

2 port direct acting solenoid valve : Open when energized

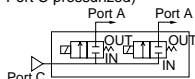
GENERAL PURPOSE VALVE GAB312-GAB352-GAB412-GA5B452 SERIES Manifold, actuator

- Direct acting poppet structure
- Common supply (Port C)/individual supply (Port A)

JIS symbol

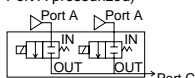
• GAB312/412

(Common supply/
Port C pressurized)



• GAB352/452

(Individual supply/
Port A pressurized)



Common specifications

Descriptions	Standard specifications		Optional specifications	
Working fluid	Air, gas, low vacu(1.33X102Pa), water, kero, oil (50mm2/s or less)		Hot water	Steam
Working pressure diff. range MPa	0 to 5 (refer to max. working pressure differential on individual specifications.)			
Max. working pressure MPa	5			1
Withstanding pressure (water) MPa	10			
Fluid temperature °C	-10 to 60 (no freezing)		-10 to 90	-10 to 184
Ambient temperature °C	-20 to 60		-20 to 100	
Insulation class	Class B		Class H	
Atmosphere	No corrosive gas and flammable place			
Valve structure	Direct acting poppet structure			
Valve seat leakage (JIS leakage standard) cm³/min	0			300 or less (compressed air and PTFE sealing)
Installation attitude	Free			

- PTFE sealing when steam.

General purpose valve

Individual specifications

Model	Port size	Orifice (mm)	Cv flow factor	Effec. Sec. Area (mm²)	Max. working pressure diff. (MPa)								Rated voltage	Apparent power (VA)				Power consumption (W)	
					Air		Water, hot water, kerosene		Oil (50mm²/s)		Steam			Holding		Starting		AC 50/60Hz	DC
					AC	DC	AC	DC	AC	DC	AC	DC		50Hz	60Hz	50Hz	60Hz		
					50Hz	60Hz	50Hz	60Hz	50Hz	60Hz	50Hz	60Hz		50Hz	60Hz	50Hz	60Hz		
GAB312/352-1	-	1.5	0.10	1.8	2.5	2.5	2.5	2.5	2.5	2.5	1.0	AC100V 50/60Hz	12	10	17	14	5.2/3.8	11 (8.1)	
GAB312/352-2		2.0	0.15	2.7	1.5	1.5	1.5	1.5	1.5	1.5	1.0	AC110V 60Hz							
GAB312/352-3		3.0	0.31	6.2	1.0	0.5	0.7	0.5	0.5	0.5	0.7								
GAB312/352-4		3.5	0.40	7.5	0.6	0.4	0.5	0.4	0.4	0.4	0.5								
GAB312/352-5		4.0	0.48	9.1	0.4	0.25	0.3	0.25	0.25	0.25	0.3								
GAB312/352-6		5.0	0.62	12.3	0.2	0.15	0.15	0.15	0.15	0.15	0.15								
GAB412/452-1	-	1.5	0.10	1.8	5.0	4.0	4.5	4.0	4.0	4.0	1.0		AC200V 50/60Hz	18	15	29	24	6.7/5.7	11 (10.4)
GAB412/452-2		2.0	0.15	2.7	3.0	2.5	2.7	2.5	2.5	2.5	1.0	AC220V 60Hz							
GAB412/452-3		3.0	0.31	6.2	1.5	0.9	1.3	0.9	0.9	0.9	1.0								
GAB412/452-4		3.5	0.40	7.5	1.2	0.6	0.9	0.6	0.6	0.6	0.9								
GAB412/452-5		4.0	0.48	9.1	1.0	0.5	0.7	0.5	0.5	0.5	0.7								
GAB412/452-6		5.0	0.62	12.3	0.6	0.25	0.4	0.25	0.25	0.25	0.4								
GAB412/452-7		7.0	0.82	15.6	0.25	0.1	0.2	0.1	0.15	0.1	0.2								

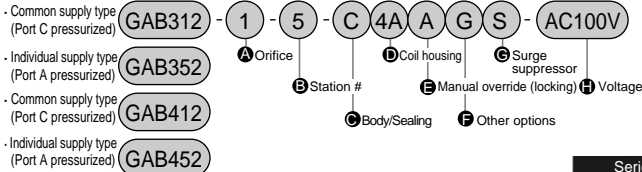
- 1 : Models above shows basic orifice. See "How to order" about other combinations (for steam etc.).
- 2 : Refer to DC column for maximum working pressure differential of coil with diode.
- 3 : Variation of rated voltage should be within ±10%.
- 4 : () shows the value of DIN terminal box and DC voltage specifications.



CAD DATA AVAILABLE.

GAB312-352-412-452 Series

How to order



Example 1 of model number

GAB312-1-3-AC200V

Series : GAB312
(common supply/Port C pressurized)

- ① Orifice : 1.5 mm
- ② Station # : 3 station
- ③ Body/sealing : Body - brass, Seal - nitrile rubber
- ④ Coil housing : Grommet lead wire
- ⑤ to ⑧ : Blank
- ⑨ Rated voltage : AC 200V 50/60Hz, AC 220V 60Hz

Example 2 of model number

GAB352-5-2-000AS-AC200V

Series : GAB352(individual supply/Port A pressurized)

- ① Orifice : 4 mm
- ② Station # : 2 station
- ③ Body/sealing : Body - brass, Seal - nitrile rubber
- ④ Coil housing : Grommet lead wire
- ⑤ Manual override (locking) : Selected
- ⑥ Other options : Blank
- ⑦ Surge suppressor : selected
- ⑧ Rated voltage : AC 200V 50/60Hz, AC 220V 60Hz
- ⑨ 1 : Circles on "A" to "C" and symbols on "D" to "H" show available combinations.
- ⑩ 2 : G and NPT are available for port thread.
- ⑪ 3 : Consult with CKD about more than 11 station manifold.
- ⑫ 4 : See P.45 to 50 in introduction to check compatibility.
- ⑬ 5 : Blank is standard, however "D", "E", "F" or "G" selected, complete "C" with 0.
- ⑭ 6 : Tropic care treatment (rust proof coating) is available.
- ⑮ 7 : Discrete masking plate and sub-plate are available.

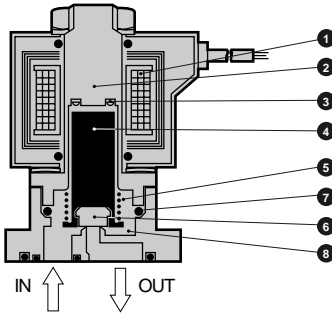
Symbol			Description		Series	
A	Orifice	1	1.5mm		●	●
		2	2mm		●	●
		3	3mm		●	●
		4	3.5mm		●	●
		5	4mm		●	●
		6	5mm		●	●
		7	7mm			●
B	Station	2 to 10	2 station to 10 station		●	●
		0	Actuator only		●	●
C	Body/Sealing	Body		Seal	Treat	Remarks
		Blank	PT	Nitrile rubber		Air, gas, low vacuum, water, kerosene
		B	Brass	Fluoro rubber	-	Heat proof
		C		PTFE		Steam
		P		Ethylene propylene rubber	Oil-prohibit	Hot water, alcohol
		D	Option	Nitrile rubber		Air, gas, low vacuum, water, kerosene
		E		Fluoro rubber	-	Heat proof
		F		PTFE		Solvent
		R	Option	Ethylene propylene rubber	Oil-prohibit	
		H		Nitrile rubber		
		J		Fluoro rubber		
		K	Option	PTFE		
		L		Nitrile rubber	Oil-prohibit	
		M		Fluoro rubber		
		N	Stainless steel	PTFE		

D Coil housing			E Manual operation (Locking)			F Other options			G Surge suppressor		H Rated voltage	
Descriptions			Cable gland (Marine cable gland)			Conduit (Conduit pipe)			Surge suppressor		Descriptions	
Blank			A-15a			CTC 19			G1/2			
Blank	PT	Grommet lead wire									AC 100V, AC 200V	
2E		DIN terminal box (G1/2)									AC 100V, AC 200V	
2G		DIN terminal box (Pg11)									DC12V, DC24V, DC48V, DC100V	
2H		DIN terminal box + small light (Pg11)									AC 100V, AC 200V, DC24V	
3A		Open frame Lead wire							G		H	
3K		Square terminal box (G1/2)									AC 100V, AC 200V	
3H		Square terminal box + light (G1/2)									DC12V, DC24V, DC48V, DC100V	
4A		Open frame Lead wire							G		H	
4K		Square terminal box (G1/2)									AC 100V, AC 200V	
4H		(Class H coil) Square terminal box + light (G1/2)										
5A		Open frame Lead wire							G		H	
5K		Square terminal box (G1/2)									AC 100V, AC 200V	
5H		(Diode) Square terminal box + light (G1/2)										

- ⑧ : See P.120 about coil selection.
- ⑨ : Standard coil housing is blank, however "E", "F" or "G" selected, complete "D" with 00.
- ⑩ : 5A, 5K and 5H are diode rectification coils.
- ⑪ : Water proof is available for square terminal box coil (except Class H).
- ⑫ : When using with steam, indicate "C" and "D" as C4A, C4K or C4H.
- ⑬ : Steam proof DC coil is available for GAB4 * 2.
- ⑭ : Blank when no item selected from "E", "F" and "G".
- ⑮ : When "C" is C, F, K or N, manual override("E" A) isn't available.
- ⑯ : Select one among D, E, F, G, H for "F".
- ⑰ : When lead wire coil, surge suppressor is attached, while terminal box coil, mounted in the terminal box.
- ⑱ : Surge suppressor is incorporated in coil with diode and "D" 2H DC24V coil as standard.
- ⑲ : AC100V coil is compatible with AC100V50/60Hz, AC110V60Hz, and AC200V coils compatible with AC200V50/60Hz, AC220V60Hz. Use "D" 5A, 5K, 5H coils only for AC100V50/60Hz, AC200V50/60Hz.
- ⑳ : Consult with CKD about other than above voltage.
- ㉑ : When lead wire length exceeding standard 300mm, custom length is available per 500mm increment.

Internal structure and main parts materials

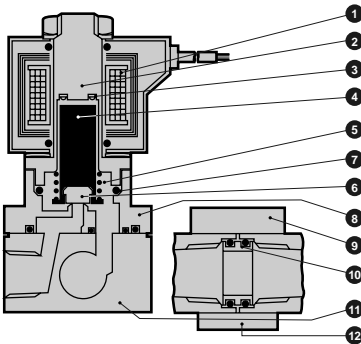
▪ GAB312/GAB352/GAB412/GAB452 actuator



No.	Parts name	Material
1	Coil	Class B mold (Class H taped)
2	Core assembly	SUS405/403/316L Stainless steel
3	Shading coil	Cu (Ag when SUS body) Copper (silver when stainless steel body)
4	Plunger	SUS405 Stainless steel
5	Spring	SUS304 Stainless steel
6	Seal	NBR(FKM/EPDM/PTFE) NBR : Nitrile FKM : Fluoro rubber
7	O ring	EPDM : Ethylene propylene (ASS68/019) PTFE : Tetrafluoroethylene
8	Stuffing	C3771(SCS13) Brass (stainless steel)

() shows options.

▪ GAB312/GAB352/GAB412/GAB452 manifold



No.	Parts name	Material
1	Coil	Class B mold (Class H taped)
2	Core assembly	SUS405/403/316L Stainless steel
3	Shading coil	Cu (Ag when SUS body) Copper (silver when stainless steel body)
4	Plunger	SUS405 Stainless steel
5	Spring	SUS304 Stainless steel
6	Seal	NBR(FKM/EPDM/PTFE) NBR : Nitrile FKM : Fluoro rubber
7	O ring	EPDM : Ethylene propylene (ASS68/019) PTFE : Tetrafluoroethylene
8	Stuffing	C3771(SCS13) Brass (stainless steel)
9	Holder	SPCC Steel
10	Connector	C3604(SUS304) Brass (stainless steel)
11	Sub-plate	C3604(SUS303) Brass (stainless steel)
12	Connecting plate	SPCC Steel

() shows options.

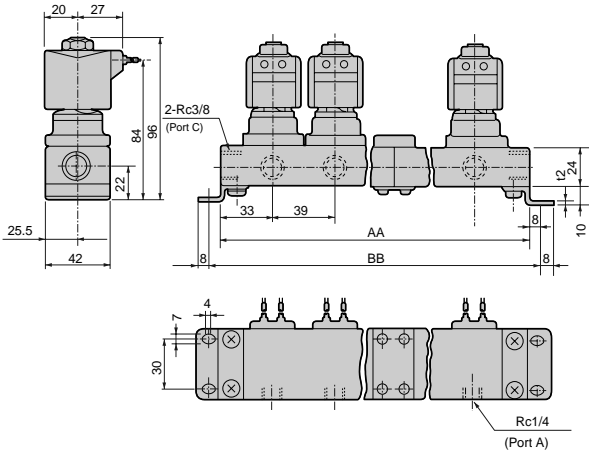
GAB312-352-412-452 Series

GAB312/352 series dimensions

- Manifold (grommet lead wire)
GAB312/352-1 to 6-2 to 10



(File name : Page 228 to 232 or Ending 19 to 23)



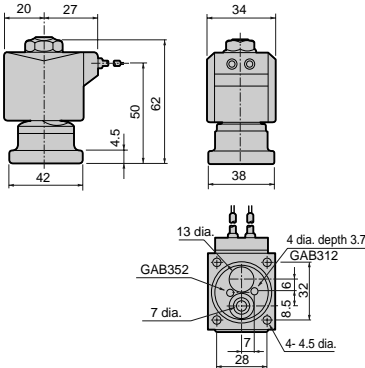
Station #	AA	BB	Manifold structure	Station #	AA	BB	Manifold structure
2	106	122	2 station X 1	7	329	345	5 station + 2 station
3	145	161	3 station X 1	8	368	384	5 station + 3 station
4	212	228	2 station X 2	9	435	451	3 station X 3
5	223	239	5 station X 1	10	446	462	5 station X 2
6	290	306	3 station X 2	Consult with CKD about more than 11 station.			

-1: Manifold structured by basic combination of 2, 4 and 5 station.

- Actuator (grommet lead wire)
GAB312/352-1 to 6-0



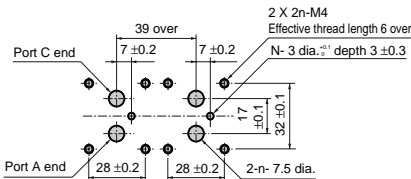
(File name : Page 228 to 232 or Ending 19 to 23)



- How to mount actuator



(File name : Page 228 to 232 or Ending 19 to 23)



GAB312/352 series optional dimensions

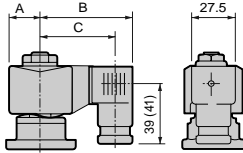
* DIN terminal box

GAB312/352-1 to 6-0 to 10- *

2E
2G
2H



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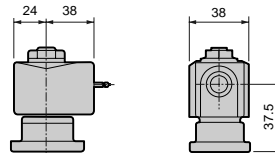
* Open frame lead wire type

GAB312/352-1 to 6-0 to 10- *

3A
4A
5A



(File name : Page 228 to 232 or Ending 19 to 23)



Dimensions in () show value of G1/2

Voltage	A	B	C
AC	20	62	50.5(50)
DC	21	63.5	52(51.5)

* Open frame + terminal box

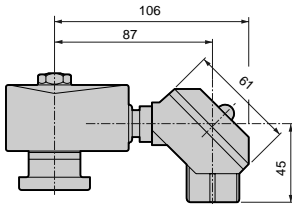
GAB312/352-1 to 6-0 to 10- *

3
4
5

K
H



(File name : Page 228 to 232 or Ending 19 to 23)

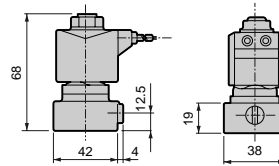


* Manual override(locking)

GAB312/352-1 to 6-0 to 10- * * * A



(File name : Page 228 to 232 or Ending 19 to 23)



GAB312-352-412-452 Series

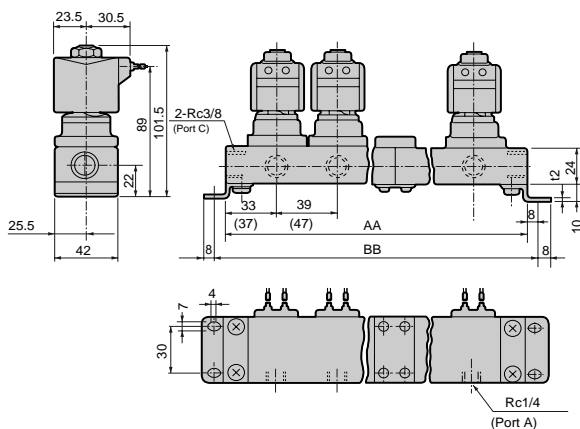
GAB412/452 series dimensions

- Manifold (grommet lead wire)

GAB412/452-1 to 7-2 to 10



(File name : Page 228 to 232 or Ending 19 to 23)



Station #	AA	BB	Manifold structure	Station #	AA	BB	Manifold structure
2	106 (122)	122 (138)	2 station X 1	7	329 (385)	345 (401)	5 station + 2 station
3	145 (169)	161 (185)	3 station X 1	8	368 (432)	384 (448)	5 station + 3 station
4	212 (244)	228 (260)	2 station X 2	9	435 (507)	451 (523)	3 station X 3
5	223 (263)	239 (279)	5 station X 1	10	446 (526)	462 (542)	5 station X 2
6	290 (338)	306 (354)	3 station X 2	Consult with CKD about more than 11 station.			

.1 : Manifold structured by basic combination of 2, 4 and 5 station.

·2 : Dimensions in () show open frame type.

- Actuator (grommet lead wire)

GAB412/452-1 to 7-0

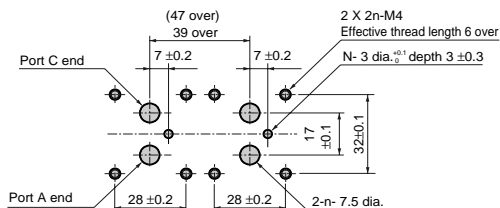
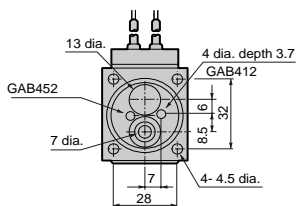
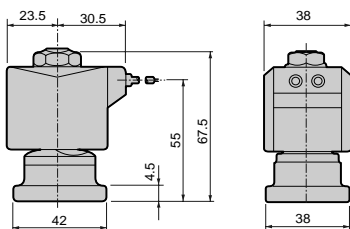


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- How to mount actuator



CAD (File name : Page 228 to 232 or Ending 19 to 23)



- Lead wire length 300mm


GAB412/452 series optional dimensions

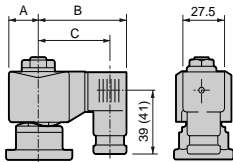
- DIN terminal box
GAB412/452-1 to 7-0 to 10-

2E

2G

2H

 (File name : Page 228 to 232 or Ending 19 to 23)



Dimensions in () show value of G1/2


Model	A	B	C
AC	23.5	65.5	54(53.5)
DC	23.5	66	54.5(54)

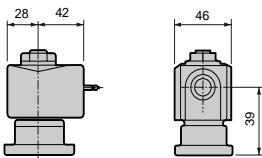
- Open frame lead wire type
GAB412/452-1 to 7-0 to 10-

3A

4A

5A

 (File name : Page 228 to 232 or Ending 19 to 23)




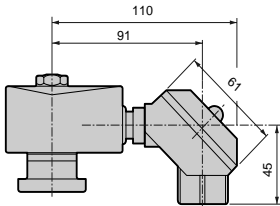
- Open frame + square terminal box
GAB412/452-1 to 7-0 to 10-

3K

4H

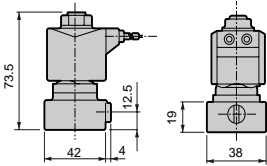
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- Manual override(locking)
GAB412/452-1 to 7-0 to 10- * * * A

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General purpose valve