

Discontinue

Direct acting 2-port solenoid valve for water, single unit
Special purpose

FWB Series

- NC (open when energized), NO (closed when energized)
- Port size: Rc1/8 to Rc1/2

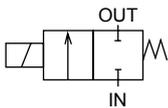


Refer to the Ending for details.

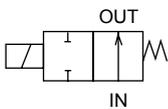


JIS symbol

- NC (open when energized)



- NO (closed when energized)



Common specifications

| Item | FWB |
|---|---|
| Working fluid | Water (excluding sewage, agricultural water and liquid manure) |
| Working pressure differential MPa | 0 (≈0 psi, 0 bar) to 1.5 (≈220 psi, 15 bar) (refer to the max. working pressure differential in the individual specifications) |
| Proof pressure (water pressure) MPa | 5.0 (≈730 psi, 50 bar) (3.0 (≈440 psi, 30 bar) for ø7 and ø10 orifice) |
| Fluid temperature °C | AC: 1 (33.8°F) to 60 (140°F), DC: 1 (33.8°F) to 40 (104°F) (no freezing) |
| Ambient temperature °C | AC:-20 (-4°F) to 60 (140°F), DC:-20 (-4°F) to 40 (104°F) |
| Thermal class | Class 130 (B) |
| Atmosphere | Place free of corrosive gas and explosive gas |
| Valve structure | Direct acting poppet structure |
| Valve seat leakage cm ³ /min | 0 (water pressure) |
| Mounting orientation | Unrestricted |
| Degree of protection | IP65 or equivalent (*1) |

*1: The T type terminal box is IP61 or equivalent.

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

| Item Model No. | Port size | Orifice size (mm) | Cv | Max. working pressure differential MPa | | Max. working pressure MPa | Rated voltage | Apparent power (VA) | | | | Power consumption (W) | | Weight (kg) | |
|---------------------------------|----------------|----------------------|-------|--|------|---------------------------|---------------------|---------------------|-------|---------------|-------|-----------------------|-------|-------------|------|
| | | | | AC | DC | | | When holding | | When starting | | AC 50/60 Hz | DC | | |
| | | | | | | | | 50 Hz | 60 Hz | 50 Hz | 60 Hz | | | | |
| NC (open when energized) | | | | | | | | | | | | | | | |
| FWB21 - 6 - Z | Rc1/8 | 1 | 0.036 | 1.5 | 0.9 | 1.5 | 100 VAC 50/60 Hz | 5 | 4 | 9 | 8 | 2.7/2 | 4 | 0.15 | |
| - 2 | | | | 0.7 | 0.35 | | | 2 | 0.15 | 0.7 | 0.35 | 2 | 0.15 | | |
| FWB31 - 6 - 8 | Rc1/8 | 3 | 0.31 | 0.8 | 0.5 | 1.5 | 100 VAC 50/60 Hz | 9.5 | 7 | 23 | 20 | 4/3.2 | 6 | 0.3 | |
| - 5 | | | | 0.5 | 0.2 | | | 4 | 0.5 | 0.2 | 4 | 0.5 | 0.2 | | |
| FWB41 - 8 - 10 | Rc1/4 | 4 | 0.54 | 0.8 | 0.5 | 1.5 | 200 VAC 50/60 Hz | 16 | 13 | 40 | 35 | 7.5/6.3 | 8 | 0.49 | |
| | Rc3/8 | 5 | 0.8 | 0.5 | 0.25 | | | | | | | | | | |
| | - 7 | 7 | 1.1 | 0.2 | 0.1 | | | | | | | | | | 0.3 |
| FWB41 - 10 - 15 | Rc3/8 Rc1/2 | 10 | 1.88 | 0.1 | 0.05 | 0.3 | 24 VDC 12 VDC | 23 | 19 | 60 | 50 | 11.5/10 | 11.5 | 0.68 | |
| FWB51 - 8 - 10 | Rc1/4 | 4 | 0.54 | 1.1 | 1.3 | 1.5 | | | | | | | | | |
| - 6 | | 5 | 0.8 | 0.7 | 0.6 | 0.3 | | | | | | | | | |
| FWB51 - 10 - 15 | Rc3/8 Rc1/2 | 10 | 1.88 | 0.12 | 0.1 | 0.3 | 24 VDC 12 VDC | 25 | 20 | 60 | 50 | 11/10 | 11.5 | 0.71 | |
| FWB32 - 6 - 8 | Rc1/8 | 3 | 0.31 | 0.4 | 0.4 | 1.5 | | | | | | | | | |
| - 5 | | 4 | 0.5 | 0.2 | 0.2 | 0.2 | | | | | | | | | |
| FWB42 - 8 - 10 | Rc1/4 | 4 | 0.54 | 0.4 | 0.4 | 1.5 | 100 VAC 50/60 Hz | 18 | 14 | 45 | 40 | 7.5/6.5 | 8 | 0.54 | |
| | | - 6 | 5 | 0.8 | 0.2 | 0.2 | | | | | | | | | |
| | - 7 | Rc3/8 | 7 | 1.1 | 0.12 | 0.12 | 0.3 | 200 VAC 50/60 Hz | 25 | 20 | 60 | 50 | 11/10 | 11.5 | 0.71 |
| FWB52 - 8 - 10 | Rc1/4 | 4 | 0.54 | 0.7 | 0.7 | 1.5 | | | | | | | | | |
| - 6 | | 5 | 0.8 | 0.45 | 0.45 | 0.45 | 0.3 | 24 VDC 12 VDC | 25 | 20 | 60 | 50 | 11/10 | 11.5 | 0.71 |
| - 7 | Rc3/8 | 7 | 1.1 | 0.2 | 0.2 | 0.3 | | | | | | | | | |

*1 : The voltage fluctuation range must be within ±10% of the rated voltage.

*2 : The leakage current must be less than or equal to the values shown on the right.

*3 : 8.5 (W) for 12 VDC.

*4 : The 100 VAC (50/60 Hz) can be used with 110 VAC (60 Hz). The 200 VAC (50/60 Hz) can be used with 220 VAC (60 Hz).

| Leakage current | Voltage | 100 VAC | 200 VAC | 24 VDC | 12 VDC |
|-----------------|-----------|--------------|----------------|--------------|--------------|
| | Model No. | | | | |
| | FWB2 | 3 mA or less | 1.5 mA or less | 1 mA or less | 2 mA or less |
| | FWB3/4/5 | 6 mA or less | 3 mA or less | 1 mA or less | 2 mA or less |

How to order

F W B 2 1 - 6 - Z - O 2C B - 1

No. of ports
(2-port valve)

Working fluid
(Water)

A Series size

B Actuation

C Port size

D Orifice size

*1

*2

E Body/sealant combination

*3

F Coil option

*4

*5

G Other options

H Rated voltage

*6

[Example of model No.]

FWB21-6-Z-02CB-1

Model: FWB

- A** Series size : 22 mm
- B** Actuation : NC (open when energized)
- C** Port size : Rc1/8
- D** Orifice size : $\phi 1$
- E** Body/sealant combination : Body - copper alloy, sealant - NBR
- F** Coil option : Grommet lead wire
- G** Other options : Mounting plate
- H** Rated voltage : 100 VAC 50/60 Hz

Precautions for model No. selection

- *1 : For FWB41 and FWB51 with orifice of $\phi 4$ mm (Item **D** 5), $\phi 5$ mm (Item **D** 6) and $\phi 7$ mm (Item **D** 7), available port size is Rc1/4 (Item **C** 8) and Rc3/8 (Item **C** 10) only.
- *2 : For orifice of $\phi 10$ mm (Item **D** 8), available port size is Rc3/8 (Item **C** 10) and Rc1/2 (Item **C** 15).
- *3 : For orifice of $\phi 10$ mm (Item **D** 8) with Item **E** O (copper alloy body), the body is bronze casting.
- *4 : For FWB21 Item **F** 2G/2HS, the DIN terminal box (Pg9) is used.
- *5 : The surge suppressor is built into the coil for Item **F** 2CS and in the terminal box for 2HS and 3RS.
- *6 : Other voltages may not be available. Contact CKD for details.

| Code | | Description | | Model No. | | | | | | | |
|-----------------------------------|--------|---|-------------|-----------|-------|-------|-------|-------|-------|-------|---|
| | | | | FWB21 | FWB31 | FWB41 | FWB51 | FWB32 | FWB42 | FWB52 | |
| A Series size | | | | | | | | | | | |
| 2 | | 22 mm | | ● | | | | | | | |
| 3 | | 28 mm | | | ● | | | | | | |
| 4 | | 34 mm | | | | ● | | | ● | | |
| 5 | | 40 mm | | | | | ● | | | ● | |
| B Actuation | | | | | | | | | | | |
| 1 | | NC (open when energized) | | ● | ● | ● | ● | | | | |
| 2 | | NO (closed when energized) | | | | | | ● | ● | ● | |
| C Port size | | | | | | | | | | | |
| 6 | | Rc1/8 | | ● | ● | | | ● | | | |
| 8 | | Rc1/4 | | | ● | ● | ● | ● | ● | ● | |
| 10 | | Rc3/8 | | | | ● | ● | | ● | ● | |
| 15 | | Rc1/2 | | | | ● | ● | | | | |
| D Orifice size | | | | | | | | | | | |
| Z | | $\phi 1$ | | ● | | | | | | | |
| 2 | | $\phi 2$ | | ● | | | | | | | |
| 3 | | $\phi 3$ | | | ● | | | | | | |
| 5 | | $\phi 4$ | | | | ● | ● | ● | ● | ● | |
| 6 | | $\phi 5$ | | | ● | ● | ● | ● | ● | ● | |
| 7 | | $\phi 7$ | | | | ● | ● | | ● | ● | |
| 8 | | $\phi 10$ | | | | ● | ● | | | | |
| E Body/sealant combination | | | | | | | | | | | |
| | | Body | Seal | | | | | | | | |
| O | | Copper alloy | NBR | ● | ● | ● | ● | ● | ● | ● | |
| D | | Stainless steel | NBR | ● | ● | ● | ● | ● | ● | ● | |
| F Coil option | | | | | | | | | | | |
| 2C | Std. | Grommet lead wire | | ● | ● | ● | ● | ● | ● | ● | |
| 2CS | Option | Grommet lead wire with surge suppressor | | ● | ● | ● | ● | ● | ● | ● | |
| 2G | | With DIN terminal box (Pg11) | | ● | ● | ● | ● | ● | ● | ● | |
| 2HS | | DIN terminal box with lamp/surge suppressor (Pg11) | | ● | ● | ● | ● | ● | ● | ● | |
| 2CG | | Conduit (CTC19) | | | ● | ● | ● | ● | ● | ● | |
| 2CH | | Conduit (G1/2) | | | ● | ● | ● | ● | ● | ● | |
| 3T | | With T type terminal box (G1/2) | | | ● | ● | ● | ● | ● | ● | |
| 3RS | | T type terminal box with lamp/surge suppressor (G1/2) | | | ● | ● | ● | ● | ● | ● | |
| G Other options | | | | | | | | | | | |
| Blank | | Std. | None | | ● | ● | ● | ● | ● | ● | ● |
| B | Option | Mounting plate | | ● | ● | ● | ● | ● | ● | ● | |
| H Rated voltage | | | | | | | | | | | |
| 1 | | 100 VAC 50/60 Hz | | ● | ● | ● | ● | ● | ● | ● | |
| 2 | | 200 VAC 50/60 Hz | | ● | ● | ● | ● | ● | ● | ● | |
| 3 | | 24 VDC | | ● | ● | ● | ● | ● | ● | ● | |
| 4 | | 12 VDC | | ● | ● | ● | ● | ● | ● | ● | |

Specify the desired voltage if it is not listed above.

Select from the combinations indicated with ● in the table above.

- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- S ϕ B/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combus
- Auto-Water
- Outdoor
- SpecFld
- Custom
- Ending

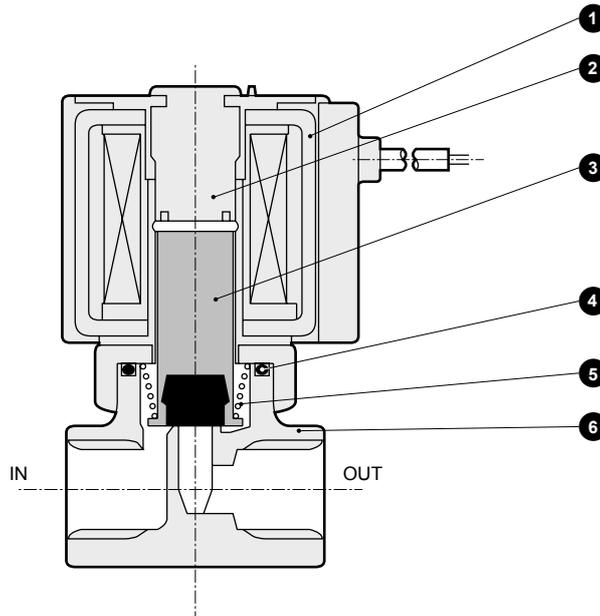
FWB Series

FWB*1 Series: NC (open when energized)

Internal structure and parts list

- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- S◇B/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combus
- Auto-Water
- Outdoor
- SpecFld
- Custom
- Ending

● FWB*1 Series



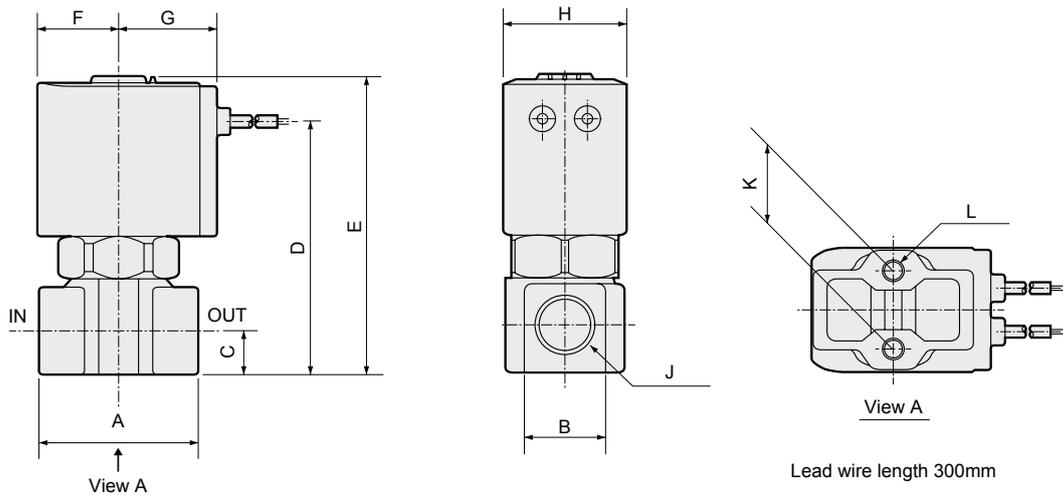
| No. | Part name | Material | |
|-----|------------------|---------------------------|---|
| 1 | Coil assembly | - | - |
| 2 | Core assembly | SUS, Cu (Ag for SUS body) | Stainless steel, copper (silver for stainless steel body) |
| 3 | Plunger assembly | SUS, NBR | Stainless steel, nitrile rubber |
| 4 | O-ring | NBR | Nitrile rubber |
| 5 | Spring | SUS | Stainless steel |
| 6 | Body | C3771 or CAC408 (SUS) | Copper alloy or bronze (stainless steel) |

() shows options. Note: For FWB4 and FWB5 with orifice of $\phi 10$ and body seal code 0, the body is bronze casting.

Dimensions



● Grommet lead wire
FWB*1-*. *-*2C



| Model No. | A | B | C | D | E | F | G | H | J | K | L |
|---------------|----|--------|----|------|------|------|------|----|--------------|----|------------|
| FWB21 | 32 | 14 | 8 | 45.5 | 56 | 15.5 | 19.5 | 22 | Rc1/8 | 15 | M4 depth 6 |
| FWB31 | 36 | 18 | 11 | 57.5 | 68.5 | 18.5 | 22.5 | 28 | Rc1/8, Rc1/4 | 18 | M5 depth 6 |
| FWB41 | 40 | 21 | 12 | 67 | 81 | 22.5 | 26 | 34 | Rc1/4, Rc3/8 | 18 | M5 depth 8 |
| FWB41-10/15-8 | 50 | 29(26) | 15 | 76 | 90 | | | | Rc3/8, Rc1/2 | | |
| FWB51 | 40 | 21 | 12 | 73.5 | 89 | 26 | 29.5 | 40 | Rc1/4, Rc3/8 | 18 | M5 depth 8 |
| FWB51-10/15-8 | 50 | 29(26) | 15 | 82.5 | 98 | | | | Rc3/8, Rc1/2 | | |

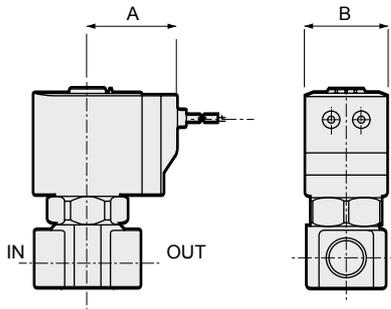
Dimensions shown in () are for stainless steel body.

Optional dimensions



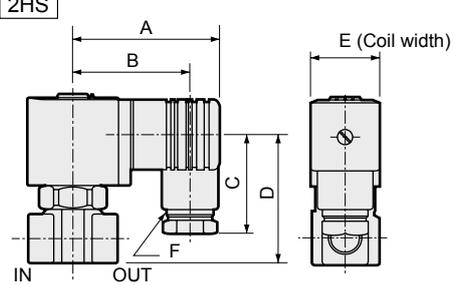
(Refer to the dimensions of grommet lead wire on page 106 for common dimensions.)

- Grommet lead wire with surge suppressor
FWB*1-*****2CS**



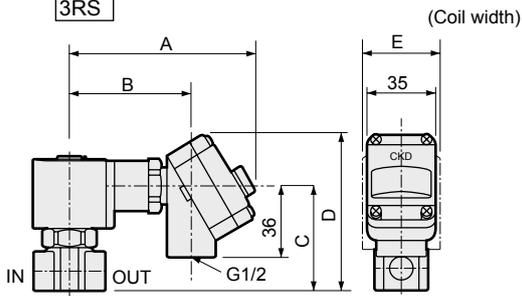
| Model No. | A | B |
|-----------|------|----|
| FWB21 | 26.5 | 22 |
| FWB31 | 29.5 | 28 |
| FWB41 | 34 | 34 |
| FWB51 | 37.5 | 40 |

- DIN terminal box (with lamp/surge suppressor)
FWB*1-*****2G**
2HS



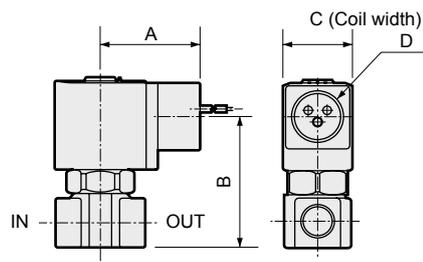
| Model No. | A | B | C | D | E | F |
|---------------|------|------|----|------|----|------|
| FWB21 | 53 | 44 | 38 | 39 | 22 | Pg9 |
| FWB31 | 58.5 | 47 | 39 | 51 | 28 | Pg11 |
| FWB41 | 62 | 50.5 | 39 | 61 | 34 | Pg11 |
| FWB41-10/15-8 | | | | 70 | | |
| FWB51 | 65.5 | 54 | 39 | 69.5 | 40 | Pg11 |
| FWB51-10/15-8 | | | | 78.5 | | |

- T type terminal box (with lamp/surge suppressor) (G1/2)
FWB*1-*****3T**
3RS



| Model No. | A | B | C | D | E |
|---------------|------|------|------|------|----|
| FWB31 | 92 | 60.5 | 53 | 79 | 28 |
| FWB41 | 96 | 64.5 | 62.5 | 88.5 | 34 |
| FWB41-10/15-8 | | | 71.5 | 97.5 | |
| FWB51 | 99.5 | 68 | 71 | 97 | 40 |
| FWB51-10/15-8 | | | 80 | 106 | |

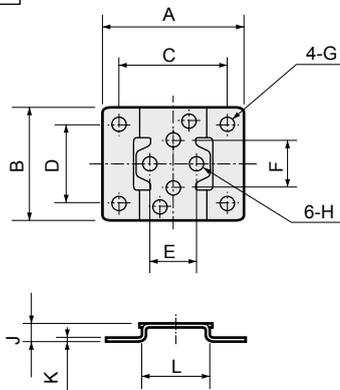
- Conduit (CTC19 / G1/2)
FWB*1-*****2CS**
2CH



| Model No. | A | B | C | D |
|---------------|------|------|----|---------------|
| FWB31 | 39 | 53 | 28 | CTC19 G1/2 |
| FWB41 | 43 | 62.5 | 34 | CTC19 G1/2 |
| FWB41-10/15-8 | | 71.5 | | |
| FWB51 | 46.5 | 71 | 40 | CTC19 G1/2 |
| FWB51-10/15-8 | | 80 | | |

- Mounting plate
FWB*1-*****B**

Material: Steel
Zinc plated



| Model No. | A | B | C | D | E | F | G | H | J | K | L |
|-----------|----|----|----|----|----|----|----|------|---|-----|----|
| FWB21 | 40 | 34 | 30 | 25 | 15 | 15 | ø5 | ø4.5 | 6 | 1.2 | 20 |
| FWB31 | 52 | 42 | 40 | 30 | 18 | 18 | ø6 | ø5.5 | 7 | 1.6 | 25 |
| FWB41/51 | 56 | 48 | 44 | 36 | 18 | 18 | ø6 | ø5.5 | 7 | 1.6 | 30 |

- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/
AD
- APK/
ADK
- DryAir
- EX-
XPLNprf
- XPLNprf
- HVB/
HVL
- S ⚡ B/
NAB
- LAD/
NAD
- Water-
Rela
- NP/NAP/
NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/
MWD
- DustColl
- CVE/
CVSE
- CCH/
CPE/D
- LifeSci
- Gas-
Combus
- Auto-
Water
- Outdoor
- SpecFld
- Custom
- Ending

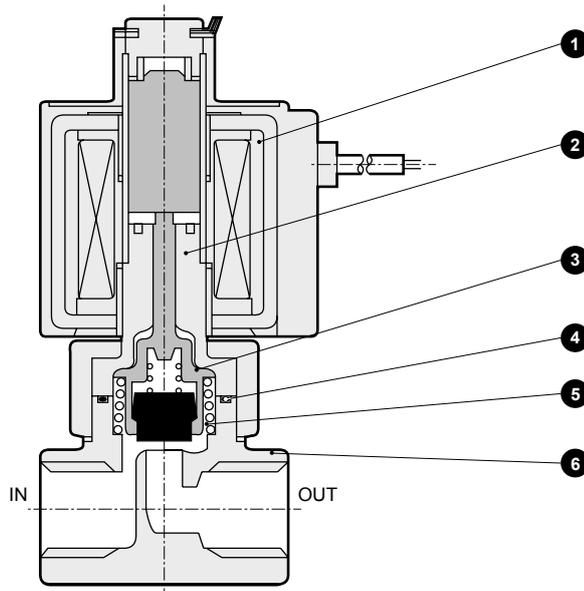
FWB Series

FWB*2 Series: NO (closed when energized)

- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G**
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- S◇B/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combus
- Auto-Water
- Outdoor
- SpecFld
- Custom
- Ending

Internal structure and parts list

● FWB*2 Series

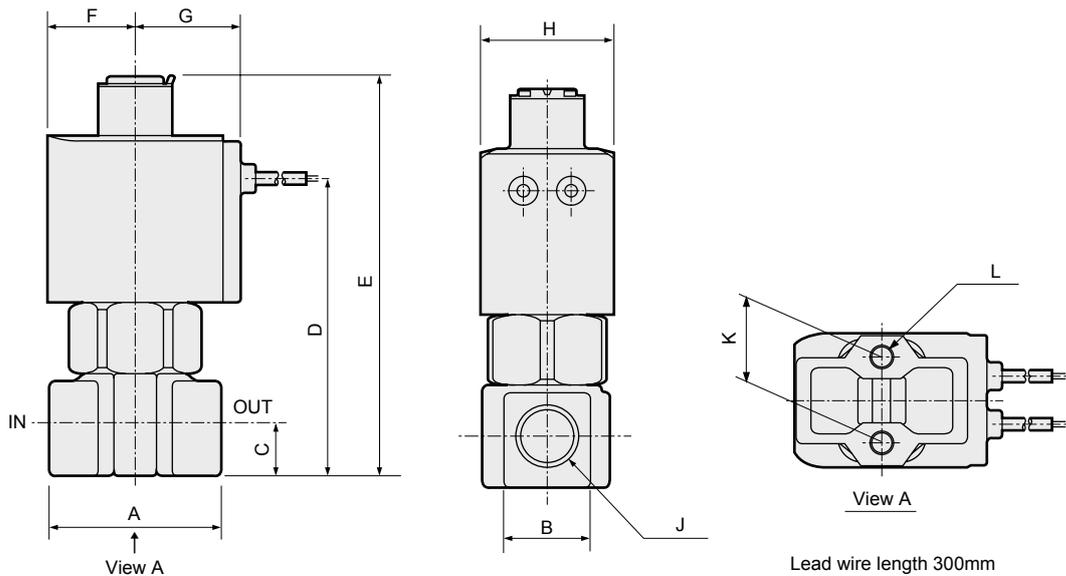


| No. | Part name | Material | |
|-----|--------------------------------|---------------------------|---|
| 1 | Coil assembly | - | - |
| 2 | Core assembly | SUS, Cu (Ag for SUS body) | Stainless steel, copper (silver for stainless steel body) |
| 3 | Valving element guide assembly | PPS, SUS, NBR | Polyphenylene sulfide, stainless steel, nitrile rubber |
| 4 | O-ring | NBR | Nitrile rubber |
| 5 | Spring | SUS | Stainless steel |
| 6 | Body | C3771(SUS) | Copper alloy (stainless steel) |

() shows options.

Dimensions

● Grommet lead wire
FWB*2-*.*.2C



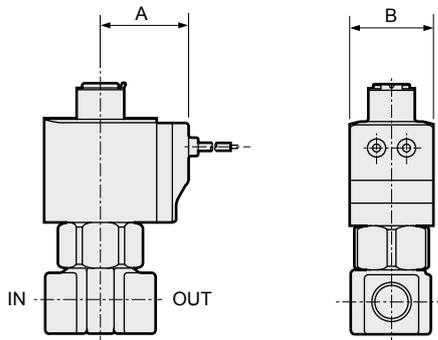
| Model No. | A | B | C | D | E | F | G | H | J | K | L |
|-----------|----|----|----|------|-------|------|------|----|--------------|----|------------|
| FWB32 | 36 | 18 | 11 | 62.5 | 84 | 18.5 | 22.5 | 28 | Rc1/8, Rc1/4 | 18 | M5 depth 6 |
| FWB42 | 40 | 21 | 12 | 71.5 | 96 | 22.5 | 26 | 34 | Rc1/4, Rc3/8 | 18 | M5 depth 8 |
| FWB52 | 40 | 21 | 12 | 78 | 103.5 | 26 | 29.5 | 40 | Rc1/4, Rc3/8 | 18 | M5 depth 8 |

Optional dimensions



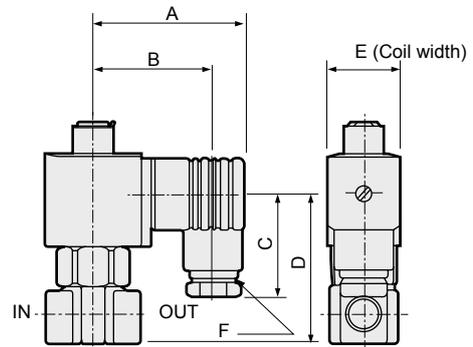
(Refer to the dimensions of grommet lead wire on page 108 for common dimensions.)

- Grommet lead wire with surge suppressor
FWB*2-*-***2CS**



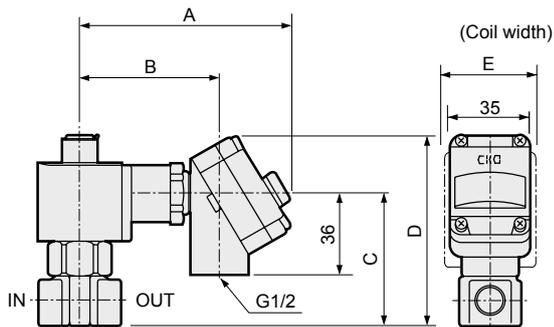
| Model No. | A | B |
|-----------|------|----|
| FWB32 | 29.5 | 28 |
| FWB42 | 34 | 34 |
| FWB52 | 37.5 | 40 |

- DIN terminal box (with lamp/surge suppressor)
FWB*2-*-***2G**
2HS



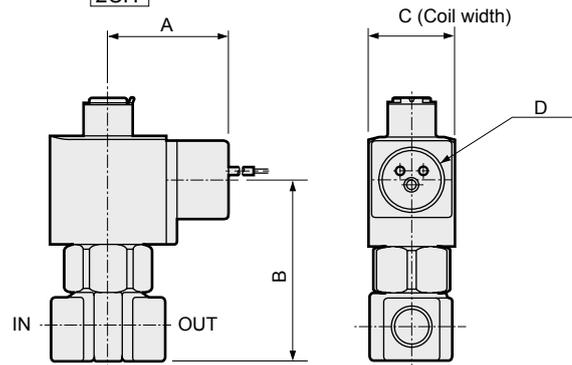
| Model No. | A | B | C | D | E | F |
|-----------|------|------|----|------|----|------|
| FWB32 | 58.5 | 47 | 39 | 56.5 | 28 | Pg11 |
| FWB42 | 62 | 50.5 | 39 | 65 | 34 | Pg11 |
| FWB52 | 65.5 | 54 | 39 | 73.5 | 40 | Pg11 |

- T type terminal box (with lamp/surge suppressor) (G1/2)
FWB*2-*-***3T**
3RS



| Model No. | A | B | C | D | E |
|-----------|------|------|----|-----|----|
| FWB32 | 92 | 60.5 | 58 | 84 | 28 |
| FWB42 | 96 | 64.5 | 67 | 93 | 34 |
| FWB52 | 99.5 | 68 | 75 | 101 | 40 |

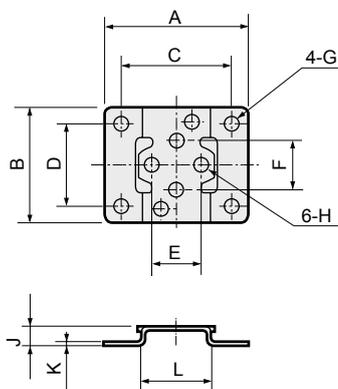
- Conduit (CTC19 / G1/2)
FWB*2-*-***2CG**
2CH



| Model No. | A | B | C | D |
|-----------|------|----|----|---------------|
| FWB32 | 39 | 58 | 28 | CTC19 G1/2 |
| FWB42 | 43 | 67 | 34 | CTC19 G1/2 |
| FWB52 | 46.5 | 75 | 40 | CTC19 G1/2 |

- Mounting plate
FWB*2-*-***B**

Material: Steel
Zinc plated



| Model No. | A | B | C | D | E | F | G | H | J | K | L |
|-----------|----|----|----|----|----|----|----|------|---|-----|----|
| FWB32 | 52 | 42 | 40 | 30 | 18 | 18 | ø6 | ø5.5 | 7 | 1.6 | 25 |
| FWB42/52 | 56 | 48 | 44 | 36 | 18 | 18 | ø6 | ø5.5 | 7 | 1.6 | 30 |

| |
|-----------------|
| EXA |
| FWD |
| HNB/G |
| USB/G |
| FAB/G |
| FGB/G |
| FVB |
| FWB/G |
| FHB |
| FLB |
| AB |
| AG |
| AP/ AD |
| APK/ ADK |
| DryAir |
| EX- XPLNprf |
| XPLNprf |
| HVB/ HVL |
| S ⚡ B/ NAB |
| LAD/ NAD |
| Water- Rela |
| NP/NAP/ NVP |
| SNP |
| CHB/G |
| MXB/G |
| Other valves |
| SWD/ MWD |
| DustColl |
| CVE/ CVSE |
| CCH/ CPE/D |
| LifeSci |
| Gas- Combus |
| Auto- Water |
| Outdoor |
| SpecFld |
| Custom |
| Ending |

Discontinue

Direct acting 2-port solenoid valve for water, manifold
Special purpose

GFWB Series

- NC (open when energized)
- Port size: Rc1/8, Rc1/4, Rc3/8

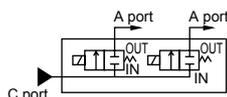


Refer to the Ending for details.



JIS symbol

- NC (open when energized)/ common water supply (C port pressurization)



Common specifications

| Item | GFWB |
|---|--|
| Working fluid | Water (excluding sewage, agricultural water and liquid manure) |
| Working pressure differential | 0 (≈0 psi, 0 bar) to 1.5 (≈220 psi, 15 bar) (refer to the max. working pressure differential in the individual specifications.) |
| MPa | |
| Proof pressure (water pressure) MPa | 5.0 (≈730 psi, 50 bar) (3.0 (≈440 psi, 30 bar) for ø7 orifice) |
| Fluid temperature °C | AC: 1 (33.8°F) to 60 (140°F), DC: 1 (33.8°F) to 40 (104°F) (no freezing) |
| Ambient temperature °C | AC: -20 (-4°F) to 40 (104°F)/DC: -20 (-4°F) to 40 (104°F) |
| Thermal class | Class 130 (B) |
| Atmosphere | Place free of corrosive gas and explosive gas |
| Valve structure | Direct acting poppet structure |
| Valve seat leakage cm ³ /min | 0 (water pressure) |
| Mounting orientation | Unrestricted |
| Degree of protection | IP65 or equivalent (*1) |

*1: The T type terminal box is IP61 or equivalent.

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

| Item | Port size | | Orifice size (mm) | Cv | Max. working pressure differential MPa | | Max. working pressure MPa | Rated voltage | Apparent power (VA) | | | | Power consumption (W) | | | | | | | |
|---------------------------------|---------------------|-----------------|-------------------|-------|--|------|---------------------------|--|------------------------|--|------------------------|--|------------------------|--|-------|----|---------|----|---------|----|
| | A port (Individual) | C port (Common) | | | AC | DC | | | When holding | | When starting | | AC 50/60 Hz | DC | | | | | | |
| | | | | | | | | | 50 Hz | 60 Hz | 50 Hz | 60 Hz | | | | | | | | |
| NC (open when energized) | | | | | | | | | | | | | | | | | | | | |
| GFWB21 - Z | Rc1/8 | Rc1/4 | 1 | 0.036 | 1.5 | 0.9 | 1.5 (≈220 psi, 15 bar) | 100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC | 5 | 4 | 9 | 9 | 2.7/2 | 4 | | | | | | |
| - 2 | | | 2 | 0.12 | 0.7 | 0.35 | | | | | | | | | | | | | | |
| GFWB31 - 3 | Rc1/4 | Rc3/8 | 3 | 0.23 | 0.8 | 0.5 | | | 1.5 (≈220 psi, 15 bar) | 100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC | 9.5 | 7 | 23 | 20 | 4/3.2 | 6 | | | | |
| - 5 | | | 4 | 0.36 | 0.5 | 0.2 | | | | | | | | | | | | | | |
| - 6 | | | 5 | 0.45 | 0.3 | 0.08 | | | | | | | | | | | | | | |
| GFWB41 - 5 | Rc1/4 | Rc3/8 | 4 | 0.42 | 0.8 | 0.5 | | | | | 1.5 (≈220 psi, 15 bar) | 100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC | 16 | 13 | 40 | 35 | 7.5/6.3 | 8 | | |
| - 6 | | | 5 | 0.55 | 0.5 | 0.25 | | | | | | | | | | | | | | |
| - 7 | | | 7 | 0.73 | 0.2 | 0.1 | | | | | | | | | | | | | 0.3 | |
| GFWB51 - 5 | Rc1/4 | Rc3/8 | 4 | 0.42 | 1.1 | 1.3 | | | | | | | 1.5 (≈220 psi, 15 bar) | 100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC | 23 | 19 | 60 | 50 | 11.5/10 | *3 |
| - 6 | | | 5 | 0.55 | 0.7 | 0.6 | | | | | | | | | | | | | | |
| - 7 | | | 7 | 0.73 | 0.3 | 0.25 | 0.3 | | | | | | | | | | | | | |

*1 : The voltage fluctuation range must be within ±10% of the rated voltage.

*2 : The leakage current must be less than or equal to the values shown below.

*3 : 8.6 (W) for 12 VDC.

*4 : The 100 VAC (50/60 Hz) can be used with 110 VAC (60 Hz).
The 200 VAC (50/60 Hz) can be used with 220 VAC (60 Hz).

| Leakage current | Voltage | 100 VAC | 200 VAC | 24 VDC | 12 VDC |
|-----------------|-----------|--------------|----------------|--------------|--------------|
| | Model No. | | | | |
| | GFWB2 | 3 mA or less | 1.5 mA or less | 1 mA or less | 2 mA or less |
| | GFWB3/4/5 | 6 mA or less | 3 mA or less | 1 mA or less | 2 mA or less |

Weight

| Model No. | Actuator weight (kg) | Masking weight (kg) | Sub-plate weight (g) (sub-plate, connection part and mounting plate) | | | | | | | | | | Formula for product weight |
|-----------|----------------------|---------------------|--|---------|---------|---------|---------|---------|---------|---------|----------|---|----------------------------|
| | | | 2 stns. | 3 stns. | 4 stns. | 5 stns. | 6 stns. | 7 stns. | 8 stns. | 9 stns. | 10 stns. | | |
| GFWB21 | 0.14 | 0.03 | 0.40 | 0.51 | 0.77 | 0.77 | 1.03 | 1.16 | 1.30 | 1.60 | 1.55 | (Product weight (kg)) = 0.14 x (Actuator quantity) + 0.03 x (Masking quantity) + Sub-plate weight | |
| GFWB31 | 0.27 | 0.05 | 0.60 | 0.80 | 1.20 | 1.22 | 1.60 | 1.81 | 2.02 | 2.40 | 2.44 | (Product weight (kg)) = 0.27 x (Actuator quantity) + 0.05 x (Masking quantity) + Sub-plate weight | |
| GFWB41 | 0.45 | 0.06 | 0.73 | 1.00 | 1.47 | 1.50 | 2.00 | 2.23 | 2.50 | 3.00 | 3.00 | (Product weight (kg)) = 0.45 x (Actuator quantity) + 0.06 x (Masking quantity) + Sub-plate weight | |
| GFWB51 | 0.64 | 0.09 | 0.83 | 1.11 | 1.67 | 1.70 | 2.24 | 2.52 | 2.81 | 3.36 | 3.40 | (Product weight (kg)) = 0.64 x (Actuator quantity) + 0.09 x (Masking quantity) + Sub-plate weight | |

How to order

● Manifold

G F W B 2 1 - Z - 3 - 0 2C - 1

● Manifold with masking plate

G F W B 3 1 - 5 - X - D 2G - 2 - 5 2

No. of ports
(2-port valve)

Working fluid
(Water)

A Series size

B Circuit configuration

C Orifice size

D Manifold station No.

*1
*2

E Body/sealant combination

F Coil option

*3
*4

G Voltage

*5

H No. of solenoid valves

*6

I Masking plate quantity

[Example of model No.]

GFWB21-Z-3-02C-1

Model: GFWB

- A** Series size : 22 mm
- B** Circuit configuration : NC (open when energized)/common supply
- C** Orifice size : $\phi 1$
- D** Manifold station No. : 3 stations
- E** Body/sealant combination : Body - copper alloy/sealant - NBR
- F** Coil option : Grommet lead wire
- G** Voltage : 100 VAC 50/60 Hz
- H** **I** : No masking plate

Precautions for model No. selection

- *1 : Select a desired manifold station No. from 2 to 10.
- *2 : For the type with masking plate, designate Item **H** as X, then designate the quantities of **H** solenoid valves and **I** masking plates.
- *3 : For GFWB21 **F** 2G/2HS, the DIN terminal box (Pg9) is used.
- *4 : The surge suppressor is built into the coil for Item **F** 2CS and in the terminal box for 2HS and 3RS.
- *5 : Other voltages may not be available. Contact CKD for details.
- *6 : Solenoid valves are arranged from the right side with the sub-plate (individual) port A facing front.
- *7 : Orders for only the masking plate and sub-plate are also available. Contact CKD for details.

| Code | | Description | | Model No. | | | |
|--|--|---|---|-----------|--------|--------|--------|
| | | | | GFWB21 | GFWB31 | GFWB41 | GFWB51 |
| A Series size | | | | | | | |
| 2 | 22 mm | ● | | | | | |
| 3 | 28 mm | | ● | | | | |
| 4 | 34 mm | | | ● | | | |
| 5 | 40 mm | | | | | ● | |
| B Circuit configuration | | | | | | | |
| 1 | NC (open when energized)/common supply | ● | ● | ● | ● | | |
| C Orifice size | | | | | | | |
| Z | $\phi 1$ | ● | | | | | |
| 2 | $\phi 2$ | ● | | | | | |
| 3 | $\phi 3$ | | ● | | | | |
| 5 | $\phi 4$ | | | ● | ● | ● | |
| 6 | $\phi 5$ | | | ● | ● | ● | |
| 7 | $\phi 7$ | | | | ● | ● | |
| D Manifold station No. | | | | | | | |
| 2 | 2 stations | ● | ● | ● | ● | | |
| to | to | | | | | | |
| 10 | 10 stations | | | | | | |
| O | Actuator only | ● | ● | ● | ● | | |
| X | With masking plate | ● | ● | ● | ● | | |
| E Body/sealant combination | | | | | | | |
| | Body | Seal | | | | | |
| O | Copper alloy | NBR | ● | ● | ● | ● | |
| D | Stainless steel | NBR | ● | ● | ● | ● | |
| F Coil option | | | | | | | |
| 2C | Std. | Grommet lead wire | ● | ● | ● | ● | |
| 2CS | Option | Grommet lead wire with surge suppressor | ● | ● | ● | ● | |
| 2G | | With DIN terminal box (Pg11) | ● | ● | ● | ● | |
| 2HS | Option | DIN terminal box with lamp/surge suppressor (Pg11) | ● | ● | ● | ● | |
| 2CG | | Conduit (CTC19) | | ● | ● | ● | |
| 2CH | | Conduit (G1/2) | | ● | ● | ● | |
| 3T | Option | With T type terminal box (G1/2) | | ● | ● | ● | |
| 3RS | | T type terminal box with lamp/surge suppressor (G1/2) | | ● | ● | ● | |
| G Voltage | | | | | | | |
| 1 | 100 VAC 50/60 Hz | ● | ● | ● | ● | | |
| 2 | 200 VAC 50/60 Hz | ● | ● | ● | ● | | |
| 3 | 24 VDC | ● | ● | ● | ● | | |
| 4 | 12 VDC | ● | ● | ● | ● | | |
| Specify the desired voltage if it is not listed above. | | | | | | | |
| H No. of solenoid valves | | | | | | | |
| Blank | No masking plate | ● | ● | ● | ● | | |
| 1 | 1 solenoid valve | | ● | ● | ● | ● | |
| to | to | | | | | | |
| 9 | 9 solenoid valves | | ● | ● | ● | ● | |
| I Masking plate quantity | | | | | | | |
| Blank | No masking plate | ● | ● | ● | ● | | |
| 1 | 1 masking plate | | ● | ● | ● | ● | |
| to | to | | | | | | |
| 9 | 9 masking plates | | ● | ● | ● | ● | |

Select from the combinations indicated with ● in the table above.

| |
|----------------|
| EXA |
| FWD |
| HNB/G |
| USB/G |
| FAB/G |
| FGB/G |
| FVB |
| FWB/G |
| FHB |
| FLB |
| AB |
| AG |
| AP/AD |
| APK/ADK |
| DryAir |
| EX-XPLNprf |
| XPLNprf |
| HVB/HVL |
| S ϕ B/NAB |
| LAD/NAD |
| Water-Rela |
| NP/NAP/NVP |
| SNP |
| CHB/G |
| MXB/G |
| Other valves |
| SWD/MWD |
| DustColl |
| CVE/CVSE |
| CCH/CPE/D |
| LifeSci |
| Gas-Combus |
| Auto-Water |
| Outdoor |
| SpecFld |
| Custom |
| Ending |

EXA Internal structure and parts list

FWD ● GFWB actuator

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/
AD

APK/
ADK

DryAir

EX-
XPLNprf

XPLNprf

HVB/
HVL

S◇B/
NAB

LAD/
NAD

Water-
Rela

NP/NAP/
NVP

SNP

CHB/G

MXB/G

Other
valves

SWD/
MWD

DustColl

CVE/
CVSE

CCH/
CPE/D

LifeSci

Gas-
Combus

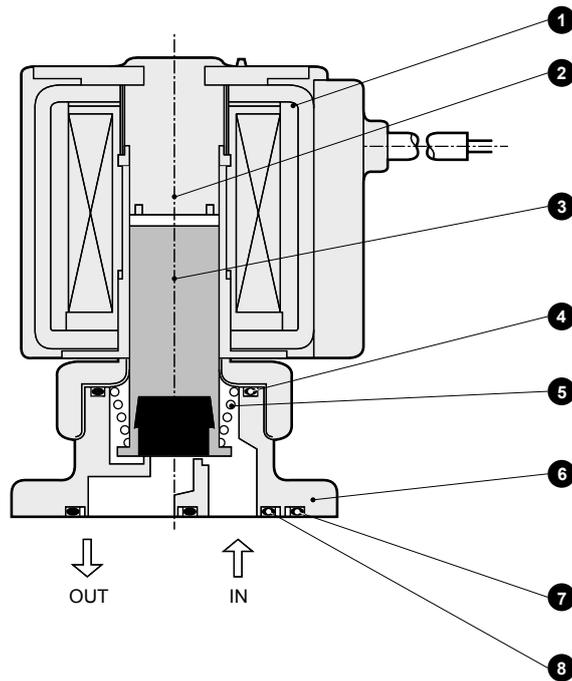
Auto-
Water

Outdoor

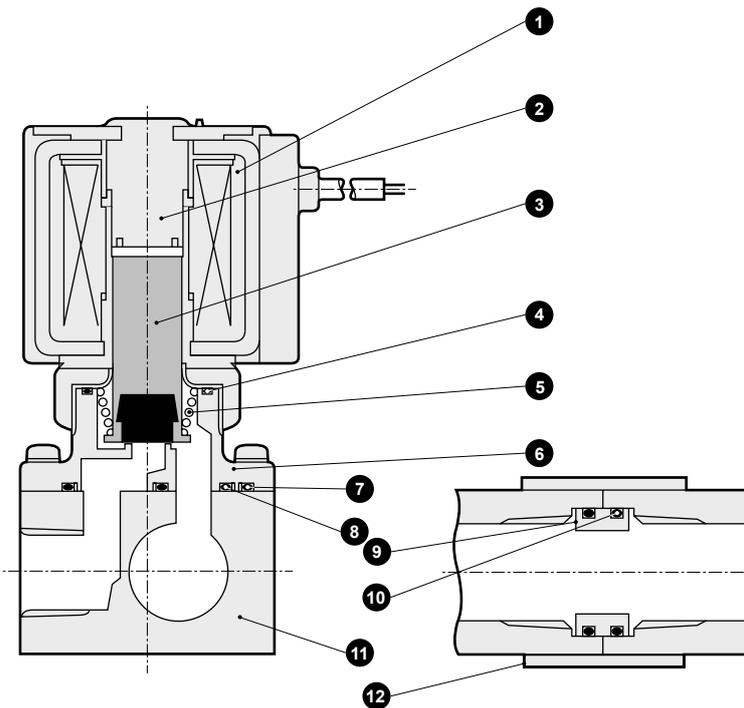
SpecFld

Custom

Ending



● GFWB manifold



| No. | Part name | Material | No. | Part name | Material |
|-----|------------------|------------------------------|-----|------------------|---|
| 1 | Coil assembly | - | 7 | O-ring | NBR Nitrile rubber |
| 2 | Core assembly | SUS, Cu (Ag for SUS body) | 8 | O-ring | NBR Nitrile rubber |
| 3 | Plunger assembly | SUS, NBR | 9 | Connector | C3604 (SUS for SUS body) Copper alloy (Stainless steel for stainless steel body) |
| 4 | O-ring | NBR | 10 | O-ring | NBR Nitrile rubber |
| 5 | Spring | SUS | 11 | Sub-plate | C3604 (SUS for SUS body) Copper alloy (Stainless steel for stainless steel body) |
| 6 | Body | C3771(SUS) | 12 | Connecting plate | SPC Steel |

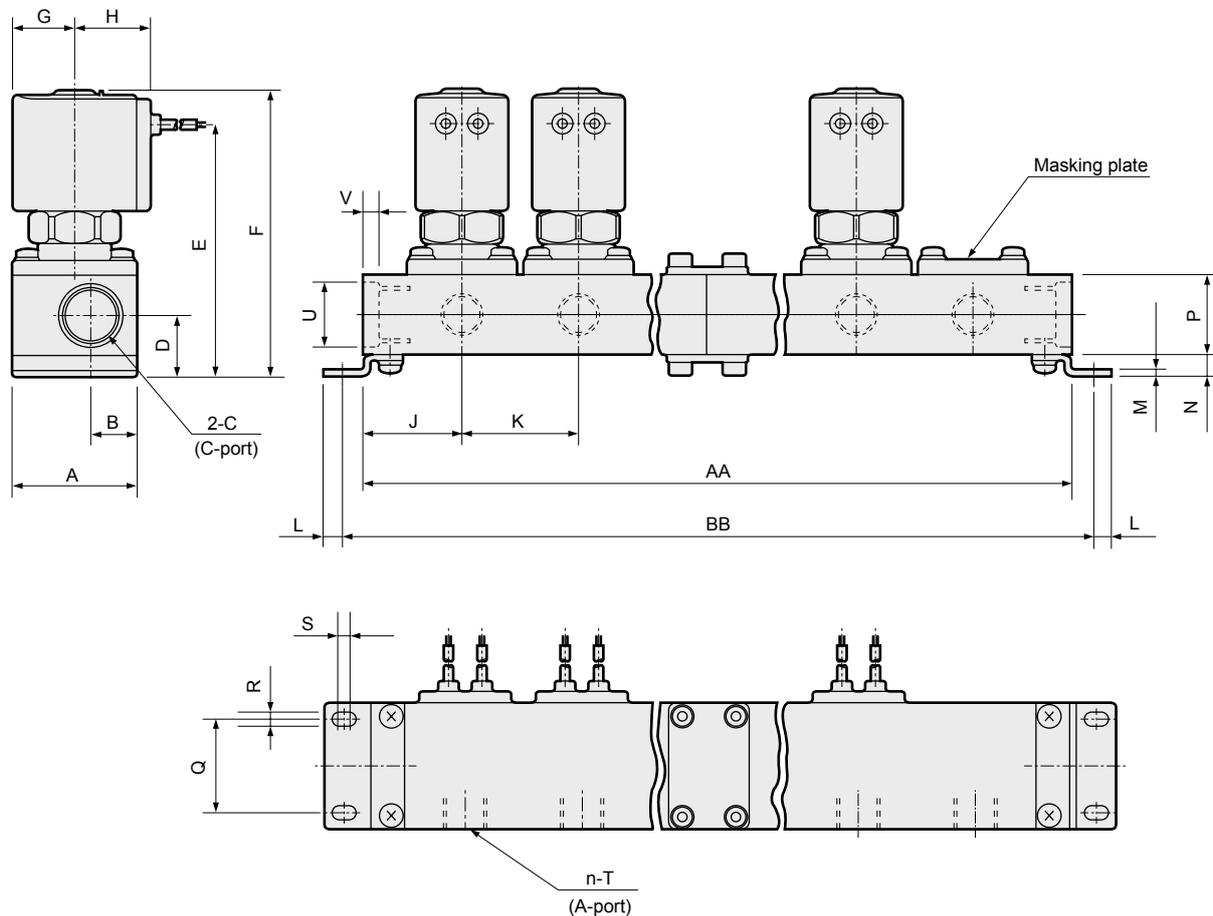
*4 body mounting screws and 2 O-rings are attached to the actuator only.

() shows options.

Dimensions: Manifold



- Grommet lead wire
GFWB*1-*.*.2C



* Lead wire length 300 mm

| Model No. | Station No. Code | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|-----------|---------------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|
| | | GFWB2 | AA | 81 | 109 | 162 | 165 | 218 | 246 | 274 |
| | BB | 93 | 121 | 174 | 177 | 230 | 258 | 286 | 339 | 342 |
| GFWB3 | AA | 97 | 133 | 194 | 205 | 266 | 302 | 338 | 399 | 410 |
| | BB | 109 | 145 | 206 | 217 | 278 | 314 | 350 | 411 | 422 |
| GFWB4 | AA | 106 | 145 | 212 | 223 | 290 | 329 | 368 | 435 | 446 |
| | BB | 119 | 158 | 225 | 236 | 303 | 342 | 381 | 448 | 459 |
| GFWB5 | AA | 118 | 163 | 236 | 253 | 326 | 371 | 416 | 489 | 506 |
| | BB | 131 | 176 | 249 | 266 | 339 | 384 | 429 | 502 | 519 |

Manifold configuration 2 stns. x 1 3 stns. x 1 2 stns. x 2 5 stns. x 1 3 stns. x 2 5 stns. + 2 stns. 5 stns. + 3 stns. 3 stns. x 3 5 stns. x 2

Note) Manifold configuration combines 2-station, 3-station and 5-station units.

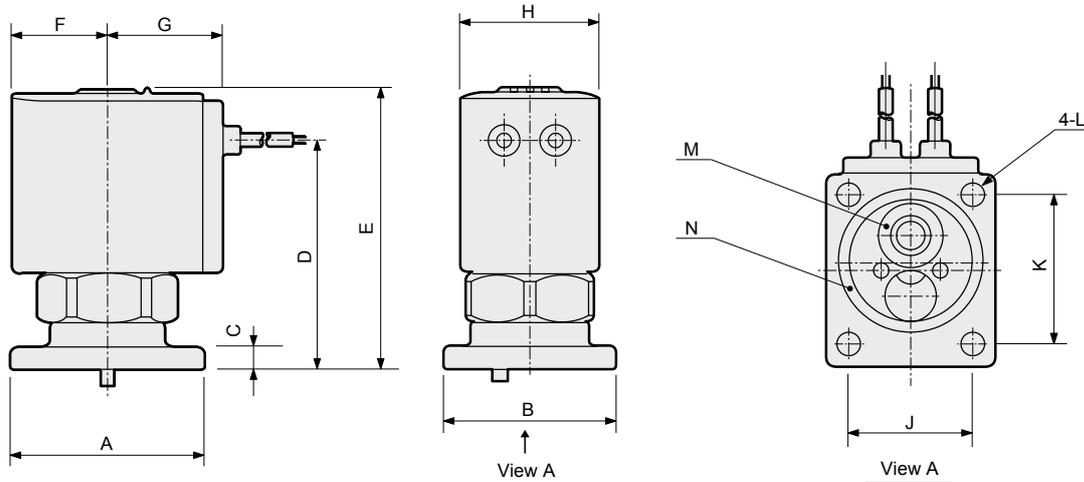
| Model No. | A | B | C | D | E | F | G | H | J | K | L | M | N | P | Q | R | S | T | U | V |
|-----------|----|------|-------|------|------|------|------|------|----|----|-----|-----|-----|----|----|-----|-----|-------|-------|-----|
| GFWB2 | 32 | 13.5 | Rc1/4 | 17.5 | 66.5 | 77 | 15.5 | 19.5 | 26 | 28 | 6 | 1.6 | 6.5 | 21 | 22 | 4.5 | 2.5 | Rc1/8 | ø17.3 | 4 |
| GFWB3 | 38 | 14.5 | Rc3/8 | 18.5 | 75.5 | 86.5 | 18.5 | 22.5 | 30 | 36 | 6 | 2 | 6.5 | 24 | 28 | 4.5 | 2.5 | Rc1/4 | ø19 | 4.6 |
| GFWB4 | 42 | 16.5 | Rc3/8 | 19.5 | 84 | 98 | 22.5 | 26 | 33 | 39 | 6.5 | 2 | 7.5 | 24 | 30 | 5.5 | 2.5 | Rc1/4 | ø19 | 4.6 |
| GFWB5 | 42 | 16.5 | Rc3/8 | 19.5 | 90 | 105 | 26 | 29.5 | 36 | 45 | 6.5 | 2 | 7.5 | 24 | 30 | 5.5 | 2.5 | Rc1/4 | ø19 | 4.6 |

| |
|-----------------|
| EXA |
| FWD |
| HNB/G |
| USB/G |
| FAB/G |
| FGB/G |
| FVB |
| FWB/G |
| FHB |
| FLB |
| AB |
| AG |
| AP/ AD |
| APK/ ADK |
| DryAir |
| EX- XPLNprf |
| XPLNprf |
| HVB/ HVL |
| S ⚡ B/ NAB |
| LAD/ NAD |
| Water- Rela |
| NP/NAP/ NVP |
| SNP |
| CHB/G |
| MXB/G |
| Other valves |
| SWD/ MWD |
| DustColl |
| CVE/ CVSE |
| CCH/ CPE/D |
| LifeSci |
| Gas- Combust |
| Auto- Water |
| Outdoor |
| SpecFld |
| Custom |
| Ending |

GFWB Series

EXA Dimensions: Actuator

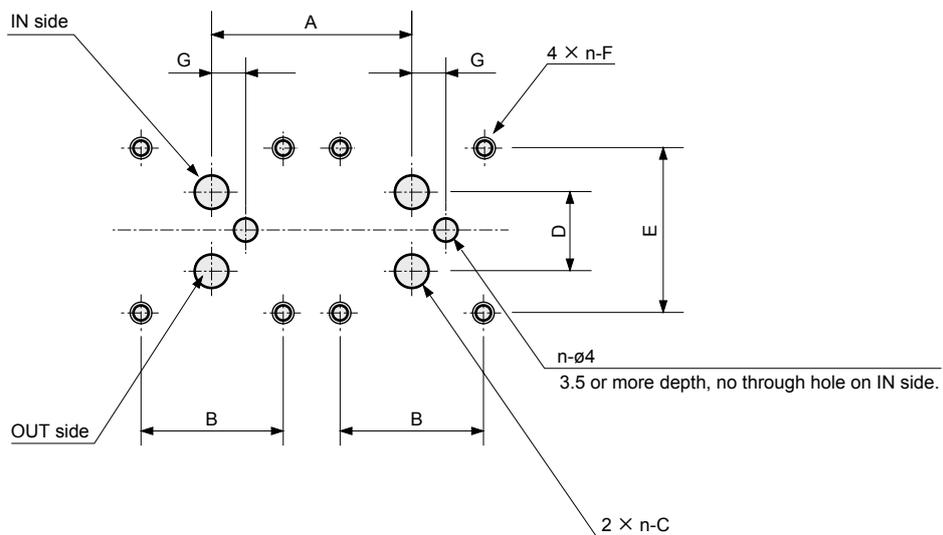
● Grommet lead wire
GFWB*1-*O-*2C



Lead wire length 300mm

| Model No. | A | B | C | D | E | F | G | H | J | K | L | Applicable O-ring | |
|-----------|----|----|-----|------|------|------|------|----|----|----|------|-------------------|-----------|
| | | | | | | | | | | | | M | N |
| GFWB2 | 32 | 27 | 4 | 39 | 49.5 | 15.5 | 19.5 | 22 | 19 | 24 | ø3.5 | AS568-009 | AS568-018 |
| GFWB3 | 38 | 34 | 4.5 | 45 | 56 | 18.5 | 22.5 | 28 | 25 | 29 | ø4.5 | AS568-011 | AS568-022 |
| GFWB4 | 42 | 38 | 4.5 | 52.5 | 66.5 | 22.5 | 26 | 34 | 28 | 32 | ø4.5 | AS568-012 | AS568-025 |
| GFWB5 | 42 | 44 | 5.5 | 58.5 | 73.5 | 26 | 29.5 | 40 | 34 | 32 | ø4.5 | AS568-012 | AS568-025 |

Actuator installation dimensions



Machining drawing when using 2 actuators

(n: number of stations)

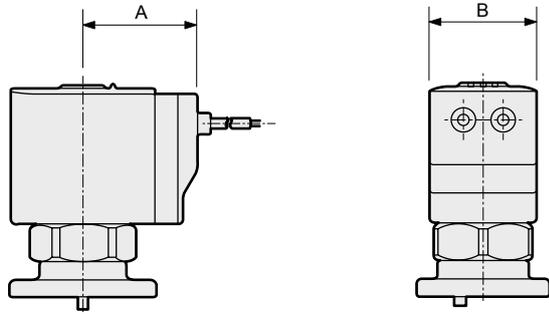
| Model No. | A | B | C | D | E | F | G |
|-----------|------------|--------|------|----------|--------|-------------------------------------|-------|
| GFWB2 | 28 or more | 19±0.1 | ø3.5 | 10.6±0.1 | 24±0.1 | M3 effective thread depth 6 or more | 6±0.2 |
| GFWB3 | 35 or more | 25±0.1 | ø5.5 | 13.8±0.1 | 29±0.1 | M4 effective thread depth 6 or more | 6±0.2 |
| GFWB4 | 39 or more | 28±0.1 | ø7.5 | 17±0.1 | 32±0.1 | M4 effective thread depth 6 or more | 7±0.2 |
| GFWB5 | 45 or more | 34±0.1 | ø7.5 | 17±0.1 | 32±0.1 | M4 effective thread depth 6 or more | 7±0.2 |

Optional dimensions



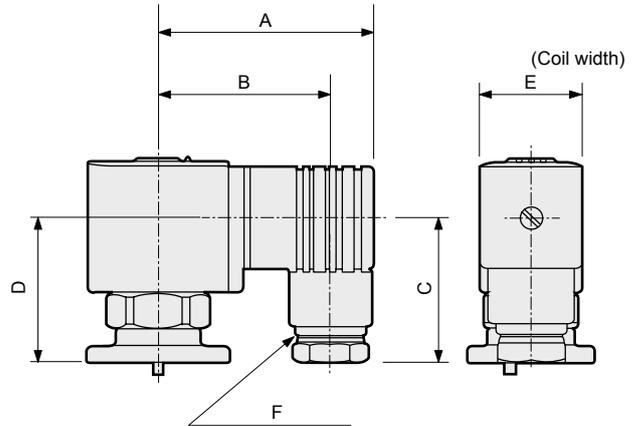
(Refer to the grommet lead wire actuator dimensions on page 114 for common dimensions.)

- Grommet lead with surge suppressor
GFWB*1-**-** 2CS



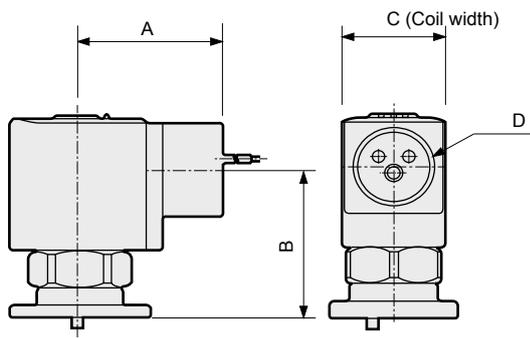
| Model No. | A | B |
|-----------|------|----|
| GFWB2 | 26.5 | 22 |
| GFWB3 | 29.5 | 28 |
| GFWB4 | 34 | 34 |
| GFWB5 | 37.5 | 40 |

- DIN terminal box (with lamp/surge suppressor)
GFWB*1-**-** 2G
2HS



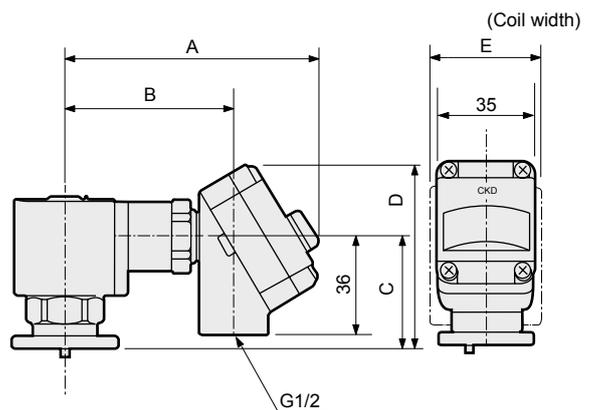
| Model No. | A | B | C | D | E | F |
|-----------|------|------|----|------|----|------|
| GFWB2 | 53 | 44 | 38 | 32.5 | 22 | Pg9 |
| GFWB3 | 58.5 | 47 | 39 | 38.5 | 28 | Pg11 |
| GFWB4 | 62 | 50.5 | 39 | 46.5 | 34 | Pg11 |
| GFWB5 | 65.5 | 54 | 39 | 54 | 40 | Pg11 |

- Conduit (CTC19 / G1/2)
GFWB*1-**-** 2CG
2CH



| Model No. | A | B | C | D |
|-----------|------|------|----|------------|
| GFWB3 | 39 | 40.5 | 28 | CTC19 G1/2 |
| GFWB4 | 43 | 48 | 34 | CTC19 G1/2 |
| GFWB5 | 46.5 | 55.5 | 40 | CTC19 G1/2 |

- T type terminal box (with lamp/surge suppressor) (G1/2)
GFWB*1-**-** 3T
3RS



| Model No. | A | B | C | D | E |
|-----------|------|------|------|------|----|
| GFWB3 | 92 | 60.5 | 40.5 | 66.5 | 28 |
| GFWB4 | 96 | 64.5 | 48 | 74 | 34 |
| GFWB5 | 99.5 | 68 | 55.5 | 81.5 | 40 |

| |
|--------------|
| EXA |
| FWD |
| HNB/G |
| USB/G |
| FAB/G |
| FGB/G |
| FVB |
| FWB/G |
| FHB |
| FLB |
| AB |
| AG |
| AP/AD |
| APK/ADK |
| DryAir |
| EX-XPLNprf |
| XPLNprf |
| HVB/HVL |
| S&B/NAB |
| LAD/NAD |
| Water-Rela |
| NP/NAP/NVP |
| SNP |
| CHB/G |
| MXB/G |
| Other valves |
| SWD/MWD |
| DustColl |
| CVE/CVSE |
| CCH/CPE/D |
| LifeSci |
| Gas-Combus |
| Auto-Water |
| Outdoor |
| SpecFld |
| Custom |
| Ending |

Discontinue

Direct acting 3-port solenoid valve for water, single unit
Special purpose

FWG Series

- Universal
- Port size: Rc1/8, Rc1/4, Rc3/8



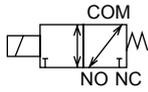
Refer to the Ending for details.



- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- S◇B/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combus
- Auto-Water
- Outdoor
- SpecFld
- Custom
- Ending

JIS symbol

- Universal



Common specifications

| Item | FWG |
|---|---|
| Working fluid | Water (excluding sewage, agricultural water and liquid manure) |
| Working pressure differential MPa | 0 (≈0 psi, 0 bar) to 1.0 (≈150 psi, 10 bar) (refer to the max. working pressure differential in the individual specifications) |
| Max. working pressure MPa | 1.0 (≈150 psi, 10 bar) |
| Proof pressure (water pressure) MPa | 2.0 (≈290 psi, 20 bar) |
| Fluid temperature °C | AC: 1 (33.8°F) to 60 (140°F), DC: 1 (33.8°F) to 40 (104°F) (no freezing) |
| Ambient temperature °C | AC:-20 (-4°F) to 60 (140°F), DC:-20 (-4°F) to 40 (104°F) |
| Thermal class | Class 130 (B) |
| Atmosphere | Place free of corrosive gas and explosive gas |
| Valve structure | Direct acting poppet structure |
| Valve seat leakage cm ³ /min | 0 (water pressure) |
| Mounting orientation | Unrestricted |
| Degree of protection | IP65 or equivalent (*1) |

*1: The T type terminal box is IP61 or equivalent.

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

| Item | Port size | Orifice size (mm) | Cv | Max. working pressure differential MPa | | Rated voltage | Apparent power (VA) | | | | Power consumption (W) | | Weight (kg) |
|---------------------------|---------------|-------------------|-------|--|--------|--|---------------------|-------|---------------|-------|-----------------------|------|-------------|
| | | | | AC | DC | | When holding | | When starting | | AC 50/60 Hz | DC | |
| | | | | | | | 50 Hz | 60 Hz | 50 Hz | 60 Hz | | | |
| Universal | | | | | | | | | | | | | |
| FWG21- 6 - Z | Rc1/8 | 1 | 0.036 | 0.7 | 0.7 | 100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC | 6.5 | 5 | 10 | 9 | 3.6/2.5 | 4 | 0.17 |
| FWG31- $\frac{6}{8}$ - 0 | Rc1/8 / Rc1/4 | 1.5 | 0.080 | 0.7 | 0.7 | | 16 | 10.5 | 23 | 20 | 7/4.1 | 6 | 0.33 |
| FWG41- $\frac{8}{10}$ - 1 | Rc1/4 / Rc3/8 | 2 | 0.14 | 1 | 1 | | 22 | 16 | 40 | 35 | 8.5/6.5 | 8*4 | 0.52 |
| FWG51- $\frac{8}{10}$ - 4 | Rc1/4 / Rc3/8 | 3 | 0.31 | 0.6 *2 | 0.6 *2 | | 32 | 22 | 60 | 50 | 12.5/10.5 | 11.5 | 0.69 |

*1 : The voltage fluctuation range must be within ±10% of the rated voltage.

*2 : 0.4 for NO pressurization.

*3 : The leakage current must be less than or equal to the values shown below.

*4 : 8.6 (W) for 12 VDC.

*5 : The 100 VAC (50/60 Hz) can be used with 110 VAC (60 Hz).

The 200 VAC (50/60 Hz) can be used with 220 VAC (60 Hz).

| Leakage current | Voltage | 100 VAC | 200 VAC | 24 VDC | 12 VDC |
|-----------------|-----------|--------------|----------------|--------------|--------------|
| | Model No. | | | | |
| | FWG2 | 3 mA or less | 1.5 mA or less | 1 mA or less | 2 mA or less |
| | FWG3/4/5 | 6 mA or less | 3 mA or less | | |

How to order



No. of ports
(3-port valve)

Working fluid
(Water)

A Series size

B Actuation

C Port size

D Orifice size

E Body/sealant combination

F Coil option

*1

*2

G Other options

H Voltage

*3

[Example of model No.]

FWG21-6-Z-02CB-1

Model: FWG

- A** Series size : 22 mm
- B** Actuation : Universal
- C** Port size : Rc1/8
- D** Orifice size : $\phi 1$
- E** Body/sealant combination : Body - copper alloy/sealant - NBR
- F** Coil option : Grommet lead wire
- G** Other options : Mounting plate
- H** Voltage : 100 VAC 50/60 Hz

| Code | | Description | | Model No. | | | |
|--|------------------|---|---|-----------|-------|-------|-------|
| | | | | FWG21 | FWG31 | FWG41 | FWG51 |
| A Series size | | | | | | | |
| 2 | 22 mm | ● | | | | | |
| 3 | 28 mm | | ● | | | | |
| 4 | 34 mm | | | ● | | | |
| 5 | 40 mm | | | | | ● | |
| B Actuation | | | | | | | |
| 1 | Universal | ● | ● | ● | ● | | |
| C Port size | | | | | | | |
| 6 | Rc1/8 | ● | ● | | | | |
| 8 | Rc1/4 | | ● | ● | ● | | |
| 10 | Rc3/8 | | | ● | ● | | |
| D Orifice size | | | | | | | |
| Z | $\phi 1$ | ● | | | | | |
| O | $\phi 1.5$ | | ● | | | | |
| 1 | $\phi 2$ | | | ● | | | |
| 4 | $\phi 3$ | | | | | ● | |
| E Body/sealant combination | | | | | | | |
| | Body | Seal | | | | | |
| O | Copper alloy | NBR | ● | ● | ● | ● | |
| D | Stainless steel | NBR | ● | ● | ● | ● | |
| F Coil option | | | | | | | |
| 2C | Std. | Grommet lead wire | ● | ● | ● | ● | |
| 2CS | Option | Grommet lead wire with surge suppressor | ● | ● | ● | ● | |
| 2G | | With DIN terminal box (Pg11) | ● | ● | ● | ● | |
| 2HS | | DIN terminal box with lamp/surge suppressor (Pg11) | ● | ● | ● | ● | |
| 2CG | | Conduit (CTC19) | | ● | ● | ● | |
| 2CH | | Conduit (G1/2) | | ● | ● | ● | |
| 3T | | With T type terminal box (G1/2) | | ● | ● | ● | |
| 3RS | | T type terminal box with lamp/surge suppressor (G1/2) | | ● | ● | ● | |
| G Other options | | | | | | | |
| Blank | None | | ● | ● | ● | ● | |
| B | Mounting plate | | ● | ● | ● | ● | |
| H Voltage | | | | | | | |
| 1 | 100 VAC 50/60 Hz | | ● | ● | ● | ● | |
| 2 | 200 VAC 50/60 Hz | | ● | ● | ● | ● | |
| 3 | 24 VDC | | ● | ● | ● | ● | |
| 4 | 12 VDC | | ● | ● | ● | ● | |
| Specify the desired voltage if it is not listed above. | | | | | | | |

Select from the combinations indicated with ● in the table above.

⚠ Precautions for model No. selection

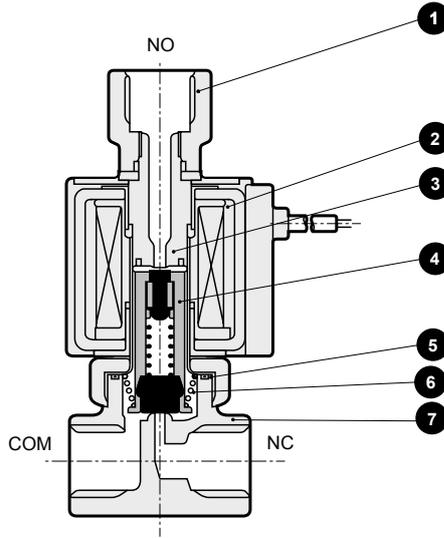
- *1 : For FWG21 Item **F** 2G/2HS, the DIN terminal box (Pg9) is used.
- *2 : The surge suppressor is built into the coil for Item **F** 2CS and in the terminal box for 2HS and 3RS.
- *3 : Other voltages may not be available. Contact CKD for details.

| |
|----------------|
| EXA |
| FWD |
| HNB/G |
| USB/G |
| FAB/G |
| FGB/G |
| FVB |
| FWB/G |
| FHB |
| FLB |
| AB |
| AG |
| AP/AD |
| APK/ADK |
| DryAir |
| EX-XPLNprf |
| XPLNprf |
| HVB/HVL |
| S ϕ B/NAB |
| LAD/NAD |
| Water-Rela |
| NP/NAP/NVP |
| SNP |
| CHB/G |
| MXB/G |
| Other valves |
| SWD/MWD |
| DustColl |
| CVE/CVSE |
| CCH/CPE/D |
| LifeSci |
| Gas-Combus |
| Auto-Water |
| Outdoor |
| SpecFld |
| Custom |
| Ending |

- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G**
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- S◇B/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combus
- Auto-Water
- Outdoor
- SpecFld
- Custom
- Ending

Internal structure and parts list

● FWG*1 Series



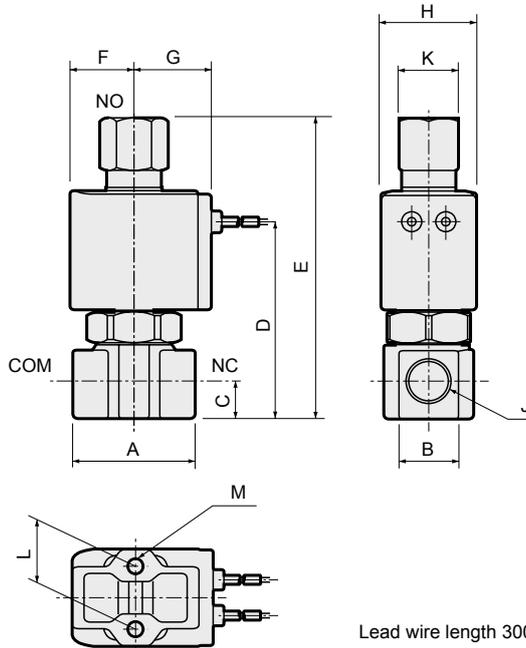
| No. | Part name | Material | |
|-----|------------------|---------------------------|---|
| 1 | Socket | C3604 (SUS for SUS body) | Copper alloy (stainless steel for stainless steel body) |
| 2 | Coil assembly | - | - |
| 3 | Core assembly | SUS, Cu (Ag for SUS body) | Stainless steel, copper (silver for stainless steel body) |
| 4 | Plunger assembly | SUS, NBR | Stainless steel, nitrile rubber |
| 5 | O-ring | NBR | Nitrile rubber |
| 6 | Spring | SUS | Stainless steel |
| 7 | Body | C3771(SUS) | Copper alloy (stainless steel) |

() shows options.

Dimensions



● Grommet lead wire
FWG*1-*.**2C



| Model No. | A | B | C | D | E | (E) | F | G | H | J | K | L | M |
|-----------|----|----|----|------|-----|--------------|------|------|----|--------------|----|----|------------|
| FWG21 | 32 | 14 | 8 | 45.5 | 74 | (75) | 15.5 | 19.5 | 22 | Rc1/8 | 14 | 15 | M4 depth 6 |
| FWG31 | 36 | 18 | 11 | 57.5 | 90 | (Rc1/8:90) | 18.5 | 22.5 | 28 | Rc1/8, Rc1/4 | 17 | 18 | M5 depth 6 |
| | | | | | | (Rc1/4:91.5) | | | | | | | |
| FWG41 | 40 | 21 | 12 | 67 | 103 | (105) | 22.5 | 26 | 34 | Rc1/4 | 17 | 18 | M5 depth 8 |
| | | | | | | | | | | Rc3/8 | 22 | | |
| FWG51 | 40 | 21 | 12 | 73.5 | 111 | (113) | 26 | 29.5 | 40 | Rc1/4 | 17 | 18 | M5 depth 8 |
| | | | | | | | | | | Rc3/8 | 22 | | |

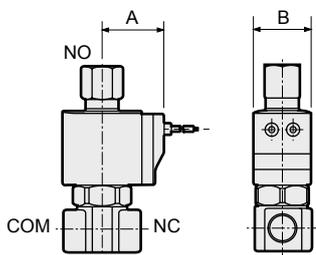
* (E) shows dimensions of stainless steel body.

Optional dimensions



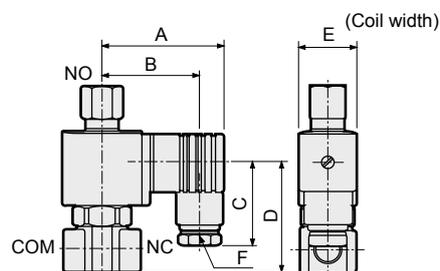
(Refer to the dimensions of grommet lead wire on page 118 for common dimensions.)

- Grommet lead wire with surge suppressor
FWG*1-**-** 2CS



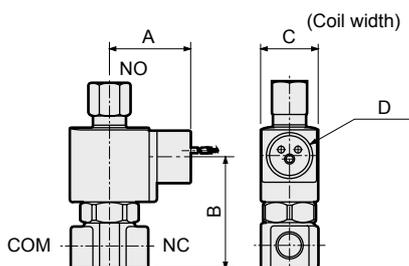
| Model No. | A | B |
|-----------|------|----|
| FWG21 | 26.5 | 22 |
| FWG31 | 29.5 | 28 |
| FWG41 | 34 | 34 |
| FWG51 | 37.5 | 40 |

- DIN terminal box (with lamp/surge suppressor)
FWG*1-**-** 2G
2HS



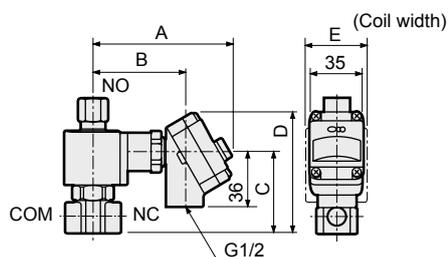
| Model No. | A | B | C | D | E | F |
|-----------|------|------|----|------|----|------|
| FWG21 | 53 | 44 | 38 | 39 | 22 | Pg9 |
| FWG31 | 58.5 | 47 | 39 | 51 | 28 | Pg11 |
| FWG41 | 62 | 50.5 | 39 | 61 | 34 | Pg11 |
| FWG51 | 65.5 | 54 | 39 | 69.5 | 40 | Pg11 |

- Conduit (CTC19 / G1/2)
FWG*1-**-** 2CG
2CH



| Model No. | A | B | C | D |
|-----------|------|------|----|--------------|
| FWG31 | 39 | 53 | 28 | CTC19 / G1/2 |
| FWG41 | 43 | 62.5 | 34 | CTC19 / G1/2 |
| FWG51 | 46.5 | 71 | 40 | CTC19 / G1/2 |

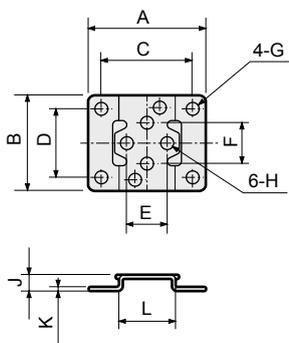
- T type terminal box (with lamp/surge suppressor) (G1/2)
FWG*1-**-** 3T
3RS



| Model No. | A | B | C | D | E |
|-----------|------|------|------|------|----|
| FWG31 | 92 | 60.5 | 53 | 79 | 28 |
| FWG41 | 96 | 64.5 | 62.5 | 88.5 | 34 |
| FWG51 | 99.5 | 68 | 71 | 97 | 40 |

- Mounting plate
FWG*1-**-** B

Material: Steel
Zinc plated



| Model No. | A | B | C | D | E | F | G | H | J | K | L |
|-----------|----|----|----|----|----|----|----|------|---|-----|----|
| FWG21 | 40 | 34 | 30 | 25 | 15 | 15 | ø5 | ø4.5 | 6 | 1.2 | 20 |
| FWG31 | 52 | 42 | 40 | 30 | 18 | 18 | ø6 | ø5.5 | 7 | 1.6 | 25 |
| FWG41/51 | 56 | 48 | 44 | 36 | 18 | 18 | ø6 | ø5.5 | 7 | 1.6 | 30 |

| |
|-----------------|
| EXA |
| FWD |
| HNB/G |
| USB/G |
| FAB/G |
| FGB/G |
| FVB |
| FWB/G |
| FHB |
| FLB |
| AB |
| AG |
| AP/ AD |
| APK/ ADK |
| DryAir |
| EX- XPLNprf |
| XPLNprf |
| HVB/ HVL |
| S ⚡ B/ NAB |
| LAD/ NAD |
| Water- Rela |
| NP/NAP/ NVP |
| SNP |
| CHB/G |
| MXB/G |
| Other valves |
| SWD/ MWD |
| DustColl |
| CVE/ CVSE |
| CCH/ CPE/D |
| LifeSci |
| Gas- Combust |
| Auto- Water |
| Outdoor |
| SpecFld |
| Custom |
| Ending |

Discontinue

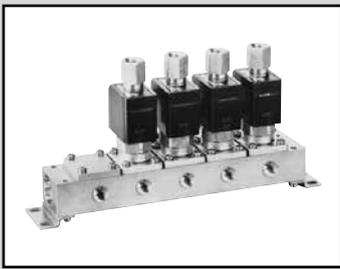
Direct acting 3-port solenoid valve for water, manifold
Special purpose

GFWG Series

- Universal
- Port size: Rc1/8, Rc1/4, Rc3/8

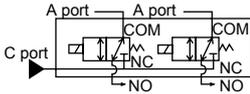


Refer to the Ending for details.



JIS symbol

- Common water supply/
individual drain



Common specifications

| Item | GFWG |
|---|--|
| Working fluid | Water (excluding sewage, agricultural water and liquid manure) |
| Working pressure differential | 0 (≈0 psi, 0 bar) to 1.0 (≈150 psi, 10 bar) (refer to the max. working pressure differential in the individual specifications.) |
| Max. working pressure MPa | 1.0 (≈150 psi, 10 bar) |
| Proof pressure (water pressure) MPa | 2.0 (≈290 psi, 20 bar) |
| Fluid temperature °C | AC: 1 (33.8°F) to 60 (140°F), DC: 1 (33.8°F) to 40 (104°F) (no freezing) |
| Ambient temperature °C | AC:-20 (-4°F) to 40 (104°F), DC:-20 (-4°F) to 40 (104°F) |
| Thermal class | Class 130 (B) |
| Atmosphere | Place free of corrosive gas and explosive gas |
| Valve structure | Direct acting poppet structure |
| Valve seat leakage cm ³ /min | 0 (water pressure) |
| Mounting orientation | Unrestricted |
| Degree of protection | IP65 or equivalent (*1) |

*1: The T type terminal box is IP61 or equivalent.

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

| Item | Port size | | Orifice size (mm) | Cv | Max. working pressure differential MPa | | Rated voltage | Apparent power (VA) | | | | Power consumption (W) | |
|------------------|------------------------------|----------------------|-------------------|-------|--|------------------|--|---------------------|-------|---------------|-------|-----------------------|------|
| | A/NO ports (Individual port) | C port (Common port) | | | AC | DC | | When holding | | When starting | | AC 50/60 Hz | DC |
| | | | | | | | | 50 Hz | 60 Hz | 50 Hz | 60 Hz | | |
| Universal | | | | | | | | | | | | | |
| GFWG21- Z | Rc1/8 | Rc1/4 | 1 | 0.036 | 0.7 | 0.7 | 100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC | 6.5 | 5 | 10 | 9 | 3.6/2.5 | 4 |
| GFWG31- 0 | Rc1/4 | Rc3/8 | 1.5 | 0.080 | 0.7 | 0.7 | | 16 | 10.5 | 23 | 20 | 7/4.1 | 6 |
| GFWG41- 1 | Rc1/4 | Rc3/8 | 2 | 0.14 | 1.0 | 1.0 | | 22 | 16 | 40 | 35 | 8.5/6.5 | 8.4 |
| GFWG51- 4 | Rc1/4 | Rc3/8 | 3 | 0.27 | 0.6 ² | 0.6 ² | | 32 | 22 | 60 | 50 | 12.5/10.5 | 11.5 |

*1 : The voltage fluctuation range must be within ±10% of the rated voltage.

*2 : 0.4 for NO pressurization.

*3 : The leakage current must be less than or equal to the values shown below.

*4 : 8.6 (W) for 12 VDC.

*5 : The 100 VAC (50/60 Hz) can be used with 110 VAC (60 Hz).
The 200 VAC (50/60 Hz) can be used with 220 VAC (60 Hz).

| Leakage current | Voltage | | | | |
|-----------------|--------------|--------------|--------------|----------------|--------------|
| | Model No. | 100 VAC | 200 VAC | 24 VDC | 12 VDC |
| | | GFWG2 | 3 mA or less | 1.5 mA or less | 1 mA or less |
| GFWG3/4/5 | 6 mA or less | 3 mA or less | | | |

Weight

| Model No. | Actuator weight (kg) | Masking weight (kg) | Sub-plate weight (g) (sub-plate, connection part and mounting plate) | | | | | | | | | | Formula for product weight |
|-----------|----------------------|---------------------|--|---------|---------|---------|---------|---------|---------|---------|----------|--|----------------------------|
| | | | 2 stns. | 3 stns. | 4 stns. | 5 stns. | 6 stns. | 7 stns. | 8 stns. | 9 stns. | 10 stns. | | |
| GFWG21 | 0.16 | 0.03 | 0.40 | 0.51 | 0.77 | 0.77 | 1.03 | 1.16 | 1.30 | 1.60 | 1.55 | (Product weight (g)) = 0.14 × (Actuator quantity) + 0.03 × (Masking quantity) + Sub-plate weight | |
| GFWG31 | 0.3 | 0.05 | 0.60 | 0.80 | 1.20 | 1.22 | 1.60 | 1.81 | 2.02 | 2.40 | 2.44 | (Product weight (g)) = 0.27 × (Actuator quantity) + 0.05 × (Masking quantity) + Sub-plate weight | |
| GFWG41 | 0.48 | 0.06 | 0.73 | 1.00 | 1.47 | 1.50 | 2.00 | 2.23 | 2.50 | 3.00 | 3.00 | (Product weight (g)) = 0.45 × (Actuator quantity) + 0.06 × (Masking quantity) + Sub-plate weight | |
| GFWG51 | 0.65 | 0.09 | 0.83 | 1.11 | 1.67 | 1.70 | 2.24 | 2.52 | 2.81 | 3.36 | 3.40 | (Product weight (g)) = 0.64 × (Actuator quantity) + 0.09 × (Masking quantity) + Sub-plate weight | |

How to order

● Manifold

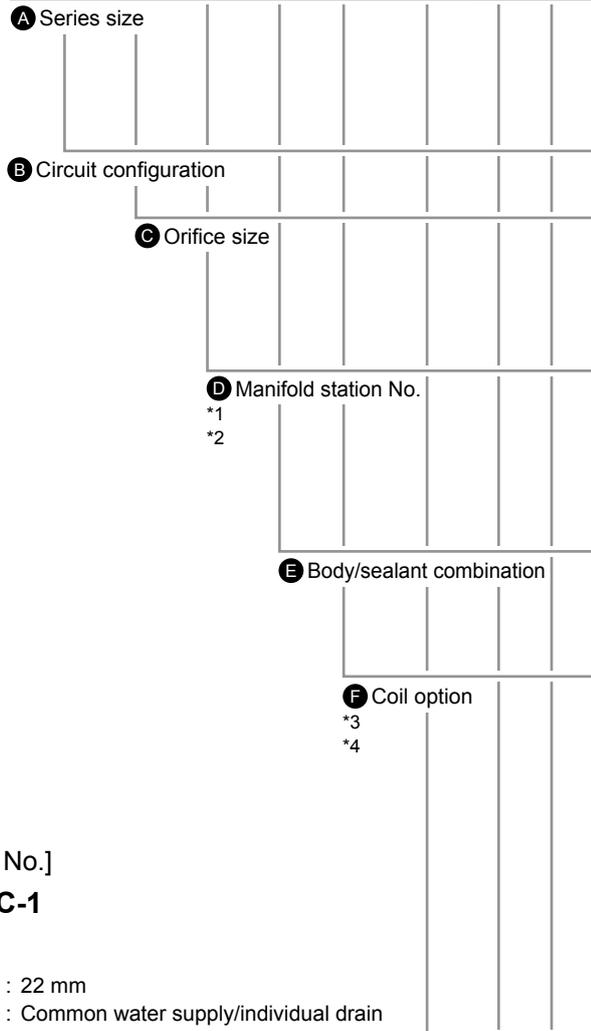
G F W G 2 1 - Z - 5 - 0 2C - 1

● Manifold with masking plate

G F W G 3 1 - 4 - X - D 2G - 2 - 3 6

No. of ports
(3-port valve)

Working fluid
(Water)



[Example of model No.]

GFWG21-Z-5-02C-1

Model: GFWG

- A** Series size : 22 mm
- B** Circuit configuration : Common water supply/individual drain
- C** Orifice size : $\phi 1$
- D** Manifold station No. : 5 stations
- E** Body/sealant combination : Body - copper alloy/sealant - NBR
- F** Coil option : Grommet lead wire
- G** Voltage : 100 VAC 50/60 Hz
- H I** : No masking plate

⚠ Precautions for model No. selection

- *1 : Select a desired manifold station No. from 2 to 10.
- *2 : For the type with masking plate, designate Item **D** as X, then designate the quantities of **H** solenoid valves and **I** masking plates.
- *3 : For GFWG21 **F** 2G/2HS, the DIN terminal box (Pg9) is used.
- *4 : The surge suppressor is built into the coil for Item **F** 2CS and in the terminal box for 2HS and 3RS.
- *5 : Other voltages may not be available. Contact CKD for details.
- *6 : Solenoid valves are arranged from the right side with the sub-plate (individual) port A facing front.
- *7 : Orders for only the masking plate and sub-plate are also available. Contact CKD for details.

| Code | Description | Model No. | | | |
|--|---|-------------|--------|--------|--------|
| | | GFWG21 | GFWG31 | GFWG41 | GFWG51 |
| A Series size | | | | | |
| 2 | 22 mm | ● | | | |
| 3 | 28 mm | | ● | | |
| 4 | 34 mm | | | ● | |
| 5 | 40 mm | | | | ● |
| B Circuit configuration | | | | | |
| 1 | Common water supply/individual drain | ● | ● | ● | ● |
| C Orifice size | | | | | |
| Z | $\phi 1$ | ● | | | |
| O | $\phi 1.5$ | | ● | | |
| 1 | $\phi 2$ | | | ● | |
| 4 | $\phi 3$ | | | | ● |
| D Manifold station No. | | | | | |
| 2 | 2 stations | | | | |
| to | to | ● | ● | ● | ● |
| 10 | 10 stations | | | | |
| O | Actuator only | ● | ● | ● | ● |
| X | With masking plate | ● | ● | ● | ● |
| E Body/sealant combination | | | | | |
| | Body | Seal | | | |
| O | Copper alloy | NBR | ● | ● | ● |
| D | Stainless steel | NBR | ● | ● | ● |
| F Coil option | | | | | |
| 2C | Std. Grommet lead wire | | ● | ● | ● |
| 2CS | Grommet lead wire with surge suppressor | | ● | ● | ● |
| 2G | With DIN terminal box (Pg11) | | ● | ● | ● |
| 2HS | DIN terminal box with lamp/surge suppressor (Pg11) | | ● | ● | ● |
| 2CG | Conduit (CTC19) | | | ● | ● |
| 2CH | Conduit (G1/2) | | | ● | ● |
| 3T | With T type terminal box (G1/2) | | | ● | ● |
| 3RS | T type terminal box with lamp/surge suppressor (G1/2) | | | ● | ● |
| G Voltage | | | | | |
| 1 | 100 VAC 50/60 Hz | | ● | ● | ● |
| 2 | 200 VAC 50/60 Hz | | ● | ● | ● |
| 3 | 24 VDC | | ● | ● | ● |
| 4 | 12 VDC | | ● | ● | ● |
| Specify the desired voltage if it is not listed above. | | | | | |
| H No. of solenoid valves | | | | | |
| Blank | No masking plate | | ● | ● | ● |
| 1 | 1 solenoid valve | | ● | ● | ● |
| to | to | | ● | ● | ● |
| 9 | 9 solenoid valves | | ● | ● | ● |
| I Masking plate quantity | | | | | |
| Blank | No masking plate | | ● | ● | ● |
| 1 | 1 masking plate | | ● | ● | ● |
| to | to | | ● | ● | ● |
| 9 | 9 masking plates | | ● | ● | ● |

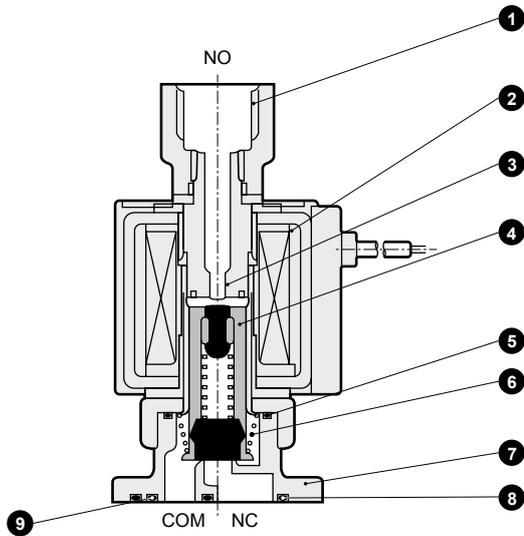
Select from the combinations indicated with ● in the table above.

- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- S ϕ B/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combus
- Auto-Water
- Outdoor
- SpecFld
- Custom
- Ending

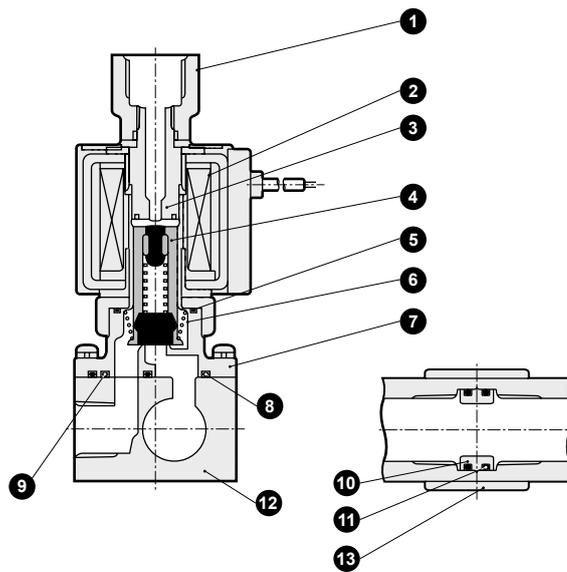
Internal structure and parts list

- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G**
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- S◇B/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combust
- Auto-Water
- Outdoor
- SpecFld
- Custom
- Ending

● GFWG actuator



● GFWG manifold



| No. | Part name | Material | No. | Part name | Material |
|-----|------------------|------------------------------|-----|------------------|--|
| 1 | Socket | C3604 (SUS for SUS body) | 8 | O-ring | NBR Nitrile rubber |
| 2 | Coil assembly | - | 9 | O-ring | NBR Nitrile rubber |
| 3 | Core assembly | SUS, Cu (Ag for SUS body) | 10 | Connector | C3604 (SUS for SUS body) Copper alloy (stainless steel for stainless steel body) |
| 4 | Plunger assembly | SUS, NBR | 11 | O-ring | NBR Nitrile rubber |
| 5 | O-ring | NBR | 12 | Sub-plate | C3604 (SUS for SUS body) Copper alloy (stainless steel for stainless steel body) |
| 6 | Spring | SUS | 13 | Connecting plate | SPC Steel |
| 7 | Body | C3771(SUS) | | | |

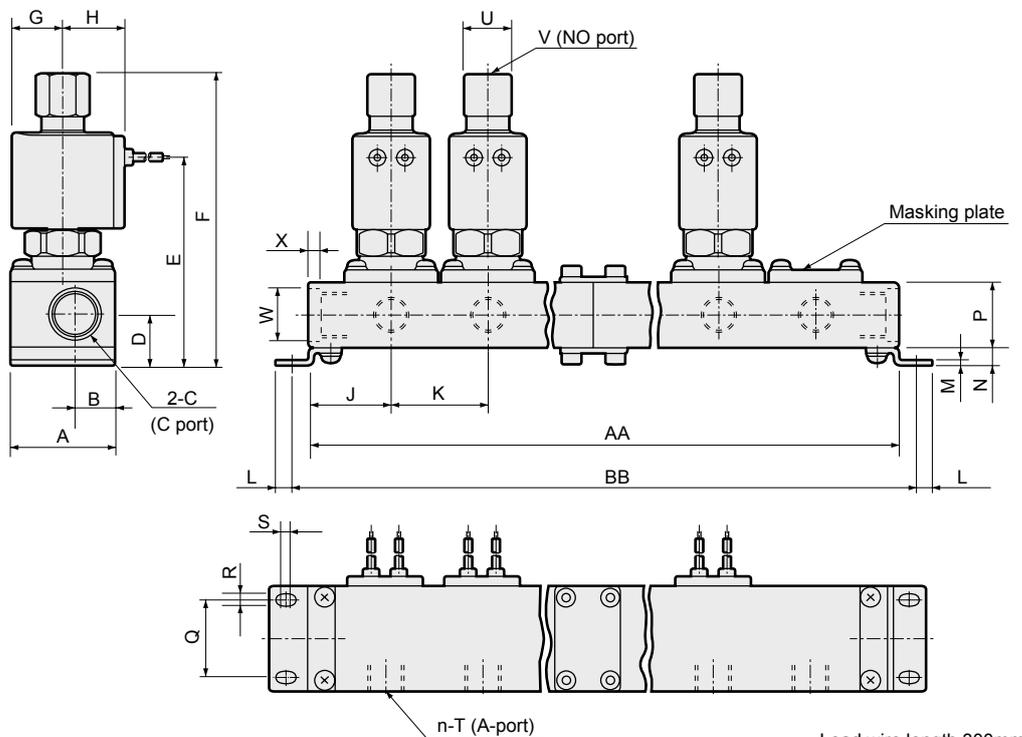
*4 body mounting screws and 2 O-rings are attached to the actuator only.

() shows options.

Dimensions: Manifold



- Grommet lead wire
GFWG*1-*.~.*2C



Lead wire length 300mm

| Model No. | Station No. | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------------|-------------------|-------------|-------------|
| | Code | | | | | | | | | |
| GFWG2 | AA | 81 | 109 | 162 | 165 | 218 | 246 | 274 | 327 | 330 |
| | BB | 93 | 121 | 174 | 177 | 230 | 258 | 286 | 339 | 342 |
| GFWG3 | AA | 97 | 133 | 194 | 205 | 266 | 302 | 338 | 399 | 410 |
| | BB | 109 | 145 | 206 | 217 | 278 | 314 | 350 | 411 | 422 |
| GFWG4 | AA | 106 | 145 | 212 | 223 | 290 | 329 | 368 | 435 | 446 |
| | BB | 119 | 158 | 225 | 236 | 303 | 342 | 381 | 448 | 459 |
| GFWG5 | AA | 118 | 163 | 236 | 253 | 326 | 371 | 416 | 489 | 506 |
| | BB | 131 | 176 | 249 | 266 | 339 | 384 | 429 | 502 | 519 |
| Manifold configuration | | 2 stns. x 1 | 3 stns. x 1 | 2 stns. x 2 | 5 stns. x 1 | 3 stns. x 2 | 5 stns. + 2 stns. | 5 stns. + 3 stns. | 3 stns. x 3 | 5 stns. x 2 |

Note) Manifold configuration combines 2-station, 3-station and 5-station units.

| Model No. | A | B | C | D | E | F | (F) | G | H | J | K | L | M | N | P | Q | R | S | T | U | V | W | X |
|-----------|----|------|-------|------|------|-----|---------|------|------|----|----|-----|-----|-----|----|----|-----|-----|-------|----|-------|-------|-----|
| GFWG2 | 32 | 13.5 | Rc1/4 | 17.5 | 66.5 | 95 | (96) | 15.5 | 19.5 | 26 | 28 | 6 | 1.6 | 6.5 | 21 | 22 | 4.5 | 2.5 | Rc1/8 | 14 | Rc1/8 | ø17.3 | 4 |
| GFWG3 | 38 | 14.5 | Rc3/8 | 18.5 | 75.5 | 108 | (109) | 18.5 | 22.5 | 30 | 36 | 6 | 2 | 6.5 | 24 | 28 | 4.5 | 2.5 | Rc1/4 | 17 | Rc1/4 | ø19 | 4.6 |
| GFWG4 | 42 | 16.5 | Rc3/8 | 19.5 | 84 | 120 | (121.5) | 22.5 | 26 | 33 | 39 | 6.5 | 2 | 7.5 | 24 | 30 | 5.5 | 2.5 | Rc1/4 | 17 | Rc1/4 | ø19 | 4.6 |
| GFWG5 | 42 | 16.5 | Rc3/8 | 19.5 | 90 | 127 | (128.5) | 26 | 29.5 | 36 | 45 | 6.5 | 2 | 7.5 | 24 | 30 | 5.5 | 2.5 | Rc1/4 | 17 | Rc1/4 | ø19 | 4.6 |

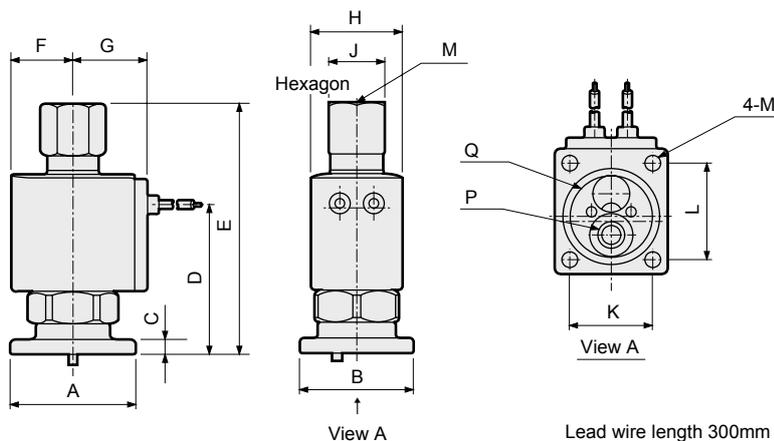
*(F) shows dimensions of stainless steel body.

| |
|----------------|
| EXA |
| FWD |
| HNB/G |
| USB/G |
| FAB/G |
| FGB/G |
| FVB |
| FWB/G |
| FHB |
| FLB |
| AB |
| AG |
| AP/AD |
| APK/ADK |
| DryAir |
| EX-XPLNprf |
| XPLNprf |
| HVB/HVL |
| S ϕ B/NAB |
| LAD/NAD |
| Water-Rela |
| NP/NAP/NVP |
| SNP |
| CHB/G |
| MXB/G |
| Other valves |
| SWD/MWD |
| DustColl |
| CVE/CVSE |
| CCH/CPE/D |
| LifeSci |
| Gas-Combust |
| Auto-Water |
| Outdoor |
| SpecFld |
| Custom |
| Ending |



Dimensions: Actuator

● Grommet lead wire
GFWG*1-*O-*2C

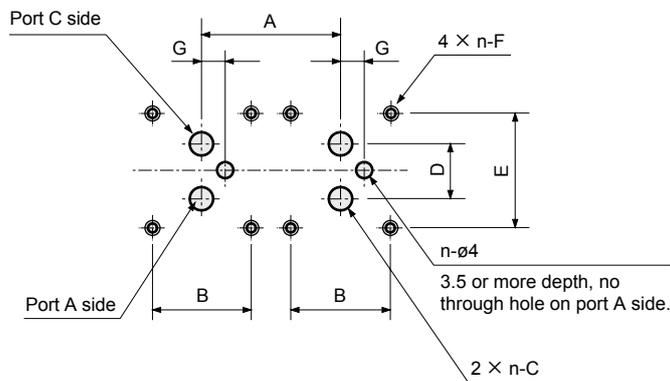


Lead wire length 300mm

| Model No. | A | B | C | D | E | (E) | F | G | H | J | K | L | M | N | Applicable O-ring | |
|-----------|----|----|-----|------|------|--------|------|------|----|----|----|----|------|-------|-------------------|-----------|
| | | | | | | | | | | | | | | | P | Q |
| GFWG2 | 32 | 27 | 4 | 39 | 67.5 | (68.5) | 15.5 | 19.5 | 22 | 14 | 19 | 24 | ø3.5 | Rc1/8 | AS568-009 | AS568-018 |
| GFWG3 | 38 | 34 | 4.5 | 45 | 77.5 | (78.5) | 18.5 | 22.5 | 28 | 17 | 25 | 29 | ø4.5 | Rc1/4 | AS568-011 | AS568-022 |
| GFWG4 | 42 | 38 | 4.5 | 52.5 | 88.5 | (90) | 22.5 | 26 | 34 | 17 | 28 | 32 | ø4.5 | Rc1/4 | AS568-012 | AS568-025 |
| GFWG5 | 42 | 44 | 5.5 | 58.5 | 95.5 | (97) | 26 | 29.5 | 40 | 17 | 34 | 32 | ø4.5 | Rc1/4 | AS568-012 | AS568-025 |

*(E) shows dimensions of stainless steel body.

Actuator installation dimensions



Machining drawing when using 2 actuators (n: number of stations)

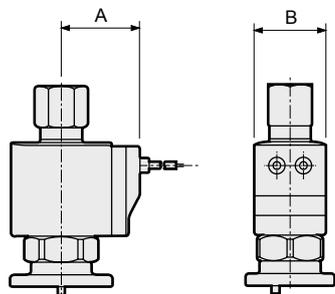
| Model No. | A | B | C | D | E | F | G |
|-----------|------------|--------|------|----------|--------|-------------------------------------|-------|
| GFWG2 | 28 or more | 19±0.1 | ø3.5 | 10.6±0.1 | 24±0.1 | M3 effective thread depth 6 or more | 6±0.2 |
| GFWG3 | 35 or more | 25±0.1 | ø5.5 | 13.8±0.1 | 29±0.1 | M4 effective thread depth 6 or more | 6±0.2 |
| GFWG4 | 39 or more | 28±0.1 | ø7.5 | 17±0.1 | 32±0.1 | M4 effective thread depth 6 or more | 7±0.2 |
| GFWG5 | 45 or more | 34±0.1 | ø7.5 | 17±0.1 | 32±0.1 | M4 effective thread depth 6 or more | 7±0.2 |

Optional dimensions



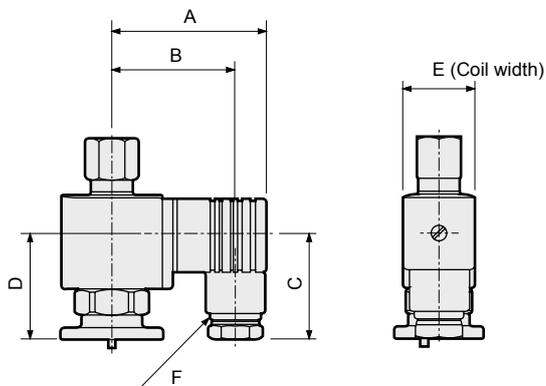
(Refer to the grommet lead wire actuator dimensions on page 124 for common dimensions.)

- Grommet lead with surge suppressor
GFWG*1-*-*^{*} 2CS



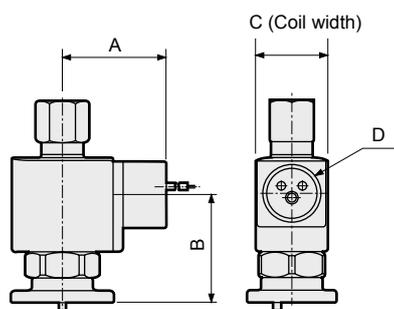
| Model No. | A | B |
|-----------|------|----|
| GFWG2 | 26.5 | 22 |
| GFWG3 | 29.5 | 28 |
| GFWG4 | 34 | 34 |
| GFWG5 | 37.5 | 40 |

- DIN terminal box (with lamp/surge suppressor)
GFWG*1-*-*^{*} 2G
2HS



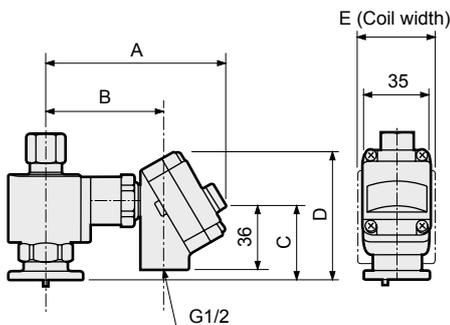
| Model No. | A | B | C | D | E | F |
|-----------|------|------|----|------|----|------|
| GFWG2 | 53 | 44 | 38 | 32.5 | 22 | Pg9 |
| GFWG3 | 58.5 | 47 | 39 | 38.5 | 28 | Pg11 |
| GFWG4 | 62 | 50.5 | 39 | 46.5 | 34 | Pg11 |
| GFWG5 | 65.5 | 54 | 39 | 54 | 40 | Pg11 |

- Conduit (CTC19 / G1/2)
GFWG*1-*-*^{*} 2CG
2CH



| Model No. | A | B | C | D |
|-----------|------|------|----|--------------|
| GFWG3 | 39 | 40.5 | 28 | CTC19 / G1/2 |
| GFWG4 | 43 | 48 | 34 | CTC19 / G1/2 |
| GFWG5 | 46.5 | 55.5 | 40 | CTC19 / G1/2 |

- T type terminal box (with lamp/surge suppressor) (G1/2)
GFWG*1-*-*^{*} 3T
3RS



| Model No. | A | B | C | D | E |
|-----------|------|------|------|------|----|
| GFWG3 | 92 | 60.5 | 40.5 | 66.5 | 28 |
| GFWG4 | 96 | 64.5 | 48 | 74 | 34 |
| GFWG5 | 99.5 | 68 | 55.5 | 81.5 | 40 |

| |
|-----------------|
| EXA |
| FWD |
| HNB/G |
| USB/G |
| FAB/G |
| FGB/G |
| FVB |
| FWB/G |
| FHB |
| FLB |
| AB |
| AG |
| AP/ AD |
| APK/ ADK |
| DryAir |
| EX- XPLNprf |
| XPLNprf |
| HVB/ HVL |
| S ⚡ B/ NAB |
| LAD/ NAD |
| Water- Rela |
| NP/NAP/ NVP |
| SNP |
| CHB/G |
| MXB/G |
| Other valves |
| SWD/ MWD |
| DustColl |
| CVE/ CVSE |
| CCH/ CPE/D |
| LifeSci |
| Gas- Combust |
| Auto- Water |
| Outdoor |
| SpecFld |
| Custom |
| Ending |