Direct acting 2-port solenoid valve for dry air
General purpose

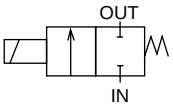
AB31/AB41-Z Series

- NC (open when energized)
- Port size: Rc1/8 to Rc1/2

RoHS CAD

JIS symbol

- NC (open when energized)



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Item	Standard specifications
Working fluid	For dry air (atmospheric dew point -60°C and over)/inert gas/low vacuum [1.33 x 10^2 Pa (abs)]
Working pressure differential MPa	0 to 4 (refer to max. working pressure differential in individual specifications.)
Max. working pressure MPa	5 (≈730 psi, 50 bar)
Proof pressure (water pressure) MPa	25 (≈3600 psi, 250 bar)
Fluid temperature °C	-10 (14°F) to 45 (113°F) (no freezing)
Ambient temperature °C	-10 (14°F) to 45 (113°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

Individual specifications

1 MPa = 10 bar

Item / Model No.		Port size	Orifice size (mm)	Max. working pressure differential (MPa)	Rated voltage	Power consumption (W) AC	Power consumption (W) DC	Weight (kg)
AB31- 01 02	-1-******Z	Rc1/8 Rc1/4	1.5	2.5 (≈360 psi)	100 VAC 50/60 Hz 200 VAC 50/60 Hz	17	14	0.45
	-2-******Z		2.0	1.5 (≈220 psi)				
	-3-******Z		3.0	0.5 (≈73 psi)				
	-4-******Z		3.5	0.35 (≈51 psi)				
	-5-******Z		4.0	0.2 (≈29 psi)				
	-6-******Z		5.0	0.12 (≈17 psi)				
AB41- 02 03	-1-******Z	Rc1/4 Rc3/8	1.5	4.0 (≈580 psi)	12 VDC 24 VDC 48 VDC 100 VDC			0.57 (Rc1/4) 0.59 (Rc3/8)
	-2-******Z		2.0	2.5 (≈360 psi)				
	-3-******Z		3.0	0.9 (≈130 psi)				
	-4-******Z		3.5	0.6 (≈87 psi)				
	-5-******Z		4.0	0.4 (≈58 psi)				
	-6-******Z		5.0	0.2 (≈29 psi)				
	-7-******Z		7.0	0.1 (≈15 psi)				
AB41- 03 04	-8-******Z	Rc3/8 / Rc1/2	10.0	0.03 (≈4.4 psi)				0.68

*1 : The model numbers above show the basic port size (Rc). Refer to How to order for other combinations.
*2 : The port size model No. is 01 for Rc1/8 (6A), 02 for Rc1/4 (8A), 03 for Rc3/8 (10A) and 04 for Rc1/2 (15A).
*3 : The voltage fluctuation range must be within ±10% of the rated voltage.
*4 : The leakage current must be less than the values shown below.
*5 : When using at low vacuum, vacuum the OUT port side.

Leakage current: Voltage / Model No.	100 VAC	200 VAC	12 VDC	24 VDC	48 VDC	100 VDC
AB31-*-*-******Z	10 mA or less	5 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less
AB41-*-*-******Z	10 mA or less	5 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less

Flow characteristics

Model No.		Port size	Orifice size (mm)	Flow characteristics	
				C[dm³/(s·bar)]	b
NC (open when energized)					
AB31-01/02	-1-******Z	Rc1/8 Rc1/4	1.5	0.29	0.53
	-2-******Z		2.0	0.53	0.52
	-3-******Z		3.0	1.1	0.52
	-4-******Z		3.5	1.7 [1.5]	0.49 [0.47]
	-5-******Z		4.0	2.1 [1.9]	0.48 [0.47]
	-6-******Z		5.0	3.0 [2.6]	0.42 [0.38]
AB41-02/03	-1-******Z	Rc1/4 Rc3/8	1.5	0.29	0.53
	-2-******Z		2.0	0.53	0.52
	-3-******Z		3.0	1.1	0.52
	-4-******Z		3.5	1.7 [1.5]	0.49 [0.47]
	-5-******Z		4.0	2.1 [1.9]	0.48 [0.47]
	-6-******Z		5.0	3.0 [2.6]	0.42 [0.38]
	-7-******Z		7.0	4.8 [4.6]	0.29 [0.37]
AB41-03/04	-8-******Z	Rc3/8 Rc1/2	10.0	9.3 [8.1]	0.36 [0.31]

*1 : Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 x C.
*2 : Dimensions shown in [ ] are for stainless steel body.

How to order

AB31 - **02** - **3** - **H** **3A** **A** **B** **G** **S** **Z** - **DC24V**

AB41

Model No.

Ⓓ Coil housing Ⓖ Other options

Ⓔ Manual override (locking)

Ⓗ With surge suppressor

Ⓕ Mounting plate

Ⓘ Voltage

Code	Description	Code	Description	Code	Description	Model No. AB31	AB31	AB41 Low pressure Large flow
Ⓐ Port size								
01	Rc1/8	**1G**	G1/8	**1N**	1/8NPT	●		
02	Rc1/4	**2G**	G1/4	**2N**	1/4NPT	●	●	
03	Rc3/8	**3G**	G3/8	**3N**	3/8NPT		●	●
04	Rc1/2	**4G**	G1/2	**4N**	1/2NPT			●

Ⓐ Port size

Ⓑ Orifice size				
1	ø1.5	●	●	
2	ø2	●	●	
3	ø3	●	●	
4	ø3.5	●	●	
5	ø4	●	●	
6	ø5	●	●	
7	ø7		●	
8	ø10			●

Ⓑ Orifice size

Ⓒ Body/sealant combination							
	Body	**Seal**	**Treatment**	**Remarks**			
H	Copper alloy	Nitrile rubber	Oil-prohibited	—	●	●	●
J		Fluoro rubber		—	●	●	●
P		Ethylene propylene rubber		—	●	●	●
L	Stainless steel	Nitrile rubber		—	●	●	●
M		Fluoro rubber		—	●	●	●
R		Ethylene propylene rubber		—	●	●	●

Ⓒ Body/sealant combination *1 *2

Refer to Intro Page 39 for reference on material combinations.

Ⓓ to Ⓘ

Refer to page 335 for details on the coil housing, other options and voltage, etc.

The combinations indicated with ● in the above table are available.

[Example of model No.]

AB31-02-3-H3ABSZ-DC24V

Model : AB31

Ⓐ Port size : Rc 1/4
Ⓑ Orifice size : ø3
Ⓒ Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
Ⓓ Coil housing : Open frame lead wire for DC voltage
Ⓔ Manual override (locking) : None
Ⓕ Mounting plate : With mounting plate
Ⓖ Other options : None
Ⓗ Surge suppressor : With surge suppressor
Ⓘ Voltage : 24 VDC

⚠ Precautions for model No. selection

Notes for Ⓒ

*1 : The body for the low pressure large flow rate AB41-03/04-8 is bronze (standard) or stainless steel (option).
*2 : Do not use fluid containing oil with ethylene propylene rubber, since it is not oil-resistant.

For Items Ⓓ to Ⓘ, the combinations indicated with codes are available.
Note that if options for Items Ⓔ to Ⓗ are not required, they should be left blank.

Ⓓ Coil housing			Ⓔ	Ⓕ	Ⓖ Other options					Ⓗ	Ⓘ Rated voltage
Description			Manual override (Locking)	Mounting plate	Cable gland (marine cable gland)			Conduit (conduit piping)		With surge suppressor	Description
					A-15a	A-15b	A-15c	CTC19	G1/2		
3A	Open frame	Lead wire (IP65 or equivalent)	A	B				G	H	S	12 VDC, 24 VDC, 48 VDC, 100 VDC
3M		With HP terminal box (G1/2)			D	E	F				
3N		HP terminal box with lamp (G1/2)									12 VDC, 24 VDC, 100 VDC
3I		HP terminal box (IP65 or equivalent) (G1/2)									12 VDC, 24 VDC, 48 VDC, 100 VDC
3J		HP term box, lamp (IP65, equiv) (G1/2)									12 VDC, 24 VDC, 100 VDC
5A	Open frame (diode integrated)	Lead wire (IP65 or equivalent)	A	B				G	H		100 VAC, 200 VAC
5M		With HP terminal box (G1/2)			D	E	F				
5N		HP terminal box with lamp (G1/2)									
5I		HP terminal box (IP65 or equivalent) (G1/2)									
5J		HP term box, lamp (IP65, equiv) (G1/2)									

⚠ Refer to the following cautions for Items Ⓓ to Ⓘ.

3A 5A

- Open frame
  Lead wire 300mm
- 5A (diode integrated)

3M 3N 5M 5N

- Open frame HP terminal box
- 5M, 5N (diode integrated)

3I 3J 5I 5J

- Open frame HP terminal box (IP65 or equivalent)
- 5I, 5J (diode integrated)

G H

- Conduit
- G(CTC19)
- H(G1/2)

Refer to page 330 for coil selection.

⚠ Precautions for model No. selection

Notes for Ⓓ

*3 : Coils for 5A/5M/5N/5I/5J have a diode to convert AC to DC voltage. Voltage of less than 100 VAC is not available.

Notes for Ⓔ to Ⓗ

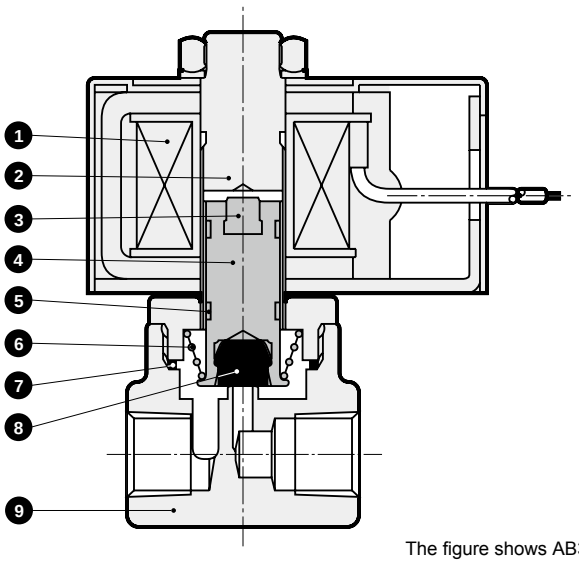
*4 : Manual override (Item Ⓔ A) cannot be mounted on the low pressure large flow rate AB41-03/04-8.
*5 : For Ⓖ, select an option from D, E, F, G and H.
*6 : The surge suppressor is attached with the lead wire coil. When selecting a coil with a terminal box, the surge suppressor is mounted in the terminal box.
*7 : Surge suppressor is incorporated as standard in the coil with diode.
*8 : Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.
Note that tropicalization is not available when the manual override option (A) is selected.

Notes for Ⓘ

*9 : 100 VAC coil is compatible with 100 VAC 50/60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz.
*10 : For voltages other than above, contact CKD.
*11 : The lead wire is available in the standard 300 mm length, and 500 mm, 1000 mm, 2000 mm and 3000 mm lengths. Contact CKD for more information.

Internal structure and parts list

● AB31/41-Z Series



The figure shows AB31.

No.	Part name	Material		No.	Part name	Material	
1	Coil assembly	-	-	6	Plunger spring	SUS304	Stainless steel
2	Core assembly	SUS405 or equiv.316/403 *1	Stainless steel	7	O-ring	NBR (FKM/EPDM)	NBR: Nitrile rubber (FKM: Fluoro rubber) (EPDM: Ethylene propylene rubber)
3	Plunger cushion	PFA	Tetrafluoroethylene resin	8	Valve seal	NBR (FKM/EPDM)	
4	Plunger	SUS405 or equiv.	Stainless steel	9	Body	C3771/CAC408 (SUS303)	Bronze (stainless steel)
5	Wear ring	POM	Acetal resin				

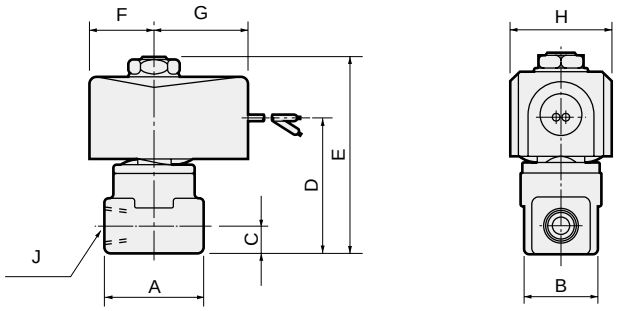
*1 : When the body/sealant combination code is other than H, the material is SUS405 or equivalent/316L/430. ( ) shows options.

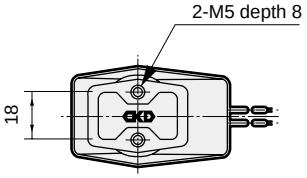
Dimensions CAD

● Open frame lead wire

AB31/41-*-1 to 7-[H/J/P] [3A/5A] ****Z

AB41-03/04-8-[H/J/P] [3A/5A] ****Z



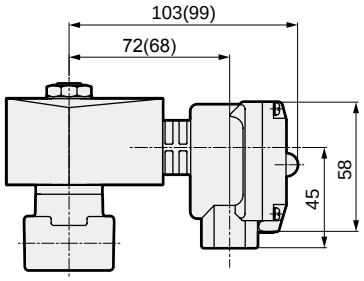


Model No.	A	B	C	D	E	F	G	H	J
AB31-$^{01}_{02}$-1 to 6-******Z	36	28	11	50.5	75	24	38	38	Rc1/8 Rc1/4
AB41-02-1 to 6-******Z	36	28	11	52	80.5	28	42	46	Rc1/4
AB41-$^{02\text{-}7}_{03\text{-}1\text{ to }7}$-******Z	40	28	12	55	83.5	28	42	46	Rc1/4 Rc3/8
AB41-$^{03}_{04}$-8-******Z	50	29	15	64	92.6	28	42	46	Rc3/8 Rc1/2

Optional dimensions

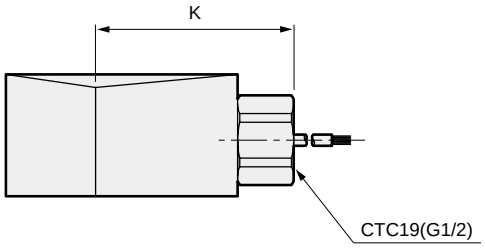
* Refer to the open frame lead wire dimensions on page 336 for common dimensions.

● Open frame + HP terminal box
AB31/41-*-*-* [3 5] [M N I J] ****Z



Dimensions shown in ( ) are for AB31 Series.

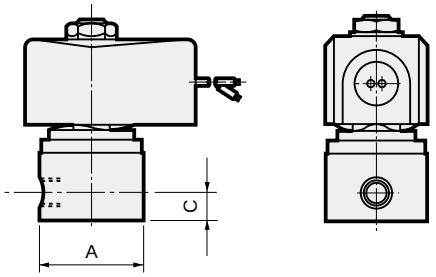
● Open frame + conduit
AB31/41-*-1 to 7-* [3A 5A] [G H]



Dimensions shown in ( ) are for G1/2.

Model No.	K
AB31-*	53(56)
AB41-*	57(60)

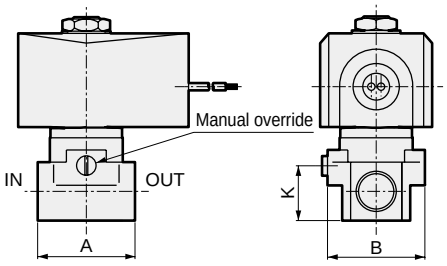
● Stainless steel body
AB31/41-*-*- [L M R] *****Z



Model No.	A	C
AB31-$^{01}_{02}$-1 to 6-******Z	ø37.5	11
AB41-02-1 to 6-******Z	ø37.5	11
AB41-$^{02\text{-}7}_{03\text{-}1\text{ to }7}$-******Z	ø45	12
AB41-$^{03}_{04}$-8-******Z	50 *1	15

*1 (The max. dimension is ø54)

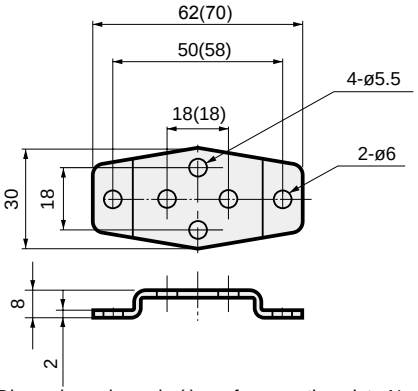
● Manual override (locking)
AB31/41-*-*-** [A] ***Z
(The figure shows copper alloy body.)



Model No.	A	B	K
AB31-$^{01}_{02}$-1 to 6-**A***Z	36	38(ø37.5)	19.5
AB41-02-1 to 6-**A***Z	36	38(ø37.5)	19.5
AB41-$^{02\text{-}7}_{03\text{-}1\text{ to }7}$-**A***Z	40	40(ø45)	22.5

Dimensions shown in ( ) are for stainless steel body.

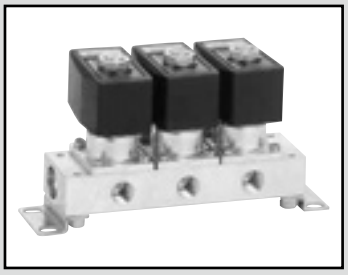
● Mounting plate
AB31/41-*-*-*** [B] **Z



Dimensions shown in ( ) are for mounting plate No. 2.

Mounting plate model	Compatibility
AB3-GE-100106-MOUNT-PLATE-KIT (Mounting plate No.1)	● All of AB31 Series
AB4-GE-100106-MOUNT-PLATE-KIT (Mounting plate No.1)	● AB41-02/03-1 to 7 Series - [H/J/P] ● Stainless steel body AB41-02-1 to 6- [L/M/R]
AB4-GE-100159-MOUNT-PLATE-KIT (Mounting plate No.2)	● AB41-03/04-8 Series ● Stainless steel body AB41-02-7- [L/M/R] AB41-03-1 to 7- [L/M/R]

* Material: Steel/Zinc plated



Direct acting 2 port solenoid valve for dry air, manifold/actuator
General purpose

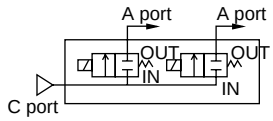
GAB312/GAB352/GAB412/GAB452-Z Series

- NC (open when energized)
- Common supply (port C pressurization), individual supply (port A pressurization)

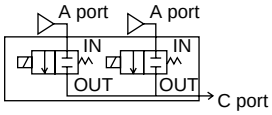
RoHS CAD

JIS symbol

- GAB312/412-Z
  (Common supply/
  port C pressurization)



- GAB352/452-Z
  (Individual supply/port A
  pressurization)



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Item	Standard specifications
Working fluid	For dry air (atmospheric dew point -60°C and over)/inert gas/low vacuum [1.33 x 10^2 Pa (abs)]
Working pressure differential MPa	0 to 4 (refer to max. working pressure differential in individual specifications.)
Max. working pressure MPa	5 (≈730 psi, 50 bar)
Proof pressure (water pressure) MPa	10 (≈1500 psi, 100 bar)
Fluid temperature °C	-10 (14°F) to 45 (113°F) (no freezing)
Ambient temperature °C	-10 (14°F) to 45 (113°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

Individual specifications

Item / Model No.	Port size	Orifice size (mm)	Max. working pressure differential (MPa)	Rated voltage	Power consumption (W) AC50/60 Hz	Power consumption (W) DC
GAB312/352-1-Z		1.5	2.5 (≈360 psi, 25 bar)			
-2-Z		2.0	1.5 (≈220 psi, 15 bar)			
-3-Z		3.0	0.5 (≈73 psi, 5 bar)	100 VAC 50/60 Hz		
-4-Z	—	3.5	0.35 (≈51 psi, 3.5 bar)			
-5-Z		4.0	0.2 (≈29 psi, 2 bar)			
-6-Z		5.0	0.12 (≈17 psi, 1.2 bar)	200 VAC 50/60 Hz		
GAB412/452-1-Z		1.5	4.0 (≈580 psi, 40 bar)		17	14
-2-Z		2.0	2.5 (≈360 psi, 25 bar)			
-3-Z		3.0	0.9 (≈130 psi, 9 bar)	12 VDC 24 VDC 48 VDC 100 VDC		
-4-Z	—	3.5	0.6 (≈87 psi, 6 bar)			
-5-Z		4.0	0.4 (≈58 psi, 4 bar)			
-6-Z		5.0	0.2 (≈29 psi, 2 bar)			
-7-Z		7.0	0.1 (≈15 psi, 1 bar)			

*1 : The model numbers above are for basic orifice sizes. Refer to How to order for other combinations.
*2 : For port size, refer to How to order (page 340) and dimensions (pages 178 to 181).
*3 : The voltage fluctuation range must be within ±10% of the rated voltage.
*4 : The leakage current must be less than the values shown below.
*5 : When using at low vacuum, vacuum the OUT port side.

Leakage current: Voltage / Model No.	100 VAC	200 VAC	12 VDC	24 VDC	48 VDC	100 VDC
GAB312/352*-*-******Z	10 mA or less	5 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less
GAB412/452*-*-******Z	10 mA or less	5 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less

Weight

Model No.	Weight (kg) Actuator only	2 stations	3 stations	4 stations	5 stations	6 stations	7 stations	8 stations	9 stations	10 stations
GAB312 GAB352 -*-*-H3AZ	0.44	1.6	2.3	3.2	3.7	4.6	5.3	6.0	6.9	7.3
GAB412 GAB452 -*-*-H3AZ	0.56	1.9	2.8	3.8	4.6	5.7	6.5	7.4	8.5	9.1

Flow characteristics

Model No.	Port size	Orifice size (mm)	Flow characteristics	
			C[dm³/(s·bar)]	b
GAB312/352 -1-Z	-	1.5	0.29	0.53
-2-Z		2.0	0.53	0.52
-3-Z		3.0	1.1	0.52
-4-Z		3.5	1.5	0.47
-5-Z		4.0	1.9	0.47
-6-Z		5.0	2.6	0.38
GAB412/452 -1-Z	-	1.5	0.29	0.53
-2-Z		2.0	0.53	0.52
-3-Z		3.0	1.1	0.52
-4-Z		3.5	1.5	0.47
-5-Z		4.0	1.9	0.47
-6-Z		5.0	2.6	0.38
-7-Z		7.0	4.6	0.37

*1 : Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 x C.

Internal structure and parts list

Same as AB31/41-Z Series. Refer to page 336.

Dimensions

The same as the open frame of GAB Series. Refer to pages 178 to 181.

How to order

● Common supply (port C pressurization)

GAB312 ○ - **1** - **5** - **H** **5A** **A** **G** **S** **Z** - **AC100V**

● Individual supply (port A pressurization)

GAB352

● Common supply (port C pressurization)

GAB412

● Individual supply (port A pressurization)

GAB452

Model No.

Ⓐ Thread

Ⓑ Orifice size

Ⓒ Manifold station No. *2

Ⓓ Body/sealant combination *3

Ⓔ Coil housing

Ⓕ Manual override (locking)

Ⓖ Other options

Ⓗ With surge suppressor

Ⓘ Rated voltage

Code	Description	Model No. GAB312 GAB352	Model No. GAB412 GAB452
Ⓐ Thread			
Blank	Rc	●	●
G	G	●	●
N	NPT	●	●
Ⓑ Orifice size			
1	ø1.5	●	●
2	ø2	●	●
3	ø3	●	●
4	ø3.5	●	●
5	ø4	●	●
6	ø5	●	●
7	ø7		●
Ⓒ Manifold station No.			
2 to 10	2 stations to 10 stations	●	●
0	Actuator only	●	●

Ⓓ Body/sealant combination

	Body	Seal	Treatment	Remarks	Model No. GAB312 GAB352	Model No. GAB412 GAB452
H	Copper alloy	Nitrile rubber	Oil-prohibited	—	●	●
J	Copper alloy	Fluoro rubber	Oil-prohibited	—	●	●
P	Copper alloy	Ethylene propylene rubber	Oil-prohibited	—	●	●
L	Stainless steel	Nitrile rubber	Oil-prohibited	—	●	●
M	Stainless steel	Fluoro rubber	Oil-prohibited	—	●	●
R	Stainless steel	Ethylene propylene rubber	Oil-prohibited	—	●	●

Refer to Intro Page 39 for reference on material combinations.

Ⓔ to Ⓘ

Refer to page 341 for details on the coil housing, other options and voltage, etc.

The combinations indicated with ● in the above table are available.

[Example of model No. 1]

GAB312-1-3-H5AZ-AC200V

Model : GAB312 (common supply, port C pressurization)

Ⓐ Thread : Rc
Ⓑ Orifice size : ø1.5
Ⓒ Manifold station No. : 3 stations
Ⓓ Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
Ⓔ Coil housing : Open frame(diode integrated) lead wire for AC voltage
Ⓕ to Ⓗ : None
Ⓘ Rated voltage : 200 VAC 50/60 Hz

[Example of model No. 2]

GAB352G-5-2-H3AASZ-DC24V

Model : GAB352 (individual supply/port A pressurization)

Ⓐ Thread : G
Ⓑ Orifice size : ø4
Ⓒ Manifold station No. : 2 stations
Ⓓ Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
Ⓔ Coil housing : Open frame lead wire for DC voltage
Ⓕ Manual override (locking) : With
Ⓖ Other options : None
Ⓗ Surge suppressor : With surge suppressor
Ⓘ Rated voltage : 24 VDC

⚠ Precautions for model No. selection

*1 : Orders for only the masking plate and sub-plate are also available. Contact CKD for details.

Notes for Ⓒ to Ⓓ

*2 : For 11 or more manifold station No., contact CKD.

*3 : Do not use fluid containing oil with ethylene propylene rubber, since it is not oil-resistant.

For Items Ⓔ to Ⓘ, the combinations indicated with codes are available.
Note that if options for Items Ⓕ to Ⓗ are not required, they should be left blank.

Ⓔ Coil housing			Ⓕ	Ⓖ Other options					Ⓗ	Ⓘ Rated voltage
Description			Manual override (Locking)	Cable gland (marine cable gland)			Conduit (conduit piping)		With surge suppressor	Description
				A-15a	A-15b	A-15c	CTC19	G1/2		
3A	Open frame	Lead wire (IP65 or equivalent)	A				G	H	S	12 VDC, 24 VDC, 48 VDC, 100 VDC
3M		With HP terminal box (G1/2)		D	E	F				
3N		HP terminal box with lamp (G1/2)								12 VDC, 24 VDC, 100 VDC
3I		HP term box (IP65, equiv) (G1/2)								12 VDC, 24 VDC, 48 VDC, 100 VDC
3J		HP term box, lamp (IP65, equiv) (G1/2)								12 VDC, 24 VDC, 100 VDC
5A	Open frame (diode integrated)	Lead wire (IP65 or equivalent)	A				G	H		100 VAC, 200 VAC
5M		With HP terminal box (G1/2)		D	E	F				
5N		HP terminal box with lamp (G1/2)								
5I		HP term box (IP65, equiv) (G1/2)								
5J		HP term box, lamp (IP65, equiv) (G1/2)								

⚠ Refer to the following cautions for Items Ⓔ to Ⓘ.

3A 5A		● Open frame lead wire 300 mm ● 5A (diode integrated)
3M 3N 5M 5N		● Open frame HP terminal box ● 5M, 5N (diode integrated)
3I 3J 5I 5J		● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

G H		● Conduit ● G(CTC19) ● H(G1/2)

Refer to page 330 for coil selection.

⚠ Precautions for model No. selection

Notes for Ⓔ

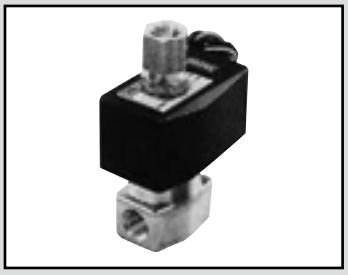
*4 : Coils for 5A/5M/5N/5I/5J have a diode to convert AC to DC voltage.

Notes for Ⓖ to Ⓗ

*5 : For Item Ⓖ, select an option from D, E, F, G and H.
*6 : The surge suppressor is attached with the lead wire coil. When selecting a coil with a terminal box, the surge suppressor is mounted in the terminal box.
*7 : Surge suppressor is incorporated as standard in the coil with diode.
*8 : Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.
Note that tropicalization is not available when the manual override option (A) is selected.

Notes for Ⓘ

*9 : 100 VAC coil is compatible with 100 VAC 50/60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz.
*10 : For voltages other than above, contact CKD.
*11 : The lead wire is available in the standard 300 mm length, and 500 mm, 1000 mm, 2000 mm and 3000 mm lengths. Contact CKD for more information.



Direct acting 3-port solenoid valve for dry air
General purpose

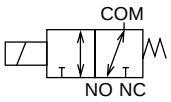
AG3*/AG4*-Z Series

- Universal, NC pressurization, NO pressurization
- Port size : Rc1/8, Rc1/4, Rc3/8

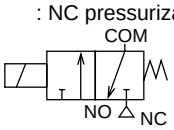
RoHS CAD

JIS symbol

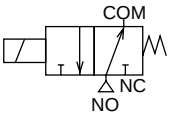
- AG31/41-Z
  : Universal



- AG33/43-Z
  : NC pressurization



- AG34/44-Z
  : NO pressurization



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Item	Standard specifications
Working fluid	For dry air (atmospheric dew point -60°C and over)/inert gas/low vacuum [1.33 x 10^2 Pa (abs)]
Working pressure differential MPa	0 to 1 (refer to max. working pressure differential in individual specifications.)
Proof pressure (water pressure) MPa	25 (≈3600 psi, 250 bar)
Fluid temperature °C	-10 (14°F) to 45 (113°F) (no freezing)
Ambient temperature °C	-10 (14°F) to 45 (113°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

Individual specifications

1 MPa = 10 bar

Item / Model No.	Port size	Orifice size (mm) TOP	Orifice size (mm) BODY	Max. working pressure differential (MPa)	Max. working pressure MPa	Rated voltage	Power consump (W) AC	Power consump (W) DC	Weight (kg)
Universal									
AG31-01 -1-******Z	Rc1/8	1.5	1.5	0.7 (≈100 psi)	1				0.45
AG31-02 -1-******Z	Rc1/8	1.5	1.5	0.7 (≈100 psi)	1				0.45
AG31-01 -2-******Z	Rc1/4	2.0	2.0	0.4 (≈58 psi)	1				0.45
AG31-02 -2-******Z	Rc1/4	2.0	2.0	0.4 (≈58 psi)	1				0.45
AG41-02 -1-******Z	Rc1/4	2.0	2.0	0.65 (≈94 psi)	1				0.57 (Rc1/4)
AG41-03 -1-******Z	Rc1/4	2.0	2.0	0.65 (≈94 psi)	1				0.57 (Rc1/4)
AG41-02 -2-******Z	Rc3/8	2.3	2.3	0.4 (≈58 psi)	1				0.59 (Rc3/8)
AG41-03 -2-******Z	Rc3/8	2.3	2.3	0.4 (≈58 psi)	1				0.59 (Rc3/8)
NC pressurization									
AG33-01 -1-******Z	Rc1/8	1.5	1.5	1.0 (≈150 psi)	1	100 VAC 50/60 Hz 200 VAC 50/60 Hz 12 VDC 24 VDC 48 VDC 100 VDC	17	14	0.45
AG33-02 -1-******Z	Rc1/8	1.5	1.5	1.0 (≈150 psi)	1				0.45
AG33-01 -2-******Z	Rc1/4	2.0	2.0	0.7 (≈100 psi)	1				0.45
AG33-02 -2-******Z	Rc1/4	2.0	2.0	0.7 (≈100 psi)	1				0.45
AG43-02 -4-******Z	Rc1/4	3.0	3.0	0.7 (≈100 psi)	1				0.57 (Rc1/4)
AG43-03 -4-******Z	Rc1/4	3.0	3.0	0.7 (≈100 psi)	1				0.57 (Rc1/4)
AG43-02 -5-******Z	Rc3/8	3.5	3.0	0.4 (≈58 psi)	1				0.59 (Rc3/8)
AG43-03 -5-******Z	Rc3/8	3.5	3.0	0.4 (≈58 psi)	1				0.59 (Rc3/8)
NO pressurization									
AG34-01 -1-******Z	Rc1/8	1.5	1.5	1.0 (≈150 psi)	1.5				0.45
AG34-02 -1-******Z	Rc1/8	1.5	1.5	1.0 (≈150 psi)	1.5				0.45
AG34-01 -2-******Z	Rc1/4	2.0	2.0	0.45 (≈65 psi)	1.5				0.45
AG34-02 -2-******Z	Rc1/4	2.0	2.0	0.45 (≈65 psi)	1.5				0.45
AG44-02 -1-******Z	Rc1/4	2.0	2.0	0.75 (≈110 psi)	1.5				0.57 (Rc1/4)
AG44-03 -1-******Z	Rc1/4	2.0	2.0	0.75 (≈110 psi)	1.5				0.57 (Rc1/4)
AG44-02 -3-******Z	Rc3/8	2.0	3.0	0.7 (≈100 psi)	1.5				0.59 (Rc3/8)
AG44-03 -3-******Z	Rc3/8	2.0	3.0	0.7 (≈100 psi)	1.5				0.59 (Rc3/8)
AG44-02 -4-******Z	Rc3/8	3.0	3.0	0.25 (≈36 psi)	1.5				0.59 (Rc3/8)
AG44-03 -4-******Z	Rc3/8	3.0	3.0	0.25 (≈36 psi)	1.5				0.59 (Rc3/8)

*1 : The model numbers above show the basic port size (Rc). Refer to How to order for other combinations.
*2 : The port size model No. is 01 for Rc1/8 (6A), 02 for Rc1/4 (8A) and 03 for Rc3/8 (10A).
*3 : The voltage fluctuation range must be within ±10% of the rated voltage.
*4 : The leakage current must be less than the values shown below.
*5 : When using at low vacuum, vacuum the NO port side of NC pressurization or the NC port side of NO pressurization.

Leakage current

Voltage / Model No.	100 VAC	200 VAC	12 VDC	24 VDC	48 VDC	100 VDC
AG31/33/34-*-******Z	6 mA or less	3 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less
AG41/43/44-*-******Z	8 mA or less	4 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less

Flow characteristics

Model No.	Port size	Orifice size (mm)		Flow characteristics			
		TOP	BODY	C[dm³/(s·bar)]		b	
				TOP	BODY	TOP	BODY
Universal							
AG31-$^{01}_{02}$-1-******Z	Rc1/8	1.5	1.5	0.29	0.29	0.64	0.53
-2-******Z	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52
AG41-$^{02}_{03}$-1-******Z	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52
-2-******Z	Rc3/8	2.3	2.3	0.74	0.74	0.66	0.53
NC pressurization							
AG33-$^{01}_{02}$-1-******Z	Rc1/8	1.5	1.5	0.29	0.29	0.64	0.53
-2-******Z	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52
AG43-$^{02}_{03}$-4-******Z	Rc1/4	3.0	3.0	1.1	1.1	0.72	0.52
-5-******Z	Rc3/8	3.5	3.0	1.5	1.1	0.62	0.52
NO pressurization							
AG34-$^{01}_{02}$-1-******Z	Rc1/8	1.5	1.5	0.29	0.29	0.64	0.53
-2-******Z	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52
AG44-$^{02}_{03}$-1-******Z	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52
-3-******Z	Rc3/8	2.0	3.0	0.53	1.1	0.54	0.52
-4-******Z		3.0	3.0	1.1	1.1	0.72	0.52

*1 : Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 x C.

How to order

● Universal

AG31 - **02** - **2** - **H** **3A** **A** **B** **G** **S** **Z** - **DC24V**

AG41 ● NC pressurization

AG33

AG43 ● NO pressurization

AG34

AG44

Model No.

Ⓐ Port size

Ⓑ Orifice size

Ⓒ Body/sealant combination *1 *2

Ⓓ Coil housing Ⓔ Manual override (locking) Ⓕ Mounting plate Ⓖ Other options Ⓗ With surge suppressor Ⓘ Voltage

Code	Description	Code	Description	Code	Description	Model No. AG31	AG41	AG33	AG43	AG34	AG44
Ⓐ Port size											
01	Rc1/8	1G	G1/8	1N	1/8NPT	●		●		●	
02	Rc1/4	2G	G1/4	2N	1/4NPT	●	●	●	●	●	●
03	Rc3/8	3G	G3/8	3N	3/8NPT		●		●		●

Ⓑ Orifice size

	AG31		AG41		AG33		AG43		AG34		AG44							
	TOP	BODY	TOP	BODY	TOP	BODY	TOP	BODY	TOP	BODY	TOP	BODY						
1	ø1.5	ø1.5	ø2.0	ø2.0	ø1.5	ø1.5	-	-	ø1.5	ø1.5	ø2.0	ø2.0	●	●	●		●	●
2	ø2.0	ø2.0	ø2.3	ø2.3	ø2.0	ø2.0	-	-	ø2.0	ø2.0	-	-	●	●	●		●	
3	-	-	-	-	-	-	-	-	-	-	ø2.0	ø3.0						●
4	-	-	-	-	-	-	ø3.0	ø3.0	-	-	ø3.0	ø3.0				●		●
5	-	-	-	-	-	-	ø3.5	ø3.0	-	-	-	-				●		

Ⓒ Body/sealant combination

	Body	Seal	Treatment	Remarks						
H	Copper alloy	Nitrile rubber	Oil-prohibited	—	●	●	●	●	●	●
J		Fluoro rubber		—	●	●	●	●	●	●
P		Ethylene propylene rubber		—	●	●	●	●	●	●
L	Stainless steel	Nitrile rubber		—	●	●	●	●	●	●
M		Fluoro rubber		—	●	●	●	●	●	●
R		Ethylene propylene rubber		—	●	●	●	●	●	●

Refer to Intro Page 39 for reference on material combinations.

Ⓓ to Ⓘ

Refer to page 345 for details on the coil housing, other options and voltage, etc.

The combinations indicated with ● in the above table are available.

[Example of model No.]
AG31-02-1-H3AASZ-DC24V

Model : AG31

Ⓐ Port size	: Rc1/4
Ⓑ Orifice size	: TOP-ø1.5/BODY-ø1.5
Ⓒ Body/sealant combination	: Body - copper alloy, sealant - nitrile rubber
Ⓓ Coil housing	: Open frame lead wire for DC voltage
Ⓔ Manual override (locking)	: Selected
Ⓕ Ⓖ	: None
Ⓗ Surge suppressor	: With surge suppressor
Ⓘ Voltage	: 24 VDC

⚠ Precautions for model No. selection

Notes for Ⓒ

*1 : NO valve seal of AG34 and AG44 is fluoro rubber.
*2 : Do not use fluid containing oil with ethylene propylene rubber, since it is not oil-resistant.

For Items Ⓓ to Ⓘ, the combinations indicated with codes are available.
Note that if options for Items Ⓔ to Ⓗ are not required, they should be left blank.

Ⓓ Coil housing			Ⓔ	Ⓕ	Ⓖ Other options					Ⓗ	Ⓘ Rated voltage
Description			Manual override (Locking)	Mounting plate	Cable gland (marine cable gland)			Conduit (conduit piping)		With surge suppressor	Description
					A-15a	A-15b	A-15c	CTC19	G1/2		
3A	Open frame	Lead wire (IP65 or equivalent)	A	B				G	H	S	12 VDC, 24 VDC, 48 VDC, 100 VDC
3M		HP terminal box (G1/2)			D	E	F				
3N		HP terminal box with lamp (G1/2)									12 VDC, 24 VDC, 100 VDC
3I		HP terminal box (IP65 or equivalent) (G1/2)									12 VDC, 24 VDC, 48 VDC, 100 VDC
3J		HP term.box w/ lamp (IP65 equiv.) (G1/2)									12 VDC, 24 VDC, 100 VDC
5A	Open frame (diode integrated)	Lead wire (IP65 or equivalent)	A	B				G	H		100 VAC, 200 VAC
5M		HP terminal box (G1/2)			D	E	F				
5N		HP terminal box with lamp (G1/2)									
5I		HP terminal box (IP65 or equivalent) (G1/2)									
5J		HP term.box w/ lamp (IP65 equiv.) (G1/2)									

⚠ Refer to the following cautions for Ⓓ to Ⓘ.

3A 5A		● Open frame Lead wire 300 mm ● 5A (diode integrated)
3M 3N 5M 5N		● Open frame HP terminal box ● 5M, 5N (diode integrated)
3I 3J 5I 5J		● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

G H		● Conduit ● G(CTC19) ● H(G1/2)

Refer to page 330
for coil selection.

⚠ Precautions for model No. selection

Notes for Ⓓ

*3 : Coils for 5A/5M/5N/5I/5J have a diode to convert AC to DC voltage
Voltage of less than 100 VAC is not available.

Notes for Ⓖ to Ⓗ

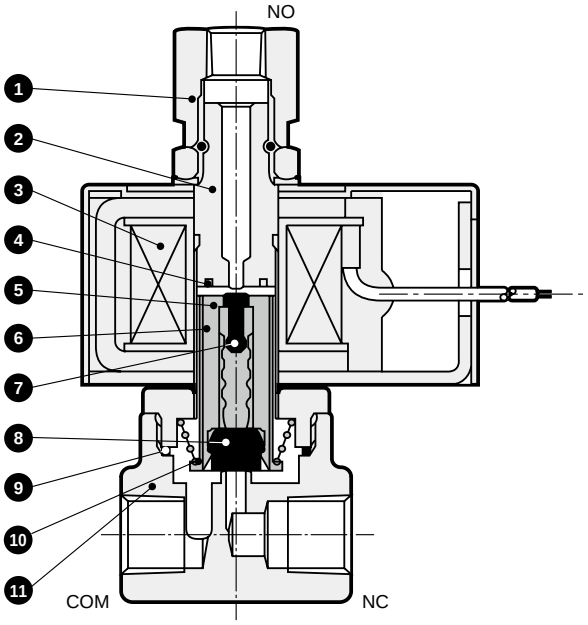
*4 : For Ⓖ, select an option from D, E, F, G and H.
*5 : The surge suppressor is attached with the lead wire coil. When selecting a coil with a terminal box, the surge suppressor is mounted in the terminal box.
*6 : Surge suppressor is incorporated as standard in the coil with diode.
*7 : Tropicalization (rust-proof coating) is available as a measure against rust.Contact CKD for more information.
Note that tropicalization is not available when the manual override option (A) is selected.

Notes for Ⓘ

*8 : 100 VAC coil is compatible with 100 VAC 50/60 Hz, and
200 VAC coil is compatible with 200 VAC 50/60 Hz.
*9 : For voltages other than above, contact CKD.
*10 : The lead wire is available in the standard 300 mm length, and 500 mm, 1000 mm, 2000 mm and 3000 mm lengths. Contact CKD for more information.

Internal structure and parts list

● AG3*/4*-Z Series



No.	Part name	Material	
1	Socket	C3604(SUS303)	Copper alloy (stainless steel)
2	Core assembly	SUS405 or equiv.316/403 *1	Stainless steel
3	Coil assembly	-	-
4	Shading coil	Cu (Ag for SUS body)	Copper (silver for stainless steel body)
5	Plunger	SUS405 or equiv.	Stainless steel
6	Plunger tube	PET	Polyethylene terephthalate
7	NO valve sealant	NBR (FKM/EPDM) *3	NBR: Nitrile rubber (FKM: Fluoro rubber) (EPDM: Ethylene propylene rubber)
8	NC valve sealant	NBR (FKM/EPDM)	
9	O-ring	NBR (FKM/EPDM)	
10	Plunger spring	SUS304	Stainless steel
11	Body	C3771(SUS303)	Copper alloy (stainless steel)

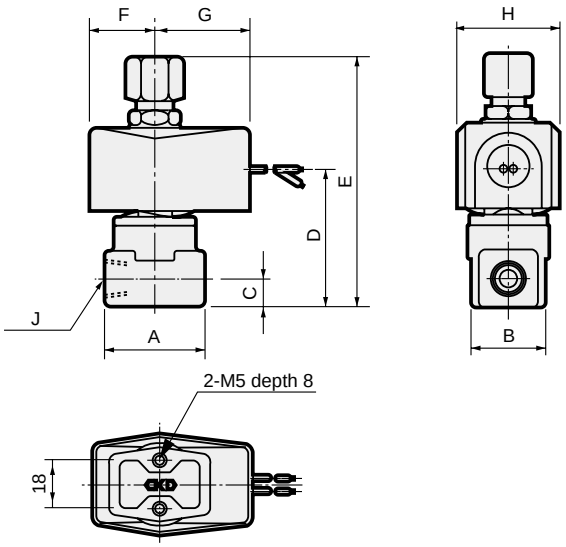
*1 : When the body/sealant combination code is other than H, the material is SUS405 or equivalent/316L/430.
*2 : ( ) shows options.
*3 : For AG34 and AG44 with body/sealant combination code H/L, NO valve seal is FKM.

The figure shows AG31/33/34.

Dimensions CAD

● Open frame lead wire

AG3*/4*-*-*- H / J / P | 3A / 5A | ****Z



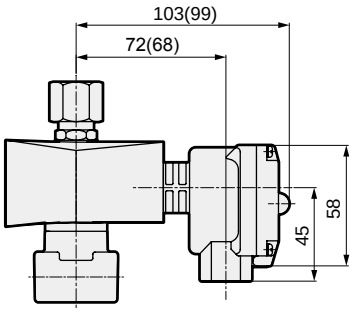
Model No.	A	B	C	D	E	F	G	H	J
AG3*-$^{01}_{02}$-1 to 2-******Z	36	28	11	50.5	94	24	38	38	Rc1/8 Rc1/4
AG4*-02-1 to 5-******Z	36	28	11	52	99.5	28	42	46	Rc1/4
AG4*-03-1 to 5-******Z	40	28	12	55	106	28	42	46	Rc3/8

Optional dimensions

CAD

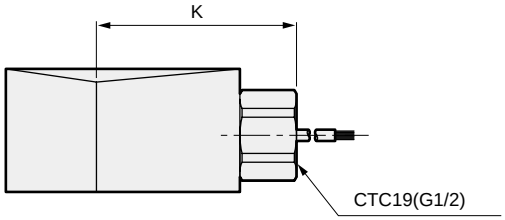
* Refer to the open frame lead wire dimensions on page 346 for common dimensions.

● Open frame + HP terminal box
AG3*/4*-*-*-* [5 3] [J I N M] ****Z



Dimensions shown in ( ) are for AG3 Series.

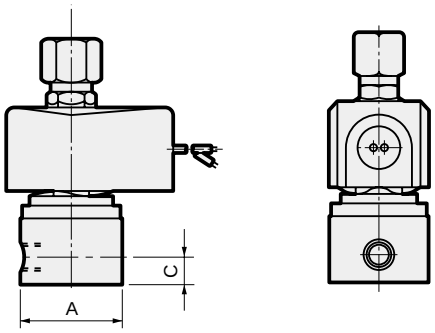
● Open frame + conduit
AG3*/4*-*-*-* [3A 5A] [G H]



Dimensions shown in ( ) are for G1/2.

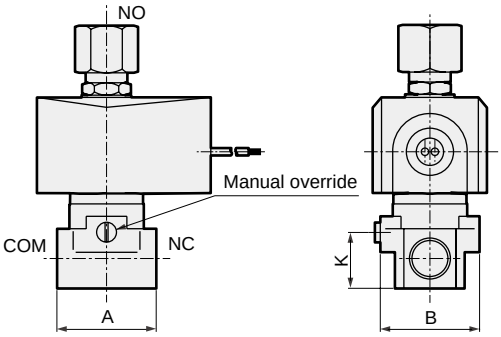
Model No.	K
AG3*	53(56)
AG4*	57(60)

● Stainless steel body
AG3*/4*-*-*- [L M R] *****Z



Model No.	A	C
AG3*- 01/02 -1 to 2-******Z	ø37.5	11
AG4*-02-1 to 5-******Z	ø37.5	11
AG4*-03-1 to 5-******Z	ø45	12

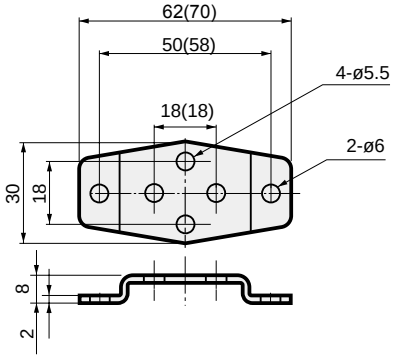
● Manual override (locking)
AG3*/4*-*-*-** [A] ***Z
(The figure shows copper alloy body.)



Model No.	A	B	K
AG3*- 01/02 -1 to 2-**A***Z	36	38(ø37.5)	19.5
AG4*-02-1 to 5-**A***Z	36	38(ø37.5)	19.5
AG4*-03-1 to 5-**A***Z	40	40(ø45)	22.5

Dimensions shown in ( ) are for stainless steel body.

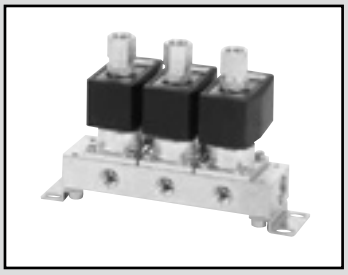
● Mounting plate
AG3*/4*-*-*-*** [B] **Z



Dimensions shown in ( ) are for mounting plate No. 2.

Mounting plate model	Compatibility
AG3-GE-100106-MOUNT-PLATE-KIT (Mounting plate No.1)	● All of AG3* Series
AG4-GE-100106-MOUNT-PLATE-KIT (Mounting plate No.1)	● Copper alloy body AG4*-02/03-1 to 5- [H/J/P] ● Stainless steel body AG4*-02-1 to 5- [L/M/R]
AG4-GE-100159-MOUNT-PLATE-KIT (Mounting plate No.2)	● Stainless steel body AG4*-03-1 to 5- [L/M/R]

* Material: Steel/Zinc plated



Direct acting 3-port solenoid valve for dry air, manifold/actuator
General purpose

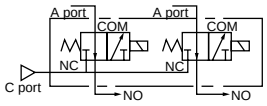
GAG31*/GAG35*/GAG41*/GAG45* -Z Series

- Universal
- Common supply/individual exhaust, common supply/separate flow

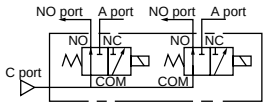
RoHS CAD

Manifold circuit configuration

● GAG31*/41*-Z
(Common supply/individual exhaust)



● GAG352/452-Z
(Common supply/separate flow)



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Item	Standard specifications
Working fluid	For dry air (atmospheric dew point -60°C and over)/inert gas/low vacuum [1.33 x 10^2 Pa (abs)]
Working pressure differential MPa	0 to 1 (refer to max. working pressure differential in individual specifications.)
Max. working pressure MPa	1 (≈150 psi, 10 bar)
Proof pressure (water pressure) MPa	10 (≈1500 psi, 100 bar)
Fluid temperature °C	-10 (14°F) to 45 (113°F) (no freezing)
Ambient temperature °C	-10 (14°F) to 45 (113°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

Individual specifications

Item / Model No.	NO port Port size	Orifice size (mm) TOP	Orifice size (mm) BODY	Max. working pressure differential (MPa)	Rated voltage	Power consumption (W) AC50/60 Hz	Power consumption (W) DC
GAG311-1-Z	Rc1/8	1.5	1.5	0.7 (≈100 psi, 7 bar)	100 VAC 50/60 Hz	17	14
351-2-Z	Rc1/8	2.0	2.0	0.4 (≈58 psi, 4 bar)	100 VAC 50/60 Hz	17	14
GAG312-1-Z	Rc1/4	1.5	1.5	0.7 (≈100 psi, 7 bar)	200 VAC 50/60 Hz	17	14
352-2-Z	Rc1/4	2.0	2.0	0.4 (≈58 psi, 4 bar)	200 VAC 50/60 Hz	17	14
GAG412-1-Z	Rc1/4	2.0	2.0	0.65 (≈94 psi, 6.5 bar)		17	14
452-2-Z	Rc1/4	2.3	2.3	0.4 (≈58 psi, 4 bar)	12 VDC 24 VDC 48 VDC 100 VDC	17	14
GAG413-1-Z	Rc3/8	2.0	2.0	0.65 (≈94 psi, 6.5 bar)		17	14
453-2-Z	Rc3/8	2.3	2.3	0.4 (≈58 psi, 4 bar)		17	14

*1 : The model numbers above are for the basic NO port size and orifice size. Refer to How to order for other combinations.
*2 : For A and C port sizes, refer to How to order (page 350) and dimensions (pages 204 to 207).
*3 : The voltage fluctuation range must be within ±10% of the rated voltage.
*4 : When using in a continuously energized state, use fluoro rubber seal.
*5 : The leakage current must be less than the values shown below.

Leakage current: Voltage / Model No.	100 VAC	200 VAC	12 VDC	24 VDC	48 VDC	100 VDC
GAG34*-******Z	6 mA or less	3 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less
GAG45*-******Z	8 mA or less	4 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less

Weight

Model No.	Weight (kg) Actuator only	2 stations	3 stations	4 stations	5 stations	6 stations	7 stations	8 stations	9 stations	10 stations
GAG35*-*-*-H3AZ	0.45	1.6	2.3	3.2	3.7	4.6	5.3	6.0	7.0	7.4
GAG452-*-*-H3AZ	0.51	1.8	2.7	3.6	4.3	5.4	6.1	7.0	8.1	8.6
GAG453-*-*-H3AZ	0.52	1.8	2.7	3.6	4.4	5.4	6.2	7.1	8.2	8.7

Flow characteristics

Model No.	Port size	Orifice size (mm)		Flow characteristics			
		TOP	BODY	C[dm³/(s·bar)]		b	
				TOP	BODY	TOP	BODY
GAG311 -1-Z	Rc1/8	1.5	1.5	0.29	0.29	0.64	0.53
351 -2-Z		2.0	2.0	0.53	0.53	0.54	0.52
GAG312 -1-Z	Rc1/4	1.5	1.5	0.29	0.29	0.64	0.53
352 -2-Z		2.0	2.0	0.53	0.53	0.54	0.52
GAG412 -1-Z	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52
452 -2-Z		2.3	2.3	0.74	0.74	0.66	0.53
GAG413 -1-Z	Rc3/8	2.0	2.0	0.53	0.53	0.54	0.52
453 -2-Z		2.3	2.3	0.74	0.74	0.66	0.53

*1 : Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 x C.

Internal structure and parts list

The same as AG3*/4*-Z Series. Refer to page 346.

Dimensions

The same as the open frame of GAG31/35/41/45 Series. Refer to pages 204 to 207.

How to order

● Common supply/individual exhaust (port C pressurization)

GAG31 1 ○ - 1 - 7 - H 5A A G S Z - AC100V

● Common supply/separate flow (port C pressurization)

GAG35 1

● Common supply/individual exhaust (port C pressurization)

GAG41 2

● Common supply/separate flow (port C pressurization)

GAG45 2

Model No.

Ⓐ NO port size

Ⓑ Thread

Ⓒ Orifice size

Ⓓ Manifold station No. *2

Ⓔ Body/sealant combination *3

Ⓕ Coil housing

Ⓖ Manual override (locking)

Ⓗ Other options

Ⓘ With surge suppressor

Ⓙ Rated voltage

Code	Description	Model No. GAG3**	Model No. GAG4**
Ⓐ NO port size			
1	1/8	●	
2	1/4	●	●
3	3/8		●
Ⓑ Thread			
Blank	Rc	●	●
G	G	●	●
N	NPT	●	●

Ⓒ Orifice size

	GAG3**		GAG4**			
	TOP	**BODY**	**TOP**	**BODY**		
1	ø1.5	ø1.5	ø2.0	ø2.0	●	●
2	ø2.0	ø2.0	ø2.3	ø2.3	●	●

Ⓓ Manifold station No.

2 to 10	2 stations to 10 stations	●	●
0	Actuator only	●	●

Ⓔ Body/sealant combination

	Body	Seal	Treatment	Remarks		
H	Copper alloy	Nitrile rubber	Oil-prohibited	—	●	●
J		Fluoro rubber		—	●	●
P		Ethylene propylene rubber		—	●	●
L	Stainless steel	Nitrile rubber		—	●	●
M		Fluoro rubber		—	●	●
R		Ethylene propylene rubber		—	●	●

Refer to Intro Page 39 for reference on material combinations.

Ⓕ to Ⓙ

Refer to page 351 for details on the coil housing, other options and voltage, etc.

The combinations indicated with ● in the above table are available.

[Example of model No. 1]

GAG311-1-4-H5AZ-AC200V

Model : GAG311 (common supply/individual exhaust, port C pressurization)

- Ⓐ NO port size : 1/8
- Ⓑ Thread : Rc
- Ⓒ Orifice size : TOP-ø1.5, BODY-ø1.5
- Ⓓ Manifold station No. : 4 stations
- Ⓔ Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
- Ⓕ Coil housing : Open frame (diode integrated) lead wire for AC voltage
- Ⓖ to Ⓘ : None
- Ⓙ Rated voltage : 200 VAC 50/60 Hz

[Example of model No. 2]

GAG352N-2-7-H3AASZ-DC24V

Model : GAG352 (common supply/separate flow, port C pressurization)

- Ⓐ NO port size : 1/4
- Ⓑ Thread : NPT
- Ⓒ Orifice size : TOP-ø2.0, BODY-ø2.0
- Ⓓ Manifold station No. : 7 stations
- Ⓔ Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
- Ⓕ Coil housing : Open frame lead wire for DC voltage
- Ⓖ Manual override (locking) : Selected
- Ⓗ Other options : None
- Ⓘ Surge suppressor : With surge suppressor
- Ⓙ Rated voltage : 24 VDC

⚠ Precautions for model No. selection

*1 : Orders for only the masking plate and sub-plate are also available. Contact CKD for details.

Notes for Ⓓ to Ⓔ

*2 : For 11 or more manifold station No., contact CKD.

*3 : Do not use fluid containing oil with ethylene propylene rubber, since it is not oil-resistant.

For Items Ⓕ to Ⓙ, the combinations indicated with codes are available.
Note that if options for Items Ⓖ to Ⓘ are not required, they should be left blank.

Ⓕ Coil housing			Ⓖ	Ⓗ Other options					Ⓘ	Ⓙ Rated voltage
Description			Manual override (Locking)	Cable gland (marine cable gland)			Conduit (conduit piping)		With surge suppressor	Description
				A-15a	A-15b	A-15c	CTC19	G1/2		
3A	Open frame	Lead wire (IP65 or equivalent)	A				G	H	S	12 VDC, 24 VDC, 48 VDC, 100 VDC
3M		HP terminal box (G1/2)		D	E	F				
3N		HP terminal box with lamp (G1/2)								12 VDC, 24 VDC, 100 VDC
3I		HP term box (IP65, equiv) (G1/2)								12 VDC, 24 VDC, 48 VDC, 100 VDC
3J		HP term.box w/ lamp (IP65 equiv.) (G1/2)								12 VDC, 24 VDC, 100 VDC
5A	Open frame (diode integrated)	Lead wire (IP65 or equivalent)	A				G	H		100 VAC, 200 VAC
5M		HP terminal box (G1/2)		D	E	F				
5N		HP terminal box with lamp (G1/2)								
5I		HP term box (IP65, equiv) (G1/2)								
5J		HP term.box w/ lamp (IP65 equiv.) (G1/2)								

⚠ Refer to the following cautions for Ⓕ to Ⓙ.

3A 5A

- Open frame
  Lead wire 300 mm
- 5A (diode integrated)

3M 3N 5M 5N

- Open frame HP terminal box
- 5M, 5N (diode integrated)

3I 3J 5I 5J

- Open frame HP terminal box
  (IP65 or equivalent)
- 5I, 5J (diode integrated)

G H

- Conduit
- G(CTC19)
- H(G1/2)

Refer to page 330
for coil selection.

⚠ Precautions for model No. selection

Ⓕ Notes for

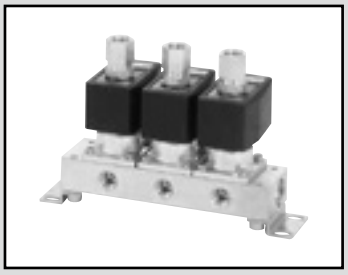
*4 : Coils for 5A/5M/5N/5I/5J have a diode to convert AC to DC voltage.

Notes for Ⓗ to Ⓘ

*5 : For Item Ⓗ, select an option from D, E, F, G and H.
*6 : The surge suppressor is attached with the lead wire coil. When selecting a coil with a terminal box, the surge suppressor is mounted in the terminal box.
*7 : Surge suppressor is incorporated as standard in the coil with diode.
*8 : Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.
Note that tropicalization is not available when the manual override option (A) is selected.

Notes for Ⓙ

*9 : 100 VAC coil is compatible with 100 VAC 50/60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz.
*10 : For voltages other than above, contact CKD.
*11 : The lead wire is available in the standard 300 mm length, and 500mm, 1000 mm, 2000 mm and 3000 mm lengths. Contact CKD for more information.



Direct acting 3-port solenoid valve for dry air, manifold/actuator
General purpose

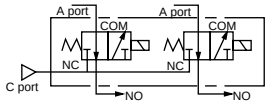
GAG33*/GAG43*-Z Series

- NC pressurization
- Common supply/individual exhaust

RoHS CAD

JIS symbol

- GAG33*/GAG43*-Z
  (Common supply/individual exhaust)



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Item	Standard specifications
Working fluid	For dry air (atmospheric dew point -60°C and over)/inert gas/low vacuum [1.33 x 10^2 Pa (abs)]
Working pressure differential MPa	0 to 1 (refer to max. working pressure differential in individual specifications.)
Max. working pressure MPa	1 (≈150 psi, 10 bar)
Proof pressure (water pressure) MPa	10 (≈1500 psi, 100 bar)
Fluid temperature °C	-10 (14°F) to 45 (113°F) (no freezing)
Ambient temperature °C	-10 (14°F) to 45 (113°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

Individual specifications

Item / Model No.	NO port size	Orifice size (mm) TOP	Orifice size (mm) BODY	Max. working pressure differential (MPa)	Rated voltage	Power consumption (W) AC50/60 Hz	Power consumption (W) DC
GAG331-1-Z	Rc1/8	1.5	1.5	1.0 (≈150 psi, 10 bar)	100 VAC 50/60 Hz	17	14
-2-Z		2.0	2.0	0.7 (≈100 psi, 7 bar)			
GAG332-1-Z	Rc1/4	1.5	1.5	1.0 (≈150 psi, 10 bar)	200 VAC 50/60 Hz		
-2-Z		2.0	2.0	0.7 (≈100 psi, 7 bar)			
GAG432-4-Z	Rc1/4	3.0	3.0	0.7 (≈100 psi, 7 bar)			
-5-Z		3.5	3.0	0.4 (≈58 psi, 4 bar)	12 VDC 24 VDC 48 VDC 100 VDC		
GAG433-4-Z	Rc3/8	3.0	3.0	0.7 (≈100 psi, 7 bar)			
-5-Z		3.5	3.0	0.4 (≈58 psi, 4 bar)			

*1 : The model numbers above are for the basic NO port size (Rc) and orifice size. Refer to How to order for other combinations.
*2 : For A and C port sizes, refer to How to order (page 354) and dimensions (pages 222 to 225).
*3 : The voltage fluctuation range must be ±10% of the rated voltage.
*4 : The leakage current must be less than the values shown below.
*5 : When using at low vacuum, vacuum the NO port side.

Leakage current: Voltage / Model No.	100 VAC	200 VAC	12 VDC	24 VDC	48 VDC	100 VDC
GAG33*-******Z	6 mA or less	3 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less
GAG43*-******Z	8 mA or less	4 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less

Weight

Model No.	Weight (kg) Actuator only	2 stations	3 stations	4 stations	5 stations	6 stations	7 stations	8 stations	9 stations	10 stations
GAG33*-*-*-H3AZ	0.45	1.6	2.3	3.2	3.7	4.6	5.3	6.0	7.0	7.4
GAG432-*-*-H3AZ	0.51	1.8	2.7	3.6	4.3	5.4	6.1	7.0	8.1	8.6
GAG433-*-*-H3AZ	0.52	1.8	2.7	3.6	4.4	5.4	6.2	7.1	8.2	8.7

Flow characteristics

Model No.	Port size	Orifice size (mm)		Flow characteristics			
		TOP	BODY	C[dm³/(s·bar)]		b	
				TOP	BODY	TOP	BODY
GAG331-1-Z	Rc1/8	1.5	1.5	0.29	0.29	0.64	0.53
-2-Z		2.0	2.0	0.53	0.53	0.54	0.52
GAG332-1-Z	Rc1/4	1.5	1.5	0.29	0.29	0.64	0.53
-2-Z		2.0	2.0	0.53	0.53	0.54	0.52
GAG432-4-Z	Rc1/4	3.0	3.0	1.1	1.1	0.72	0.52
-5-Z		3.5	3.0	1.5	1.1	0.62	0.52
GAG433-4-Z	Rc3/8	3.0	3.0	1.1	1.1	0.72	0.52
-5-Z		3.5	3.0	1.5	1.1	0.62	0.52

*1 : Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 x C.

Internal structure and parts list

The same as AG3*/4*-Z Series. Refer to page 346.

Dimensions

The same as the open frame of GAG33/43 Series. Refer to pages 222 to 225.

How to order

● Common supply/individual exhaust (port C pressurization)

GAG33 / GAG43 **1** **-** **2** **-** **6** **-** **H** **5A** **A** **G** **S** **Z** **-** **AC100V**

- GAG33 / GAG43 → Model No.
- 1 → Ⓐ NO port size
- 2 → Ⓑ Thread
- 6 → Ⓒ Orifice size
- H → Ⓓ Manifold station No. *2
- 5A → Ⓔ Body/sealant combination *3
- A → Ⓕ Coil housing
- G → Ⓖ Manual override (locking)
- S → Ⓘ With surge suppressor
- AC100V → Ⓙ Rated voltage
- Ⓗ Other options

Code	Description	Model No. GAG33*	Model No. GAG43*
Ⓐ NO port size			
1	1/8	●	
2	1/4	●	●
3	3/8		●
Ⓑ Thread			
Blank	Rc	●	●
G	G	●	●
N	NPT	●	●

Ⓒ Orifice size

	GAG33* TOP	GAG33* BODY	GAG43* TOP	GAG43* BODY	GAG33*	GAG43*
1	ø1.5	ø1.5	-	-	●	
2	ø2.0	ø2.0	-	-	●	
4	-	-	ø3.0	ø3.0		●
5	-	-	ø3.5	ø3.0		●

Ⓓ Manifold station No.			
2 to 10	2 stations to 10 stations	●	●
0	Actuator only	●	●

Ⓔ Body/sealant combination

	Body	Seal	Treatment	Remarks	GAG33*	GAG43*
H	Copper alloy	Nitrile rubber	Oil-prohibited	—	●	●
J		Fluoro rubber		—	●	●
P		Ethylene propylene rubber		—	●	●
L	Stainless steel	Nitrile rubber		—	●	●
M		Fluoro rubber		—	●	●
R		Ethylene propylene rubber		—	●	●

Refer to Intro Page 39 for reference on material combinations.

Ⓕ to Ⓙ

Refer to page 355 for details on the coil housing, other options and voltage, etc.

The combinations indicated with ● in the above table are available.

[Example of model No. 1]

GAG331-1-4-H5AZ-AC200V

Model : GAG331 (common supply/individual exhaust, port C pressurization)

- Ⓐ NO port size : 1/8
- Ⓑ Thread : Rc
- Ⓒ Orifice size : TOP-ø1.5, BODY-ø1.5
- Ⓓ Manifold station No. : 4 stations
- Ⓔ Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
- Ⓕ Coil housing : Open frame (diode integrated) lead wire for AC voltage
- Ⓖ to Ⓘ : None
- Ⓙ Rated voltage : 200 VAC 50/60 Hz

[Example of model No. 2]

GAG332G-2-7-H3AASZ-DC24V

Model : GAG332 (common supply/individual exhaust, port C pressurization)

- Ⓐ NO port size : 1/4
- Ⓑ Thread : G
- Ⓒ Orifice size : TOP-ø2.0, BODY-ø2.0
- Ⓓ Manifold station No. : 7 stations
- Ⓔ Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
- Ⓕ Coil housing : Open frame lead wire for DC voltage
- Ⓖ Manual override (locking) : Selected
- Ⓗ Other options : None
- Ⓘ Surge suppressor : With surge suppressor
- Ⓙ Rated voltage : 24 VDC

⚠ Precautions for model No. selection

*1 : Orders for only the masking plate and sub-plate are also available. Contact CKD for details.

Notes for Ⓓ to Ⓔ

*2 : For 11 or more manifold station No., contact CKD.

*3 : Do not use fluid containing oil with ethylene propylene rubber, since it is not oil-resistant.

For Items Ⓕ to Ⓙ, the combinations indicated with codes are available.
Note that if options for Items Ⓖ to Ⓘ are not required, they should be left blank.

Ⓕ Coil housing			Ⓖ	Ⓗ Other options					Ⓘ	Ⓙ Rated voltage
Description			Manual override (Locking)	Cable gland (marine cable gland)			Conduit (conduit piping)		With surge suppressor	Description
				A-15a	A-15b	A-15c	CTC-19	G1/2		
3A	Open frame	Lead wire (IP65 or equivalent)	A				G	H	S	12 VDC, 24 VDC, 48 VDC, 100 VDC
3M		With HP terminal box (G1/2)		D	E	F				
3N		HP terminal box with lamp (G1/2)								12 VDC, 24 VDC, 100 VDC
3I		HP terminal box (IP65 or equivalent) (G1/2)								12 VDC, 24 VDC, 48 VDC, 100 VDC
3J		HP term box, lamp (IP65, equiv) (G1/2)								12 VDC, 24 VDC, 100 VDC
5A	Open frame (diode integrated)	Lead wire (IP65 or equivalent)	A				G	H		100 VAC, 200 VAC
5M		With HP terminal box (G1/2)		D	E	F				
5N		HP terminal box with lamp (G1/2)								
5I		HP terminal box (IP65 or equivalent) (G1/2)								
5J		HP term box, lamp (IP65, equiv) (G1/2)								

⚠ Refer to the following cautions for Items Ⓕ to Ⓙ.

3A 5A		● Open frame Lead wire 300 mm ● 5A (diode integrated)
3M 3N 5M 5N		● Open frame HP terminal box ● 5M, 5N (diode integrated)
3I 3J 5I 5J		● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

G H		● Conduit ● G(CTC19) ● H(G1/2)

Refer to page 330 for coil selection.

⚠ Precautions for model No. selection

Notes for Item Ⓕ

*4 : Coils for 5A/5M/5N/5I/5J have a diode to convert AC to DC voltage.

Notes for Items Ⓗ to Ⓘ

*5 : For Item Ⓗ, select an option from D, E, F, G and H.
*6 : The surge suppressor is attached with the lead wire coil. When selecting a coil with a terminal box, the surge suppressor is mounted in the terminal box.
*7 : Surge suppressor is incorporated as standard in the coil with diode.
*8 : Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.
Note that tropicalization is not available when the manual override option (A) is selected.

Notes for Item Ⓙ

*9 : 100 VAC coil is compatible with 100 VAC 50/60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz.
*10 : For voltages other than above, contact CKD.
*11 : The lead wire is available in the standard 300 mm length, and 500mm, 1000 mm, 2000 mm and 3000 mm lengths. Contact CKD for more information.

Direct acting 3-port solenoid valve for dry air, actuator
General purpose

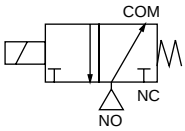
GAG34*/GAG44*-Z Series

● NO pressurization

RoHS CAD

JIS symbol

● GAG34*/44*-Z
: NO pressurization



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Item	Standard specifications
Working fluid	For dry air (atmospheric dew point -60°C and over)/inert gas/low vacuum [1.33 x 10^2 Pa (abs)]
Working pressure differential MPa	0 to 1 (refer to max. working pressure differential in individual specifications.)
Max. working pressure MPa	1.5 (≈220 psi, 15 bar)
Proof pressure (water pressure) MPa	10 (≈1500 psi, 100 bar)
Fluid temperature °C	-10 (14°F) to 45 (113°F) (no freezing)
Ambient temperature °C	-10 (14°F) to 45 (113°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

Individual specifications

Item / Model No.	Port size	Orifice size (mm) TOP	Orifice size (mm) BODY	Max. working pressure differential (MPa)	Rated voltage	Power consumption (W) AC50/60 Hz	Power consumption (W) DC	Weight (kg)
GAG341-1-Z	Rc1/8	1.5	1.5	1.0 (≈150 psi, 10 bar)	100 VAC 50/60 Hz	17	14	0.45
-2-Z		2.0	2.0	0.45 (≈65 psi, 4.5 bar)				
GAG342-1-Z	Rc1/4	1.5	1.5	1.0 (≈150 psi, 10 bar)				
-2-Z		2.0	2.0	0.45 (≈65 psi, 4.5 bar)				
GAG442-1-Z	Rc1/4	2.0	2.0	0.75 (≈110 psi, 7.5 bar)	200 VAC 50/60 Hz			0.51
-3-Z		2.0	3.0	0.7 (≈100 psi, 7 bar)				
-4-Z		3.0	3.0	0.25 (≈36 psi, 2.5 bar)				
GAG443-1-Z	Rc3/8	2.0	2.0	0.75 (≈110 psi, 7.5 bar)	12 VDC 24 VDC 48 VDC 100 VDC			0.52
-3-Z		2.0	3.0	0.7 (≈100 psi, 7 bar)				
-4-Z		3.0	3.0	0.25 (≈36 psi, 2.5 bar)				

*1 : The model numbers above are for the basic NO port size (Rc) and orifice size. Refer to How to order for other combinations.
*2 : The voltage fluctuation range must be within ±10% of the rated voltage.
*3 : The leakage current must be less than or equal to the values shown below.
*4 : When using at low vacuum, vacuum the NC port side.

Leakage current: Voltage / Model No.	100 VAC	200 VAC	12 VDC	24 VDC	48 VDC	100 VDC
GAG34*-******Z	6 mA or less	3 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less
GAG44*-******Z	8 mA or less	4 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less

Flow characteristics

Model No.	Port size	Orifice size (mm)		Flow characteristics			
		TOP	BODY	C[dm³/(s·bar)]		b	
				TOP	BODY	TOP	BODY
GAG341 -1-Z	Rc1/8	1.5	1.5	0.29	0.29	0.64	0.53
-2-Z		2.0	2.0	0.53	0.53	0.54	0.52
GAG342 -1-Z	Rc1/4	1.5	1.5	0.29	0.29	0.64	0.53
-2-Z		2.0	2.0	0.53	0.53	0.54	0.52
GAG442 -1-Z	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52
-3-Z		2.0	3.0	0.53	1.1	0.54	0.52
-4-Z		3.0	3.0	1.1	1.1	0.72	0.52
GAG443 -1-Z	Rc3/8	2.0	2.0	0.53	0.53	0.54	0.52
-3-Z		2.0	3.0	0.53	1.1	0.54	0.52
-4-Z		3.0	3.0	1.1	1.1	0.72	0.52

*1 : Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 x C.

Internal structure and parts list

The same as AG3*/4*-Z Series. Refer to page 346.

Dimensions

The same as the open frame of GAG34/44 Series. Refer to pages 238 to 241.

How to order

GAG34 / GAG44 — 1 — ( ) — 1 — 0 — H — 5A — A — H — S — Z — AC100V

- GAG34 / GAG44: Model No.
- 1: A NO port size
- ( ): B Thread
- 1: C Orifice size
- 0: Actuator only (Fixed symbol)
- H: D Body/sealant combination *1 *2
- 5A: E Coil housing
- A: F Manual override (locking)
- H: G Other options
- S: H With surge suppressor
- Z
- AC100V: I Rated voltage

Code	Description	Model No. GAG34*	Model No. GAG44*
A NO port size			
1	1/8	●	
2	1/4	●	●
3	3/8		●
B Thread			
Blank	Rc	●	●
G	G	●	●
N	NPT	●	●

C Orifice size

	GAG34*		GAG44*			
	TOP	BODY	TOP	BODY		
1	ø1.5	ø1.5	ø2.0	ø2.0	●	●
2	ø2.0	ø2.0	-	-	●	
3	-	-	ø2.0	ø3.0		●
4	-	-	ø3.0	ø3.0		●

D Body/sealant combination

	Body	Seal	Treatment	Remarks		
H	Copper alloy	Nitrile rubber	Oil-prohibited	—	●	●
J		Fluoro rubber		—	●	●
P		Ethylene propylene rubber		—	●	●
L	Stainless steel	Nitrile rubber		—	●	●
M		Fluoro rubber		—	●	●
R		Ethylene propylene rubber		—	●	●

Refer to Intro Page 39 for reference on material combinations.

E to I

Refer to page 359 for details on the coil housing, other options and voltage, etc.

The combinations indicated with ● in the above table are available.

[Example of model No. 1]
GAG341-1-0-H5AZ-AC200V

Model : GAG341
- A NO port size : 1/8
- B Thread : Rc
- C Orifice size : TOP-ø1.5, BODY-ø1.5
- D Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
- E Coil housing : Open frame (diode integrated) lead wire for AC voltage
- F to H : None
- I Rated voltage : 200 VAC 50/60 Hz

[Example of model No. 2]
GAG342N-2-0-H3AASZ-DC24V

Model : GAG342
- A NO port size : 1/4
- B Thread : NPT
- C Orifice size : TOP-ø2.0, BODY-ø2.0
- D Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
- E Coil housing : Open frame lead wire for DC voltage
- F Manual override (locking) : Selected
- G Other options : None
- H Surge suppressor : With surge suppressor
- I Rated voltage : 24 VDC

⚠ Precautions for model No. selection

Notes for D

*1 : NO valve seal is fluoro rubber.
*2 : Do not use fluid containing oil with ethylene propylene rubber, since it is not oil-resistant.

For Items Ⓔ to Ⓘ, the combinations indicated with codes are available.
Note that if options for Items Ⓕ to Ⓗ are not required, they should be left blank.

Ⓔ Coil housing			Ⓕ	Ⓖ Other options					Ⓗ	Ⓘ Rated voltage
Description			Manual override (Locking)	Cable gland (marine cable gland)			Conduit (conduit piping)		With surge suppressor	Description
				A-15a	A-15b	A-15c	CTC19	G1/2		
3A	Open frame	Lead wire (IP65 or equivalent)	A				G	H	S	12 VDC, 24 VDC, 48 VDC, 100 VDC
3M		With HP terminal box (G1/2)		D	E	F				
3N		HP terminal box with lamp (G1/2)								12 VDC, 24 VDC, 100 VDC
3I		HP terminal box (IP65 or equivalent) (G1/2)								12 VDC, 24 VDC, 48 VDC, 100 VDC
3J		HP term box, lamp (IP65, equiv) (G1/2)								12 VDC, 24 VDC, 100 VDC
5A	Open frame (diode integrated)	Lead wire (IP65 or equivalent)	A				G	H		100 VAC, 200 VAC
5M		With HP terminal box (G1/2)		D	E	F				
5N		HP terminal box with lamp (G1/2)								
5I		HP terminal box (IP65 or equivalent) (G1/2)								
5J		HP term box, lamp (IP65, equiv) (G1/2)								

⚠ Refer to the following cautions for Items Ⓔ to Ⓘ.

3A 5A		● Open frame Lead wire 300 mm ● 5A (diode integrated)
3M 3N 5M 5N		● Open frame HP terminal box ● 5M, 5N (diode integrated)
3I 3J 5I 5J		● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

G H		● Conduit ● G(CTC19) ● H(G1/2)

Refer to page 330 for coil selection.

⚠ Precautions for model No. selection

Notes for Item Ⓔ

*3 : Coils for 5A/5M/5N/5I/5J have a diode to convert AC to DC voltage.

Notes for Items Ⓖ to Ⓗ

*4 : For Item Ⓖ, select an option from D, E, F, G and H.
*5 : The surge suppressor is attached with the lead wire coil. When selecting a coil with a terminal box, the surge suppressor is mounted in the terminal box.
*6 : Surge suppressor is incorporated as standard in the coil with diode.
*7 : Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.
Note that tropicalization is not available when the manual override option (A) is selected.

Notes for Item Ⓘ

*8 : 100 VAC coil is compatible with 100 VAC 50/60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz.
*9 : For voltages other than above, contact CKD.
*10 : The lead wire is available in the standard 300 mm length, and 500mm, 1000 mm, 2000 mm and 3000 mm lengths. Contact CKD for more information.