

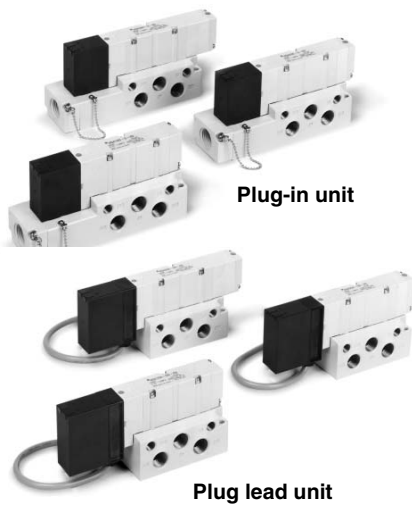
Series VQ4000

Base Mounted

Plug-in/Plug Lead Single Unit

Model

| Series | Configuration | Model | Port size | Flow characteristics | | | | | | Response time (ms) | | | Weight (kg) | |
|--------|---------------|-----------------|---|------------------------------|-----|------|------------------------------|-----|------|--------------------|-------------------|------------|-------------|-------------|
| | | | | 1 → 4/2 (P → A/B) | | | 4/2 → 5/3 (A/B → EA/EB) | | | Standard 1 W | Low wattage 0.5 W | AC | | |
| | | | | C [dm ³ /(s·bar)] | b | Cv | C [dm ³ /(s·bar)] | b | Cv | | | | | |
| VQ4000 | 2 position | Single | Metal seal VQ41 ⁰ ₅₀ | Rc 3/8 | 6.2 | 0.19 | 1.5 | 6.9 | 0.17 | 1.7 | 20 or less | 22 or less | 22 or less | 0.23 (0.29) |
| | | | Rubber seal VQ41 ⁰ ₅₁ | | 7.2 | 0.43 | 2.1 | 7.3 | 0.38 | 2.0 | 25 or less | 27 or less | 27 or less | |
| | | Double | Metal seal VQ42 ⁰ ₅₀ | | 6.2 | 0.19 | 1.5 | 6.9 | 0.17 | 1.7 | 12 or less | 14 or less | 14 or less | |
| | | | Rubber seal VQ42 ⁰ ₅₁ | | 7.2 | 0.43 | 2.1 | 7.3 | 0.38 | 2.0 | 15 or less | 17 or less | 17 or less | |
| | 3 position | Closed center | Metal seal VQ43 ⁰ ₅₀ | | 5.9 | 0.23 | 1.5 | 6.3 | 0.18 | 1.6 | 45 or less | 47 or less | 47 or less | 0.28 (0.34) |
| | | | Rubber seal VQ43 ⁰ ₅₁ | | 7.0 | 0.34 | 1.9 | 6.4 | 0.42 | 1.9 | 50 or less | 52 or less | 52 or less | |
| | | Exhaust center | Metal seal VQ44 ⁰ ₅₀ | | 6.2 | 0.18 | 1.5 | 6.9 | 0.17 | 1.7 | 45 or less | 47 or less | 47 or less | 0.28 (0.34) |
| | | | Rubber seal VQ44 ⁰ ₅₁ | | 7.0 | 0.38 | 1.9 | 7.3 | 0.38 | 2.0 | 50 or less | 52 or less | 52 or less | |
| | | Pressure center | Metal seal VQ45 ⁰ ₅₀ | | 6.2 | 0.18 | 1.6 | 6.4 | 0.18 | 1.6 | 45 or less | 47 or less | 47 or less | 0.28 (0.34) |
| | | | Rubber seal VQ45 ⁰ ₅₁ | | 7.0 | 0.38 | 1.9 | 7.1 | 0.38 | 2.0 | 50 or less | 52 or less | 52 or less | |
| | | Double check | Metal seal VQ46 ⁰ ₅₀ | | 2.7 | — | — | 3.7 | — | — | 55 or less | 57 or less | 57 or less | 0.50 (0.56) |
| | | | Rubber seal VQ46 ⁰ ₅₁ | | 2.8 | — | — | 3.9 | — | — | 62 or less | 64 or less | 64 or less | |



Plug-in unit

Plug lead unit



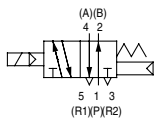
- Note 1) Value for valve on sub-plate and cylinder port Rc 3/8
 Note 2) Based on JIS B 8375-1981 Supply pressure: 0.5 MPa, with indicator light and surge voltage suppressor, clean air. This will change depending on pressure and air quality.) The value when ON for the double type.
 Note 3) Values inside () indicate the weight of plug lead units.
 Table: Without sub-plate, With sub-plate: Add 0.41 kg for plug-in type, 0.30 kg for plug lead type.

Standard Specifications

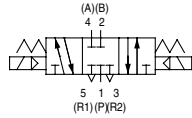
| Valve specifications | Valve construction | | Metal seal | Rubber seal |
|-------------------------|---|------------------------------|---|---------------------------|
| | Fluid | | Air/Inert gas | Air/Inert gas |
| | Maximum operating pressure ⁽³⁾ | | 1.0 MPa (0.7 MPa) | |
| | Min. operating pressure | Single | 0.15 MPa | 0.20 MPa |
| | | Double | 0.15 MPa | 0.15 MPa |
| | | 3 position | 0.15 MPa | 0.20 MPa |
| | Ambient and fluid temperature | | -10 to 50°C ⁽¹⁾ | -5 to 50°C ⁽¹⁾ |
| | Lubrication | | Not required | |
| | Manual override | | Push type/Locking type (Tool required) Option | |
| | Shock/Vibration resistance | | 150/30 m/s ² | |
| Enclosure | | Dust tight (IP65 compatible) | | |
| Solenoid specifications | Coil rated voltage | | 12, 24 VDC, 100, 110, 200, 220 VAC (50/60 Hz) | |
| | Allowable voltage fluctuation | | ±10% of rated voltage | |
| | Coil insulation type | | Class B or equivalent | |
| | Power consumption (Current) | 24 VDC | 1 W DC (42 mA), 0.5 W DC (21 mA) | |
| | | 12 VDC | 1 W DC (83 mA), 0.5 W DC (42 mA) | |
| | | 100 VAC | Inrush 1.2 VA (12 mA), Holding 1.2 VA (12 mA) | |
| | | 110 VAC | Inrush 1.3 VA (11.7 mA), Holding 1.3 VA (11.7 mA) | |
| 200 VAC | Inrush 2.4 VA (12 mA), Holding 2.4 VA (12 mA) | | | |
| 220 VAC | Inrush 2.6 VA (11.7 mA), Holding 2.6 VA (11.7 mA) | | | |

JIS Symbol

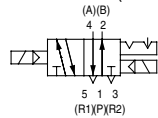
2 position single



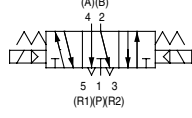
3 position closed center



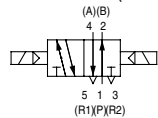
2 position double (Metal)



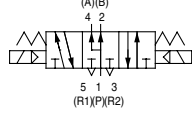
3 position exhaust center



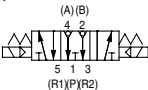
2 position double (Rubber)



3 position pressure center



3 position double check



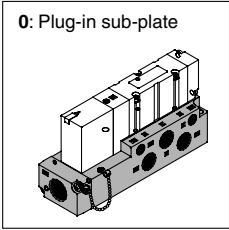
- Note 1) Use dry air to prevent condensation when operating at low temperatures.
 Note 2) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once 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)

Note 3) Values inside () denote the low wattage (0.5 W) specifications.

How to Order Valves

Body

0: Plug-in sub-plate



Porting specifications

| | |
|-----|---------------|
| Nil | Side ported |
| B | Bottom ported |

Port size

| | |
|-----|----------------------------------|
| Nil | Without sub-plate (For manifold) |
| 02 | Rc 1/4 |
| 03 | Rc 3/8 |

Note) For thread standard, refer to page 2-5-39.

Plug-in VQ4 1 0 0

Plug lead VQ4 2 5 1

Type of actuation

| | | | |
|---|-------------------|---|---|
| 1 | 2 position single | 3 | 3 position closed center |
| | 2 position double | | 3 position exhaust center |
| 2 | 2 position double | 5 | 3 position pressure center |
| | 2 position double | | 3 position double check |
| | | 6 | Note) For double check style, refer to page 2-5-36. |

Enclosure

| | |
|-----|------------------------------------|
| Nil | Dust-protected |
| W | Dusttight/Low jetproof type (IP65) |

Manual override

| | |
|--|---|
| Nil: Non-locking push type (Tool required) | B: Slotted locking type (Tool required) |
|--|---|

Light/Surge voltage suppressor

| | |
|-----|--|
| Nil | Yes |
| E | Without light, with surge voltage suppressor |

Electrical entry

| | |
|---|------------------------|
| G | Lead wire length 0.6 m |
| H | Lead wire length 1.5 m |

Coil voltage

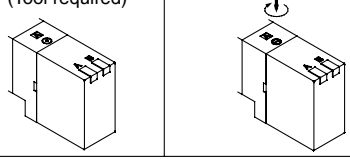
| | |
|---|--------------------|
| 1 | 100 VAC (50/60 Hz) |
| 2 | 200 VAC (50/60 Hz) |
| 3 | 110 VAC (50/60 Hz) |
| 4 | 220 VAC (50/60 Hz) |
| 5 | 24 VDC |
| 6 | 12 VDC |

Seal

| | |
|---|-------------|
| 0 | Metal seal |
| 1 | Rubber seal |

Body

5: Plug lead sub-plate



- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD

How to Order Sub-plates

VQ4000

Electrical entry

| | |
|---|--------------------------|
| P | Plug-in conduit terminal |
| S | Plug lead |

Porting specifications

| | |
|-----|------------------------------|
| Nil | Side ported |
| B | Bottom ported ⁽¹⁾ |

Note 1) For bottom ported port size is RC 1/4 only.

Note 2) For thread standard, refer to page 2-5-39.

Port size

| | |
|----|--------|
| 02 | Rc 1/4 |
| 03 | Rc 3/8 |

Enclosure

| | |
|--------------------|-----------------------------|
| Nil | Dust-protected |
| W ^{Note)} | Dusttight/Low jetproof type |

Note) It is not necessary for plug lead type.

Note 1) Applicable to DC specifications.
 Note 2) For external pilot specifications, refer to page 2-5-39. Combination of external pilot and perfect interface is not possible.
 Note 3) When two or more symbols are specified, indicate them alphabetically.

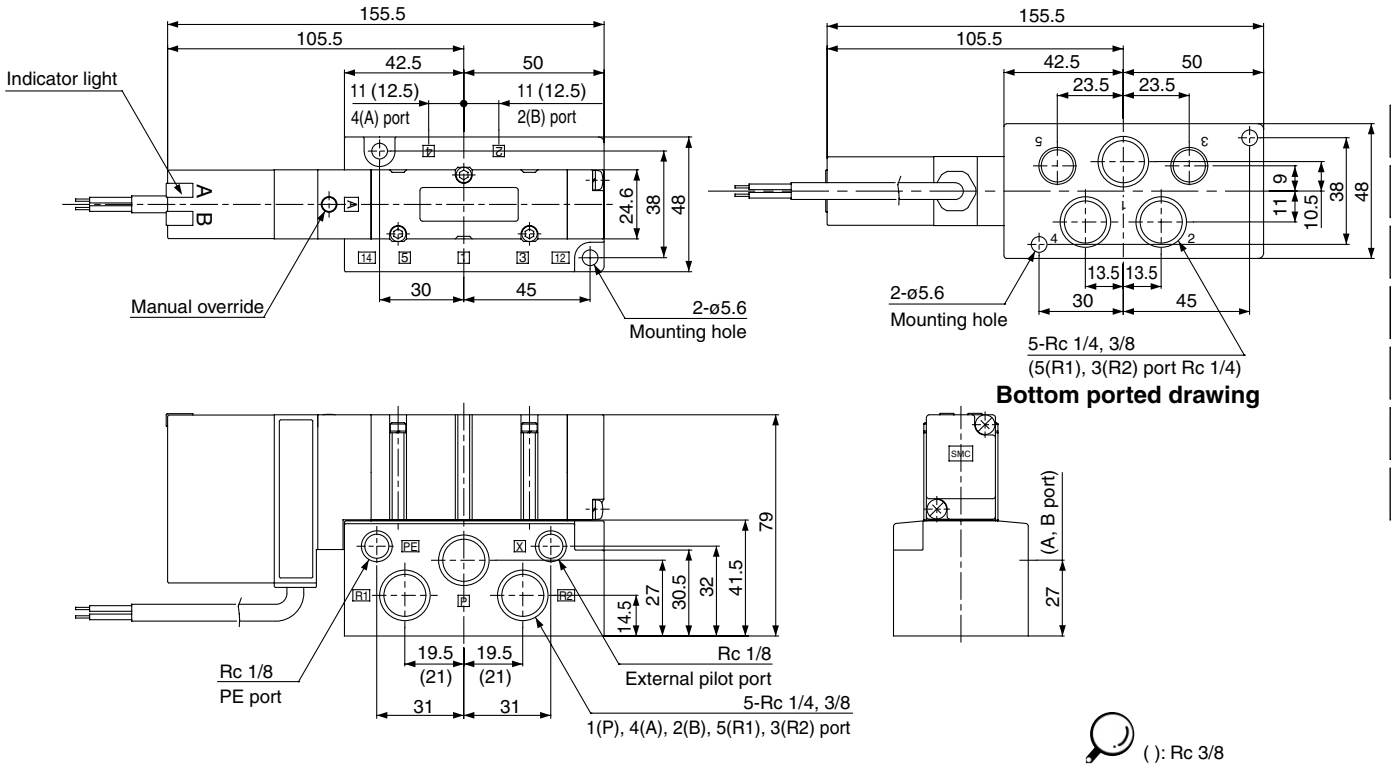
Replacement of pilot valve assembly (Voltage)

- Refer to pages 2-5-44 and 2-5-45 for pilot valve assembly part numbers.
- For "How to Replace", refer to page 2-5-3.

Plug Lead Type

Grommet

2 position single: VQ415 $\frac{0}{1}$ -□ $\frac{G}{H}$



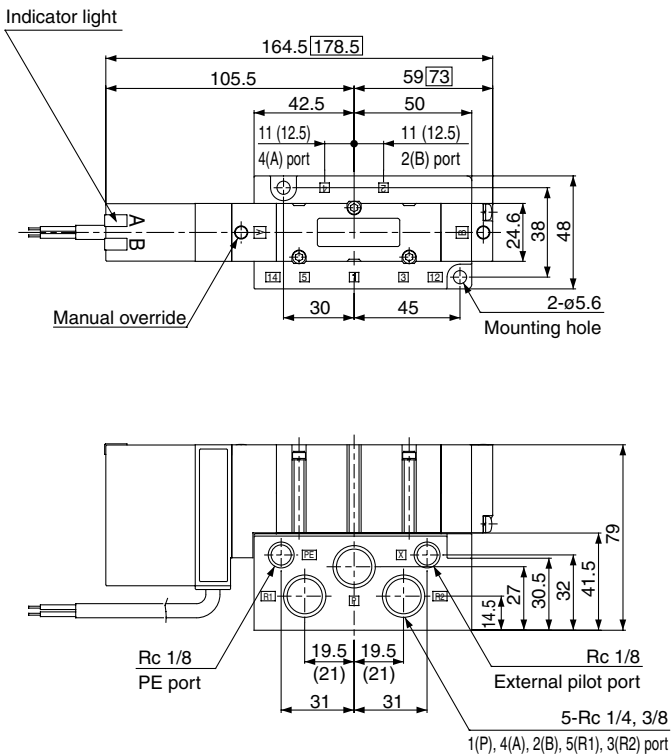
- VQC
- SQ
- VQ0
- VQ4
- VQ5
- VQZ
- VQD

2 position double: VQ425 $\frac{0}{1}$ -□ $\frac{G}{H}$

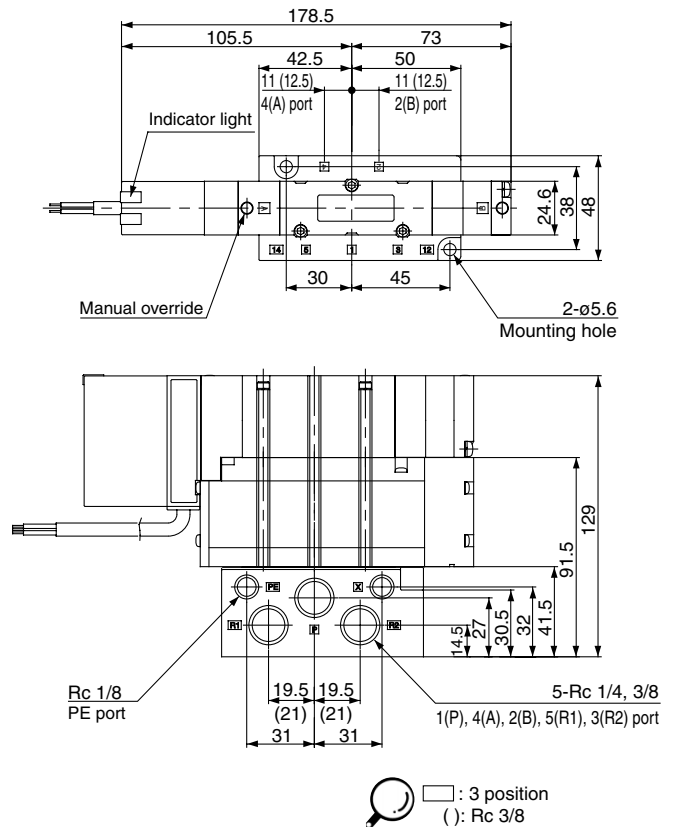
3 position closed center: VQ435 $\frac{0}{1}$ -□ $\frac{G}{H}$

3 position exhaust center: VQ445 $\frac{0}{1}$ -□ $\frac{G}{H}$

3 position pressure center: VQ455 $\frac{0}{1}$ -□ $\frac{G}{H}$



3 position double check: VQ465 $\frac{0}{1}$



<D Side End Plate Assembly>

1. D side end plate assembly no. (For F, L, S, T kit)

VVQ4000 — 3A — 1

| | |
|------------------|------------------------|
| L | F, L, T, S kit |
| F ⁽¹⁾ | F kit (Connector side) |
| C | C kit (Plug lead type) |

| | |
|------------------|----------------------------------|
| Nil | Standard |
| W ⁽²⁾ | IP65 enclosure |
| CD | For exhaust cleaner mounting |
| SD | Direct exhaust with silencer box |

Note 1) D-sub connector is not included.
Note 2) Dripproof F kit is not available.

D side end plate assembly part no. (For input/output type for S kit)

VVQ4000 — 3A — 12

* With connector on the SI unit

<Manifold Block Assembly>

3. Manifold block assembly part no.

VVQ4000 — 1

| | | | |
|---|-------------------------------|------------------|------------------------|
| A | For 1 station | Nil | Standard |
| C | For 2 stations ⁽³⁾ | W ⁽²⁾ | IP65 enclosure is dust |

| Electrical entry | | Port size | |
|------------------|------------------------------|-----------|----------------------------------|
| F1 | F kit Double wiring | 02 | Rc 1/4 |
| F2 | F kit Single wiring | 03 | Rc 3/8 |
| T1 | T kit Double wiring | B | Bottom ported Rc 1/4 |
| T2 | T kit Single wiring | C8 | With One-touch fitting for ø8 |
| S1 | S kit Double wiring | C10 | With One-touch fitting for ø10 |
| S2 | S kit Single wiring | C12 | With One-touch fitting for ø12 |
| L0□ | L0 kit □: Stations (1 to 16) | N7 | With One-touch fitting for ø1/4 |
| L1□ | L1 kit □: Stations (1 to 16) | N9 | With One-touch fitting for ø5/16 |
| L2□ | L2 kit □: Stations (1 to 16) | N11 | With One-touch fitting for ø3/8 |
| C | C kit (Plug lead type) | | |

Note 1) Tie-rods (2 pcs.) and lead wire assembly for station addition included.
Note 2) Dripproof F kit is not available.
Note 3) When ordering block assembly for L kit 2 stations, the lead wire should be ordered by the smaller numbers of the D side (no. of station).

<SI Unit>

SI Unit Part No.

| Type | Model symbol | SI unit part no. | Description | Note |
|------------------------|--------------|--------------------------|--|------|
| Dedicated output model | O | — | Without SI unit | |
| | A | EX323 _U -S001 | General type SI unit (Series EX300) | |
| | B | EX123 _U -SMB1 | Mitsubishi Electric Corporation: MELSECNET/MINI-S3 Data Link System | |
| | BB | EX124 _U -SMB1 | Mitsubishi Electric Corp.: MELSECNET/MINI-S3 Data Link System (2 power supply systems) | |
| | C | EX123 _U -STA1 | OMRON Corporation: SYSBUS Wire System | |
| | D | EX123 _U -SSH1 | SHARP Corporation: Satellite I/O Link System | |
| | F1 | EX123 _U -SUW1 | 16 output points Uni-wire System (NKE Corporation) | |
| | G | EX124 _U -SAB1 | Allen Bradley Remote I/O (RIO) System (2 power supply systems) (Rockwell Automation, Inc.) | |
| | H | EX123 _U -SUH1 | SI unit for 16 output points Uni-wire H System (NKE) | |
| | J1 | EX123 _U -SSL1 | 16 output points S-LINK System (Sunx) | |
| | J2 | EX123 _U -SSL2 | 8 output points S-LINK System (Sunx) | |
| | K | EX123 _U -SFU1 | T-LINK Mini System (Fuji Electric Co.) | |
| | Q | EX124 _U -SDN1 | SI unit for DeviceNet and CompoBus/D (OMRON) | |
| | R1 | EX124 _U -SCS1 | SI unit for 16 output points CompoBus/S (OMRON) | |
| | R2 | EX124 _U -SCS2 | SI unit for 8 output points CompoBus/S (OMRON) | |
| | U | EX124 _U -SJM1 | JEMANET (2 power supply systems) | |
| | V | EX124 _U -SMJ1 | SI unit for CC-LINK System (2 power supply systems) (Mitsubishi Electric Corp.) | |
| For in/output model | QW | EX240-SDN2 | CC-LINK System | |
| | NW | EX240-SPR1 | PROFIBUS-DP (—COM) | |
| | | EX240-IE1 | DI unit (For input) M12 8 number of inputs | |

<U Side End Plate Assembly Part No.>

2. U side end plate assembly no. (For F, L, S, T kit)

VVQ4000 — 2A — 1

| | |
|------------------|------------------------|
| L | F, L, T, S kit |
| F ⁽¹⁾ | F kit (Connector side) |
| C | C kit (Plug lead type) |

| | |
|------------------|----------------------------------|
| Nil | Standard |
| W ⁽²⁾ | IP65 enclosure |
| CU | For exhaust cleaner mounting |
| SU | Direct exhaust with silencer box |

Note 1) D-sub connector is not included.
Note 2) Dripproof F kit is not available.

U side end plate assembly part no. (For input/output type for S kit)

VVQ4000 — 2A — 12

* With connector on the SI unit

<Manifold Block Replacement Parts>

Replacement Parts

| No. | Part no. | Description | Material | Number |
|-----|---------------|-------------|-----------------|--------|
| ④ | VVQ4000-80A-1 | Gasket | NBR | 10 |
| ⑤ | VVQ4000-80A-2 | Gasket | NBR | 10 |
| ⑥ | VVQ4000-80A-4 | Clip | Stainless steel | 10 |

Note) Spare parts consist of sets containing 10 pcs. each.

<Fitting Assembly>

7. Fitting assembly part no. (For cylinder port)

VVQ4000 — 50B

| Port size | |
|-----------|-------------------------|
| C8 | Applicable tubing ø8 |
| C10 | Applicable tubing ø10 |
| C12 | Applicable tubing ø12 |
| N7 | Applicable tubing ø1/4 |
| N9 | Applicable tubing ø5/16 |
| N11 | Applicable tubing ø3/8 |

Note) Purchasing order is available in units of 10 pieces.