\* For the port size 01 only.



**Port size**

|    |                 |
|----|-----------------|
| M5 | M5 x 0.8        |
| 01 | Rc 1/8 (A port) |

**Valve option**

|    |                                  |
|----|----------------------------------|
| V  | For vacuum                       |
| Y* | For low power consumption        |
| W* | For vacuum/low power consumption |
| E* | Continuous duty type             |

\* Applicable voltage: 12 and 24 VDC

**Light/Surge voltage suppressor**

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

\* Since the indicator light is built in the connector, thus, "DOZ" is not available.

**Port size**

|     |                         |
|-----|-------------------------|
| 01  | Rc 1/8 (With sub-plate) |
| Nil | Without sub-plate       |

**Ordering Example:**

VKF332 □ — 5 G □ — M5 □ (With bracket)

VKF333 □ — 5 G □ — M5 □

VKF334 □ — 5 G □ — 01 □

### Flow Characteristics/Mass

| Valve model                      |                                   | Operating pressure range (MPa) | Port size          | Flow characteristics |      |      |                 |      |      | Mass (g)          |                   |
|----------------------------------|-----------------------------------|--------------------------------|--------------------|----------------------|------|------|-----------------|------|------|-------------------|-------------------|
|                                  |                                   |                                |                    | 1 → 2 (P → A)        |      |      | 2 → 3 (A → R)   |      |      | Grommet           | DIN terminal      |
|                                  |                                   |                                |                    | C [dm³/(s·bar)]      | b    | Cv   | C [dm³/(s·bar)] | b    | Cv   |                   |                   |
| Body ported                      | VKF33 <sup>2</sup> <sub>3</sub>   | 0 to 0.7                       | M5 x 0.8<br>Rc 1/8 | 0.67                 | 0.10 | 0.15 | 0.41            | 0.39 | 0.11 | 80 <sup>(1)</sup> | 90 <sup>(1)</sup> |
|                                  | VKF33 <sup>2</sup> <sub>3</sub> Y |                                |                    | 0.56                 | 0.13 | 0.13 | 0.32            | 0.25 | 0.09 |                   |                   |
|                                  | VKF33 <sup>2</sup> <sub>3</sub> E | 0.56                           |                    | 0.13                 | 0.13 | 0.32 | 0.25            | 0.09 |      |                   |                   |
|                                  | VKF33 <sup>2</sup> <sub>3</sub> V | -101.2 KPa to 0.1              |                    | 0.67                 | 0.10 | 0.15 | 0.41            | 0.39 | 0.11 |                   |                   |
|                                  | VKF33 <sup>2</sup> <sub>3</sub> W |                                |                    | 0.56                 | 0.13 | 0.13 | 0.32            | 0.25 | 0.09 |                   |                   |
| Base mounted<br>(With sub-plate) | VKF334                            | 0 to 0.7                       |                    | 0.68                 | 0.13 | 0.15 | 0.59            | 0.31 | 0.14 | 120               | 130               |
|                                  | VKF334Y                           |                                |                    | 0.56                 | 0.13 | 0.13 | 0.32            | 0.25 | 0.09 |                   |                   |
|                                  | VKF334E                           | 0.56                           |                    | 0.13                 | 0.13 | 0.32 | 0.25            | 0.09 |      |                   |                   |
|                                  | VKF334V                           | -101.2 kPa to 0.1              |                    | 0.68                 | 0.13 | 0.15 | 0.59            | 0.31 | 0.14 |                   |                   |
|                                  | VKF334W                           |                                |                    | 0.56                 | 0.13 | 0.13 | 0.32            | 0.25 | 0.09 |                   |                   |
|                                  |                                   |                                |                    |                      |      |      |                 |      |      |                   |                   |

Note 1) VKF33□: Add 10 g to each when equipped with bracket.

# 3 Port Solenoid Valve Direct Operated Poppet Type **Series VKF300**

## Standard Specifications

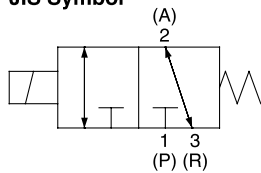


Body ported



Base mounted

JIS Symbol



|                            |  |                     |  |
|----------------------------|--|---------------------|--|
| Valve specifications       | Type of actuation                          |                     | Direct operated type 2 position single solenoid                      |
|                            | Fluid                                      |                     | Air  |
|                            | Ambient and fluid temperature              |                     | Max. 50°C  |
|                            | Response time (at 0.5 MPa) <sup>(1)</sup>  |                     | 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                       |                     | Unrestricted   |
|                            | Impact/Vibration resistance <sup>(2)</sup> |                     | 300/50 m/s <sup>2</sup>  |
| Electricity specifications | Enclosure                                  |                     | Dustproof  |
|                            | Electrical entry                           |                     | Grommet (G), DIN terminal (D)  |
|                            | Rated voltage                              | AC                  | 100, 110, 200, 220, 240 V  |
|                            |  | DC                  | 6, 12, 24, 48 V  |
|                            | Allowable voltage fluctuation              |                     | ±10% of rated voltage  |
|                            | Apparent power (AC)                        | Inrush              | 9.5 VA/50 Hz, 8 VA/60 Hz   |
|                            |  | Holding             | 7 VA/50 Hz, 5 VA/60 Hz   |
|                            | Power consumption (DC)                     | W/o indicator light | 4 W (Standard), 2 W (Low power consumption type)                     |
|                            |  | W/ 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  |



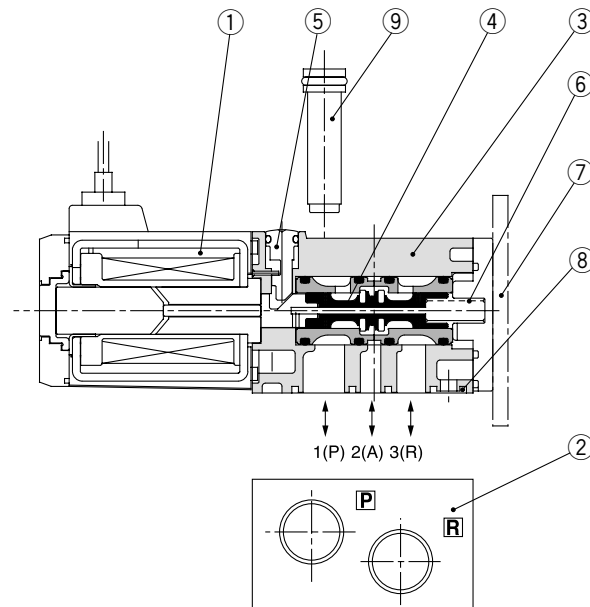
Note 1) Based on dynamic performance test, JIS B 8374-1981. (Coil temperature: 20°C, at rated voltage, without surge voltage suppressor)

\* When equipped with DC solenoid/surge voltage suppressor, a delay of about 20 to 30 m/sec. occurs in the OFF response time.

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)

## Construction



## Component Parts

| No. | Description                              | Material            | Note   |
|-----|--|---------------------|--|
| ①   | Solenoid coil assembly                   | —                   |  |
| ②   | Sub-plate                                | Aluminum die-casted | For VKF334: VKF300-S-01                              |
| ③   | Body                                     | Aluminum die-casted |  |
| ④   | Spool/Sleeve                             | Aluminum            |  |
| ⑤   | Manual override                          | Resin               |  |
| ⑥   | Return spring                            | Stainless steel     |  |
| ⑦   | Bracket assembly                         | Steel               | For VKF332: VKF300-13A-2                             |
| ⑧   | Gasket assembly<br>(With mounting screw) | —                   | For VKF333: VKF300-11A-2<br>For VKF334: VKF300-11A-1 |
| ⑨   | Bushing assembly                         | Resin               | For VKF333: VKF300-6A-1<br>2 sets per unit required  |