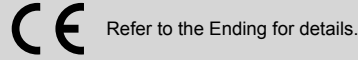




Direct acting 2-port solenoid valve for compressed air, single unit  
Special purpose

# FAB Series

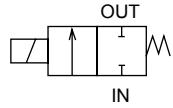
- NC (open when energized), NO (closed when energized)
- Port size: M5, Rc1/8 to Rc1/2



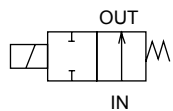
EXA  
FWD  
HNB/G  
USB/G  
FAB/G  
FGB/G  
FVB  
FWB/G  
FHB  
FLB  
AB  
AG  
AP/  
AD  
APK/  
ADK  
DryAir  
EX-  
XPLNprf  
XPLNprf  
HVB/  
HVL  
S ∅ B/  
NAB  
LAD/  
NAD  
Water-  
Rela  
NP/NAP/  
NVP  
SNP  
CHB/G  
MXB/G  
Other  
valves  
SWD/  
MWD  
DustColl  
CVE/  
CVSE  
CCH/  
CPE/D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

## JIS symbol

- NC (open when energized)



- NO (closed when energized)



## Common specifications

| Item   | FAB   |
|--|---|
| Working fluid                                | Compressed air  |
| Working pressure differential<br>MPa         | 0 (≈0 psi, 0 bar) to 1.4 (≈200 psi, 14 bar)<br>(refer to the max. working pressure differential in the individual specifications) |
| Proof pressure (water pressure) MPa          | 2.1 (≈300 psi, 21 bar) (1.5 (≈220 psi, 15 bar) for FAB11/21)  |
| Fluid temperature °C                         | AC: -10 (14°F) to 60 (140°F), DC: -10 (14°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 <sup>3</sup> /min(ANR) | 0.2 or less   |
| Mounting orientation                         | Unrestricted  |
| Degree of protection                         | IP65 or equivalent (*1)   |

\*1 : The T type terminal box is IP61 or equivalent, and the FAB11 compact terminal box is IP40 or equivalent.

## Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

| Item                       | Port size | Orifice size (mm) | Flow characteristics                      |       | Max. working press diff MPa |      | Max. working pressure MPa | Rated voltage | Apparent power (VA) |                     |      |     | Power consumption (W) |     | Weight (kg) |      |      |
|----------------------------|-----------|-------------------|---|-------|-----------------------------|------|---------------------------|---------------|---------------------|---------------------|------|-----|-----------------------|-----|-------------|------|------|
|                            |           |                   | C <sub>v</sub> [dm <sup>3</sup> /(s·bar)] | b     | AC                          | DC   |                           |               | When holding        | When starting       | AC   | DC  |                       |     |             |      |      |
| NC (open when energized)   |           |                   |   |       |                             |      |                           |               |                     |                     |      |     |                       |     |             |      |      |
| FAB11-                     | M5        | -Z                | M5  | 1     | 0.12                        | 0.64 | 0.7                       | 0.7           | 1.0                 | 100 VAC<br>50/60 Hz | 3.4  | 2.6 | 5                     | 4.6 | 2.3/1.6     | 3    | 0.07 |
|                            |           | -1                |   | 1.5   | 0.28                        | 0.52 | 0.3                       | 0.3           |                     |                     | 5.3  | 3.7 | 10                    | 9   | 2.7/2       | 4    | 0.12 |
| FAB21-                     | 6         | -1                | Rc1/8                                     | 1.5   | 0.28                        | 0.52 | 1.0                       | 1.0           | 1.4                 | 100 VAC<br>50/60 Hz | 7.5  | 5.5 | 20                    | 17  | 4/3.4       | 6.5  | 0.21 |
|                            |           | -2                |   | 2     | 0.55                        | 0.59 | 0.6                       | 0.6           |                     |                     |      |     |                       |     |             |      |      |
| FAB31-                     | 6         | -2                | Rc1/8                                     | 2     | 0.55                        | 0.56 | 1.4                       | 1.4           | 1.4                 | 200 VAC<br>50/60 Hz | 15   | 11  | 40                    | 35  | 7.5/6.5     | 8    | 0.37 |
|                            |           | -3                |   | 3     | 1.2                         | 0.56 | 1.0                       | 0.6           |                     |                     |      |     |                       |     |             |      |      |
|                            |           | -6                | Rc1/4                                     | 5     | 3.1                         | 0.50 | 0.3                       | 0.15          | 1.4                 | 24 VDC<br>12 VDC    | 20   | 16  | 55                    | 45  | 11/9.5      | 11.5 | 0.60 |
| FAB41-                     | 8         | -3                | Rc1/4                                     | 3     | 1.2                         | 0.56 | 1.4                       | 1.4           |                     |                     |      |     |                       |     |             |      |      |
|                            |           | -5                | Rc3/8                                     | 4     | 2.1                         | 0.54 | 1.0                       | 0.9           | 1.4                 | 24 VDC<br>12 VDC    | 18   | 14  | 45                    | 40  | 7.5/6.5     | 8    | 0.54 |
|                            |           | -7                | Rc3/8                                     | 7     | 5.7                         | 0.48 | 0.25                      | 0.15          |                     |                     |      |     |                       |     |             |      |      |
| FAB51-                     | 10        | -5                | Rc3/8                                     | 4     | 2.1                         | 0.54 | 1.2                       | 1.2           | 1.4                 | 24 VDC<br>12 VDC    | 25   | 20  | 60                    | 50  | 11/10       | 11.5 | 0.71 |
|                            |           | -6                |   | 5     | 3.1                         | 0.50 | 0.7                       | 0.8           |                     |                     |      |     |                       |     |             |      |      |
|                            |           | -7                | Rc3/8                                     | 7     | 5.7                         | 0.48 | 0.3                       | 0.3           | 1.4                 | 24 VDC<br>12 VDC    | 25   | 20  | 60                    | 50  | 11/10       | 11.5 | 0.71 |
|                            |           | -8                | Rc1/2                                     | 10    | 5.5                         | 0.41 | 0.15                      | 0.15          |                     |                     |      |     |                       |     |             |      |      |
| NO (closed when energized) |           |                   |   |       |                             |      |                           |               |                     |                     |      |     |                       |     |             |      |      |
| FAB32-                     | 6         | -2                | Rc1/8                                     | 2     | 0.57                        | 0.53 | 1.1                       | 1.1           | 1.4                 | 100 VAC<br>50/60 Hz | 11.5 | 8   | 25                    | 22  | 4.6/3.2     | 6    | 0.31 |
|                            |           | -3                |   | Rc1/4 | 3                           | 1.2  | 0.57                      | 0.55          |                     |                     |      |     |                       |     |             |      |      |
|                            |           | -6                | Rc1/4                                     | 5     | 3.0                         | 0.48 | 0.2                       | 0.2           | 1.4                 | 200 VAC<br>50/60 Hz | 18   | 14  | 45                    | 40  | 7.5/6.5     | 8    | 0.54 |
| FAB42-                     | 8         | -3                | Rc1/4                                     | 3     | 1.2                         | 0.50 | 0.9                       | 0.9           |                     |                     |      |     |                       |     |             |      |      |
|                            |           | -5                | Rc1/4                                     | 4     | 2.1                         | 0.54 | 0.55                      | 0.55          | 1.4                 | 24 VDC<br>12 VDC    | 25   | 20  | 60                    | 50  | 11/10       | 11.5 | 0.71 |
|                            |           | -7                | Rc1/4                                     | 7     | 5.2                         | 0.41 | 0.15                      | 0.15          |                     |                     |      |     |                       |     |             |      |      |
| FAB52-                     | 8         | -5                | Rc3/8                                     | 4     | 2.1                         | 0.54 | 0.8                       | 0.8           | 1.4                 | 24 VDC<br>12 VDC    | 25   | 20  | 60                    | 50  | 11/10       | 11.5 | 0.71 |
|                            |           | -6                |   | 5     | 3.0                         | 0.52 | 0.5                       | 0.5           |                     |                     |      |     |                       |     |             |      |      |
|                            |           | -7                | Rc3/8                                     | 7     | 5.2                         | 0.41 | 0.25                      | 0.25          | 1.4                 | 24 VDC<br>12 VDC    | 25   | 20  | 60                    | 50  | 11/10       | 11.5 | 0.71 |
|                            |           | -7                | Rc3/8                                     | 7     | 5.2                         | 0.41 | 0.25                      | 0.25          |                     |                     |      |     |                       |     |             |      |      |

\*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.

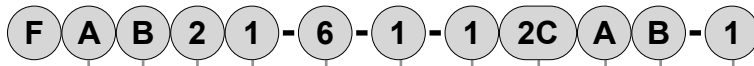
\*3 : 8.6 (W) for 12 VDC.

\*4 : Effective cross-sectional area S and sonic conductance C are converted as  $S \approx 5.0 \times C$ .

\*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.    |                |              |              |              |
|                 | FAB1         | 2 mA or less   | 1 mA or less | 1 mA or less | 2 mA or less |
| FAB2            | 3 mA or less | 1.5 mA or less |              |              |              |
| FAB3/4/5        | 6 mA or less | 3 mA or less   |              |              |              |

## How to order



No. of ports  
(2-port valve)

Working fluid  
(Compressed air) **A** Series size

**B** Actuation

**C** Port size

**D** Orifice size

\*1

**E** Body/sealant combination

\*2

**F** Coil option

\*3

\*4

\*5

**G** Manual override

\*6

**H** Other options

Other options

[Example of model No.]

**FAB21-6-1-12CAB-1**

Model : FAB

- A** Series size : 22 mm
- B** Actuation : NC (open when energized)
- C** Port size : Rc1/8
- D** Orifice size :  $\phi$ 1.5
- E** Body/sealant combination : Body - aluminum, sealant - NBR, actuation - NC (open when energized)
- F** Coil option : Grommet lead wire
- G** Manual override : Manual locking
- H** Other options : Mounting plate
- I** Voltage : 100 VAC50/60 Hz

### ⚠ Precautions for model No. selection

- \*1 : For FAB51 with orifice of  $\phi$ 4 mm (Item **D** 5) and  $\phi$ 5 mm (Item **D** 6), available port size is Rc3/8 (Item **C** 10) only.
- \*2 : For Item **E** 1, only NC is available. For Item **E** 0, only NO is available.
- \*3 : For FAB11 Item **F** 2G, the compact terminal box (G1/4) is used.
- \*4 : For FAB21 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 : Manual override is available only for NC (open when energized).
- \*7 : Other voltages may not be available. Contact CKD for details.

|                                   |                            | Model No.   |                  |       |       |       |       |       |       |
|-----------------------------------|----------------------------|---|------------------|-------|-------|-------|-------|-------|-------|
|                                   |                            | FAB11   | FAB21            | FAB31 | FAB41 | FAB51 | FAB32 | FAB42 | FAB52 |
| Code                              | Description                |   |                  |       |       |       |       |       |       |
| <b>A Series size</b>              |                            |   |                  |       |       |       |       |       |       |
| 1                                 | 18 mm                      | ●   |                  |       |       |       |       |       |       |
| 2                                 | 22 mm                      |   | ●                |       |       |       |       |       |       |
| 3                                 | 28 mm                      |   |                  | ●     |       |       |       |       |       |
| 4                                 | 34 mm                      |   |                  |       | ●     |       |       | ●     |       |
| 5                                 | 40 mm                      |   |                  |       |       | ●     |       |       | ●     |
| <b>B Actuation</b>                |                            |   |                  |       |       |       |       |       |       |
| 1                                 | NC (open when energized)   | ●   | ●                | ●     | ●     | ●     |       |       |       |
| 2                                 | NO (closed when energized) |   |                  |       |       |       | ●     | ●     | ●     |
| <b>C Port size</b>                |                            |   |                  |       |       |       |       |       |       |
| M5                                | M5                         | ●   |                  |       |       |       |       |       |       |
| 6                                 | Rc1/8                      |   | ●                | ●     |       |       | ●     |       |       |
| 8                                 | Rc1/4                      |   |                  | ●     |       |       | ●     | ●     | ●     |
| 10                                | Rc3/8                      |   |                  |       | ●     | ●     | ●     | ●     | ●     |
| 15                                | Rc1/2                      |   |                  |       |       | ●     |       |       | ●     |
| <b>D Orifice size</b>             |                            |   |                  |       |       |       |       |       |       |
| Z                                 | $\phi$ 1                   | ●   |                  |       |       |       |       |       |       |
| 1                                 | $\phi$ 1.5                 | ●   | ●                |       |       |       |       |       |       |
| 2                                 | $\phi$ 2                   |   | ●                | ●     |       |       | ●     |       |       |
| 3                                 | $\phi$ 3                   |   |                  | ●     | ●     |       | ●     | ●     | ●     |
| 5                                 | $\phi$ 4                   |   |                  |       | ●     | ●     | ●     | ●     | ●     |
| 6                                 | $\phi$ 5                   |   |                  | ●     |       | ●     | ●     | ●     | ●     |
| 7                                 | $\phi$ 7                   |   |                  |       | ●     | ●     | ●     | ●     | ●     |
| 8                                 | $\phi$ 10                  |   |                  |       |       | ●     |       |       | ●     |
| <b>E Body/sealant combination</b> |                            |   |                  |       |       |       |       |       |       |
|                                   | <b>Body</b>                | <b>Seal</b>   | <b>Actuation</b> |       |       |       |       |       |       |
| 1                                 | Aluminum                   | NBR   | NC               | ●     | ●     | ●     | ●     | ●     |       |
| 0                                 | Copper alloy               | NBR   | NO               |       |       |       |       |       | ●     |
| <b>F Coil option</b>              |                            |   |                  |       |       |       |       |       |       |
| 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) |                  |       | ●     | ●     | ●     | ●     | ●     |
| <b>G Manual override</b>          |                            |   |                  |       |       |       |       |       |       |
| Blank                             | Std.                       | None  |                  | ●     | ●     | ●     | ●     | ●     | ●     |
| A                                 | Option                     | Manual locking  |                  | ●     | ●     | ●     | ●     |       |       |
| N                                 |                            | Manual non-locking                                    |                  |       | ●     | ●     | ●     |       |       |
| <b>H Other options</b>            |                            |   |                  |       |       |       |       |       |       |
| Blank                             | Std.                       | None  |                  | ●     | ●     | ●     | ●     | ●     | ●     |
| B                                 | Option                     | Mounting plate  |                  | ●     | ●     | ●     | ●     | ●     | ●     |
| <b>I Voltage</b>                  |                            |   |                  |       |       |       |       |       |       |
| 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 $\phi$ 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         |

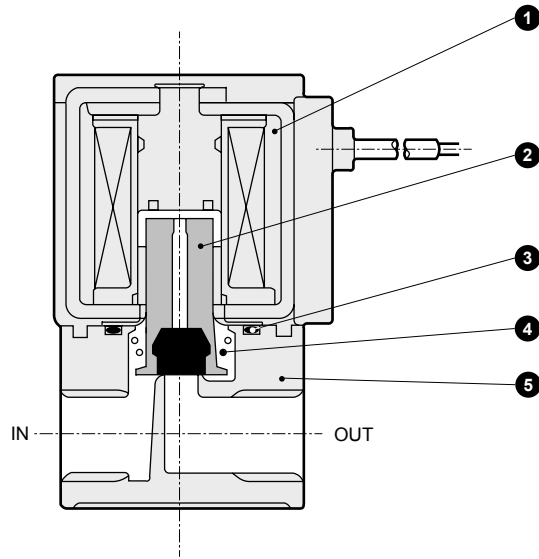
# FAB Series

FAB\*1 Series: NC (open 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 $\diamond$ 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

● FAB\*1 Series

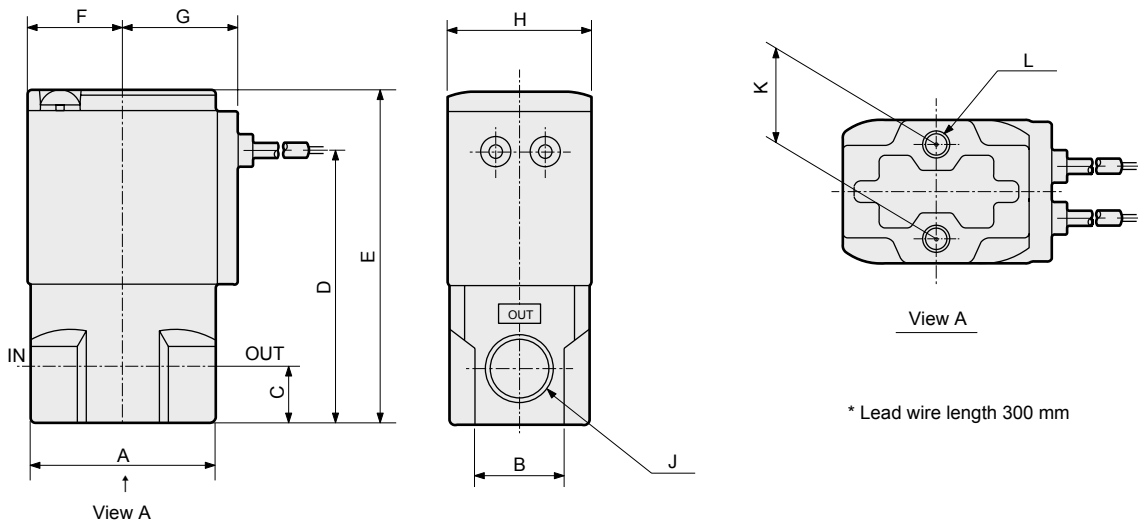


| No. | Part name        | Material |                                 |
|-----|------------------|----------|---------------------------------|
| 1   | Coil assembly    | -        | -                               |
| 2   | Plunger assembly | SUS, NBR | Stainless steel, nitrile rubber |
| 3   | O-ring           | NBR      | Nitrile rubber                  |
| 4   | Spring           | SUS      | Stainless steel                 |
| 5   | Body             | ADC      | Aluminum die-casting            |

## Dimensions



● Grommet lead wire  
FAB\*1-\*.\*.2C



\* Lead wire length 300 mm

| Model No. | A  | B  | C  | D    | E    | F    | G    | H  | J            | K  | L            |
|-----------|----|----|----|------|------|------|------|----|--------------|----|--------------|
| FAB11     | 25 | 14 | 5  | 34   | 43.5 | 13   | 17   | 18 | M5           | 10 | M4 depth 5.5 |
| FAB21     | 32 | 16 | 8  | 43   | 54   | 15.5 | 19.5 | 22 | Rc1/8        | 15 | M4 depth 6   |
| FAB31     | 36 | 18 | 11 | 53.5 | 65.5 | 18.5 | 22.5 | 28 | Rc1/8, Rc1/4 | 18 | M5 depth 6   |
| FAB41     | 40 | 25 | 12 | 62   | 76   | 22.5 | 26   | 34 | Rc1/4, Rc3/8 | 18 | M5 depth 7   |
| FAB51     | 50 | 30 | 15 | 74.5 | 90.5 | 26   | 29.5 | 40 | Rc3/8, Rc1/2 | 20 | M5 depth 8   |

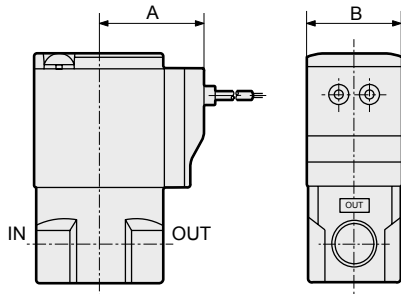
### Optional dimensions



(Refer to the dimensions of grommet lead wire on page 54 for common dimensions.)

● Grommet lead wire with surge suppressor

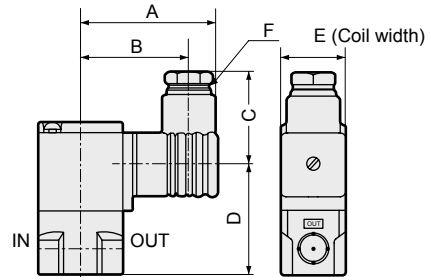
FAB\*1-\*.\*\*\***[2CS]**



| Model No. | A    | B  |
|-----------|------|----|
| FAB11     | 24.5 | 18 |
| FAB21     | 26.5 | 22 |
| FAB31     | 29.5 | 28 |
| FAB41     | 34   | 34 |
| FAB51     | 37.5 | 40 |

● DIN terminal box (with lamp/surge suppressor)

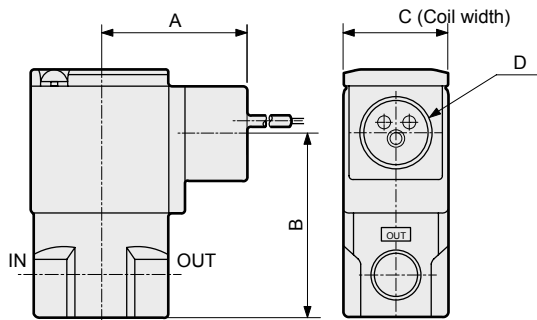
FAB\*1-\*.\*\*\***[2G  
2HS]**



| Model No. | A    | B    | C  | D    | E  | F    |
|-----------|------|------|----|------|----|------|
| FAB11     | 36   | 28.5 | 22 | 32   | 18 | G1/4 |
| FAB21     | 53   | 44   | 38 | 36.5 | 22 | Pg 9 |
| FAB31     | 58.5 | 47   | 39 | 47   | 28 | Pg11 |
| FAB41     | 62   | 50.5 | 39 | 55.5 | 34 | Pg11 |
| FAB51     | 65.5 | 54   | 39 | 70   | 40 | Pg11 |

● Conduit (CTC19 / G1/2)

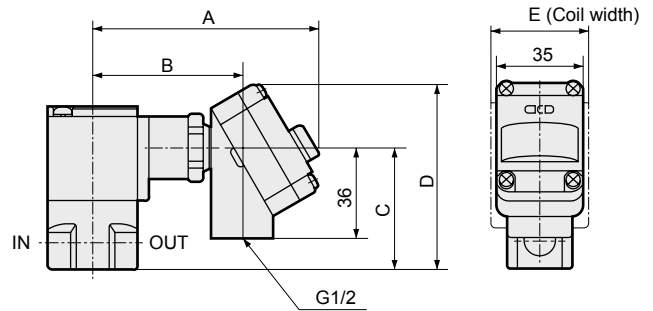
FAB\*1-\*.\*\*\***[2CG  
2CH]**



| Model No. | A    | B    | C  | D             |
|-----------|------|------|----|---------------|
| FAB31     | 39   | 48.5 | 28 | CTC19<br>G1/2 |
| FAB41     | 43   | 57.5 | 34 | CTC19<br>G1/2 |
| FAB51     | 46.5 | 71.5 | 40 | CTC19<br>G1/2 |

● T type terminal box (with lamp/surge suppressor) (G1/2)

FAB\*1-\*.\*\*\***[3T  
3RS]**

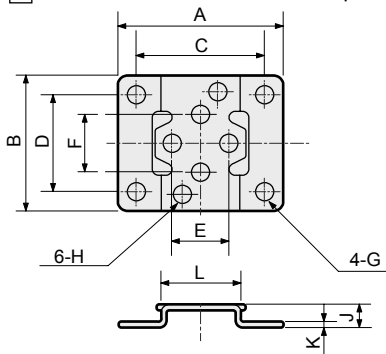


| Model No. | A    | B    | C    | D    | E  |
|-----------|------|------|------|------|----|
| FAB31     | 92   | 60.5 | 48.5 | 74.5 | 28 |
| FAB41     | 96   | 64.5 | 57.5 | 83.5 | 34 |
| FAB51     | 99.5 | 68   | 71.5 | 97.5 | 40 |

● Mounting plate

FAB\*1-\*.\*\*\***[B]**

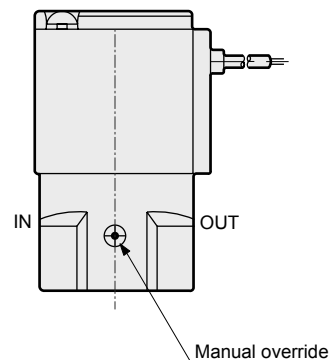
Material : Steel  
Zinc plated



| Model No. | A  | B  | C  | D  | E  | F  | G  | H    | J | K   | L  |
|-----------|----|----|----|----|----|----|----|------|---|-----|----|
| FAB11     | 40 | 30 | 30 | 21 | 10 | 10 | ø5 | ø4.5 | 6 | 1.2 | 19 |
| FAB21     | 40 | 34 | 30 | 25 | 15 | 15 | ø5 | ø4.5 | 6 | 1.2 | 20 |
| FAB31     | 52 | 42 | 40 | 30 | 18 | 18 | ø6 | ø5.5 | 7 | 1.6 | 25 |
| FAB41     | 56 | 48 | 44 | 36 | 18 | 18 | ø6 | ø5.5 | 7 | 1.6 | 30 |
| FAB51     | 62 | 50 | 50 | 38 | 20 | 20 | ø6 | ø5.5 | 7 | 1.6 | 36 |

● Manual override locking/non-locking

FAB\*1-\*.\*\*\***[A  
N]**



Note : Non-locking is available only for sizes 3/4/5.

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

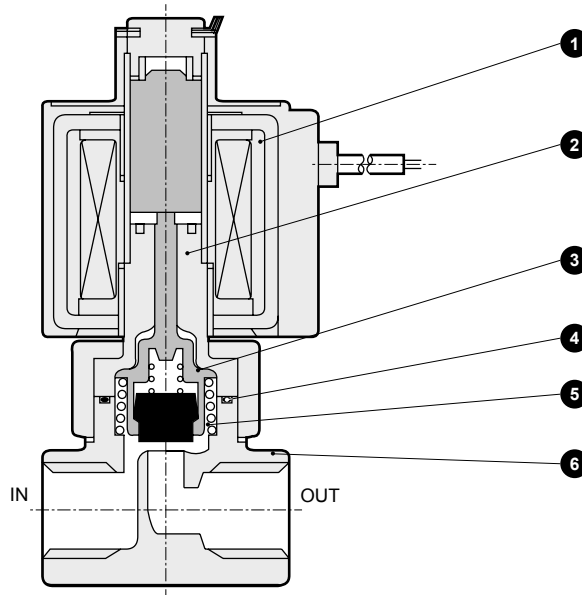
# FAB Series

FAB\*2 Series: NO (closed when energized)

## Internal structure and parts list

EXA  
FWD  
HNB/G  
USB/G  
**FAB/G**  
FGB/G  
FVB  
FWB/G  
FHB  
FLB  
AB

● FAB\*2 Series



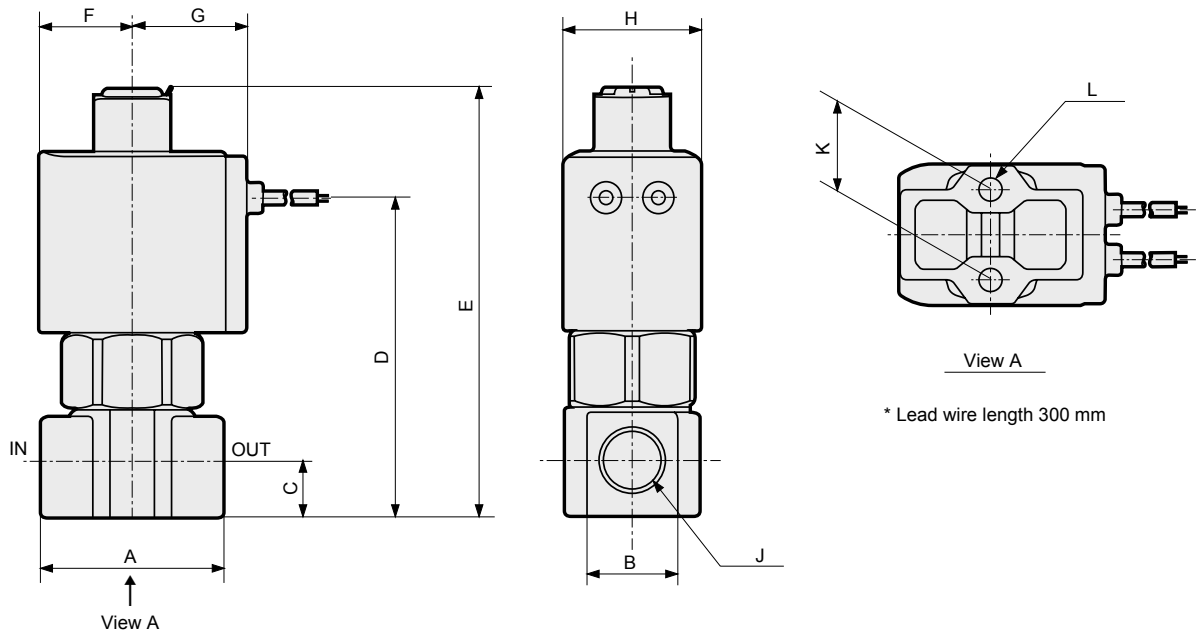
| No. | Part name                      | Material      |  |
|-----|--------------------------------|---------------|--|
| 1   | Coil assembly                  | -             | -  |
| 2   | Core assembly                  | SUS, Cu       | Stainless steel, copper                                |
| 3   | 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         | Copper alloy   |

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

## Dimensions



● Grommet lead wire  
FAB\*2-\*. \*-\*2C



\* Lead wire length 300 mm

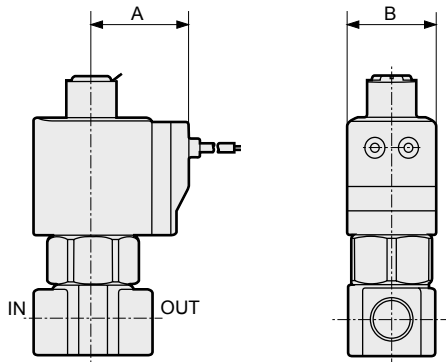
| Model No. | A  | B  | C  | D    | E     | F    | G    | H  | J            | K  | L          |
|-----------|----|----|----|------|-------|------|------|----|--------------|----|------------|
| FAB32     | 36 | 18 | 11 | 62.5 | 84    | 18.5 | 22.5 | 28 | Rc1/8, Rc1/4 | 18 | M5 depth 6 |
| FAB42     | 40 | 21 | 12 | 71.5 | 96    | 22.5 | 26   | 34 | Rc1/4, Rc3/8 | 18 | M5 depth 8 |
| FAB52     | 40 | 21 | 12 | 78   | 103.5 | 26   | 29.5 | 40 | Rc1/4, Rc3/8 | 18 | M5 depth 8 |

### Optional dimensions



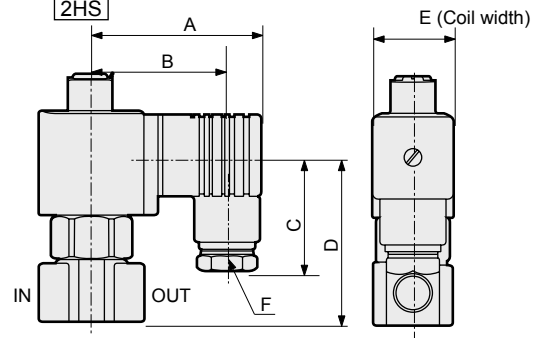
(Refer to the dimensions of grommet lead wire on page 56 for common dimensions.)

- Grommet lead wire with surge suppressor  
FAB\*2-\*-\*-\* [2CS]



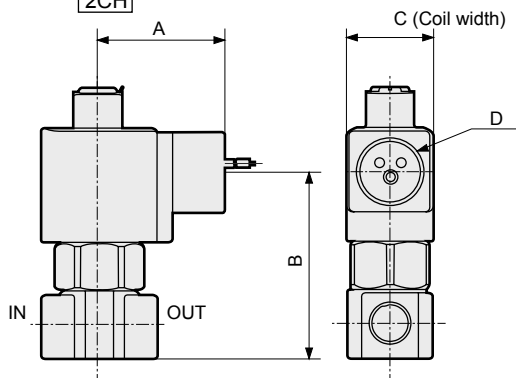
| Model No. | A    | B  |
|-----------|------|----|
| FAB32     | 29.5 | 28 |
| FAB42     | 34   | 34 |
| FAB52     | 37.5 | 40 |

- DIN terminal box (with lamp/surge suppressor)  
FAB\*2-\*-\*-\* [2G 2HS]



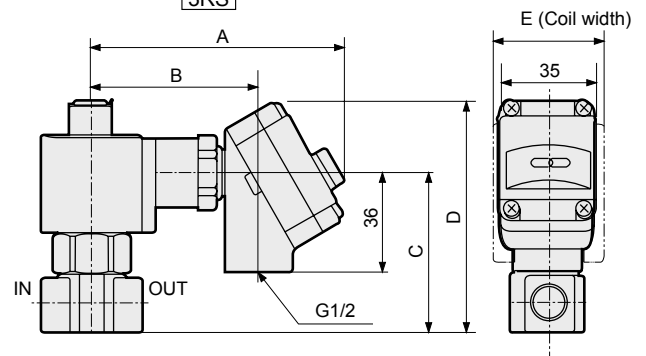
| Model No. | A    | B    | C  | D    | E  | F    |
|-----------|------|------|----|------|----|------|
| FAB32     | 58.5 | 47   | 39 | 56.5 | 28 | Pg11 |
| FAB42     | 62   | 50.5 | 39 | 65   | 34 | Pg11 |
| FAB52     | 65.5 | 54   | 39 | 73.5 | 40 | Pg11 |

- Conduit (CTC19 / G1/2)  
FAB\*2-\*-\*-\* [2CG 2CH]



| Model No. | A    | B  | C  | D             |
|-----------|------|----|----|---------------|
| FAB32     | 39   | 58 | 28 | CTC19<br>G1/2 |
| FAB42     | 43   | 67 | 34 | CTC19<br>G1/2 |
| FAB52     | 46.5 | 75 | 40 | CTC19<br>G1/2 |

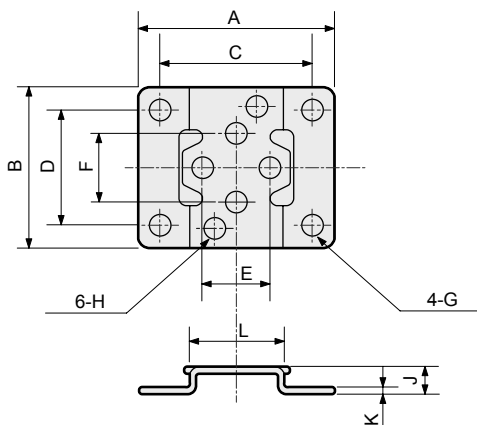
- T type terminal box (with lamp/surge suppressor)  
(G1/2) FAB\*2-\*-\*-\* [3T 3RS]



| Model No. | A    | B    | C  | D   | E  |
|-----------|------|------|----|-----|----|
| FAB32     | 92   | 60.5 | 58 | 84  | 28 |
| FAB42     | 96   | 64.5 | 67 | 93  | 34 |
| FAB52     | 99.5 | 68   | 75 | 101 | 40 |

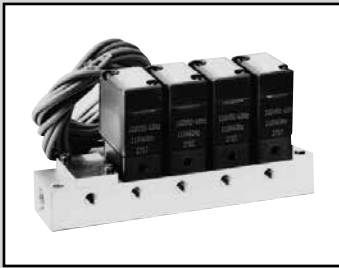
- Mounting plate  
FAB\*2-\*-\*-\* [B]

Material : Steel  
Zinc plated



| Model No. | A  | B  | C  | D  | E  | F  | G  | H    | J | K   | L  |
|-----------|----|----|----|----|----|----|----|------|---|-----|----|
| FAB32     | 52 | 42 | 40 | 30 | 18 | 18 | ø6 | ø5.5 | 7 | 1.6 | 25 |
| FAB42/52  | 56 | 48 | 44 | 36 | 18 | 18 | ø6 | ø5.5 | 7 | 1.6 | 30 |

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



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

# GFAB Series

- NC (open when energized)
- Port size: M5, Rc1/8, Rc1/4, Rc3/8

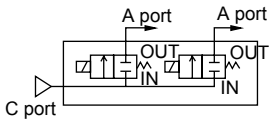


Refer to the Ending for details.

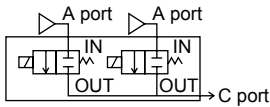


## JIS symbol

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



- NC (open when energized)/ individual supply (port A pressurization)



## Common specifications

| Item   | GFAB  |
|--|---|
| Working fluid                                | Compressed air  |
| Working pressure differential MPa            | 0 (≈0 psi, 0 bar) to 1.4 (≈200 psi, 14 bar)<br>(refer to the max. working pressure differential in the individual specifications) |
| Proof pressure (water pressure) MPa          | 2.1 (≈300 psi, 21 bar) (1.5 (≈220 psi, 15 bar) for GFAB11/GFAB21)   |
| Fluid temperature °C                         | AC: -10 (14°F) to 60 (140°F), DC: -10 (14°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 <sup>3</sup> /min(ANR) | 0.2 or less   |
| Mounting orientation                         | Unrestricted  |
| Degree of protection                         | IP65 or equivalent (*1)   |

\*1 : The T type terminal box is IP61 or equivalent, and the GFAB11/GFAB15 compact terminal box is IP40 or equivalent.

## Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

| Item  | Port size |        | Orifice size (mm) | Flow characteristics         |      | Max. working press diff MPa |      | Max. working pressure MPa | Rated voltage | Apparent power (VA) |               |       |       | Power consumption (W) |       |       |          |     |     |         |   |
|---|-----------|--------|-------------------|------------------------------|------|-----------------------------|------|---------------------------|---------------|---------------------|---------------|-------|-------|-----------------------|-------|-------|----------|-----|-----|---------|---|
|   | A port    | C port |                   | C [dm <sup>3</sup> /(s·bar)] | b    | AC                          | DC   |                           |               | When holding        | When starting | AC    |       | DC                    |       |       |          |     |     |         |   |
|   |           |        |                   |                              |      |                             |      |                           |               |                     |               | 50 Hz | 60 Hz |                       | 50 Hz | 60 Hz | 50/60 Hz |     |     |         |   |
| GFAB <sup>11</sup> / <sub>15</sub> -Z<br>-1       | M5        | Rc1/8  | 1                 | 0.15                         | 0.54 | 0.7                         | 0.7  | 1.0                       | 100 VAC       | 7.5                 | 5.5           | 20    | 17    | 4/3.4                 | 6.5   |       |          |     |     |         |   |
|   |           |        | 1.5               | 0.31                         | 0.49 | 0.3                         | 0.3  |                           |               |                     |               |       |       |                       |       | 3.4   | 2.6      | 5.0 | 4.6 | 2.3/1.6 | 3 |
| GFAB <sup>21</sup> / <sub>25</sub> -1<br>-2       | Rc1/8     | Rc1/8  | 1.5               | 0.31                         | 0.49 | 1.0                         | 1.0  | 1.0                       | 100 VAC       | 7.5                 | 5.5           | 20    | 17    | 4/3.4                 | 6.5   |       |          |     |     |         |   |
|   |           |        | 2                 | 0.53                         | 0.38 | 0.6                         | 0.6  |                           |               |                     |               |       |       |                       |       | 5.3   | 3.7      | 10  | 9   | 2.7/2   | 4 |
| GFAB <sup>31</sup> / <sub>35</sub> -2<br>-3<br>-6 | Rc1/4     | Rc3/8  | 2                 | 0.55                         | 0.48 | 1.4                         | 1.4  | 1.4                       | 200 VAC       | 7.5                 | 5.5           | 20    | 17    | 4/3.4                 | 6.5   |       |          |     |     |         |   |
|   |           |        | 3                 | 1.2                          | 0.39 | 1.0                         | 0.6  |                           |               |                     |               |       |       |                       |       | 15    | 11       | 40  | 35  | 7.5/6.5 | 8 |
|   |           |        | 5                 | 2.1                          | 0.27 | 0.3                         | 0.15 |                           |               |                     |               |       |       |                       |       |       |          |     |     |         |   |
| GFAB <sup>41</sup> / <sub>45</sub> -3<br>-5<br>-7 | Rc1/4     | Rc3/8  | 3                 | 1.2                          | 0.39 | 1.4                         | 1.4  | 1.4                       | 24 VDC        | 15                  | 11            | 40    | 35    | 7.5/6.5               | 8     |       |          |     |     |         |   |
|   |           |        | 4                 | 2.1                          | 0.34 | 1.0                         | 0.9  |                           |               |                     |               |       |       |                       |       |       |          |     |     |         |   |
|   |           |        | 7                 | 3.5                          | 0.21 | 0.25                        | 0.15 |                           |               |                     |               |       |       |                       |       |       |          |     |     |         |   |
| GFAB <sup>51</sup> / <sub>55</sub> -5<br>-6<br>-7 | Rc1/4     | Rc3/8  | 4                 | 2.1                          | 0.34 | 1.2                         | 1.2  | 1.4                       | 12 VDC        | 20                  | 16            | 55    | 45    | 11/9.5                | 11.5  |       |          |     |     |         |   |
|   |           |        | 5                 | 3.0                          | 0.22 | 0.7                         | 0.8  |                           |               |                     |               |       |       |                       |       |       |          |     |     |         |   |
|   |           |        | 7                 | 4.4                          | 0.18 | 0.3                         | 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 : Effective cross-sectional area S and sonic conductance C are converted as  $S \approx 5.0 \times C$ .

\*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. |              |                |              |              |
|                 | GFAB1     | 2 mA or less | 1 mA or less   | 1 mA or less | 2 mA or less |
|                 | GFAB2     | 3 mA or less | 1.5 mA or less |              |              |
|                 | GFAB3/4/5 | 6 mA or less | 3 mA or less   |              |              |
|                 |           |              |                |              |              |

## Weight

| Model No.        | Actuator weight (kg) | Masking weight (kg) | Sub-plate weight (kg) (n: manifold station No.) | Formula for product weight  |
|------------------|----------------------|---------------------|---|---|
| GFAB11<br>GFAB15 | 0.065                | 0.008               | 0.015+0.017×n                                   | (Product weight (kg)) = 0.065 x (Actuator quantity) + 0.008 x (Masking quantity) + 0.015 + 0.017 x (Manifold station No.) |
| GFAB21<br>GFAB25 | 0.11                 | 0.012               | 0.017+0.025×n                                   | (Product weight (kg)) = 0.11 x (Actuator quantity) + 0.012 x (Masking quantity) + 0.017 + 0.025 x (Manifold station No.)  |
| GFAB31<br>GFAB35 | 0.18                 | 0.026               | 0.038+0.056×n                                   | (Product weight (kg)) = 0.18 x (Actuator quantity) + 0.026 x (Masking quantity) + 0.038 + 0.056 x (Manifold station No.)  |
| GFAB41<br>GFAB45 | 0.32                 | 0.032               | 0.044+0.076×n                                   | (Product weight (kg)) = 0.32 x (Actuator quantity) + 0.032 x (Masking quantity) + 0.044 + 0.076 x (Manifold station No.)  |
| GFAB51<br>GFAB55 | 0.52                 | 0.045               | 0.053+0.11×n                                    | (Product weight (kg)) = 0.52 x (Actuator quantity) + 0.045 x (Masking quantity) + 0.053 + 0.11 x (Manifold station No.)   |

## How to order

● Manifold

**G F A B 3 1 - 2 - 7 - 1 2C N - 1**

● Manifold with masking plate

**G F A B 2 5 - 1 - X - 1 2G N - 2 - 5 2**

No. of ports  
(2-port valve)  
Working fluid  
(Compressed air)

**A** Series size

**B** Circuit configuration

**C** Orifice size

**D** Manifold station No.

\*1  
\*2

**E** Body/sealant combination

**F** Coil option

\*3  
\*4  
\*5

**G** Manual override

**H** Voltage

\*6

**I** No. of solenoid valves  
\*7

**J** Masking plate quantity

[Example of model No.]

**GFAB31-2-7-12CN-1**

Model : GFAB

- A** Series size : 28 mm
- B** Circuit configuration : NC (open when energized)/common supply
- C** Orifice size :  $\varnothing 2$
- D** Manifold station No. : 7 stations
- E** Body/sealant combination: Body - PPS, sealant - NBR
- F** Coil option : Grommet lead wire
- G** Manual override : Manual non-locking
- H** Voltage : 100 VAC 50/60 Hz
- I** **J** : 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 **I** solenoid valves and **J** masking plates.
- \*3 : For GFAB11/15 Item **F** 2G, the compact terminal box (G1/4) is used.
- \*4 : For GFAB21/25 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.
- \*7 : Solenoid valves are arranged from the right side with the sub-plate (individual) port A facing front.
- \*8 : Orders for only the masking plate and sub-plate are also available. Contact CKD for details.

|  |  | Model No.   |           |           |           |           |
|--|--|-------------|-----------|-----------|-----------|-----------|
|  |  | GFAB11/15   | GFAB21/25 | GFAB31/35 | GFAB41/45 | GFAB51/55 |
| Code   | Description  |             |           |           |           |           |
| <b>A Series size</b>                                   |  |             |           |           |           |           |
| 1  | 18 mm  | ●           |           |           |           |           |
| 2  | 22 mm  |             | ●         |           |           |           |
| 3  | 28 mm  |             |           | ●         |           |           |
| 4  | 34 mm  |             |           |           | ●         |           |
| 5  | 40 mm  |             |           |           |           | ●         |
| <b>B Circuit configuration</b>                         |  |             |           |           |           |           |
| 1  | NC (open when energized)/common supply                   | ●           | ●         | ●         | ●         | ●         |
| 5  | NC (open when energized)/individual supply               | ●           | ●         | ●         | ●         | ●         |
| <b>C Orifice size</b>                                  |  |             |           |           |           |           |
| Z  | $\varnothing 1$  | ●           |           |           |           |           |
| 1  | $\varnothing 1.5$  | ●           | ●         |           |           |           |
| 2  | $\varnothing 2$  |             | ●         | ●         |           |           |
| 3  | $\varnothing 3$  |             |           | ●         | ●         |           |
| 5  | $\varnothing 4$  |             |           |           | ●         | ●         |
| 6  | $\varnothing 5$  |             |           |           | ●         | ●         |
| 7  | $\varnothing 7$  |             |           |           | ●         | ●         |
| <b>D Manifold station No.</b>                          |  |             |           |           |           |           |
| 2  | 2 stations   |             |           |           |           |           |
| to   | to   | ●           | ●         | ●         | ●         | ●         |
| 10   | 10 stations  |             |           |           |           |           |
| 0  | Actuator only  | ●           | ●         | ●         | ●         | ●         |
| X  | With masking plate                                       | ●           | ●         | ●         | ●         | ●         |
| <b>E Body/sealant combination</b>                      |  |             |           |           |           |           |
|  | <b>Body</b>  | <b>Seal</b> |           |           |           |           |
| 1  | PPS  | NBR         | ●         | ●         | ●         | ●         |
| <b>F Coil option</b>                                   |  |             |           |           |           |           |
| 2C   | Std. Grommet lead wire                                   | ●           | ●         | ●         | ●         | ●         |
| 2CS  | Grommet lead wire<br>With surge suppressor               | ●           | ●         | ●         | ●         | ●         |
| 2G   | With DIN terminal box (Pg11)                             | ●           | ●         | ●         | ●         | ●         |
| 2HS  | DIN terminal box with lamp/<br>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<br>surge suppressor (G1/2) |             |           |           | ●         | ●         |
| <b>G Manual override</b>                               |  |             |           |           |           |           |
| Blank  | Std. None  | ●           | ●         | ●         | ●         | ●         |
| N  | Option Manual non-locking                                | ●           | ●         | ●         | ●         | ●         |
| <b>H Voltage</b>                                       |  |             |           |           |           |           |
| 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. |  |             |           |           |           |           |
| <b>I No. of solenoid valves</b>                        |  |             |           |           |           |           |
| Blank  | No masking plate   | ●           | ●         | ●         | ●         | ●         |
| 1  | 1 solenoid valve   |             |           |           |           |           |
| to   | to   | ●           | ●         | ●         | ●         | ●         |
| 9  | 9 solenoid valves  |             |           |           |           |           |
| <b>J Masking plate quantity</b>                        |  |             |           |           |           |           |
| Blank  | No masking plate   | ●           | ●         | ●         | ●         | ●         |
| 1  | 1 masking plate  |             |           |           |           |           |
| to   | to   | ●           | ●         | ●         | ●         | ●         |
| 9  | 9 masking plates   |             |           |           |           |           |

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

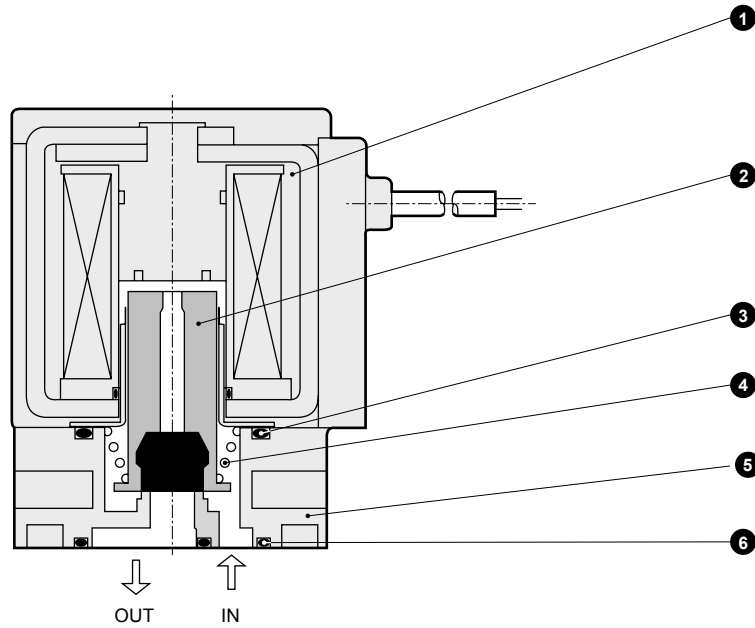
EXA  
FWD  
HNB/G  
USB/G  
FAB/G  
FGB/G  
FVB  
FWB/G  
FHB  
FLB  
AB  
AG  
AP/  
AD  
APK/  
ADK  
DryAir  
EX-  
XPLNprf  
XPLNprf  
HVB/  
HVL  
S ♂ B/  
NAB  
LAD/  
NAD  
Water-  
Rela  
NP/NAP/  
NVP  
SNP  
CHB/G  
MXB/G  
Other  
valves  
SWD/  
MWD  
DustColl  
CVE/  
CVSE  
CCH/  
CPE/D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



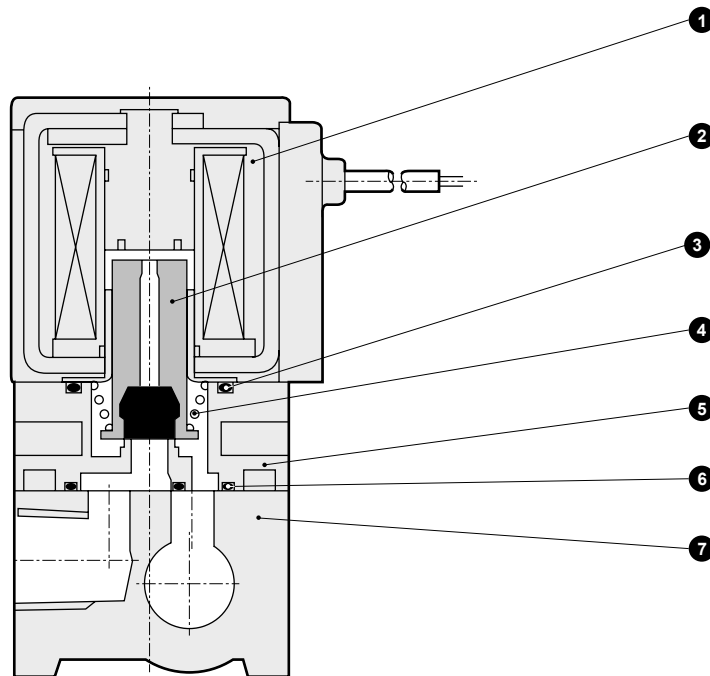
## Internal structure and parts list

- 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 $\diamond$ 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

● GFAB actuator



● GFAB manifold



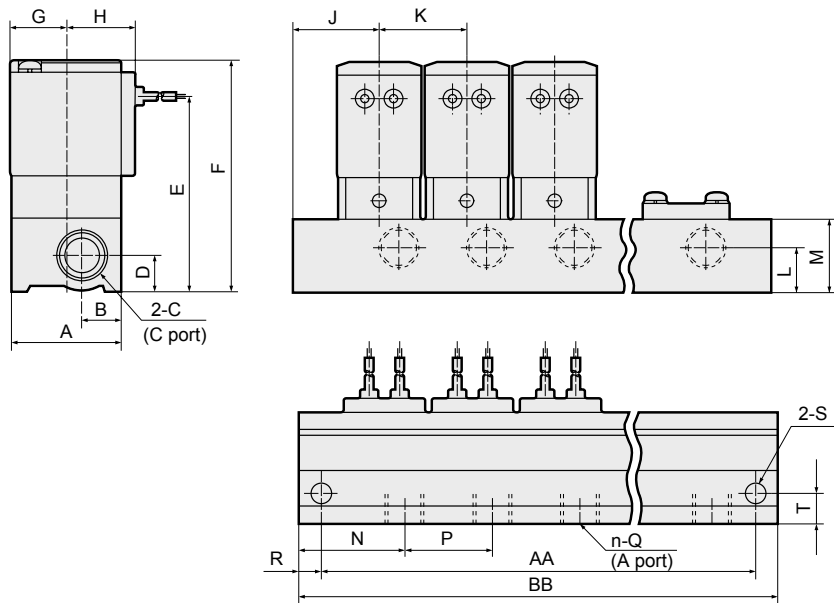
| No. | Part name        | Material                                    | No. | Part name | Material                     |
|-----|------------------|---|-----|-----------|------------------------------|
| 1   | Coil assembly    | -   | 5   | Body      | PPS<br>Polyphenylene sulfide |
| 2   | Plunger assembly | SUS, NBR<br>Stainless steel, nitrile rubber | 6   | Gasket    | NBR<br>Nitrile rubber        |
| 3   | O-ring           | NBR<br>Nitrile rubber                       | 7   | Sub-plate | A6063<br>Aluminum            |
| 4   | Spring           | SUS<br>Stainless steel                      |     |           |                              |

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

## Dimensions: Manifold



- Grommet lead wire  
GFAB\*\*-\*-12C



Lead wire length 300 mm

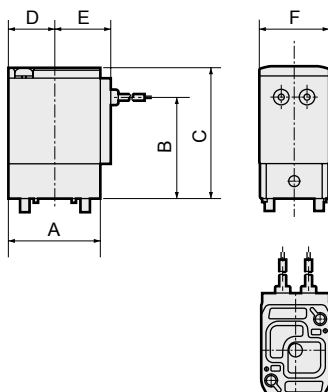
| Model No. | Station No. Code | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|-----------|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| GFAB1     | AA               | 48  | 68  | 88  | 108 | 128 | 148 | 168 | 188 | 208 |
|           | BB               | 58  | 78  | 98  | 118 | 138 | 158 | 178 | 198 | 218 |
| GFAB2     | AA               | 58  | 84  | 110 | 136 | 162 | 188 | 214 | 240 | 266 |
|           | BB               | 68  | 94  | 120 | 146 | 172 | 198 | 224 | 250 | 276 |
| GFAB3     | AA               | 74  | 106 | 138 | 170 | 202 | 234 | 266 | 298 | 330 |
|           | BB               | 88  | 120 | 152 | 184 | 216 | 248 | 280 | 312 | 344 |
| GFAB4     | AA               | 86  | 124 | 162 | 200 | 238 | 276 | 314 | 352 | 390 |
|           | BB               | 100 | 138 | 176 | 214 | 252 | 290 | 328 | 366 | 404 |
| GFAB5     | AA               | 100 | 146 | 192 | 238 | 284 | 330 | 376 | 422 | 468 |
|           | BB               | 114 | 160 | 206 | 252 | 298 | 344 | 390 | 436 | 482 |

| Model No. | A  | B  | C     | D  | E    | F  | G    | H    | J  | K  | L  | M  | N    | P  | Q     | R | S    | T    |
|-----------|----|----|-------|----|------|----|------|------|----|----|----|----|------|----|-------|---|------|------|
| GFAB1     | 25 | 10 | Rc1/8 | 8  | 44.5 | 54 | 13   | 17   | 19 | 20 | 11 | 16 | 21.5 | 20 | M5    | 5 | ∅4.5 | 6.5  |
| GFAB2     | 30 | 12 | Rc1/8 | 8  | 49   | 60 | 15.5 | 19.5 | 21 | 26 | 8  | 16 | 25   | 26 | Rc1/8 | 5 | ∅4.5 | 9    |
| GFAB3     | 36 | 13 | Rc3/8 | 12 | 64   | 76 | 18.5 | 22.5 | 28 | 32 | 15 | 24 | 34.5 | 32 | Rc1/4 | 7 | ∅6.5 | 10   |
| GFAB4     | 43 | 18 | Rc3/8 | 12 | 71   | 85 | 22.5 | 26   | 31 | 38 | 15 | 24 | 31   | 38 | Rc1/4 | 7 | ∅6.5 | 11.5 |
| GFAB5     | 50 | 20 | Rc3/8 | 12 | 79   | 95 | 26   | 29.5 | 34 | 46 | 12 | 24 | 34   | 46 | Rc1/4 | 7 | ∅6.5 | 14   |

## Dimensions: Actuator



- Grommet lead wire  
GFAB\*\*-\*-0-12C



| Model No. | A  | B    | C  | D    | E    | F  |
|-----------|----|------|----|------|------|----|
| GFAB1     | 25 | 28.5 | 38 | 13   | 17   | 18 |
| GFAB2     | 30 | 33   | 44 | 15.5 | 19.5 | 22 |
| GFAB3     | 36 | 40   | 52 | 18.5 | 22.5 | 28 |
| GFAB4     | 43 | 47   | 61 | 22.5 | 26   | 34 |
| GFAB5     | 50 | 55   | 71 | 26   | 29.5 | 40 |

\* Lead wire length 300 mm

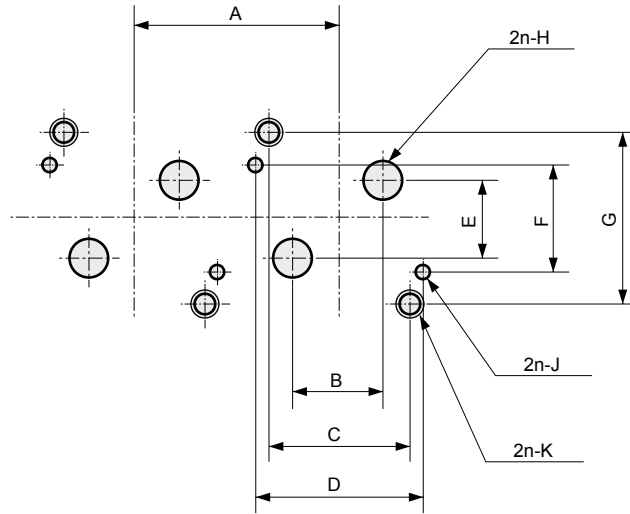
|                |
|----------------|
| EXA            |
| FWD            |
| HNB/G          |
| USB/G          |
| <b>FAB/G</b>   |
| FGB/G          |
| FVB            |
| FWB/G          |
| FHB            |
| FLB            |
| AB             |
| AG             |
| AP/AD          |
| APK/ADK        |
| DryAir         |
| EX-XPLNprf     |
| XPLNprf        |
| HVB/HVL        |
| S $\phi$ 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         |

## Actuator installation dimensions

- 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
- NPN/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

### ● GFAB1\*/2\*/3\*

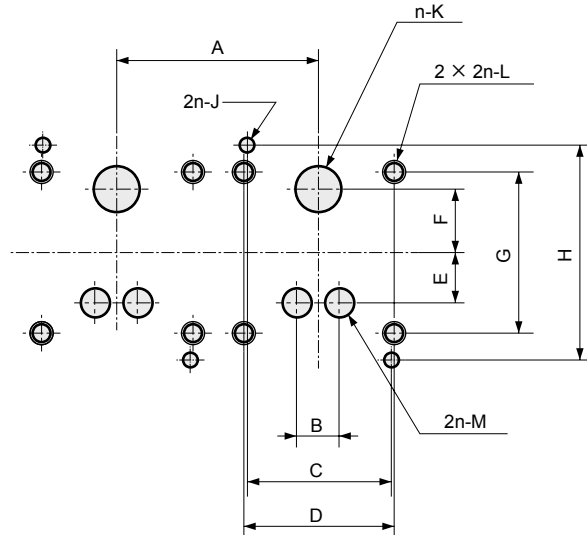
Machining drawing when using 2 actuators.



| Model No. | A          | B       | C        | D        | E         | F        | G        | H    | J   | K                                       |
|-----------|------------|---------|----------|----------|-----------|----------|----------|------|---|---|
| GFAB1     | 20 or more | 5±0.15  | 12.4±0.1 | 14.4±0.1 | 10±0.15   | 11.2±0.1 | 17±0.1   | ∅3   | ∅1.6 <sup>+0.1</sup> / <sub>0</sub> depth 2.5±0.5 | M2.5 effective thread depth 5.5 or more |
| GFAB2     | 26 or more | 8±0.15  | 15.5±0.1 | 18.4±0.1 | 10±0.15   | 12.4±0.1 | 19.4±0.1 | ∅3.5 | ∅1.6 <sup>+0.1</sup> / <sub>0</sub> depth 2.5±0.5 | M3 effective thread depth 6 or more     |
| GFAB3     | 32 or more | 13±0.15 | 20±0.1   | 23.6±0.1 | 11.4±0.15 | 15±0.1   | 24.2±0.1 | ∅5.5 | ∅2.1 <sup>+0.1</sup> / <sub>0</sub> depth 2.5±0.5 | M4 effective thread depth of 6 or more  |

### ● GFAB4\*/5\*

Machining drawing when using 2 actuators.



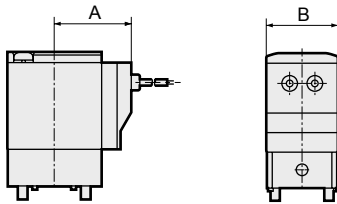
| Model No. | A          | B     | C      | D      | E        | F        | G      | H      | J   | K   | L                                   | M  |
|-----------|------------|-------|--------|--------|----------|----------|--------|--------|---|-----|-------------------------------------|----|
| GFAB4     | 38 or more | 6±0.2 | 25±0.1 | 26±0.1 | 8.5±0.2  | 11±0.2   | 28±0.1 | 37±0.1 | ∅2.6 <sup>+0.1</sup> / <sub>0</sub> depth 2.5±0.5 | ∅8  | M4 effective thread depth 9 or more | ∅5 |
| GFAB5     | 46 or more | 8±0.2 | 30±0.1 | 30±0.1 | 11.5±0.2 | 14.5±0.2 | 33±0.1 | 43±0.1 | ∅2.6 <sup>+0.1</sup> / <sub>0</sub> depth 2.5±0.5 | ∅11 | M5 effective thread depth 8 or more | ∅7 |

## Optional dimensions



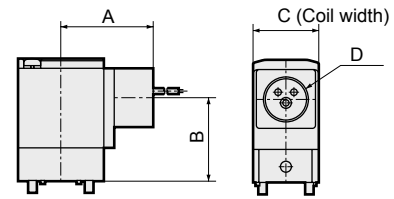
(Refer to the grommet lead wire actuator dimensions on page 61 for common dimensions.)

- Grommet lead wire with surge suppressor  
GFAB\*\*-\*-1 **2CS**



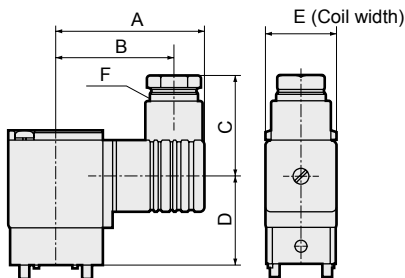
| Model No. | A    | B  |
|-----------|------|----|
| GFAB1     | 24.5 | 18 |
| GFAB2     | 26.5 | 22 |
| GFAB3     | 29.5 | 28 |
| GFAB4     | 34   | 34 |
| GFAB5     | 37.5 | 40 |

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



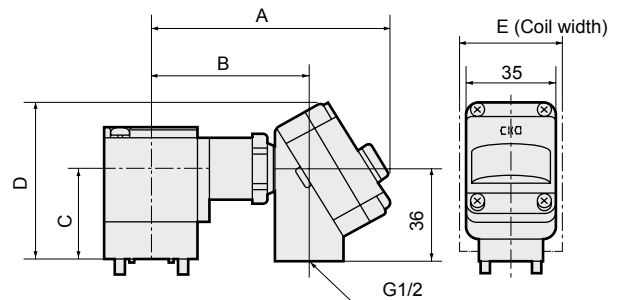
| Model No. | A    | B    | C  | D             |
|-----------|------|------|----|---------------|
| GFAB3     | 39   | 35   | 28 | CTC19<br>G1/2 |
| GFAB4     | 43   | 42.5 | 34 | CTC19<br>G1/2 |
| GFAB5     | 46.5 | 52   | 40 | CTC19<br>G1/2 |

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



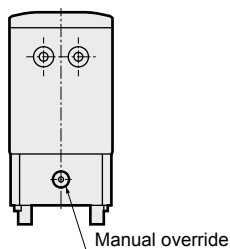
| Model No. | A    | B    | C  | D    | E  | F    |
|-----------|------|------|----|------|----|------|
| GFAB1     | 36   | 28.5 | 22 | 26.5 | 18 | G1/4 |
| GFAB2     | 53   | 44   | 38 | 26.5 | 22 | Pg9  |
| GFAB3     | 58.5 | 47   | 39 | 33.5 | 28 | Pg11 |
| GFAB4     | 62   | 50.5 | 39 | 40.5 | 34 | Pg11 |
| GFAB5     | 65.5 | 54   | 39 | 50.5 | 40 | Pg11 |

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



| Model No. | A    | B    | C    | D    | E  |
|-----------|------|------|------|------|----|
| GFAB4     | 96   | 64.5 | 42.5 | 68.5 | 34 |
| GFAB5     | 99.5 | 68   | 52   | 78   | 40 |

- Manual override (non-locking)  
GFAB\*\*-\*-1 **N**



Position of manual override

- Common supply : Opposite side to port A
- Individual supply : Port A side

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



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

# FAG Series

- Universal, NC pressurization
- Port size: M5, Rc1/8, Rc1/4, Rc3/8



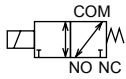
Refer to the Ending for details.



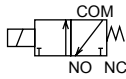
- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- S $\diamond$ B/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combus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

## JIS symbol

- Universal



- NC pressurization



## Common specifications

| Item   | FAG   |
|--|---|
| Working fluid                                | Compressed air  |
| Working pressure differential MPa            | 0 ( $\approx$ 0 psi, 0 bar) to 1.4 ( $\approx$ 200 psi, 14 bar)<br>(refer to the max. working pressure differential in the individual specifications) |
| Proof pressure (water pressure) MPa          | 2.1 ( $\approx$ 300 psi, 21 bar) (1.5 ( $\approx$ 220 psi, 15 bar) for FAG11/FAG21)   |
| Fluid temperature °C                         | AC: -10 (14°F) to 60 (140°F), DC: -10 (14°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 <sup>3</sup> /min(ANR) | 0.2 or less   |
| Mounting orientation                         | Unrestricted  |
| Degree of protection                         | IP65 or equivalent (*1)   |

\*1 : The T type terminal box is IP61 or equivalent, and the FAG11 compact terminal box is IP40 or equivalent.

## Individual specifications

1 MPa  $\approx$  145.0 psi, 1 MPa = 10 bar

| Item                       | Port size | Orifice size (mm) | Flow characteristics        |      | Max. working pressure differential MPa | Max. working pressure MPa | Rated voltage                              | Apparent power (VA) |       |               |             | Power consumption (W) |      | Weight (kg) |
|----------------------------|-----------|-------------------|-----------------------------|------|--|---------------------------|--|---------------------|-------|---------------|-------------|-----------------------|------|-------------|
|                            |           |                   | C(dm <sup>3</sup> /(s·bar)) | b    |  |                           |  | When holding        |       | When starting |             | AC                    | DC   |             |
| Model No.                  |           |                   |                             |      |  |                           | 50 Hz                                      | 60 Hz               | 50 Hz | 60 Hz         | 50 Hz/60 Hz | DC                    |      |             |
| <b>● Universal</b>         |           |                   |                             |      |  |                           |  |                     |       |               |             |                       |      |             |
| FAG11- M5 - Y              | M5        | 0.8               | 0.08                        | 0.61 | 0.7                                    | 1.0                       | 100 VAC<br>50/60 Hz                        | 3.4                 | 2.6   | 5             | 4.6         | 2.3/1.6               | 3    | 0.09        |
| - 0                        |           | 1.5               | 0.28                        | 0.40 | 0.2                                    |                           |  | 5.3                 | 3.7   | 10            | 9           | 2.7/2                 | 4    | 0.14        |
| FAG21 - 6 - Z              | Rc1/8     | 1                 | 0.13                        | 0.58 | 0.7                                    | 1.4                       | 200 VAC<br>50/60 Hz                        | 7.5                 | 5.5   | 20            | 17          | 4/3.4                 | 6.5  | 0.23        |
| - 1                        |           | 2                 | 0.52                        | 0.54 | 0.15                                   |                           |  | 15                  | 11    | 40            | 35          | 7.5/6.5               | 8    | 0.43        |
| FAG31 - $\frac{6}{8}$ - 0  | Rc1/8     | 1.5               | 0.32                        | 0.58 | 0.7                                    | 1.4                       | 24 VDC<br>12 VDC                           | 20                  | 16    | 55            | 45          | 11/9.5                | 11.5 | 0.63        |
| - 1                        | Rc1/4     | 2                 | 0.55                        | 0.48 | 0.4                                    |                           |  |                     |       |               |             |                       |      |             |
| - 4                        | Rc1/4     | 3                 | 1.2                         | 0.57 | 0.2                                    |                           |  |                     |       |               |             |                       |      |             |
| FAG41 - $\frac{8}{10}$ - 1 | Rc1/4     | 2                 | 0.55                        | 0.48 | 0.7                                    |                           |  |                     |       |               |             |                       |      |             |
| - 4                        | Rc3/8     | 3                 | 1.2                         | 0.57 | 0.3                                    |                           |  |                     |       |               |             |                       |      |             |
| - 8                        | Rc3/8     | 4                 | 2.1                         | 0.48 | 0.15                                   |                           |  |                     |       |               |             |                       |      |             |
| FAG51 - $\frac{8}{10}$ - 1 | Rc1/4     | 2                 | 0.55                        | 0.48 | 1.2(0.6)                               |                           |  |                     |       |               |             |                       |      |             |
| - 4                        | Rc1/4     | 3                 | 1.2                         | 0.57 | 0.6(0.3)                               |                           |  |                     |       |               |             |                       |      |             |
| - 8                        | Rc3/8     | 4                 | 2.1                         | 0.48 | 0.3(0.15)                              |                           |  |                     |       |               |             |                       |      |             |
| <b>● NC pressurization</b> |           |                   |                             |      |  |                           |  |                     |       |               |             |                       |      |             |
| FAG33 - $\frac{6}{8}$ - 0  | Rc1/8     | 1.5               | 0.32                        | 0.58 | 1.0                                    | 1.4                       | 100 VAC<br>50/60 Hz<br>200 VAC<br>50/60 Hz | 7.5                 | 5.5   | 20            | 17          | 4/3.4                 | 6.5  | 0.23        |
| - 1                        | Rc1/4     | 2                 | 0.55                        | 0.48 | 0.7                                    |                           |  |                     |       |               |             |                       |      |             |
| - 4                        | Rc1/4     | 3                 | 1.2                         | 0.57 | 0.3                                    |                           |  |                     |       |               |             |                       |      |             |
| FAG43 - $\frac{8}{10}$ - 1 | Rc1/4     | 2                 | 0.55                        | 0.48 | 1.2                                    | 1.4                       | 24 VDC<br>12 VDC                           | 15                  | 11    | 40            | 35          | 7.5/6                 | 8    | 0.43        |
| - 4                        | Rc3/8     | 3                 | 1.2                         | 0.57 | 0.6                                    |                           |  |                     |       |               |             |                       |      |             |
| - 8                        | Rc3/8     | 4                 | 2.1                         | 0.48 | 0.3                                    |                           |  |                     |       |               |             |                       |      |             |

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

\*2 : For FAG51, the max. working pressure differential when NO pressurized is shown in parentheses.

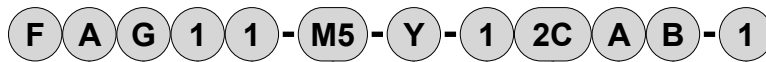
\*3 : The leakage current must be less than or equal to the values shown on the right.

\*4 : Effective cross-sectional area S and sonic conductance C are converted as  $S \approx 5.0 \times C$ .

\*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       |
|                 | FAG1      | 2 mA or less | 1 mA or less   | 1 mA or less | 2 mA or less |
|                 | FAG2      | 3 mA or less | 1.5 mA or less |              |              |
|                 | FAG3/4/5  | 6 mA or less | 3 mA or less   |              |              |

## How to order



No. of ports  
(3-port valve)

Working fluid  
(Compressed air)

|                                   |  |  |  |  |  |
|-----------------------------------|--|--|--|--|--|
| <b>A</b> Series size              |  |  |  |  |  |
| <b>B</b> Actuation                |  |  |  |  |  |
| <b>C</b> Port size                |  |  |  |  |  |
| <b>D</b> Orifice size             |  |  |  |  |  |
| <b>E</b> Body/sealant combination |  |  |  |  |  |
| <b>F</b> Coil option              |  |  |  |  |  |
| <b>G</b> Manual override          |  |  |  |  |  |
| <b>H</b> Other options            |  |  |  |  |  |
| <b>I</b> Voltage                  |  |  |  |  |  |

[Example of model No.]

### FAG11-M5-Y-12CAB-1

Model : FAG

- A** Series size : 18 mm
- B** Actuation : Universal
- C** Port size : M5
- D** Orifice size :  $\phi 0.8$
- E** Body/sealant combination : Body - aluminum, sealant - NBR
- F** Coil option : Grommet lead wire
- G** Manual override : Manual locking
- H** Other options : Mounting plate
- I** Voltage : 100 VAC 50/60 Hz

### ⚠ Precautions for model No. selection

- \*1 : For FAG11 Item **F** 2G, the compact terminal box (G1/4) is used.
- \*2 : For FAG21 Item **F** 2G/2HS, the DIN terminal box (Pg9) is used.
- \*3 : The surge suppressor is built into the coil for Item **F** 2CS and in the terminal box for 2HS and 3RS.
- \*4 : Other voltages may not be available. Contact CKD for details.

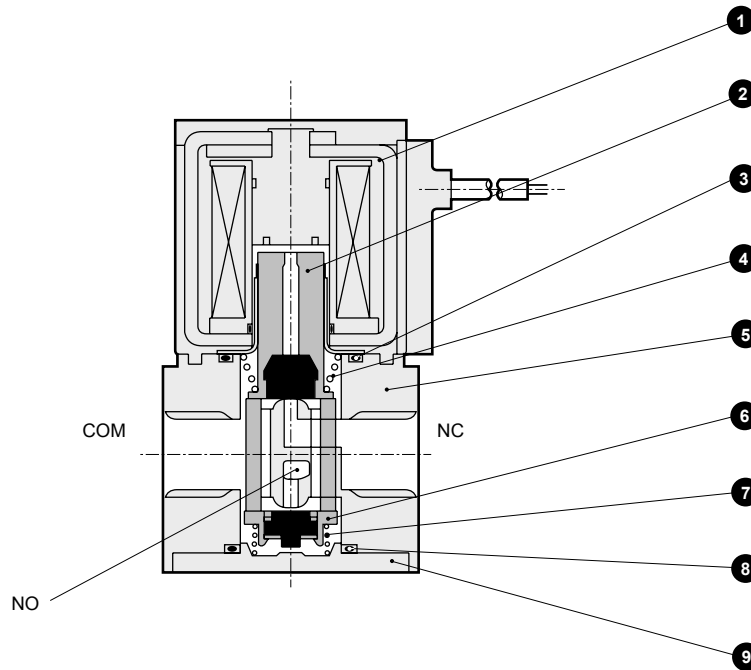
|  |   | Model No.          |       |          |          |       |
|--|---|--------------------|-------|----------|----------|-------|
|  |   | FAG11              | FAG21 | FAG31/33 | FAG41/43 | FAG51 |
| Code   | Description   |                    |       |          |          |       |
| <b>A Series size</b>                                   |   |                    |       |          |          |       |
| 1  | 18 mm   | ●                  |       |          |          |       |
| 2  | 22 mm   |                    | ●     |          |          |       |
| 3  | 28 mm   |                    |       | ●        |          |       |
| 4  | 34 mm   |                    |       |          | ●        |       |
| 5  | 40 mm   |                    |       |          |          | ●     |
| <b>B Actuation</b>                                     |   |                    |       |          |          |       |
| 1  | Universal   | ●                  | ●     | ●        | ●        | ●     |
| 3  | NC pressurization                                     |                    |       | ●        | ●        |       |
| <b>C Port size</b>                                     |   |                    |       |          |          |       |
| M5   | M5  | ●                  |       |          |          |       |
| 6  | Rc1/8   |                    | ●     | ●        |          |       |
| 8  | Rc1/4   |                    |       | ●        | ●        | ●     |
| 10   | Rc3/8   |                    |       |          | ●        | ●     |
| <b>D Orifice size</b>                                  |   |                    |       |          |          |       |
| Y  | $\phi 0.8$  | ●                  |       |          |          |       |
| Z  | $\phi 1$  |                    | ●     |          |          |       |
| 0  | $\phi 1.5$  | ●                  |       | ●        |          |       |
| 1  | $\phi 2$  |                    | ●     | ●        | ●        | ●     |
| 4  | $\phi 3$  |                    |       | ●        | ●        | ●     |
| 8  | $\phi 4$  |                    |       |          | ●        | ●     |
| <b>E Body/sealant combination</b>                      |   |                    |       |          |          |       |
|  | <b>Body</b>   | <b>Seal</b>        |       |          |          |       |
| 1  | Aluminum  | NBR                | ●     | ●        | ●        | ●     |
| <b>F Coil option</b>                                   |   |                    |       |          |          |       |
| 2C   | 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) |                    |       | ●        | ●        | ●     |
| <b>G Manual override</b>                               |   |                    |       |          |          |       |
| Blank  | Std.  | None               | ●     | ●        | ●        | ●     |
| A  | Option  | Manual locking     | ●     | ●        | ●        | ●     |
| N  | Option  | Manual non-locking |       |          | ●        | ●     |
| <b>H Other options</b>                                 |   |                    |       |          |          |       |
| Blank  | Std.  | None               | ●     | ●        | ●        | ●     |
| B  | Option  | Mounting plate     | ●     | ●        | ●        | ●     |
| <b>I Voltage</b>                                       |   |                    |       |          |          |       |
| 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 $\phi$ 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

● FAG\*1/\*3 Series

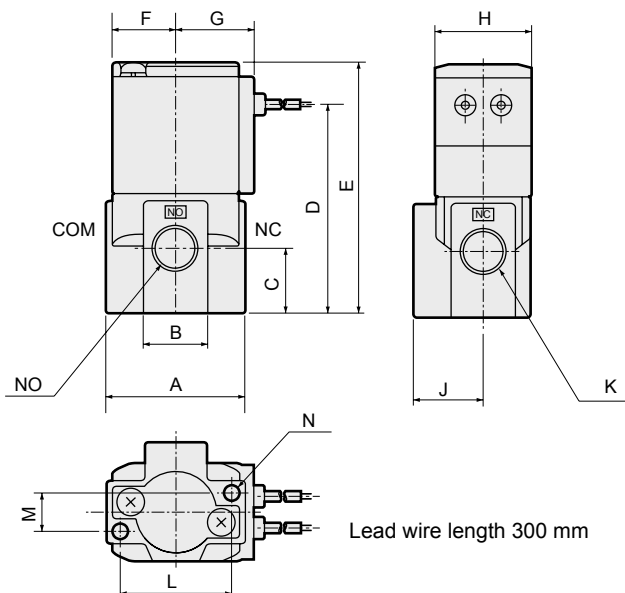


| No. | Part name        | Material                                   | No. | Part name                      | Material   |
|-----|------------------|--|-----|--------------------------------|--|
| 1   | Coil assembly    | -  | 6   | Valving element guide assembly | PPS, SUS, NBR ; Polyphenylene sulfide, stainless steel, nitrile rubber |
| 2   | Plunger assembly | SUS, NBR ; Stainless steel, nitrile rubber | 7   | Spring                         | SUS ; Stainless steel  |
| 3   | O-ring           | NBR ; Nitrile rubber                       | 8   | O-ring                         | NBR ; Nitrile rubber   |
| 4   | Spring           | SUS ; Stainless steel                      | 9   | Cover                          | ADC ; Aluminum die-casting   |
| 5   | Body             | ADC ; Aluminum die-casting                 |     |                                |  |

## Dimensions



● Grommet lead wire  
FAG\*\*-\*-\*-12C



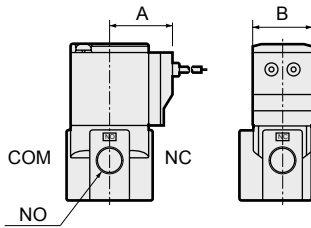
| Model No. | A  | B  | C    | D    | E    | F    | G    | H  | J  | K           | L  | M  | N            |
|-----------|----|----|------|------|------|------|------|----|----|-------------|----|----|--------------|
| FAG1      | 28 | 14 | 13.5 | 42   | 51.5 | 13   | 17   | 18 | 12 | M5×0.8      | 21 | 7  | M4 depth 5.5 |
| FAG2      | 32 | 16 | 16.5 | 51   | 62   | 15.5 | 19.5 | 22 | 16 | Rc1/8       | 25 | 8  | M4 depth 6   |
| FAG3      | 40 | 18 | 18.5 | 60.5 | 72.5 | 18.5 | 22.5 | 28 | 20 | Rc1/8 Rc1/4 | 32 | 11 | M5 depth 8   |
| FAG4      | 45 | 25 | 25   | 74.5 | 88.5 | 22.5 | 26   | 34 | 21 | Rc1/4 Rc3/8 | 35 | 15 | M5 depth 8   |
| FAG5      | 50 | 25 | 25   | 81   | 97   | 26   | 29.5 | 40 | 21 | Rc1/4 Rc3/8 | 35 | 15 | M5 depth 8   |

## Optional dimensions



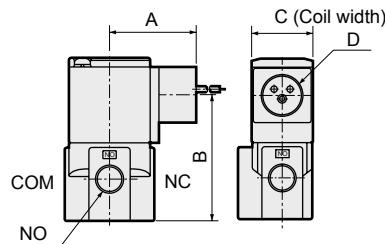
(Refer to the dimensions of grommet lead wire on page 66 for common dimensions.)

- Grommet lead wire with surge suppressor  
FAG\*\*-\*-1 **2CS**



| Model No. | A    | B  |
|-----------|------|----|
| FAG1      | 24.5 | 18 |
| FAG2      | 26.5 | 22 |
| FAG3      | 29.5 | 28 |
| FAG4      | 34   | 34 |
| FAG5      | 37.5 | 40 |

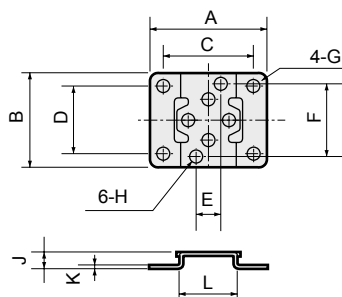
- Conduit (CTC19 / G1/2)  
FAG\*\*-\*-1 **2CG**  
**2CH**



| Model No. | A    | B    | C  | D             |
|-----------|------|------|----|---------------|
| FAG3      | 39   | 55.5 | 28 | CTC19<br>G1/2 |
| FAG4      | 43   | 70   | 34 | CTC19<br>G1/2 |
| FAG5      | 46.5 | 78   | 40 | CTC19<br>G1/2 |

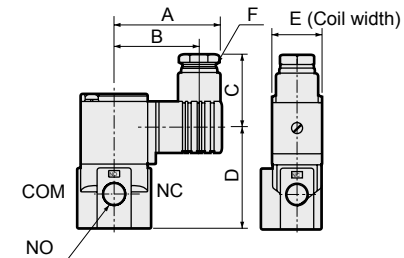
- Mounting plate  
FAG\*\*-\*-1\*\* **B**

Material : Steel  
Zinc plated



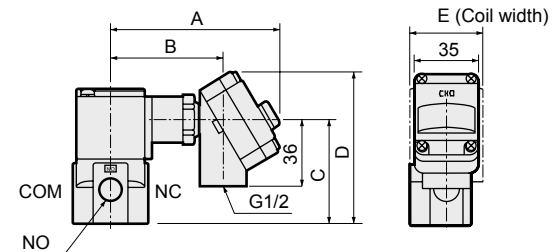
| Model No. | A  | B  | C  | D  | E  | F  | G  | H    | J | K   | L  |
|-----------|----|----|----|----|----|----|----|------|---|-----|----|
| FAG1      | 40 | 30 | 30 | 21 | 7  | 21 | ø5 | ø4.5 | 6 | 1.2 | 19 |
| FAG2      | 40 | 34 | 30 | 25 | 8  | 25 | ø5 | ø4.5 | 6 | 1.2 | 20 |
| FAG3      | 52 | 42 | 40 | 30 | 11 | 32 | ø6 | ø5.5 | 7 | 1.6 | 25 |
| FAG4      | 56 | 48 | 44 | 36 | 15 | 35 | ø6 | ø5.5 | 7 | 1.6 | 30 |
| FAG5      | 62 | 50 | 50 | 38 | 15 | 35 | ø6 | ø5.5 | 7 | 1.6 | 36 |

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



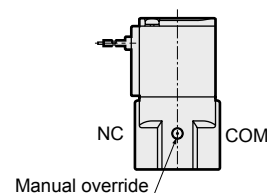
| Model No. | A    | B    | C  | D    | E  | F    |
|-----------|------|------|----|------|----|------|
| FAG1      | 36   | 28.5 | 22 | 40   | 18 | G1/4 |
| FAG2      | 53   | 44   | 38 | 44.5 | 22 | Pg9  |
| FAG3      | 58.5 | 47   | 39 | 54   | 28 | Pg11 |
| FAG4      | 62   | 50.5 | 39 | 68   | 34 | Pg11 |
| FAG5      | 65.5 | 54   | 39 | 76.5 | 40 | Pg11 |

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



| Model No. | A    | B    | C    | D    | E  |
|-----------|------|------|------|------|----|
| FAG3      | 92   | 60.5 | 55.5 | 81.5 | 28 |
| FAG4      | 96   | 64.5 | 70   | 96   | 34 |
| FAG5      | 99.5 | 68   | 78   | 104  | 40 |

- Manual override (locking/non-locking)  
FAG\*\*-\*-1\* **A**  
**N**



Note: Non-locking is available only for sizes 3/4/5.

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





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

# GFAG Series

- Universal
- Port size: M5, Rc1/8, Rc1/4



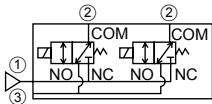
Refer to the Ending for details.



- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK

## JIS symbol

- Common supply/common exhaust



## Common specifications

| Item   | GFAG  |
|--|---|
| Working fluid                                | Compressed air  |
| Working pressure differential<br>MPa         | 0 (≈0 psi, 0 bar) to 1.2 (≈170 psi, 12 bar)<br>(refer to the max. working pressure differential in the individual specifications) |
| Proof pressure (water pressure) MPa          | 1.8 (≈260 psi, 18 bar) (1.5 (≈220 psi, 15 bar) for GFAG11/GFAG21/GFAG31)  |
| Fluid temperature °C                         | AC: -10 (14°F) to 60 (140°F), DC: -10 (14°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 <sup>3</sup> /min(ANR) | 0.2 or less   |
| Mounting orientation                         | Unrestricted  |
| Degree of protection                         | IP65 or equivalent (*1)   |

\*1 : The T type terminal box is IP61 or equivalent, and the GFAG11 compact terminal box is IP40 or equivalent.

## Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

| Item      | Port size |              | Orifice size (mm) | Flow characteristics |                              | Max. working pressure differential MPa | Max. working pressure MPa | Rated voltage       | Apparent power (VA) |                  |               |     | Power consumption (W) |       |         |        |      |          |  |
|-----------|-----------|--------------|-------------------|----------------------|------------------------------|--|---------------------------|---------------------|---------------------|------------------|---------------|-----|-----------------------|-------|---------|--------|------|----------|--|
|           | Model No. | 2-port (Ind) |                   | 1. 3-port (common)   | C [dm <sup>3</sup> /(s·bar)] |  |                           |                     | b                   | When holding     | When starting | AC  | DC                    |       |         |        |      |          |  |
| GFAG11 -Y | -0        | M5           | Rc1/8             | 0.8                  | 0.08                         | 0.55                                   | 0.7                       | 100 VAC<br>50/60 Hz | 3.4                 | 2.6              | 5             | 4.6 | 2.3/1.6               | 3     |         |        |      |          |  |
|           |           |              |                   | 1.5                  | 0.25                         | 0.29                                   |                           |                     |                     |                  |               |     |                       |       | 0.2     |        |      |          |  |
| GFAG21 -Z | -1        | Rc1/8        | Rc1/8             | 1                    | 0.12                         | 0.44                                   | 0.7                       |                     | 200 VAC<br>50/60 Hz | 5.3              | 3.7           | 10  | 9                     | 2.7/2 | 4       |        |      |          |  |
|           |           |              |                   | 2                    | 0.42                         | 0.19                                   |                           |                     |                     |                  |               |     |                       |       |         | 0.15   |      |          |  |
| GFAG31 -0 | -1        | Rc1/4        | Rc1/4             | 1.5                  | 0.28                         | 0.46                                   | 0.7                       |                     |                     | 24 VDC<br>12 VDC | 7.5           | 5.5 | 20                    | 17    | 4/3.4   | 6.5    |      |          |  |
|           |           |              |                   | 3                    | 0.90                         | 0.20                                   |                           |                     |                     |                  |               |     |                       |       |         |        | 0.2  |          |  |
| GFAG41 -1 | -4        | Rc1/4        | Rc1/4             | 2                    | 0.50                         | 0.31                                   | 0.7                       |                     |                     |                  | 15            | 11  | 40                    | 35    | 7.5/6.5 | 8      |      |          |  |
|           |           |              |                   | 3                    | 1.1                          | 0.20                                   |                           |                     |                     |                  |               |     |                       |       |         |        | 0.3  |          |  |
| GFAG51 -1 | -4        | Rc1/4        | Rc1/4             | 2                    | 0.50                         | 0.31                                   | 1.2(0.6)                  |                     |                     |                  |               | 20  | 16                    | 55    | 45      | 11/9.5 | 11.5 |          |  |
|           |           |              |                   | 3                    | 1.1                          | 0.20                                   |                           |                     |                     |                  |               |     |                       |       |         |        |      | 0.6(0.3) |  |
| GFAG51 -1 | -8        | Rc1/4        | Rc1/4             | 4                    | 1.6                          | 0.14                                   | 0.15                      |                     |                     |                  |               |     | 0.3(0.15)             |       |         |        |      |          |  |
|           |           |              |                   | 4                    | 1.6                          | 0.14                                   |                           |                     |                     |                  |               |     |                       |       |         |        |      |          |  |

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

\*2 : For GFAG51, the max. working pressure differential with NO pressurized is shown in ( ).

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

\*4 : Effective cross-sectional area S and sonic conductance C are converted as  $S \approx 5.0 \times C$ .

\*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. |              |                |              |              |
| GFAG1           |           | 2 mA or less | 1 mA or less   | 1 mA or less | 2 mA or less |
| GFAG2           |           | 3 mA or less | 1.5 mA or less |              |              |
| GFAG3/4/5       |           | 6 mA or less | 3 mA or less   |              |              |

## Weight

| Model No. | Actuator weight (kg) | Masking weight (kg) | Sub-plate weight (kg) (n: manifold station No.) | Formula for product weight   |
|-----------|----------------------|---------------------|---|--|
| GFAG11    | 0.07                 | 0.008               | 0.024+0.025×n                                   | (Product weight (kg)) = 0.07 x (Actuator quantity) + 0.008 x (Masking quantity) + 0.024 + 0.025 x (Manifold station No.) |
| GFAG21    | 0.12                 | 0.012               | 0.027+0.043×n                                   | (Product weight (kg)) = 0.12 x (Actuator quantity) + 0.012 x (Masking quantity) + 0.027 + 0.043 x (Manifold station No.) |
| GFAG31    | 0.2                  | 0.026               | 0.06+0.08×n                                     | (Product weight (kg)) = 0.2 x (Actuator quantity) + 0.026 x (Masking quantity) + 0.06 + 0.080 x (Manifold station No.)   |
| GFAG41    | 0.36                 | 0.034               | 0.067+0.11×n                                    | (Product weight (kg)) = 0.36 x (Actuator quantity) + 0.034 x (Masking quantity) + 0.067 + 0.11 x (Manifold station No.)  |
| GFAG51    | 0.55                 | 0.048               | 0.08+0.15×n                                     | (Product weight (kg)) = 0.55 x (Actuator quantity) + 0.048 x (Masking quantity) + 0.08 + 0.15 x (Manifold station No.)   |

## How to order

● Manifold

**G F A G 2 1 - Z - 5 - 1 2C N - 1**

● Manifold with masking plate

**G F A G 3 1 - 1 - X - 1 2G N - 2 - 4 1**

No. of ports  
(3-port valve)  
Working fluid  
(Compressed air)

**A** Series size

**B** Circuit configuration

**C** Orifice size

**D** Manifold station No.

\*1  
\*2

**E** Body/sealant combination

**F** Coil option

\*3  
\*4  
\*5

**G** Manual operation

**H** Voltage

\*6

[Example of model No.]

**GFAG21-Z-5-12CN-1**

Model : GFAG

- A** Series size : 22 mm
- B** Circuit configuration : Common supply/common exhaust
- C** Orifice size :  $\phi 1$
- D** Manifold station No. : 5 stations
- E** Body/sealant combination : Body - PPS, sealant - NBR
- F** Coil option : Grommet lead wire
- G** Manual override : Manual non-locking
- H** Voltage : 100 VAC50/60 Hz
- I J** : 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 **I** solenoid valves and **J** masking plates.
- \*3 : For GFAG11 Item **F** 2G, the compact terminal box (G1/4) is used.
- \*4 : For GFAG21 **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.
- \*7 : Solenoid valves are arranged from the right side with the sub-plate (individual) port A facing front.
- \*8 : Orders for only the masking plate and sub-plate are also available. Contact CKD for details.

**I** No. of solenoid valves  
\*7 valves

**J** Masking plate quantity

Model No.

GFAG11 GFAG21 GFAG31 GFAG41 GFAG51

| Code                 | Description | GFAG11 | GFAG21 | GFAG31 | GFAG41 | GFAG51 |
|----------------------|-------------|--------|--------|--------|--------|--------|
| <b>A Series size</b> |             |        |        |        |        |        |
| 1                    | 18 mm       | ●      |        |        |        |        |
| 2                    | 22 mm       |        | ●      |        |        |        |
| 3                    | 28 mm       |        |        | ●      |        |        |
| 4                    | 34 mm       |        |        |        | ●      |        |
| 5                    | 40 mm       |        |        |        |        | ●      |

| <b>B Circuit configuration</b> |                              |   |   |   |   |   |
|--------------------------------|------------------------------|---|---|---|---|---|
| 1                              | Common supply/common exhaust | ● | ● | ● | ● | ● |

| <b>C Orifice size</b> |            |   |   |   |   |   |
|-----------------------|------------|---|---|---|---|---|
| Y                     | $\phi 0.8$ | ● |   |   |   |   |
| Z                     | $\phi 1$   |   | ● |   |   |   |
| 0                     | $\phi 1.5$ | ● |   | ● |   |   |
| 1                     | $\phi 2$   |   | ● | ● | ● | ● |
| 4                     | $\phi 3$   |   |   | ● | ● | ● |
| 8                     | $\phi 4$   |   |   |   | ● | ● |

| <b>D Manifold station No.</b> |                    |   |   |   |   |   |
|-------------------------------|--------------------|---|---|---|---|---|
| 2                             | 2 stations         |   |   |   |   |   |
| to                            | to                 | ● | ● | ● | ● | ● |
| 10                            | 10 stations        |   |   |   |   |   |
| O                             | Actuator only      | ● | ● | ● | ● | ● |
| X                             | With masking plate | ● | ● | ● | ● | ● |

| <b>E Body/sealant combination</b> |      |      |   |   |   |   |
|-----------------------------------|------|------|---|---|---|---|
|                                   | Body | Seal |   |   |   |   |
| 1                                 | PPS  | NBR  | ● | ● | ● | ● |

| <b>F Coil option</b> |        |   |   |   |   |   |
|----------------------|--------|---|---|---|---|---|
| 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) |   |   |   | ● |

| <b>G Manual operation</b> |        |                    |   |   |   |   |
|---------------------------|--------|--------------------|---|---|---|---|
| Blank                     | Std.   | None               | ● | ● | ● | ● |
| N                         | Option | Manual non-locking | ● | ● | ● | ● |

| <b>H Voltage</b> |                  |   |   |   |   |   |
|------------------|------------------|---|---|---|---|---|
| 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.

| <b>I No. of solenoid valves</b> |                   |    |   |   |   |   |
|---------------------------------|-------------------|----|---|---|---|---|
| Blank                           | No masking plate  |    | ● | ● | ● | ● |
| 1                               | 1 solenoid valve  | to | ● | ● | ● | ● |
| 9                               | 9 solenoid valves |    |   |   |   |   |

| <b>J Masking plate quantity</b> |                  |    |   |   |   |   |
|---------------------------------|------------------|----|---|---|---|---|
| Blank                           | No masking plate |    | ● | ● | ● | ● |
| 1                               | 1 masking plate  | to | ● | ● | ● | ● |
| 9                               | 9 masking plates |    |   |   |   |   |

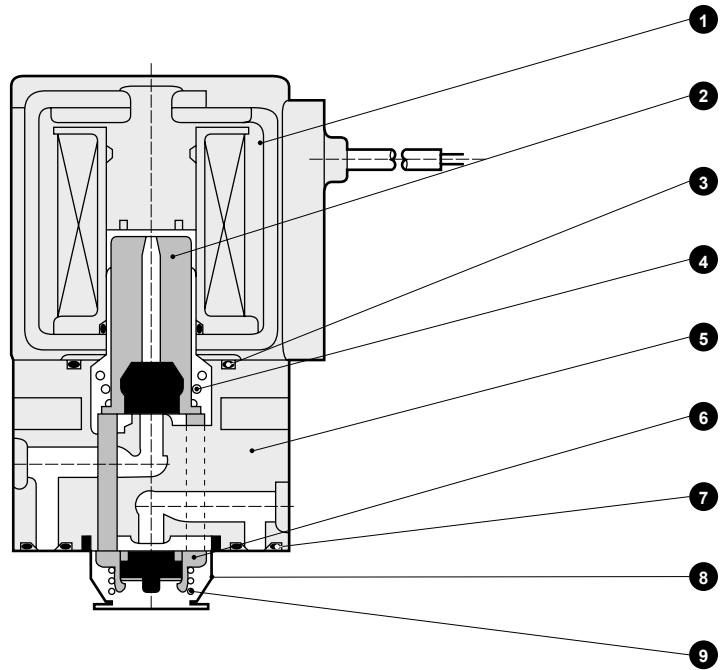
Select from the combinations indicated with ● in the table above.

- 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 $\phi$ 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

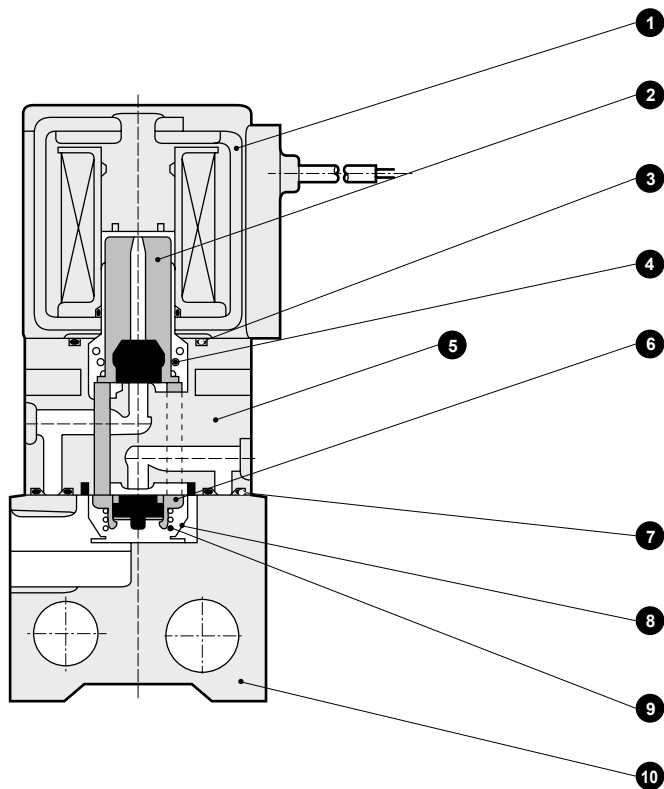
## Internal structure and parts list

- 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 $\diamond$ 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

● GFAG actuator



● GFAG manifold



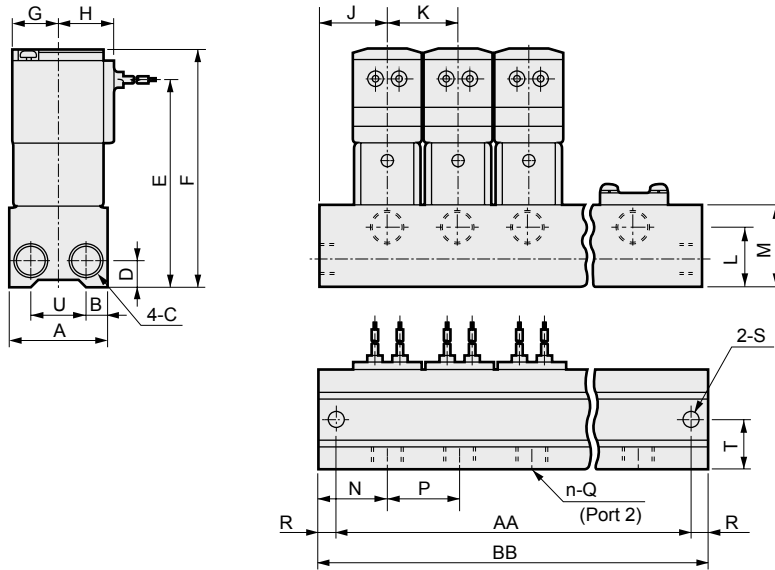
| No. | Part name        | Material | No. | Part name                      | Material      |
|-----|------------------|----------|-----|--------------------------------|---------------|
| 1   | Coil assembly    | -        | 6   | Valving element guide assembly | PPS, SUS, NBR |
| 2   | Plunger assembly | SUS, NBR | 7   | Gasket                         | NBR           |
| 3   | O-ring           | NBR      | 8   | Holder                         | SUS           |
| 4   | Spring           | SUS      | 9   | Spring                         | SUS           |
| 5   | Body             | PPS      | 10  | Sub-plate                      | A6063         |

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

## Dimensions: Manifold



- Grommet lead wire  
GFAG\*1-\*-\*-\*12C



Lead wire length 300 mm

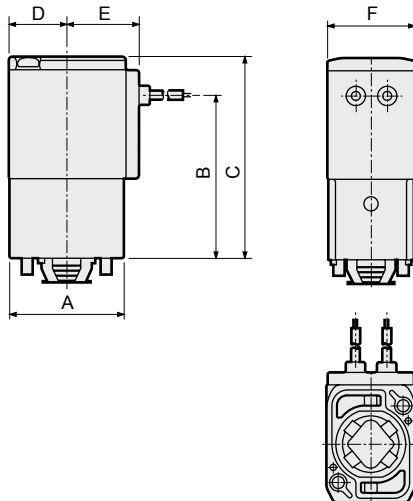
| Model No. | Station Code | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  |
|-----------|--------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| GFAG1     | AA           | 48  | 68  | 88  | 108 | 128 | 148 | 168 | 188 | 208 |
|           | BB           | 58  | 78  | 98  | 118 | 138 | 158 | 178 | 198 | 218 |
| GFAG2     | AA           | 58  | 84  | 110 | 136 | 162 | 188 | 214 | 240 | 266 |
|           | BB           | 68  | 94  | 120 | 146 | 172 | 198 | 224 | 250 | 276 |
| GFAG3     | AA           | 74  | 106 | 138 | 170 | 202 | 234 | 266 | 298 | 330 |
|           | BB           | 88  | 120 | 152 | 184 | 216 | 248 | 280 | 312 | 344 |
| GFAG4     | AA           | 86  | 124 | 162 | 200 | 238 | 276 | 314 | 352 | 390 |
|           | BB           | 100 | 138 | 176 | 214 | 252 | 290 | 328 | 366 | 404 |
| GFAG5     | AA           | 100 | 146 | 192 | 238 | 284 | 330 | 376 | 422 | 468 |
|           | BB           | 114 | 160 | 206 | 252 | 298 | 344 | 390 | 436 | 482 |

| Model No. | A  | B   | C     | D  | E    | F     | G    | H    | J  | K  | L  | M  | N    | P  | Q     | R | S    | T    | U  |
|-----------|----|-----|-------|----|------|-------|------|------|----|----|----|----|------|----|-------|---|------|------|----|
| GFAG1     | 30 | 6.5 | Rc1/8 | 8  | 55.5 | 65    | 13   | 17   | 19 | 20 | 16 | 22 | 18.5 | 20 | M5    | 5 | ø4.5 | 15   | 17 |
| GFAG2     | 30 | 6.5 | Rc1/8 | 8  | 70   | 81    | 15.5 | 19.5 | 21 | 26 | 18 | 27 | 20   | 26 | Rc1/8 | 5 | ø4.5 | 15   | 17 |
| GFAG3     | 40 | 9   | Rc1/4 | 11 | 84   | 96    | 18.5 | 22.5 | 28 | 32 | 24 | 33 | 27.5 | 32 | Rc1/4 | 7 | ø6.5 | 20   | 22 |
| GFAG4     | 43 | 9   | Rc1/4 | 11 | 93.5 | 107.5 | 22.5 | 26   | 31 | 38 | 24 | 33 | 34.5 | 38 | Rc1/4 | 7 | ø6.5 | 21.5 | 25 |
| GFAG5     | 50 | 10  | Rc1/4 | 11 | 100  | 116   | 26   | 29.5 | 34 | 46 | 24 | 33 | 38.5 | 46 | Rc1/4 | 7 | ø6.5 | 25   | 30 |

## Dimensions: Actuator



- Grommet lead wire  
GFAG\*1-\*-\*0-12C



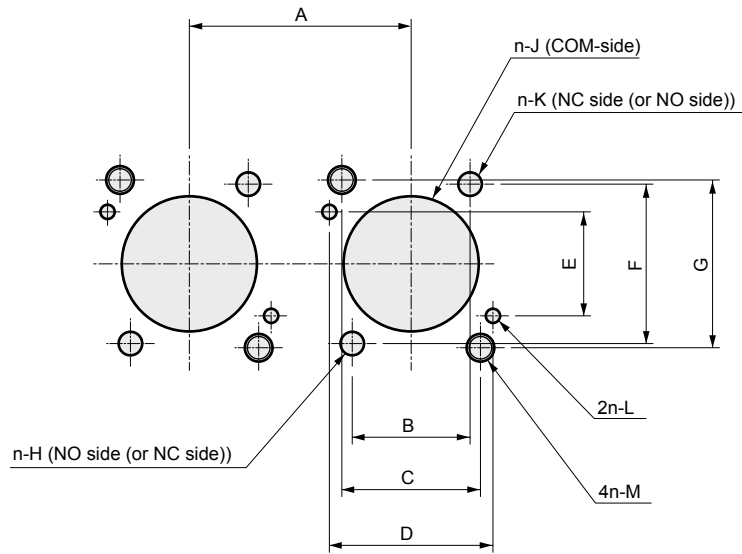
| Model No. | A  | B    | C    | D    | E    | F  |
|-----------|----|------|------|------|------|----|
| GFAG1     | 25 | 33.5 | 43   | 13   | 17   | 18 |
| GFAG2     | 30 | 43   | 54   | 15.5 | 19.5 | 22 |
| GFAG3     | 36 | 51   | 63   | 18.5 | 22.5 | 28 |
| GFAG4     | 43 | 60.5 | 74.5 | 22.5 | 26   | 34 |
| GFAG5     | 50 | 67   | 83   | 26   | 29.5 | 40 |

\* Lead wire length 300 mm

## Actuator installation dimensions

### ● GFAG1\*/2\*/3\*

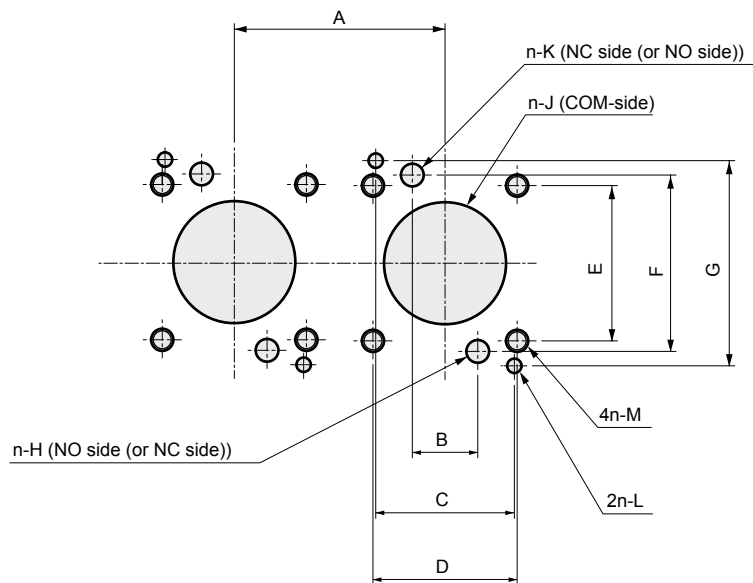
Machining drawing when using 2 actuators.



| Model No. | A          | B       | C        | D        | E        | F         | G        | H                                 | J   | K                                 | L   | M                      |
|-----------|------------|---------|----------|----------|----------|-----------|----------|-----------------------------------|---|-----------------------------------|---|------------------------|
| GFAG1     | 20 or more | 9±0.15  | 12.4±0.1 | 14.4±0.1 | 11.2±0.1 | 16.4±0.15 | 17±0.1   | ø2 <sup>+0.1</sup> <sub>0</sub>   | ø12 ±0.1 depth 7 <sup>+0.2</sup> <sub>0</sub>     | ø2 <sup>+0.1</sup> <sub>0</sub>   | ø1.6 <sup>+0.1</sup> <sub>0</sub> depth 2.5±0.5 | M2.5 effective depth 5 |
| GFAG2     | 26 or more | 12±0.15 | 15.5±0.1 | 18.4±0.1 | 12.4±0.1 | 20±0.15   | 19.4±0.1 | ø2.5 <sup>+0.1</sup> <sub>0</sub> | ø14.5 ±0.1 depth 6.7 <sup>+0.2</sup> <sub>0</sub> | ø2.5 <sup>+0.1</sup> <sub>0</sub> | ø1.6 <sup>+0.1</sup> <sub>0</sub> depth 2.5±0.5 | M3 effective depth 6   |
| GFAG3     | 32 or more | 17±0.15 | 20±0.1   | 23.6±0.1 | 15±0.1   | 24±0.15   | 24.2±0.1 | ø3.4 <sup>+0.1</sup> <sub>0</sub> | ø19.5 ±0.1 depth 7.6 <sup>+0.2</sup> <sub>0</sub> | ø3.4 <sup>+0.1</sup> <sub>0</sub> | ø2.1 <sup>+0.1</sup> <sub>0</sub> depth 2.5±0.5 | M4 effective depth 6   |

### ● GFAG4\*/5\*

Machining drawing when using 2 actuators.



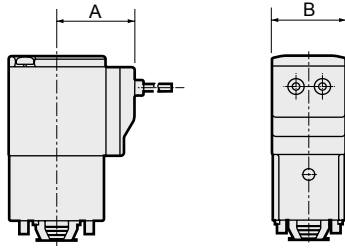
| Model No. | A          | B         | C      | D      | E      | F         | G      | H                                 | J   | K    | L   | M                     |
|-----------|------------|-----------|--------|--------|--------|-----------|--------|-----------------------------------|---|------|---|-----------------------|
| GFAG4     | 38 or more | 11.8±0.15 | 25±0.1 | 26±0.1 | 28±0.1 | 31.8±0.15 | 37±0.1 | ø4.1 <sup>+0.1</sup> <sub>0</sub> | ø22 ±0.15 depth 11.2 <sup>+0.2</sup> <sub>0</sub> | ø4.1 | ø2.6 depth 2.5±0.5 <sup>+0.1</sup> <sub>0</sub> | M4 effective depth 12 |
| GFAG5     | 46 or more | 11.8±0.15 | 30±0.1 | 30±0.1 | 33±0.1 | 31.8±0.15 | 43±0.1 | ø4.1 <sup>+0.1</sup> <sub>0</sub> | ø22 ±0.15 depth 11.2 <sup>+0.2</sup> <sub>0</sub> | ø4.1 | ø2.6 depth 2.5±0.5 <sup>+0.1</sup> <sub>0</sub> | M5 effective depth 8  |

## Optional dimensions



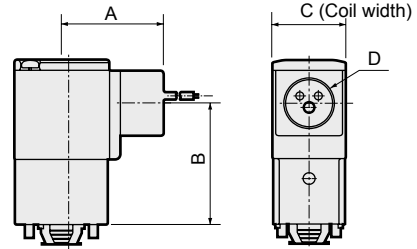
(Refer to the grommet lead wire actuator dimensions on page 71 for common dimensions.)

- Grommet lead wire with surge suppressor  
GFAG\*1-\*-\*1 **2CS**



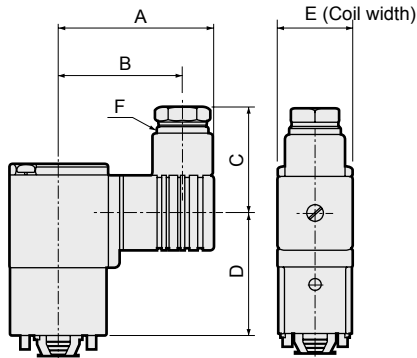
| Model No. | A    | B  |
|-----------|------|----|
| GFAG1     | 24.5 | 18 |
| GFAG2     | 26.5 | 22 |
| GFAG3     | 29.5 | 28 |
| GFAG4     | 34   | 34 |
| GFAG5     | 37.5 | 40 |

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



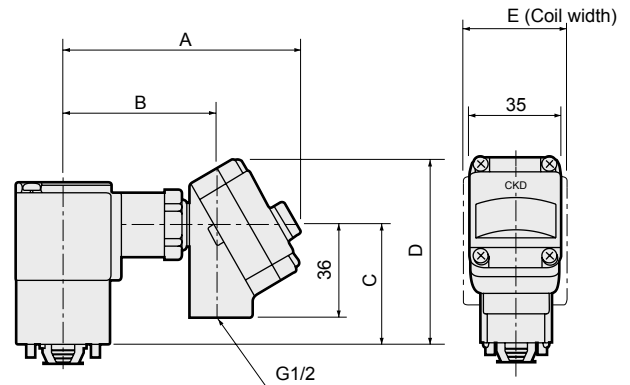
| Model No. | A    | B  | C  | D            |
|-----------|------|----|----|--------------|
| GFAG3     | 39   | 46 | 28 | CTC19 / G1/2 |
| GFAG4     | 43   | 56 | 34 | CTC19 / G1/2 |
| GFAG5     | 46.5 | 64 | 40 | CTC19 / G1/2 |

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



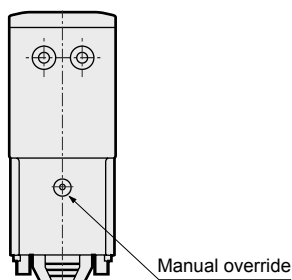
| Model No. | A    | B    | C  | D    | E  | F    |
|-----------|------|------|----|------|----|------|
| GFAG1     | 36   | 28.5 | 22 | 31.5 | 18 | G1/4 |
| GFAG2     | 53   | 44   | 38 | 36.5 | 22 | Pg9  |
| GFAG3     | 58.5 | 47   | 39 | 44.5 | 28 | Pg11 |
| GFAG4     | 62   | 50.5 | 39 | 54   | 34 | Pg11 |
| GFAG5     | 65.5 | 54   | 39 | 62.5 | 40 | Pg11 |

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



| Model No. | A    | B    | C  | D  | E  |
|-----------|------|------|----|----|----|
| GFAG4     | 96   | 64.5 | 56 | 82 | 34 |
| GFAG5     | 99.5 | 68   | 64 | 90 | 40 |

- Manual override (non-locking)  
GFAG\*1-\*-\*1 **N**



Position of manual override:  
Opposite side to COM port

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