Discontinue

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

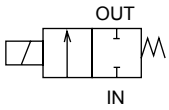
FAB Series

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

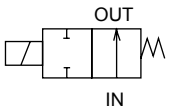
CE Refer to the Ending for details. RoHS CAD

JIS symbol

- NC (open when energized)



- NO (closed when energized)



Common specifications

Item	FAB
Working fluid	Compressed air
Working pressure differential MPa	0 (≈0 psi, 0 bar) to 1.4 (≈200 psi, 14 bar) (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 $cm^3/min(ANR)$	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 / Model No.			Port size	Orifice size (mm)	Flow characteristics C[$dm^3/(s\cdot bar)$]	Flow characteristics b	Max. working press diff MPa AC	Max. working press diff MPa DC	Max. working pressure MPa	Rated voltage	Apparent power (VA) When holding 50 Hz	Apparent power (VA) When holding 60 Hz	Apparent power (VA) When starting 50 Hz	Apparent power (VA) When starting 60 Hz	Power consumption (W) AC 50/60 Hz	Power consumption (W) DC	Weight (kg)
NC (open when energized)																	
FAB11-	M5	-Z	M5	1	0.12	0.64	0.7	0.7	1.0	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	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									
FAB21-	6	-1	Rc1/8	1.5	0.28	0.52	1.0	1.0			5.3	3.7	10	9	2.7/2	4	0.12
		-2		2	0.55	0.59	0.6	0.6									
FAB31-	6 8	-2	Rc1/8	2	0.55	0.56	1.4	1.4	1.4		7.5	5.5	20	17	4/3.4	6.5	0.21
		-3	Rc1/4	3	1.2	0.56	1.0	0.6									
		-6		5	3.1	0.50	0.3	0.15									
FAB41-	8 10	-3	Rc1/4	3	1.2	0.56	1.4	1.4			15	11	40	35	7.5/6.5	8	0.37
		-5	Rc3/8	4	2.1	0.54	1.0	0.9									
		-7		7	5.7	0.48	0.25	0.15									
FAB51-	10	-5	Rc3/8	4	2.1	0.54	1.2	1.2			20	16	55	45	11/9.5	11.5	0.60
		-6		5	3.1	0.50	0.7	0.8									
FAB51-	10 15	-7	Rc3/8	7	5.7	0.48	0.3	0.3									
		-8	Rc1/2	10	5.5	0.41	0.15	0.15									
NO (closed when energized)																	
FAB32-	6 8	-2	Rc1/8	2	0.57	0.53	1.1	1.1	1.4		11.5	8	25	22	4.6/3.2	6	0.31
		-3	Rc1/4	3	1.2	0.57	0.55	0.55									
		-6		5	3.0	0.48	0.2	0.2									
FAB42-	8 10	-3		3	1.2	0.50	0.9	0.9		100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	18	14	45	40	7.5/6.5	*3 8	0.54
		-5		4	2.1	0.54	0.55	0.55									
		-7	Rc1/4	7	5.2	0.41	0.15	0.15									
FAB52-	8 10	-5	Rc3/8	4	2.1	0.54	0.8	0.8			25	20	60	50	11/10	11.5	0.71
		-6		5	3.0	0.52	0.5	0.5									
		-7		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 ≈ 5.0 x 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
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

F A B 2 1 - 6 - 1 - 1 2C A B - 1

- F: Working fluid (Compressed air)
- A: No. of ports (2-port valve)
- B: Series size
- C: Actuation
- D: Port size
- E: Orifice size *1
- F: Body/sealant combination *2
- G: Coil option *3 *4 *5
- H: Manual override *6
- I: Other options
- J: Voltage *7

Code	Description	FAB11	FAB21	FAB31	FAB41	FAB51	FAB32	FAB42	FAB52
A Series size									
1	18 mm	●							
2	22 mm		●						
3	28 mm			●			●		
4	34 mm				●			●	
5	40 mm					●			●
B Actuation									
1	NC (open when energized)	●	●	●	●	●			
2	NO (closed when energized)						●	●	●
C Port size									
M5	M5	●							
6	Rc1/8		●	●			●		
8	Rc1/4			●	●		●	●	●
10	Rc3/8				●	●		●	●
15	Rc1/2					●			
D Orifice size									
Z	ø1	●							
1	ø1.5	●	●						
2	ø2		●	●			●		
3	ø3			●	●		●	●	
5	ø4				●	●		●	●
6	ø5			●		●	●		●
7	ø7				●	●		●	●
8	ø10					●			
E Body/sealant combination									
	Body / Seal / Actuation								
1	Aluminum / NBR / NC	●	●	●	●	●			
0	Copper alloy / NBR / NO						●	●	●
F Coil option									
2C	Std. Grommet lead wire	●	●	●	●	●	●	●	●
2CS	Option: Grommet lead wire with surge suppressor	●	●	●	●	●	●	●	●
2G	Option: With DIN terminal box (Pg11)	●	●	●	●	●	●	●	●
2HS	Option: DIN terminal box with lamp/ surge suppressor (Pg11)		●	●	●	●	●	●	●
2CG	Option: Conduit (CTC19)			●	●	●	●	●	●
2CH	Option: Conduit (G1/2)			●	●	●	●	●	●
3T	Option: With T type terminal box (G1/2)			●	●	●	●	●	●
3RS	Option: T type terminal box with lamp/ surge suppressor (G1/2)			●	●	●	●	●	●
G Manual override									
Blank	Std. None	●	●	●	●	●	●	●	●
A	Option: Manual locking	●	●	●	●	●			
N	Option: Manual non-locking			●	●	●			
H Other options									
Blank	Std. None	●	●	●	●	●	●	●	●
B	Option: Mounting plate	●	●	●	●	●	●	●	●
I Voltage									
1	100 VAC 50/60 Hz	●	●	●	●	●	●	●	●
2	200 VAC 50/60 Hz	●	●	●	●	●	●	●	●
3	24 VDC	●	●	●	●	●	●	●	●
4	12 VDC	●	●	●	●	●	●	●	●
Specify the desired voltage if it is not listed above.									

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

[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 : ø1.5
- 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 ø4 mm (Item D 5) and ø5 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.

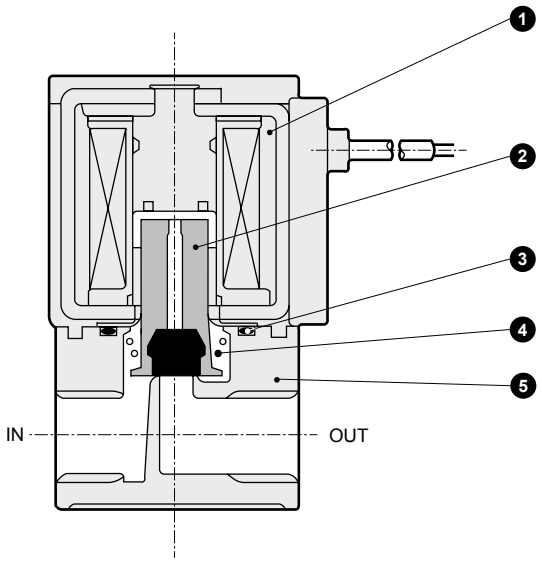
Discontinue

FAB Series

FAB*1 Series: NC (open when energized)

Internal structure and parts list

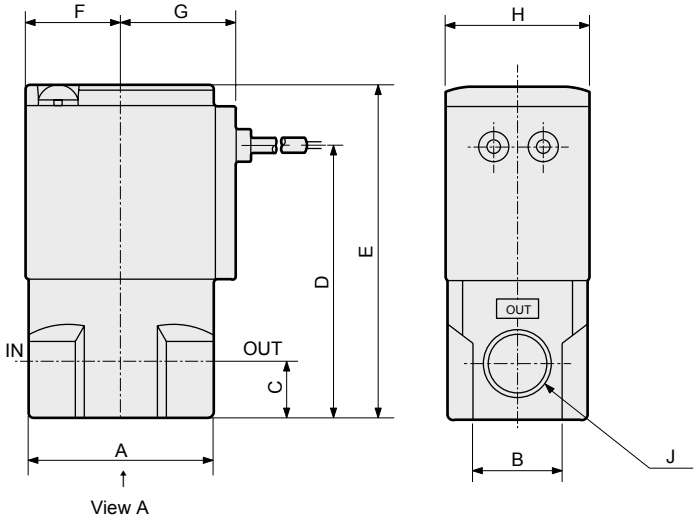
● FAB*1 Series

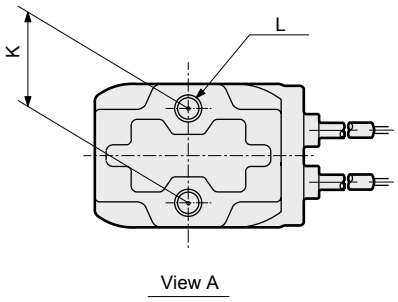


No.	Part name	Material	
1	Coil assembly	-	-
2	Plunger assembly	SUS, NBR	Stainless steel, nitrile rubber
3	O-ring	NBR	Nitrile rubber
4	Spring	SUS	Stainless steel
5	Body	ADC	Aluminum die-casting

Dimensions CAD

● Grommet lead wire
FAB*1-*-*-*2C





* Lead wire length 300 mm

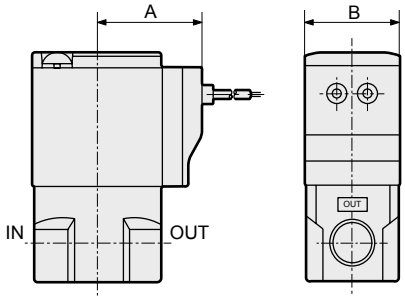
Model No.	A	B	C	D	E	F	G	H	J	K	L
FAB11	25	14	5	34	43.5	13	17	18	M5	10	M4 depth 5.5
FAB21	32	16	8	43	54	15.5	19.5	22	Rc1/8	15	M4 depth 6
FAB31	36	18	11	53.5	65.5	18.5	22.5	28	Rc1/8, Rc1/4	18	M5 depth 6
FAB41	40	25	12	62	76	22.5	26	34	Rc1/4, Rc3/8	18	M5 depth 7
FAB51	50	30	15	74.5	90.5	26	29.5	40	Rc3/8,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

Optional dimensions

CAD

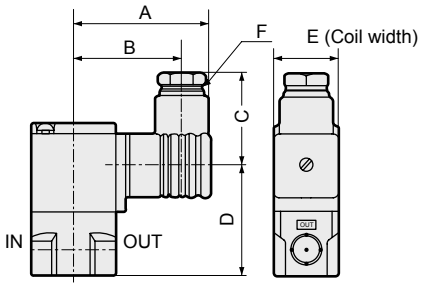
(Refer to the dimensions of grommet lead wire on page 54 for common dimensions.)

● Grommet lead wire with surge suppressor
FAB*1-*-*-* 2CS



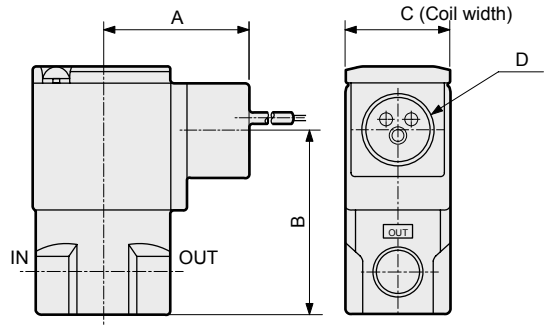
Model No.	A	B
FAB11	24.5	18
FAB21	26.5	22
FAB31	29.5	28
FAB41	34	34
FAB51	37.5	40

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



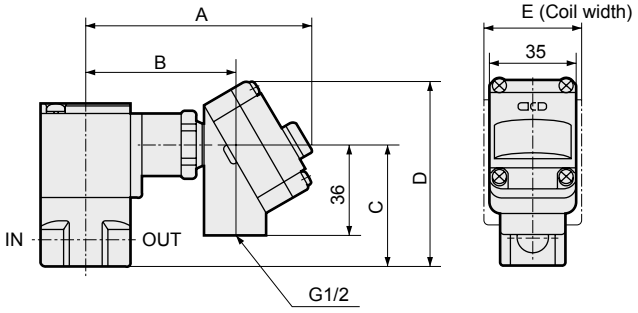
Model No.	A	B	C	D	E	F
FAB11	36	28.5	22	32	18	G1/4
FAB21	53	44	38	36.5	22	Pg 9
FAB31	58.5	47	39	47	28	Pg11
FAB41	62	50.5	39	55.5	34	Pg11
FAB51	65.5	54	39	70	40	Pg11

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



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

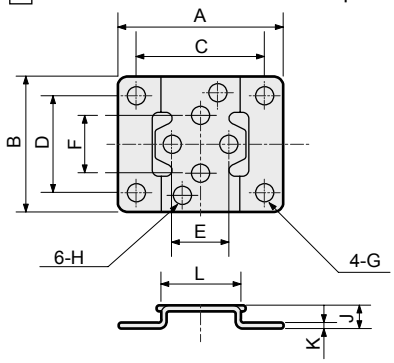
● T type terminal box (with lamp/surge suppressor) (G1/2)
FAB*1-*-*-* 3T 3RS



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

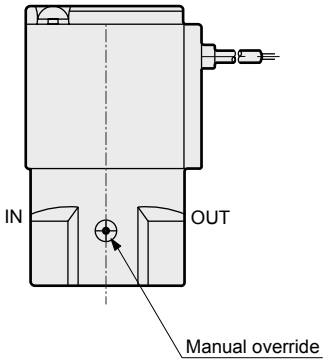
● Mounting plate
FAB*1-*-*-***B

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.

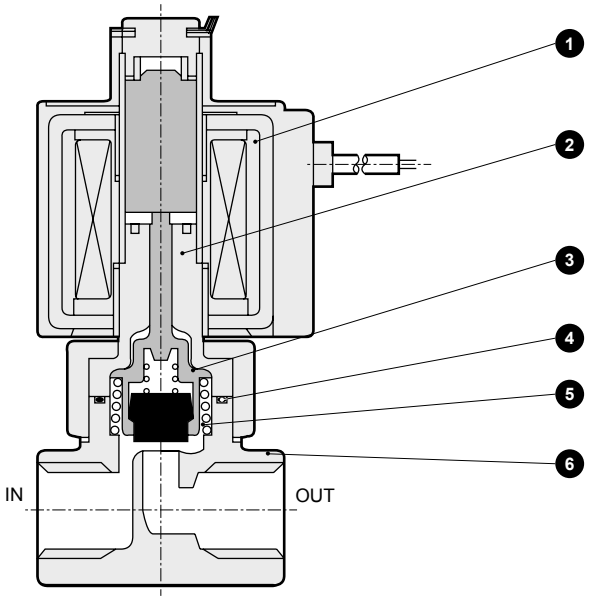
Discontinue

FAB Series

FAB*2 Series: NO (closed when energized)

Internal structure and parts list

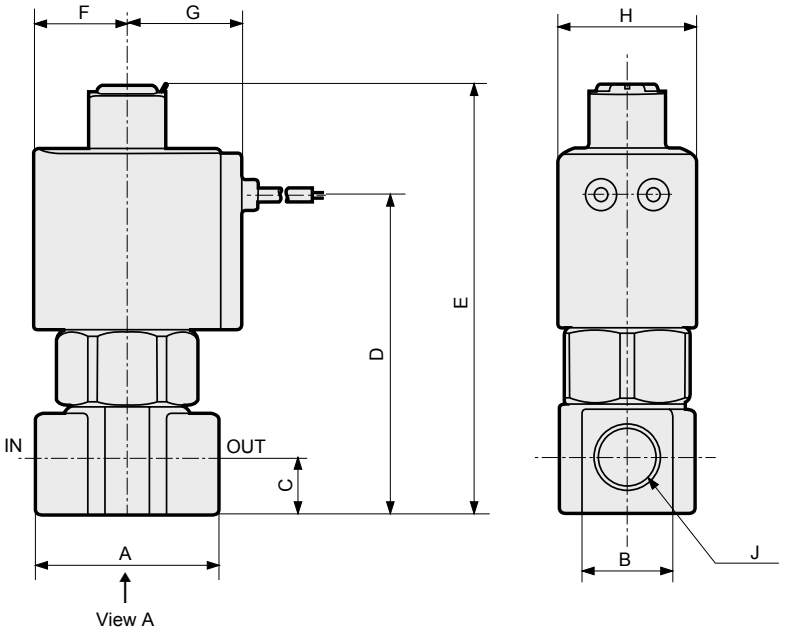
● FAB*2 Series

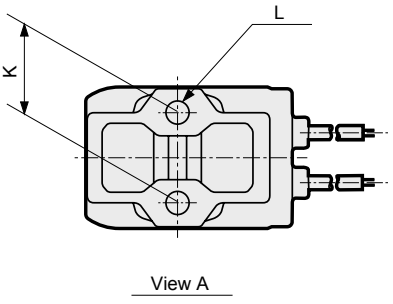


No.	Part name	Material	
1	Coil assembly	-	-
2	Core assembly	SUS, Cu	Stainless steel, copper
3	Valving element guide assembly	PPS, SUS, NBR	Polyphenylene sulfide, stainless steel, nitrile rubber
4	O-ring	NBR	Nitrile rubber
5	Spring	SUS	Stainless steel
6	Body	C3771	Copper alloy

Dimensions CAD

● Grommet lead wire
FAB*2-*-*-*2C





* Lead wire length 300 mm

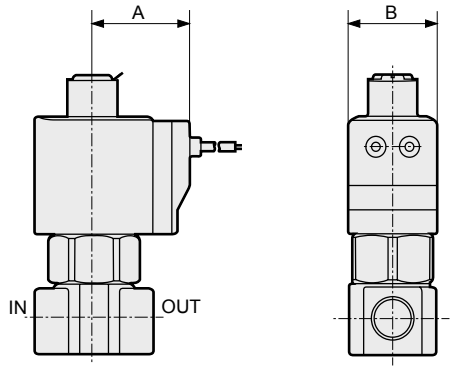
Model No.	A	B	C	D	E	F	G	H	J	K	L
FAB32	36	18	11	62.5	84	18.5	22.5	28	Rc1/8, Rc1/4	18	M5 depth 6
FAB42	40	21	12	71.5	96	22.5	26	34	Rc1/4, Rc3/8	18	M5 depth 8
FAB52	40	21	12	78	103.5	26	29.5	40	Rc1/4, Rc3/8	18	M5 depth 8

Optional dimensions

CAD

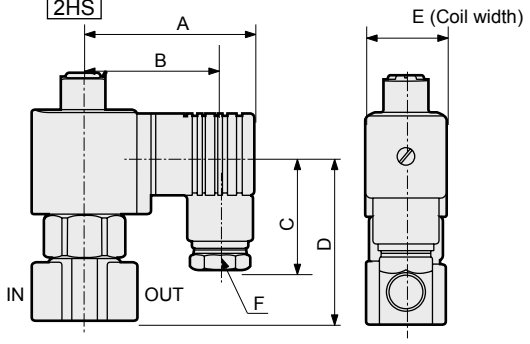
(Refer to the dimensions of grommet lead wire on page 56 for common dimensions.)

● Grommet lead wire with surge suppressor
FAB*2-*-*-* 2CS



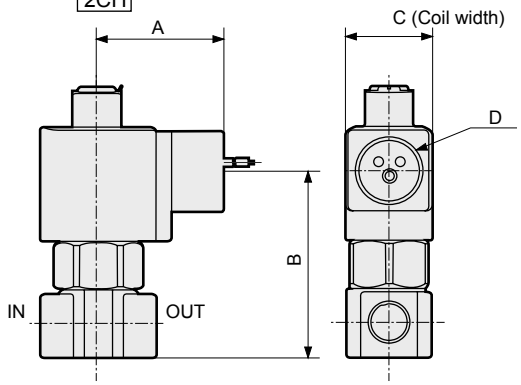
Model No.	A	B
FAB32	29.5	28
FAB42	34	34
FAB52	37.5	40

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



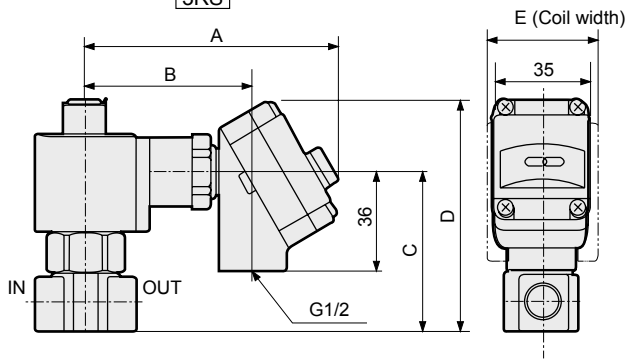
Model No.	A	B	C	D	E	F
FAB32	58.5	47	39	56.5	28	Pg11
FAB42	62	50.5	39	65	34	Pg11
FAB52	65.5	54	39	73.5	40	Pg11

● Conduit (CTC19 / G1/2)
FAB*2-*-*-* 2CG 2CH



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

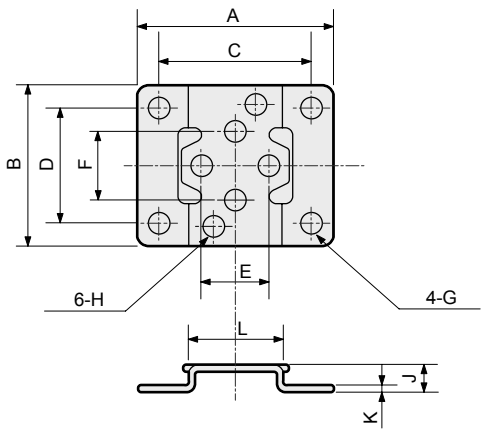
● T type terminal box (with lamp/surge suppressor)
(G1/2) FAB*2-*-*-* 3T 3RS



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

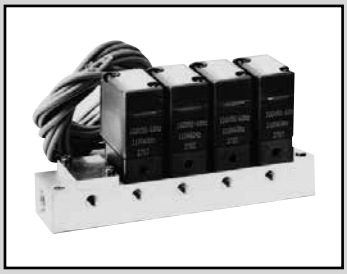
● Mounting plate
FAB*2-*-*-** B

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

Discontinue



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

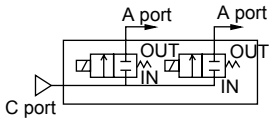
GFAB Series

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

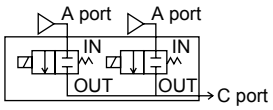
CE Refer to the Ending for details. RoHS CAD

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) (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^3/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 / Model No.		Port size A port	Port size C port	Orifice size (mm)	Flow characteristics C[$dm^3/(s\cdot bar)$]	Flow characteristics b	Max. working press diff MPa AC	Max. working press diff MPa DC	Max. working pressure MPa	Rated voltage	Apparent power (VA) When holding 50 Hz	Apparent power (VA) When holding 60 Hz	Apparent power (VA) When starting 50 Hz	Apparent power (VA) When starting 60 Hz	Power consumption (W) AC 50/60 Hz	Power consumption (W) DC
GFAB 11 15	-Z	M5	Rc1/8	1	0.15	0.54	0.7	0.7	1.0	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	3.4	2.6	5.0	4.6	2.3/1.6	3
	-1			1.5	0.31	0.49	0.3	0.3								
GFAB 21 25	-1	Rc1/8	Rc1/8	1.5	0.31	0.49	1.0	1.0			5.3	3.7	10	9	2.7/2	4
	-2			2	0.53	0.38	0.6	0.6								
GFAB 31 35	-2	Rc1/4	Rc3/8	2	0.55	0.48	1.4	1.4	1.4		7.5	5.5	20	17	4/3.4	6.5
	-3			3	1.2	0.39	1.0	0.6								
	-6			5	2.1	0.27	0.3	0.15								
GFAB 41 45	-3	Rc1/4	Rc3/8	3	1.2	0.39	1.4	1.4			15	11	40	35	7.5/6.5	8
	-5			4	2.1	0.34	1.0	0.9								
	-7			7	3.5	0.21	0.25	0.15								
GFAB 51 55	-5	Rc1/4	Rc3/8	4	2.1	0.34	1.2	1.2			20	16	55	45	11/9.5	11.5
	-6			5	3.0	0.22	0.7	0.8								
	-7			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 ≈ 5.0 x 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 / Model No.	100 VAC	200 VAC	24 VDC	12 VDC
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 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 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 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 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 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)

Ⓐ Series size

Ⓑ Circuit configuration

Ⓒ Orifice size

Ⓓ Manifold station No. *1 *2

Ⓔ Body/sealant combination

Ⓕ Coil option *3 *4 *5

Ⓖ Manual override

Ⓗ Voltage *6

Ⓘ No. of *7 solenoid valves

Ⓙ Masking plate quantity

Code	Description	Model No. GFAB11/15	GFAB21/25	GFAB31/35	GFAB41/45	GFAB51/55
Ⓐ Series size						
1	18 mm	●				
2	22 mm		●			
3	28 mm			●		
4	34 mm				●	
5	40 mm					●
Ⓑ Circuit configuration						
1	NC (open when energized)/common supply	●	●	●	●	●
5	NC (open when energized)/individual supply	●	●	●	●	●
Ⓒ Orifice size						
Z	ø1	●				
1	ø1.5	●	●			
2	ø2		●	●		
3	ø3			●	●	
5	ø4				●	●
6	ø5			●		●
7	ø7				●	●
Ⓓ Manifold station No.						
2 to 10	2 stations to 10 stations	●	●	●	●	●
0	Actuator only	●	●	●	●	●
X	With masking plate	●	●	●	●	●
Ⓔ Body/sealant combination						
	Body / Seal					
1	PPS / NBR	●	●	●	●	●
Ⓕ Coil option						
2C	Std. Grommet lead wire	●	●	●	●	●
2CS	Option Grommet lead wire With surge suppressor	●	●	●	●	●
2G	Option With DIN terminal box (Pg11)	●	●	●	●	●
2HS	Option DIN terminal box with lamp/ surge suppressor (Pg11)		●	●	●	●
2CG	Option Conduit (CTC19)			●	●	●
2CH	Option Conduit (G1/2)			●	●	●
3T	Option With T type terminal box (G1/2)				●	●
3RS	Option T type terminal box with lamp surge suppressor (G1/2)				●	●
Ⓖ Manual override						
Blank	Std. None	●	●	●	●	●
N	Option Manual non-locking	●	●	●	●	●
Ⓗ Voltage						
1	100 VAC 50/60 Hz	●	●	●	●	●
2	200 VAC 50/60 Hz	●	●	●	●	●
3	24 VDC	●	●	●	●	●
4	12 VDC	●	●	●	●	●
Specify the desired voltage if it is not listed above.						
Ⓘ No. of solenoid valves						
Blank	No masking plate	●	●	●	●	●
1 to 9	1 solenoid valve to 9 solenoid valves	●	●	●	●	●
Ⓙ Masking plate quantity						
Blank	No masking plate	●	●	●	●	●
1 to 9	1 masking plate to 9 masking plates	●	●	●	●	●

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

[Example of model No.]

GFAB31-2-7-12CN-1

Model : GFAB

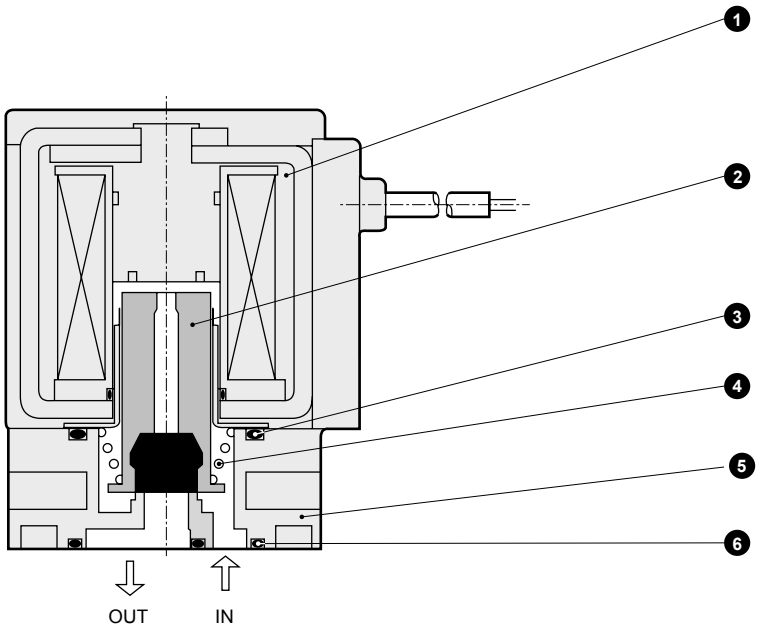
Ⓐ Series size	: 28 mm
Ⓑ Circuit configuration	: NC (open when energized)/ common supply
Ⓒ Orifice size	: ø2
Ⓓ Manifold station No.	: 7 stations
Ⓔ Body/sealant combination	: Body - PPS, sealant - NBR
Ⓕ Coil option	: Grommet lead wire
Ⓖ Manual override	: Manual non-locking
Ⓗ Voltage	: 100 VAC 50/60 Hz
Ⓘ Ⓙ	: No masking plate

⚠ Precautions for model No. selection

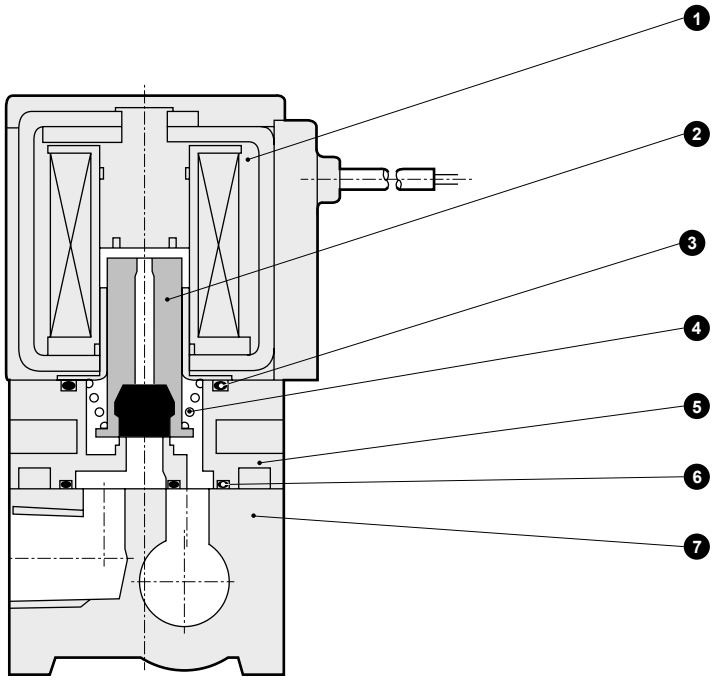
*1 : Select a desired manifold station No. from 2 to 10.
*2 : For the type with masking plate, designate Item Ⓓ as "X", then designate the quantities of Ⓘ solenoid valves and Ⓙ masking plates.
*3 : For GFAB11/15 Item Ⓕ 2G, the compact terminal box (G1/4) is used.
*4 : For GFAB21/25 Item Ⓕ 2G/2HS, the DIN terminal box (Pg9) is used.
*5 : The surge suppressor is built into the coil for Item Ⓕ 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.

Internal structure and parts list

● GFAB actuator



● GFAB manifold

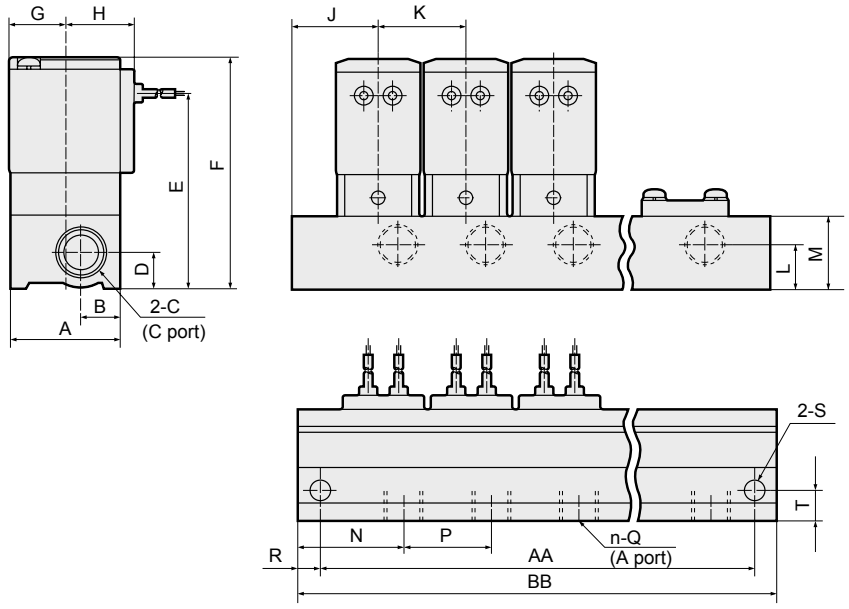


No.	Part name	Material		No.	Part name	Material	
1	Coil assembly	-	-	5	Body	PPS	Polyphenylene sulfide
2	Plunger assembly	SUS, NBR	Stainless steel, nitrile rubber	6	Gasket	NBR	Nitrile rubber
3	O-ring	NBR	Nitrile rubber	7	Sub-plate	A6063	Aluminum
4	Spring	SUS	Stainless steel				

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

Dimensions: Manifold CAD

● Grommet lead wire
GFAB**-*-*-12C



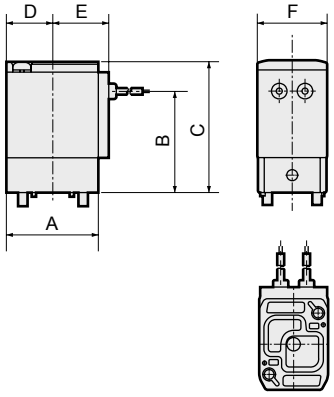
Lead wire length 300 mm

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	ø4.5	6.5
GFAB2	30	12	Rc1/8	8	49	60	15.5	19.5	21	26	8	16	25	26	Rc1/8	5	ø4.5	9
GFAB3	36	13	Rc3/8	12	64	76	18.5	22.5	28	32	15	24	34.5	32	Rc1/4	7	ø6.5	10
GFAB4	43	18	Rc3/8	12	71	85	22.5	26	31	38	15	24	31	38	Rc1/4	7	ø6.5	11.5
GFAB5	50	20	Rc3/8	12	79	95	26	29.5	34	46	12	24	34	46	Rc1/4	7	ø6.5	14

Dimensions: Actuator CAD

● Grommet lead wire
GFAB**-*-0-12C



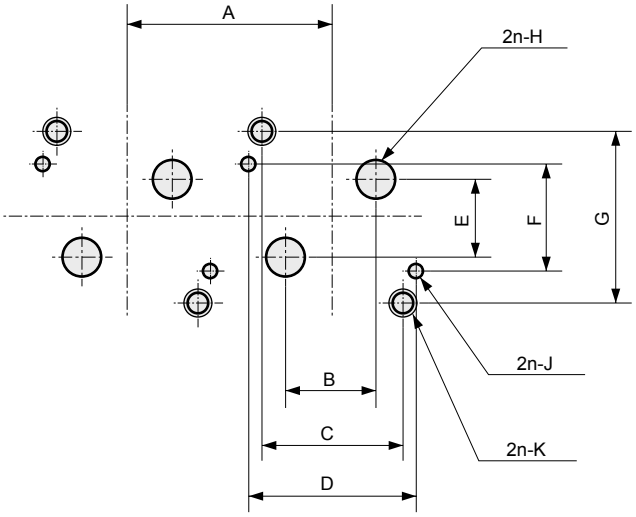
Model No.	A	B	C	D	E	F
GFAB1	25	28.5	38	13	17	18
GFAB2	30	33	44	15.5	19.5	22
GFAB3	36	40	52	18.5	22.5	28
GFAB4	43	47	61	22.5	26	34
GFAB5	50	55	71	26	29.5	40

* Lead wire length 300 mm

Actuator installation dimensions

● GFAB1*/2*/3*

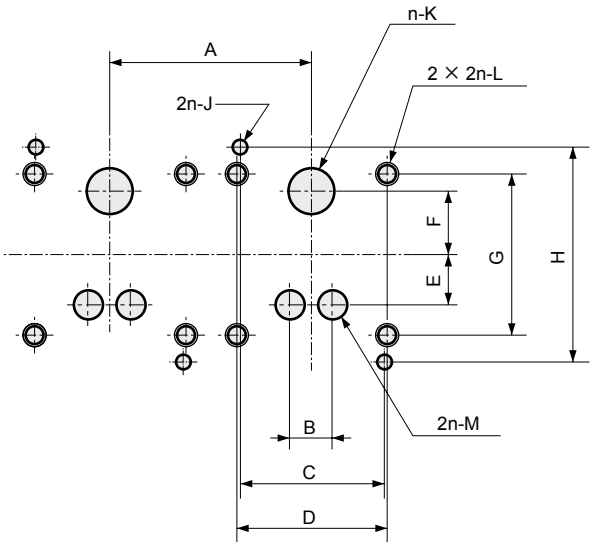
Machining drawing when using 2 actuators.



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	ø3	ø1.6 $^{+0.1}_{0}$ 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	ø3.5	ø1.6 $^{+0.1}_{0}$ 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	ø5.5	ø2.1 $^{+0.1}_{0}$ depth 2.5±0.5	M4 effective thread depth of 6 or more

● GFAB4*/5*

Machining drawing when using 2 actuators.

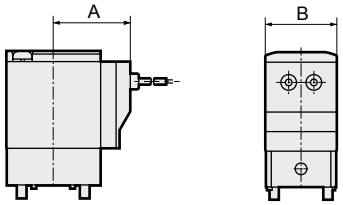


Model No.	A	B	C	D	E	F	G	H	J	K	L	M
GFAB4	38 or more	6±0.2	25±0.1	26±0.1	8.5±0.2	11±0.2	28±0.1	37±0.1	ø2.6 $^{+0.1}_{0}$ depth 2.5±0.5	ø8	M4 effective thread depth 9 or more	ø5
GFAB5	46 or more	8±0.2	30±0.1	30±0.1	11.5±0.2	14.5±0.2	33±0.1	43±0.1	ø2.6 $^{+0.1}_{0}$ depth 2.5±0.5	ø11	M5 effective thread depth 8 or more	ø7

Optional dimensions

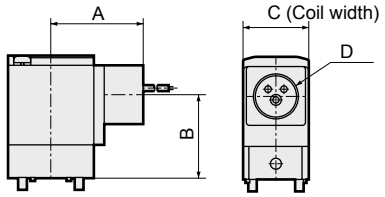
(Refer to the grommet lead wire actuator dimensions on page 61 for common dimensions.)

● Grommet lead wire with surge suppressor
GFAB**-*-*-1 [2CS]



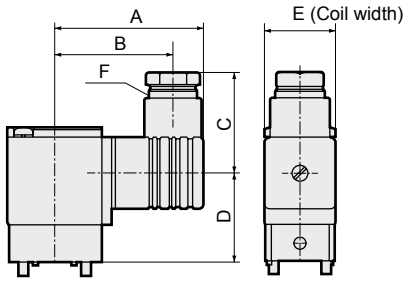
Model No.	A	B
GFAB1	24.5	18
GFAB2	26.5	22
GFAB3	29.5	28
GFAB4	34	34
GFAB5	37.5	40

● Conduit (CTC19 / G1/2)
GFAB**-*-*-1 [2CG] [2CH]



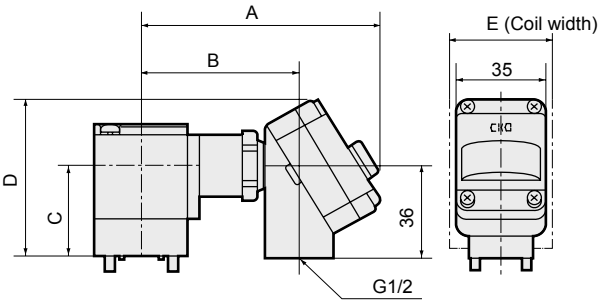
Model No.	A	B	C	D
GFAB3	39	35	28	CTC19 G1/2
GFAB4	43	42.5	34	CTC19 G1/2
GFAB5	46.5	52	40	CTC19 G1/2

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



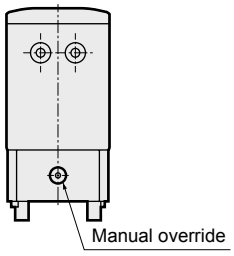
Model No.	A	B	C	D	E	F
GFAB1	36	28.5	22	26.5	18	G1/4
GFAB2	53	44	38	26.5	22	Pg9
GFAB3	58.5	47	39	33.5	28	Pg11
GFAB4	62	50.5	39	40.5	34	Pg11
GFAB5	65.5	54	39	50.5	40	Pg11

● 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**-*-*-** [N]



Position of manual override

● Common supply : Opposite side to port A

● Individual supply : Port A side

Discontinue

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

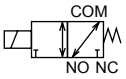
FAG Series

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

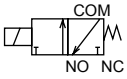
CE Refer to the Ending for details. RoHS CAD

JIS symbol

● Universal



● NC pressurization



Common specifications

Item	FAG
Working fluid	Compressed air
Working pressure differential MPa	0 (≈0 psi, 0 bar) to 1.4 (≈200 psi, 14 bar) (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 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 cm³/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 ≈ 145.0 psi, 1 MPa = 10 bar

Item / Model No.	Port size	Orifice size (mm)	Flow characteristics C[dm³/(s·bar)]	Flow characteristics b	Max. working pressure differential MPa	Max. working pressure MPa	Rated voltage	Apparent power (VA) When holding 50 Hz	Apparent power (VA) When holding 60 Hz	Apparent power (VA) When starting 50 Hz	Apparent power (VA) When starting 60 Hz	Power consumption (W) AC 50 Hz/60 Hz	Power consumption (W) DC	Weight (kg)
● Universal														
FAG11- M5 - Y	M5	0.8	0.08	0.61	0.7	1.0	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	3.4	2.6	5	4.6	2.3/1.6	3	0.09
FAG11- M5 - 0	M5	1.5	0.28	0.40	0.2	1.0	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	3.4	2.6	5	4.6	2.3/1.6	3	0.09
FAG21 - 6 - Z	Rc1/8	1	0.13	0.58	0.7	1.0	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	5.3	3.7	10	9	2.7/2	4	0.14
FAG21 - 6 - 1	Rc1/8	2	0.52	0.54	0.15	1.0	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	5.3	3.7	10	9	2.7/2	4	0.14
FAG31 - 6 8 - 0	Rc1/8 Rc1/4	1.5	0.32	0.58	0.7	1.4	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	7.5	5.5	20	17	4/3.4	6.5	0.23
FAG31 - 6 8 - 1	Rc1/8 Rc1/4	2	0.55	0.48	0.4	1.4	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	7.5	5.5	20	17	4/3.4	6.5	0.23
FAG31 - 6 8 - 4	Rc1/8 Rc1/4	3	1.2	0.57	0.2	1.4	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	7.5	5.5	20	17	4/3.4	6.5	0.23
FAG41 - 8 10 - 1	Rc1/4 Rc3/8	2	0.55	0.48	0.7	1.4	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	15	11	40	35	7.5/6.5	8	0.43
FAG41 - 8 10 - 4	Rc1/4 Rc3/8	3	1.2	0.57	0.3	1.4	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	15	11	40	35	7.5/6.5	8	0.43
FAG41 - 8 10 - 8	Rc1/4 Rc3/8	4	2.1	0.48	0.15	1.4	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	15	11	40	35	7.5/6.5	8	0.43
FAG51 - 8 10 - 1	Rc1/4 Rc3/8	2	0.55	0.48	1.2(0.6)	1.4	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	20	16	55	45	11/9.5	11.5	0.63
FAG51 - 8 10 - 4	Rc1/4 Rc3/8	3	1.2	0.57	0.6(0.3)	1.4	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	20	16	55	45	11/9.5	11.5	0.63
FAG51 - 8 10 - 8	Rc1/4 Rc3/8	4	2.1	0.48	0.3(0.15)	1.4	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	20	16	55	45	11/9.5	11.5	0.63
● NC pressurization														
FAG33 - 6 8 - 0	Rc1/8 Rc1/4	1.5	0.32	0.58	1.0	1.4	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	7.5	5.5	20	17	4/3.4	6.5	0.23
FAG33 - 6 8 - 1	Rc1/8 Rc1/4	2	0.55	0.48	0.7	1.4	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	7.5	5.5	20	17	4/3.4	6.5	0.23
FAG33 - 6 8 - 4	Rc1/8 Rc1/4	3	1.2	0.57	0.3	1.4	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	7.5	5.5	20	17	4/3.4	6.5	0.23
FAG43 - 8 10 - 1	Rc1/4 Rc3/8	2	0.55	0.48	1.2	1.4	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	15	11	40	35	7.5/6	8	0.43
FAG43 - 8 10 - 4	Rc1/4 Rc3/8	3	1.2	0.57	0.6	1.4	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	15	11	40	35	7.5/6	8	0.43
FAG43 - 8 10 - 8	Rc1/4 Rc3/8	4	2.1	0.48	0.3	1.4	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	15	11	40	35	7.5/6	8	0.43

*1 : The voltage fluctuation range must be within ±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 ≈ 5.0 x 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

F A G 1 1 - M5 - Y - 1 2C A B - 1

- F: Working fluid (Compressed air)
- G: No. of ports (3-port valve)
- 1: Series size
- 1: Actuation
- M5: Port size
- Y: Orifice size
- 1: Body/sealant combination
- 2C: Coil option *1 *2 *3
- A: Manual override
- B: Other options
- 1: Voltage *4

Code	Description	FAG11	FAG21	FAG31/33	FAG41/43	FAG51
Ⓐ Series size						
1	18 mm	●				
2	22 mm		●			
3	28 mm			●		
4	34 mm				●	
5	40 mm					●
Ⓑ Actuation						
1	Universal	●	●	●	●	●
3	NC pressurization			●	●	
Ⓒ Port size						
M5	M5	●				
6	Rc1/8		●	●		
8	Rc1/4			●	●	●
10	Rc3/8				●	●
Ⓓ Orifice size						
Y	ø0.8	●				
Z	ø1		●			
0	ø1.5	●		●		
1	ø2		●	●	●	●
4	ø3			●	●	●
8	ø4				●	●
Ⓔ Body/sealant combination						
	Body / Seal					
1	Aluminum / NBR	●	●	●	●	●
Ⓕ Coil option						
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)			●	●	●
Ⓖ Manual override						
Blank	Std. None	●	●	●	●	●
A	Option Manual locking	●	●	●	●	●
N	Option Manual non-locking			●	●	●
Ⓗ Other options						
Blank	Std. None	●	●	●	●	●
B	Option Mounting plate	●	●	●	●	●
Ⓘ Voltage						
1	100 VAC 50/60 Hz	●	●	●	●	●
2	200 VAC 50/60 Hz	●	●	●	●	●
3	24 VDC	●	●	●	●	●
4	12 VDC	●	●	●	●	●
Specify the desired voltage if it is not listed above.						

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

[Example of model No.]

FAG11-M5-Y-12CAB-1

Model : FAG

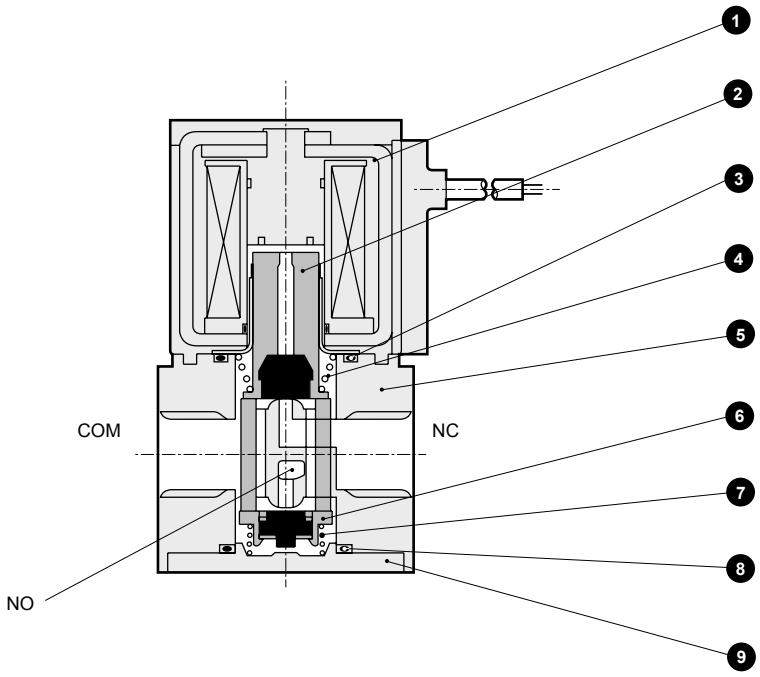
- Ⓐ Series size : 18 mm
- Ⓑ Actuation : Universal
- Ⓒ Port size : M5
- Ⓓ Orifice size : ø0.8
- Ⓔ Body/sealant combination : Body - aluminum, sealant - NBR
- Ⓕ Coil option : Grommet lead wire
- Ⓖ Manual override : Manual locking
- Ⓗ Other options : Mounting plate
- Ⓘ Voltage : 100 VAC 50/60 Hz

⚠ Precautions for model No. selection

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

Internal structure and parts list

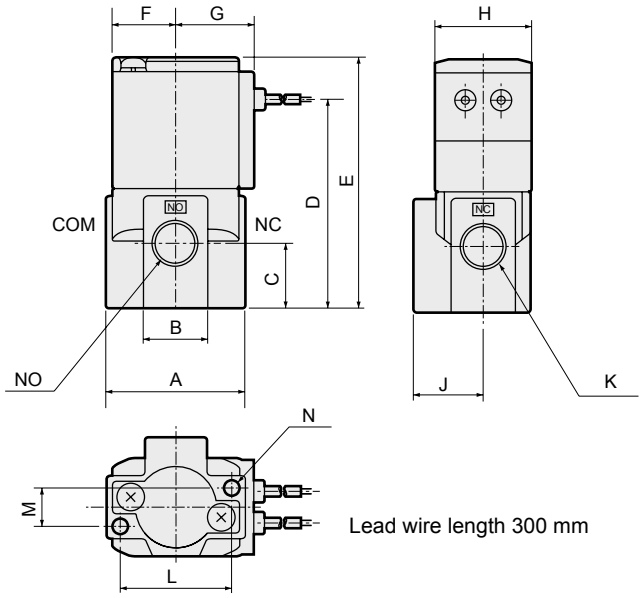
● FAG*1/*3 Series



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 CAD

● Grommet lead wire
FAG**-*-*-12C



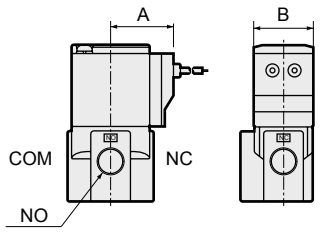
Lead wire length 300 mm

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 CAD

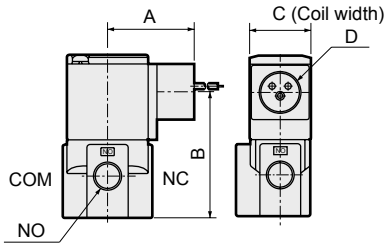
(Refer to the dimensions of grommet lead wire on page 66 for common dimensions.)

● 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

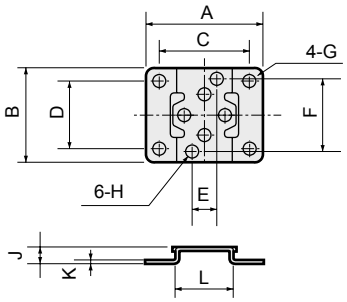
● Conduit (CTC19 / G1/2)
FAG**-*-*-1 2CG 2CH



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

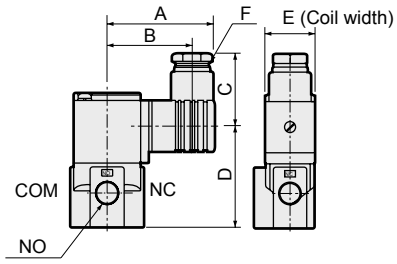
● Mounting plate
FAG**-*-*-1**B

Material : Steel
Zinc plated



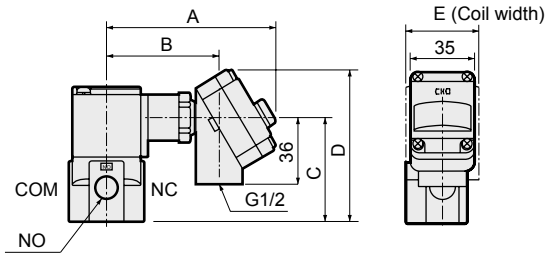
Model No.	A	B	C	D	E	F	G	H	J	K	L
FAG1	40	30	30	21	7	21	ø5	ø4.5	6	1.2	19
FAG2	40	34	30	25	8	25	ø5	ø4.5	6	1.2	20
FAG3	52	42	40	30	11	32	ø6	ø5.5	7	1.6	25
FAG4	56	48	44	36	15	35	ø6	ø5.5	7	1.6	30
FAG5	62	50	50	38	15	35	ø6	ø5.5	7	1.6	36

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



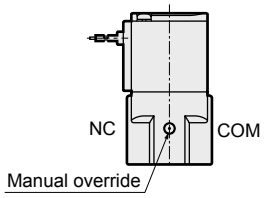
Model No.	A	B	C	D	E	F
FAG1	36	28.5	22	40	18	G1/4
FAG2	53	44	38	44.5	22	Pg9
FAG3	58.5	47	39	54	28	Pg11
FAG4	62	50.5	39	68	34	Pg11
FAG5	65.5	54	39	76.5	40	Pg11

● 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.

Discontinue

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

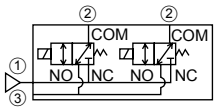
GFAG Series

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

CE Refer to the Ending for details. RoHS CAD

JIS symbol

- Common supply/common exhaust



Common specifications

Item	GFAG
Working fluid	Compressed air
Working pressure differential MPa	0 (≈0 psi, 0 bar) to 1.2 (≈170 psi, 12 bar) (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^3/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 / Model No.		Port size 2-port (Ind)	Port size 1. 3-port (common)	Orifice size (mm)	Flow characteristics C[dm^3/(s·bar)]	Flow characteristics b	Max. working pressure differential MPa	Max. working pressure MPa	Rated voltage	Apparent power (VA) When holding 50 Hz	Apparent power (VA) When holding 60 Hz	Apparent power (VA) When starting 50 Hz	Apparent power (VA) When starting 60 Hz	Power consumption (W) AC 50/60 Hz	Power consumption (W) DC
GFAG11	-Y	M5	Rc1/8	0.8	0.08	0.55	0.7	1.0	100 VAC 50/60 Hz 200 VAC 50/60 Hz 24 VDC 12 VDC	3.4	2.6	5	4.6	2.3/1.6	3
	-0			1.5	0.25	0.29	0.2								
GFAG21	-Z	Rc1/8	Rc1/8	1	0.12	0.44	0.7			5.3	3.7	10	9	2.7/2	4
	-1			2	0.42	0.19	0.15								
GFAG31	-0	Rc1/4	Rc1/4	1.5	0.28	0.46	0.7			7.5	5.5	20	17	4/3.4	6.5
	-1			2	0.49	0.36	0.4								
	-4			3	0.90	0.20	0.2								
GFAG41	-1	Rc1/4	Rc1/4	2	0.50	0.31	0.7	1.2		15	11	40	35	7.5/6.5	8
	-4			3	1.1	0.20	0.3								
	-8			4	1.6	0.14	0.15								
GFAG51	-1	Rc1/4	Rc1/4	2	0.50	0.31	1.2(0.6)			20	16	55	45	11 /9.5	11.5
	-4			3	1.1	0.20	0.6(0.3)								
	-8			4	1.6	0.14	0.3(0.15)								

*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 ≈ 5.0 x 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
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)

Ⓐ Series size

Ⓑ Circuit configuration

Ⓒ Orifice size

Ⓓ Manifold station No. *1 *2

Ⓔ Body/sealant combination

Ⓕ Coil option *3 *4 *5

Ⓖ Manual operation

Ⓗ Voltage *6

Ⓘ No. of solenoid valves *7

Ⓙ Masking plate quantity

Code	Description	GFAG11	GFAG21	GFAG31	GFAG41	GFAG51
Ⓐ Series size						
1	18 mm	●				
2	22 mm		●			
3	28 mm			●		
4	34 mm				●	
5	40 mm					●
Ⓑ Circuit configuration						
1	Common supply/common exhaust	●	●	●	●	●
Ⓒ Orifice size						
Y	ø0.8	●				
Z	ø1		●			
0	ø1.5	●		●		
1	ø2		●	●	●	●
4	ø3			●	●	●
8	ø4				●	●
Ⓓ Manifold station No.						
2 to 10	2 stations to 10 stations	●	●	●	●	●
O	Actuator only	●	●	●	●	●
X	With masking plate	●	●	●	●	●
Ⓔ Body/sealant combination						
	Body / Seal					
1	PPS / NBR	●	●	●	●	●
Ⓕ Coil option						
2C	Std. Grommet lead wire	●	●	●	●	●
2CS	Option: Grommet lead wire with surge suppressor	●	●	●	●	●
2G	Option: With DIN terminal box (Pg11)	●	●	●	●	●
2HS	Option: DIN terminal box with lamp/ surge suppressor (Pg11)		●	●	●	●
2CG	Option: Conduit (CTC19)			●	●	●
2CH	Option: Conduit (G1/2)			●	●	●
3T	Option: With T type terminal box (G1/2)				●	●
3RS	Option: T type terminal box with lamp/ surge suppressor (G1/2)				●	●
Ⓖ Manual operation						
Blank	Std. None	●	●	●	●	●
N	Option: Manual non-locking	●	●	●	●	●
Ⓗ Voltage						
1	100 VAC 50/60 Hz	●	●	●	●	●
2	200 VAC 50/60 Hz	●	●	●	●	●
3	24 VDC	●	●	●	●	●
4	12 VDC	●	●	●	●	●
Specify the desired voltage if it is not listed above.						
Ⓘ No. of solenoid valves						
Blank	No masking plate	●	●	●	●	●
1 to 9	1 solenoid valve to 9 solenoid valves	●	●	●	●	●
Ⓙ Masking plate quantity						
Blank	No masking plate	●	●	●	●	●
1 to 9	1 masking plate to 9 masking plates	●	●	●	●	●

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

[Example of model No.]

GFAG21-Z-5-12CN-1

Model : GFAG

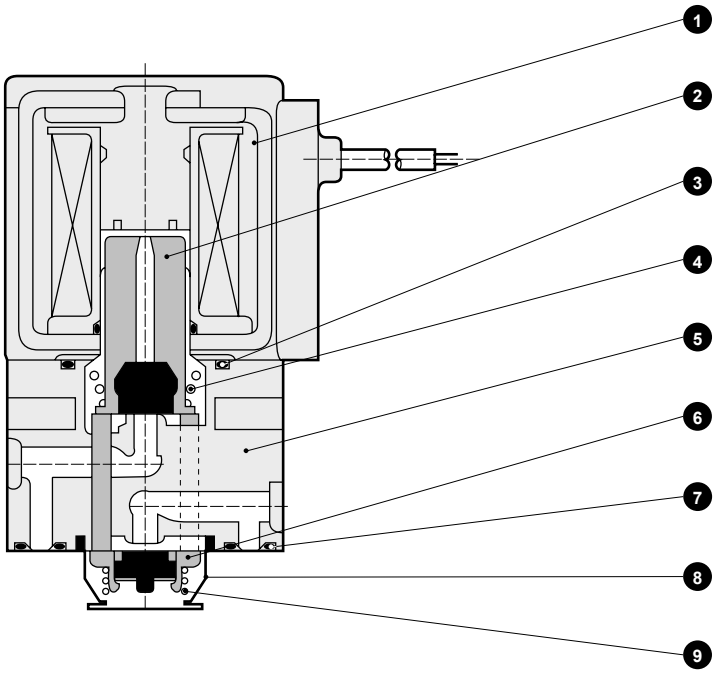
Ⓐ Series size : 22 mm
Ⓑ Circuit configuration : Common supply/common exhaust
Ⓒ Orifice size : ø1
Ⓓ Manifold station No. : 5 stations
Ⓔ Body/sealant combination : Body - PPS, sealant - NBR
Ⓕ Coil option : Grommet lead wire
Ⓖ Manual override : Manual non-locking
Ⓗ Voltage : 100 VAC50/60 Hz
Ⓘ Ⓙ : No masking plate

⚠ Precautions for model No. selection

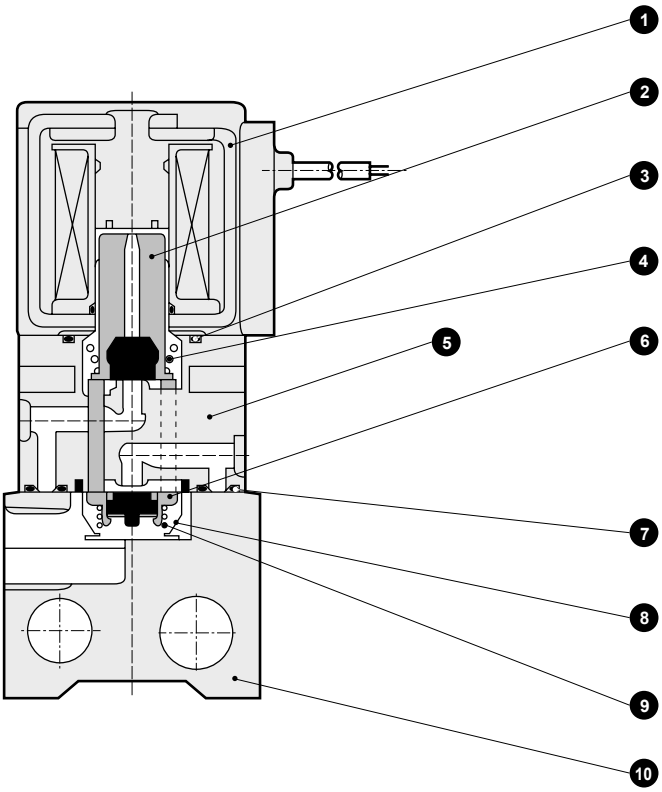
*1 : Select a desired manifold station No. from 2 to 10.
*2 : For the type with masking plate, designate Item Ⓓ as X, then designate the quantities of Ⓘ solenoid valves and Ⓙ masking plates.
*3 : For GFAG11 Item Ⓕ 2G, the compact terminal box (G1/4) is used.
*4 : For GFAG21 Ⓕ 2G/2HS, the DIN terminal box (Pg9) is used.
*5 : The surge suppressor is built into the coil for Item Ⓕ 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.

Internal structure and parts list

● GFAG actuator



● GFAG manifold

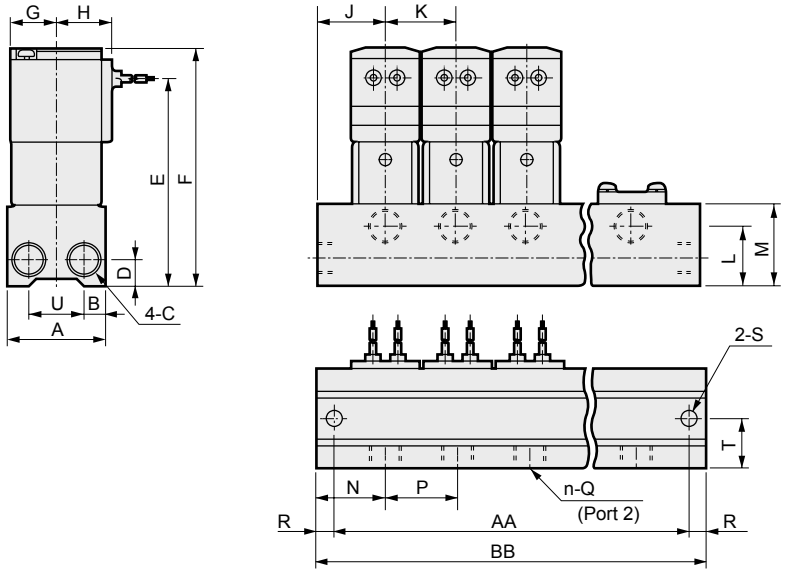


No.	Part name	Material		No.	Part name	Material	
1	Coil assembly	-	-	6	Valving element guide assembly	PPS, SUS, NBR	Polyphenylene sulfide, stainless steel, nitrile rubber
2	Plunger assembly	SUS, NBR	Stainless steel, nitrile rubber	7	Gasket	NBR	Nitrile rubber
3	O-ring	NBR	Nitrile rubber	8	Holder	SUS	Stainless steel
4	Spring	SUS	Stainless steel	9	Spring	SUS	Stainless steel
5	Body	PPS	Polyphenylene sulfide	10	Sub-plate	A6063	Aluminum

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

Dimensions: Manifold

● Grommet lead wire
GFAG*1-*-*-12C



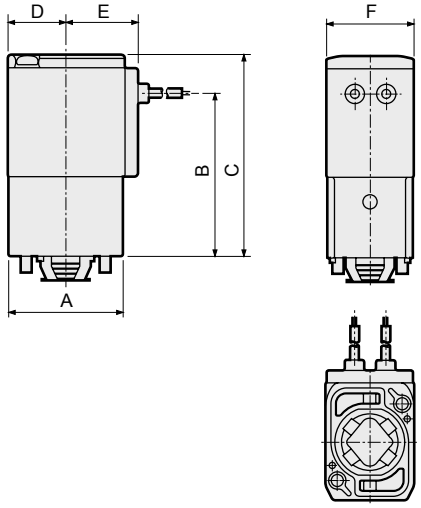
Lead wire length 300 mm

Model No.	Station No. / 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



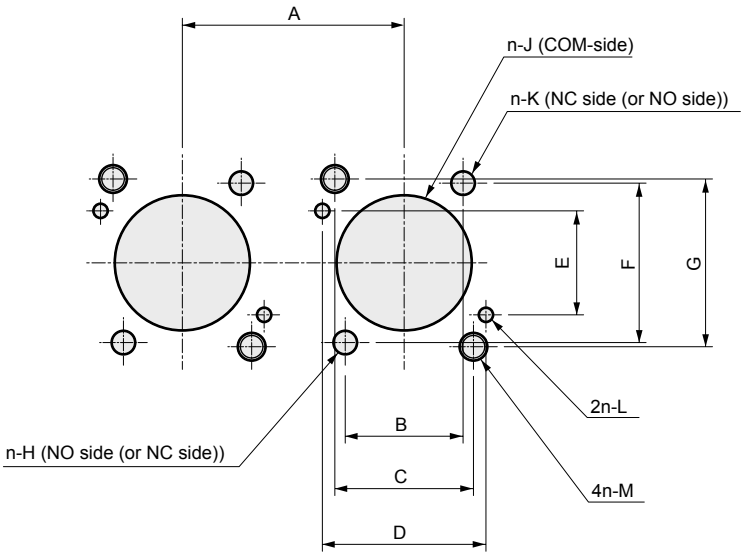
Model No.	A	B	C	D	E	F
GFAG1	25	33.5	43	13	17	18
GFAG2	30	43	54	15.5	19.5	22
GFAG3	36	51	63	18.5	22.5	28
GFAG4	43	60.5	74.5	22.5	26	34
GFAG5	50	67	83	26	29.5	40

* Lead wire length 300 mm

Actuator installation dimensions

● GFAG1*/2*/3*

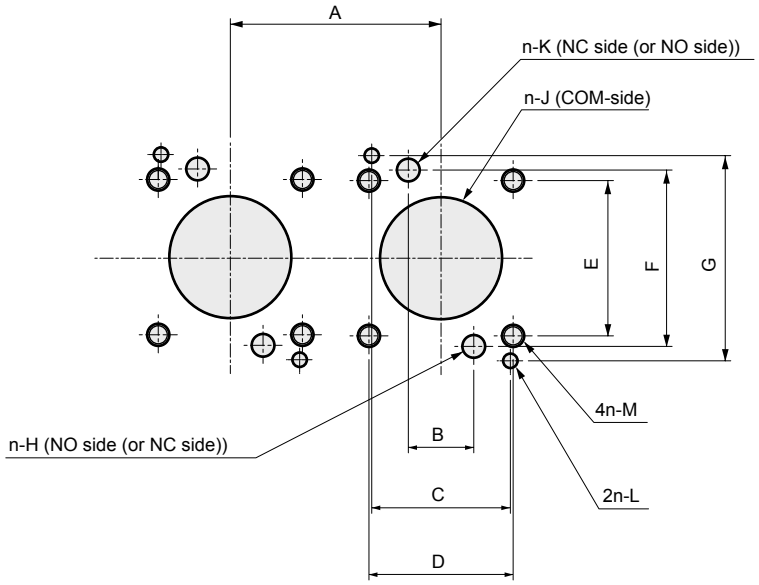
Machining drawing when using 2 actuators.



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 $^{+0.1}_{0}$	ø12 ±0.1 depth 7 $^{+0.2}_{0}$	ø2 $^{+0.1}_{0}$	ø1.6 $^{+0.1}_{0}$ 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 $^{+0.1}_{0}$	ø14.5 ±0.1 depth 6.7 $^{+0.2}_{0}$	ø2.5 $^{+0.1}_{0}$	ø1.6 $^{+0.1}_{0}$ 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 $^{+0.1}_{0}$	ø19.5 ±0.1 depth 7.6 $^{+0.2}_{0}$	ø3.4 $^{+0.1}_{0}$	ø2.1 $^{+0.1}_{0}$ depth 2.5±0.5	M4 effective depth 6

● GFAG4*/5*

Machining drawing when using 2 actuators.

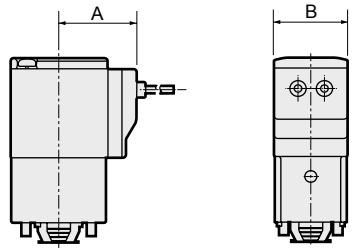


Model No.	A	B	C	D	E	F	G	H	J	K	L	M
GFAG4	38 or more	11.8±0.15	25±0.1	26±0.1	28±0.1	31.8±0.15	37±0.1	ø4.1 $^{+0.1}_{0}$	ø22 ±0.15 depth 11.2 $^{+0.2}_{0}$	ø4.1	ø2.6 depth 2.5±0.5 $^{+0.1}_{0}$	M4 effective depth 12
GFAG5	46 or more	11.8±0.15	30±0.1	30±0.1	33±0.1	31.8±0.15	43±0.1	ø4.1 $^{+0.1}_{0}$	ø22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

Optional dimensions CAD

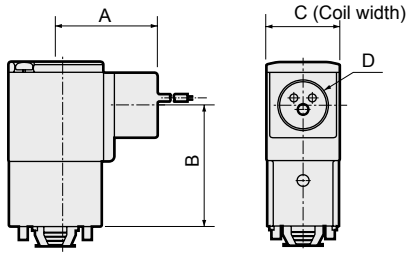
(Refer to the grommet lead wire actuator dimensions on page 71 for common dimensions.)

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



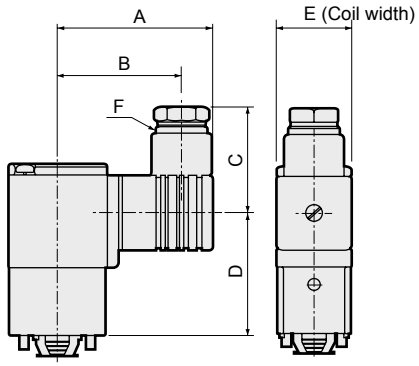
Model No.	A	B
GFAG1	24.5	18
GFAG2	26.5	22
GFAG3	29.5	28
GFAG4	34	34
GFAG5	37.5	40

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



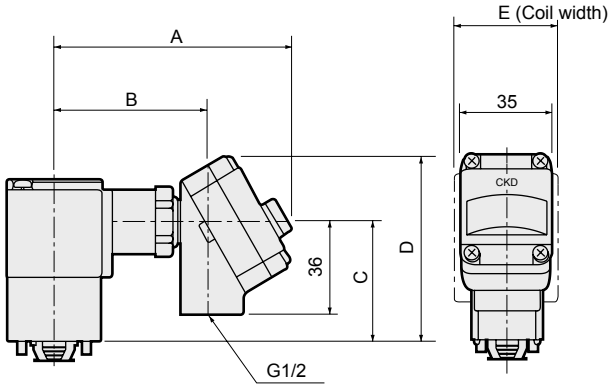
Model No.	A	B	C	D
GFAG3	39	46	28	CTC19 / G1/2
GFAG4	43	56	34	CTC19 / G1/2
GFAG5	46.5	64	40	CTC19 / G1/2

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



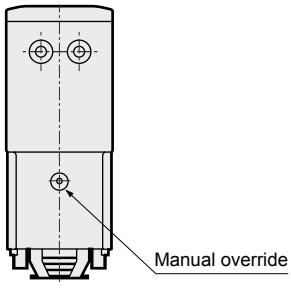
Model No.	A	B	C	D	E	F
GFAG1	36	28.5	22	31.5	18	G1/4
GFAG2	53	44	38	36.5	22	Pg9
GFAG3	58.5	47	39	44.5	28	Pg11
GFAG4	62	50.5	39	54	34	Pg11
GFAG5	65.5	54	39	62.5	40	Pg11

● 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-*-*-** N



Position of manual override:
Opposite side to COM port