



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

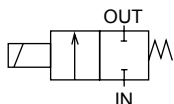
AB31/AB41-Z Series

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



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 [1.33×10^2 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 $\text{cm}^3/\text{min}(\text{ANR})$	0.2 or less
Mounting orientation	Unrestricted

Individual specifications

1 MPa = 10 bar

Item	Port size	Orifice size (mm)	Max. working pressure differential (MPa)	Rated voltage	Power consumption (W)		Weight (kg)		
Model No.					AC	DC			
AB31- ⁰¹ ₀₂ -1-*****Z	Rc1/8 Rc1/4	1.5	2.5 (≈360 psi)	100 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			17	14	0.57 (Rc1/4)
-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)						17

*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
-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

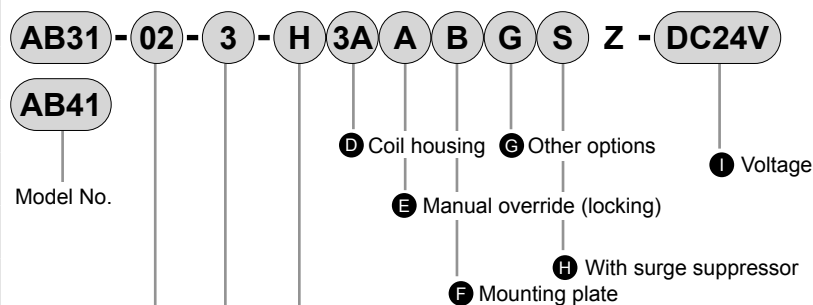
*1 : Effective cross-sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

*2 : Dimensions shown in [] are for stainless steel body.

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

AB31/41-Z Series

How to order



A Port size

B Orifice size

C Body/sealant combination

*1
*2

Code	Description	Code	Description	Code	Description	Model No.		
A Port size						AB31	AB41	AB41 Low pressure Large flow
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			●

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

C 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.

D to I

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

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

⚠ Precautions for model No. selection

Notes for C




*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 ④ to ①, the combinations indicated with codes are available.
Note that if options for Items ⑤ to ⑧ are not required, they should be left blank.

D Coil housing			E	F	G Other options					H	I Rated voltage
Description			Manual override (Locking)	Mounting plate	Cable gland			Conduit		With surge suppressor	Description
					(marine cable gland)			(conduit piping)			
					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				12 VDC, 24 VDC, 100 VDC
3N		HP terminal box with lamp (G1/2)									12 VDC, 24 VDC, 48 VDC, 100 VDC
3I		HP terminal box (IP65 or equivalent) (G1/2)									12 VDC, 24 VDC, 100 VDC
3J		HP term box, lamp (IP65, equiv) (G1/2)						G	H		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)						G	H		

⚠ Refer to the following cautions for Items ④ to ①.

3A 5A		<ul style="list-style-type: none"> ● Open frame ● Lead wire 300mm ● 5A (diode integrated)
3M 3N 5M 5N		<ul style="list-style-type: none"> ● Open frame HP terminal box ● 5M, 5N (diode integrated)
3I 3J 5I 5J		<ul style="list-style-type: none"> ● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

G H		<ul style="list-style-type: none"> ● Conduit ● G(CTC19) ● H(G1/2)
--------	--	--

Refer to page 330 for coil selection.

⚠ Precautions for model No. selection

Notes for ④

*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 ⑤ to ⑧

- *4 : Manual override (Item ⑤ A) cannot be mounted on the low pressure large flow rate AB41-03/04-8.
- *5 : For ⑦, 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

- *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.

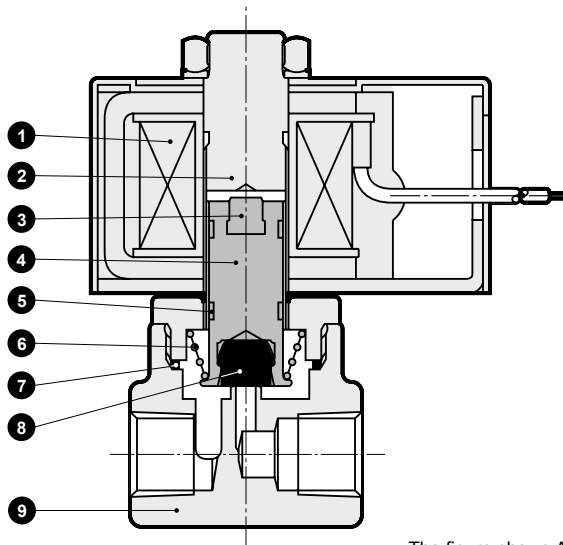
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/
AD
APK/
ADK
DryAir
EX-
XPLNprf
XPLNprf
HVB/
HVL
S B/
NAB
LAD/
NAD
Water-
Rela
NP/NAP/
NVP
SNP
CHB/G
MXB/G
Other
valves
SWD/
MWD
DustColl
CVE/
CVSE
CCH/
CPE/D
LifeSci
Gas-
Combus
Auto-
Water
Outdoor
SpecFld
Custom
Ending

AB31/41-Z Series

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

Internal structure and parts list

● AB31/41-Z Series



The figure shows AB31.

No.	Part name	Material	No.	Part name	Material
1	Coil assembly	-	6	Plunger spring	SUS304
2	Core assembly	SUS405 or equiv.316/403 *1	7	O-ring	NBR (FKM/EPDM)
3	Plunger cushion	PFA	8	Valve seal	NBR (FKM/EPDM)
4	Plunger	SUS405 or equiv.	9	Body	C3771/CAC408 (SUS303)
5	Wear ring	POM			

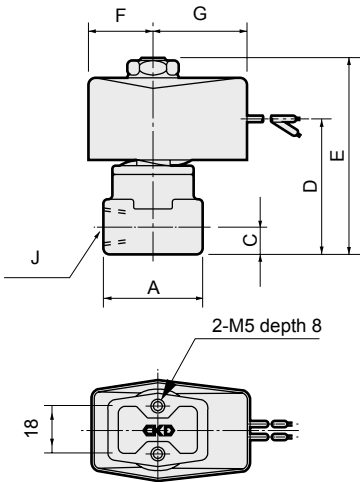
*1 : When the body/sealant combination code is other than H, the material is SUS405 or equivalent/316L/430. () shows options.

Dimensions

● 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



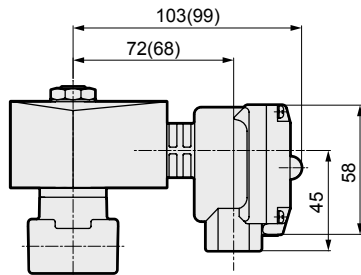
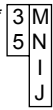
Model No.	A	B	C	D	E	F	G	H	J
AB31- ⁰¹ ₀₂ -1 to 6-*****Z	36	28	11	50.5	75	24	38	38	Rc1/8 Rc1/4
AB41-02-1 to 6-*****Z	36	28	11	52	80.5	28	42	46	Rc1/4
AB41- ⁰²⁻⁷ _{03-1 to 7} -*****Z	40	28	12	55	83.5	28	42	46	Rc1/4 Rc3/8
AB41- ⁰³⁻⁸ ₀₄ -*****Z	50	29	15	64	92.6	28	42	46	Rc3/8 Rc1/2

Optional dimensions



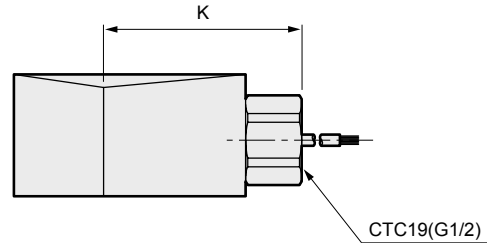
* Refer to the open frame lead wire dimensions on page 336 for common dimensions.

- Open frame + HP terminal box
AB31/41-**-***3M******Z



Dimensions shown in () are for AB31 Series.

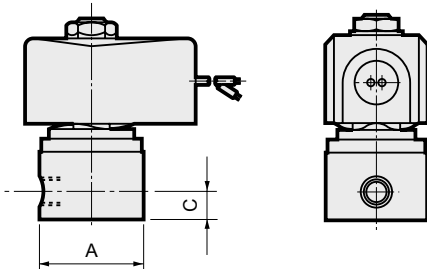
- Open frame + conduit
AB31/41-**-1 to 7-***3A****G**



Dimensions shown in () are for G1/2.

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

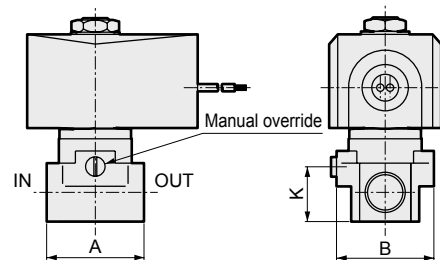
- Stainless steel body
AB31/41-**-***L******Z



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

*1 (The max. dimension is ø54)

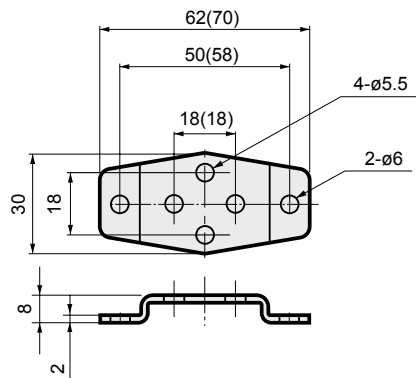
- Manual override (locking)
AB31/41-**-****A*****Z
(The figure shows copper alloy body.)



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- ⁰²⁻⁷ ₀₃₋₁ 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

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

EXA

FWD

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/
ADAPK/
ADK

DryAir

EX-
XPLNprf

XPLNprf

HVB/
HVLS ◇ B/
NABLAD/
NADWater-
RelaNP/NAP/
NVP

SNP

CHB/G

MXB/G

Other
valvesSMD/
MWD

DustColl

CVE/
CVSECCH/
CPE/D

LifeSci

Gas-
CombusAuto-
Water

Outdoor

SpecFld

Custom

Ending



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

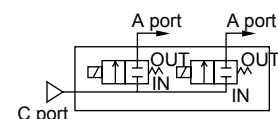
GAB312/GAB352/GAB412/GAB452-Z Series

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

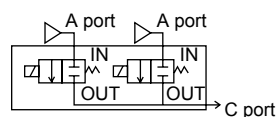


JIS symbol

- 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 [1.33×10^2 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	DC
GAB312/352-1-Z	—	1.5	2.5 (≈360 psi, 25 bar)	100 VAC 50/60 Hz 200 VAC 50/60 Hz 12 VDC 24 VDC 48 VDC 100 VDC	17	14
-2-Z		2.0	1.5 (≈220 psi, 15 bar)			
-3-Z		3.0	0.5 (≈73 psi, 5 bar)			
-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)			
GAB412/452-1-Z	—	1.5	4.0 (≈580 psi, 40 bar)			
-2-Z		2.0	2.5 (≈360 psi, 25 bar)			
-3-Z		3.0	0.9 (≈130 psi, 9 bar)			
-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	100 VAC	200 VAC	12 VDC	24 VDC	48 VDC	100 VDC
	Model No.						
	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[dm ³ /(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 $S \approx 5.0 \times C$.

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.

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

GAB312/352/412/452-Z Series

How to order

● Common supply (port C pressurization)

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

● Individual supply (port A pressurization)

GAB352

E Coil housing **H** With surge suppressor

F Manual override (locking) **I** Rated voltage

● Common supply (port C pressurization)

GAB412

G Other options

● Individual supply (port A pressurization)

GAB452

A Thread

Model No.

B Orifice size

C Manifold station No.

*2

D Body/sealant combination

*3

[Example of model No. 1]

GAB312-1-3-H5AZ-AC200V

Model : GAB312 (common supply, port C pressurization)

A Thread : Rc

B Orifice size : ø1.5

C Manifold station No. : 3 stations

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]

GAB352G-5-2-H3AASZ-DC24V

Model : GAB352 (individual supply/port A pressurization)

A Thread : G

B Orifice size : ø4

C Manifold station No. : 2 stations

D Body/sealant combination : Body - copper alloy, sealant - nitrile rubber

E Coil housing : Open frame lead wire for DC voltage

F Manual override (locking) : With

G Other options : None

H Surge suppressor : With surge suppressor

I Rated voltage : 24 VDC

Model No.

GAB312	GAB412
GAB352	GAB452

Code	Description		
A Thread			
Blank	Rc	●	●
G	G	●	●
N	NPT	●	●

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

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

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

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

⚠ Precautions for model No. selection

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

Notes for **C** to **D**

*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.


GAB312/352/412/452-Z Series

For Items ⑤ to ⑪, the combinations indicated with codes are available.
Note that if options for Items ⑥ to ⑧ are not required, they should be left blank.

⑤ Coil housing			⑥	⑦ Other options					⑧	⑨ 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)								
3N		HP terminal box with lamp (G1/2)		D	E	F				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)								
5N		HP terminal box with lamp (G1/2)		D	E	F				
5I		HP term box (IP65, equiv) (G1/2)								
5J		HP term box, lamp (IP65, equiv) (G1/2)								

⚠ Refer to the following cautions for Items ⑤ to ⑪.

3A 5A		<ul style="list-style-type: none"> ● Open frame lead wire 300 mm ● 5A (diode integrated)
3M 3N 5M 5N		<ul style="list-style-type: none"> ● Open frame HP terminal box ● 5M, 5N (diode integrated)
3I 3J 5I 5J		<ul style="list-style-type: none"> ● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

G H		<ul style="list-style-type: none"> ● Conduit ● G(CTC19) ● H(G1/2)
--------	--	--

Refer to page 330 for coil selection.

⚠ Precautions for model No. selection

Notes for ⑤

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

Notes for ⑦ to ⑧

*5 : For Item ⑦, 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

*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

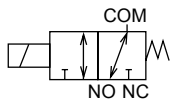
- Universal, NC pressurization, NO pressurization
- Port size : Rc1/8, Rc1/4, Rc3/8



JIS symbol

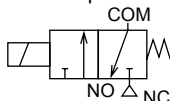
● AG31/41-Z

: Universal



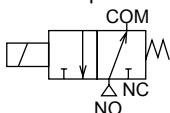
● AG33/43-Z

: 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 [1.33×10^2 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	Port size	Orifice size (mm)		Max. working pressure differential (MPa)	Max. working pressure MPa	Rated voltage	Power consump (W)		Weight (kg)
Model No.		TOP	BODY				AC	DC	
Universal									
AG31- ⁰¹ ₀₂ -1-*****Z	Rc1/8	1.5	1.5	0.7 (≈100 psi)	1	100 VAC 50/60 Hz	17	14	0.45 0.57 (Rc1/4) 0.59 (Rc3/8)
-2-*****Z	Rc1/4	2.0	2.0	0.4 (≈58 psi)					
AG41- ⁰² ₀₃ -1-*****Z	Rc1/4	2.0	2.0	0.65 (≈94 psi)					
-2-*****Z	Rc3/8	2.3	2.3	0.4 (≈58 psi)					
NC pressurization									
AG33- ⁰¹ ₀₂ -1-*****Z	Rc1/8	1.5	1.5	1.0 (≈150 psi)	1	200 VAC 50/60 Hz	17	14	0.45 0.57 (Rc1/4) 0.59 (Rc3/8)
-2-*****Z	Rc1/4	2.0	2.0	0.7 (≈100 psi)					
AG43- ⁰² ₀₃ -4-*****Z	Rc1/4	3.0	3.0	0.7 (≈100 psi)					
-5-*****Z	Rc3/8	3.5	3.0	0.4 (≈58 psi)					
NO pressurization									
AG34- ⁰¹ ₀₂ -1-*****Z	Rc1/8	1.5	1.5	1.0 (≈150 psi)	1.5	12 VDC 24 VDC 48 VDC 100 VDC			0.45 0.57 (Rc1/4) 0.59 (Rc3/8)
-2-*****Z	Rc1/4	2.0	2.0	0.45 (≈65 psi)					
AG44- ⁰² ₀₃ -1-*****Z	Rc1/4	2.0	2.0	0.75 (≈110 psi)					
-3-*****Z	Rc3/8	2.0	3.0	0.7 (≈100 psi)					
-4-*****Z		3.0	3.0	0.25 (≈36 psi)					

*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 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 $S \approx 5.0 \times C$.

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

AG3*/4*-Z Series

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

How to order

● Universal

AG31-02-2-H3AABGSZ-DC24V

AG41

● NC pressurization

AG33

AG43

● NO pressurization

AG34

AG44

Model No.

A Port size

B Orifice size

C Body/sealant combination

*1
*2

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

Code	Description	Code	Description	Code	Description	Model No.					
A Port size						AG31	AG41	AG33	AG43	AG34	AG44
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		●		●		●

B 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	-	-	-	-	●

C 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.

D to I													
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

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

⚠ Precautions for model No. selection

Notes for **C**




*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 ④ to ①, the combinations indicated with codes are available.
Note that if options for Items ⑤ to ⑧ are not required, they should be left blank.

D Coil housing			E	F	G Other options					H	I Rated voltage
Description			Manual override (Locking)	Mounting plate	Cable gland			Conduit		With surge suppressor	Description
					(marine cable gland)			(conduit piping)			
					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				12 VDC, 24 VDC, 100 VDC
3N		HP terminal box with lamp (G1/2)									12 VDC, 24 VDC, 48 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 ④ to ①.

3A 5A		<ul style="list-style-type: none"> ● Open frame ● Lead wire 300 mm ● 5A (diode integrated)
3M 3N 5M 5N		<ul style="list-style-type: none"> ● Open frame HP terminal box ● 5M, 5N (diode integrated)
3I 3J 5I 5J		<ul style="list-style-type: none"> ● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

G H		<ul style="list-style-type: none"> ● Conduit ● G(CTC19) ● H(G1/2)
--------	--	--

Refer to page 330
for coil selection.

⚠ Precautions for model No. selection

Notes for ④

*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 ⑦ to ⑧

*4 : For ⑦, 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 ⑨

*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.

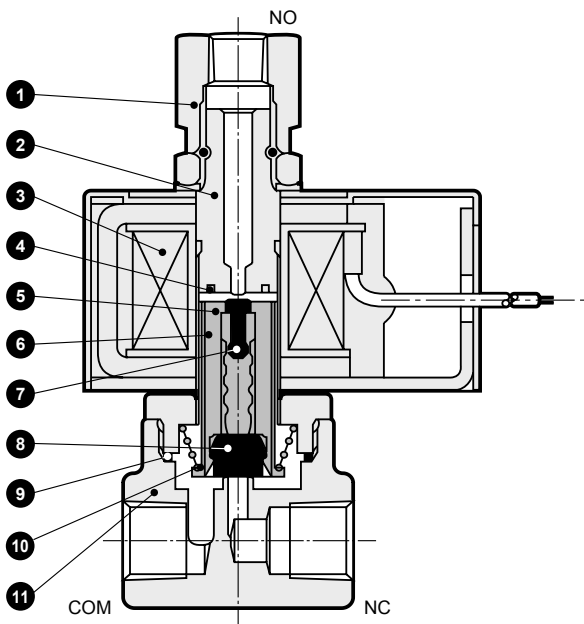
*10 : The lead wire is available in the standard 300 mm length, and 500 mm, 1000 mm, 2000 mm and 3000 mm lengths. Contact CKD for more information.

AG3*/4*-Z Series

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

Internal structure and parts list

● 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)
8	NC valve sealant	NBR (FKM/EPDM) ; (EPDM: Ethylene propylene rubber)
9	O-ring	NBR (FKM/EPDM) ; rubber
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.

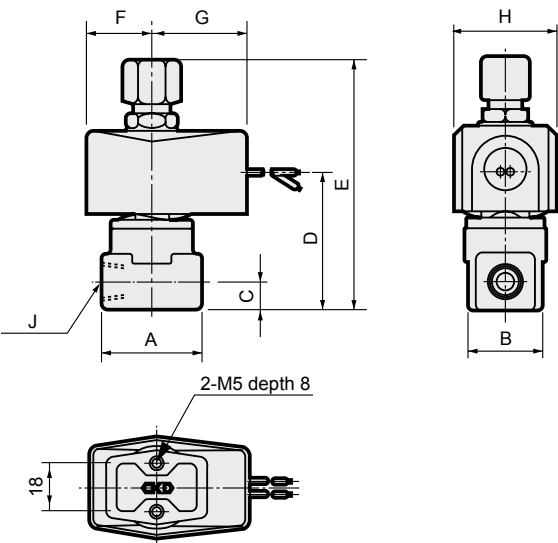
The figure shows AG31/33/34.

Dimensions



● Open frame lead wire

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



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

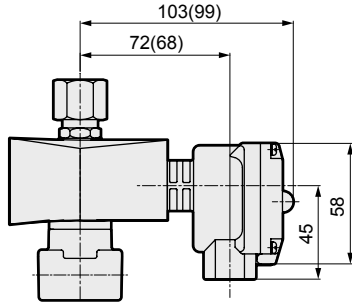


* Refer to the open frame lead wire dimensions on page 346 for common dimensions.

● Open frame + HP terminal box

AG3*/4*-Z-***Z

5
3
J
I
N
M

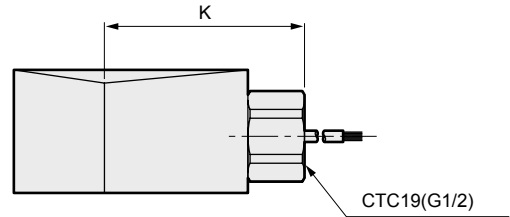


Dimensions shown in () are for AG3 Series.

● Open frame + conduit

AG3*/4*-Z-***Z

3A
5A
G
H



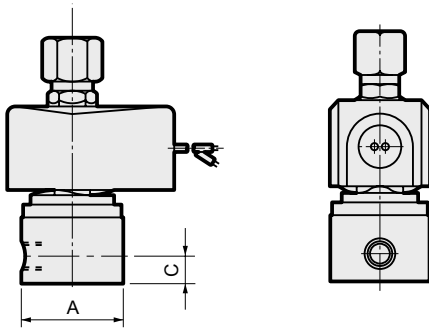
Dimensions shown in () are for G1/2.

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

● Stainless steel body

AG3*/4*-Z-***Z

L
M
R

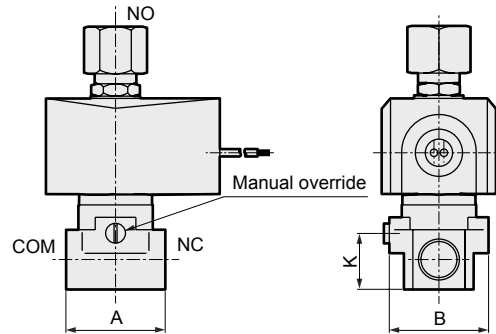


Model No.	A	C
AG3*-01-02-1 to 2-***Z	ø37.5	11
AG4*-02-1 to 5-***Z	ø37.5	11
AG4*-03-1 to 5-***Z	ø45	12

● Manual override (locking)

AG3*/4*-Z-***Z

(The figure shows copper alloy body.)

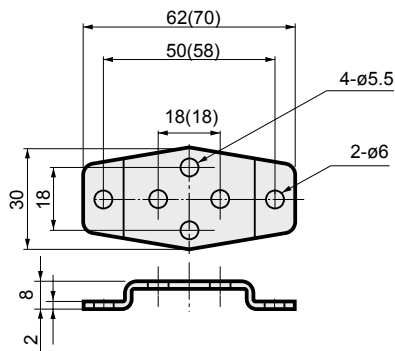


Model No.	A	B	K
AG3*-01-02-1 to 2-***Z	36	38(ø37.5)	19.5
AG4*-02-1 to 5-***Z	36	38(ø37.5)	19.5
AG4*-03-1 to 5-***Z	40	40(ø45)	22.5

Dimensions shown in () are for stainless steel body.

● Mounting plate

AG3*/4*-Z-***Z

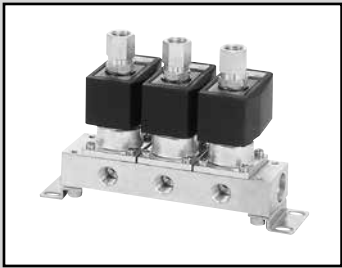


Dimensions shown in () are for mounting plate No. 2.

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- <u>H/J/P</u> ● Stainless steel body AG4*-02-1 to 5- <u>L/M/R</u>
AG4-GE-100159-MOUNT-PLATE-KIT (Mounting plate No.2)	● Stainless steel body AG4*-03-1 to 5- <u>L/M/R</u>

* Material: Steel/Zinc plated

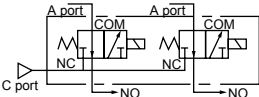
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/AD
APK/ADK
DryAir
EX-XPLNprf
XPLNprf
HVB/HVL
S [◇] B/NAB
LAD/NAD
Water-Rela
NP/NAP/NVP
SNP
CHB/G
MXB/G
Other valves
SWD/MWD
DustColl
CVE/CVSE
CCH/CPE/D
LifeSci
Gas-Combus
Auto-Water
Outdoor
SpecFld
Custom
Ending



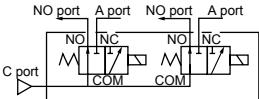
Direct acting 3-port solenoid valve for dry air, manifold/actuator
 General purpose
GAG31*/GAG35*/GAG41*/GAG45* -Z Series
 ● Universal
 ● Common supply/individual exhaust,
 common supply/separate flow



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

*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[dm ³ /(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 $S \approx 5.0 \times C$.

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.

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

GAG31*/35*/41*/45*-Z Series

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) **F** Coil housing **I** With surge suppressor

GAG35 **1**

G Manual override (locking) **J** Rated voltage

● Common supply/individual exhaust (port C pressurization)

H Other options

GAG41 **2**

● Common supply/separate flow (port C pressurization)

GAG45 **2**

Model No.

A NO port size

B Thread

C Orifice size

D Manifold station No.
*2

E Body/sealant combination
*3

[Example of model No. 1]

GAG311-1-4-H5AZ-AC200V

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

A NO port size : 1/8

B Thread : Rc

C Orifice size : TOP-ø1.5, BODY-ø1.5

D Manifold station No. : 4 stations

E Body/sealant combination

: Body - copper alloy,
sealant - nitrile rubber

F Coil housing : Open frame
(diode integrated) lead
wire for AC voltage

G to **I** : None

J 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)

A NO port size : 1/4

B Thread : NPT

C Orifice size : TOP-ø2.0, BODY-ø2.0

D Manifold station No. : 7 stations

E Body/sealant combination : Body - copper alloy, sealant - nitrile rubber

F Coil housing : Open frame lead wire for DC voltage

G Manual override (locking) : Selected

H Other options : None

I Surge suppressor : With surge suppressor

J Rated voltage : 24 VDC

Code		Description	GAG3	GAG4			
A NO port size							
1	1/8		●				
2	1/4		●	●			
3	3/8			●			
B Thread							
Blank	Rc		●	●			
G	G		●	●			
N	NPT		●	●			
C 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	●	●	
D Manifold station No.							
2 to 10	2 stations to 10 stations				●	●	
0	Actuator only				●	●	
E 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.							
F to J							
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.

⚠ Precautions for model No. selection

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

Notes for **D** to **E**

*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.


GAG31*/35*/41*/45*-Z Series

For Items ⑥ to ⑪, the combinations indicated with codes are available.
Note that if options for Items ③ to ① are not required, they should be left blank.

F Coil housing			G	H Other options					I	J Rated voltage	
Description			Manual override (Locking)	Cable gland			Conduit		With surge suppressor	Description	
				(marine cable gland)			(conduit piping)				
				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				12 VDC, 24 VDC, 100 VDC	
3N		HP terminal box with lamp (G1/2)								12 VDC, 24 VDC, 48 VDC, 100 VDC	
3I		HP term box (IP65, equiv) (G1/2)								12 VDC, 24 VDC, 100 VDC	
3J		HP term box w/ lamp (IP65 equiv) (G1/2)					G	H		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 ⑥ to ⑪.

3A 5A		<ul style="list-style-type: none"> ● Open frame Lead wire 300 mm ● 5A (diode integrated)
3M 3N 5M 5N		<ul style="list-style-type: none"> ● Open frame HP terminal box ● 5M, 5N (diode integrated)
3I 3J 5I 5J		<ul style="list-style-type: none"> ● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

G H		<ul style="list-style-type: none"> ● Conduit ● G(CTC19) ● H(G1/2)
--------	--	--

Refer to page 330
for coil selection.

⚠ Precautions for model No. selection

⑥ Notes for

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

Notes for ⑧ to ⑩

*5 : For Item ⑧, 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.

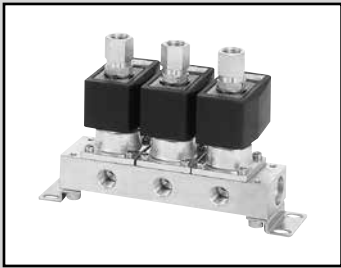
Notes for ⑩

*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.

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



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

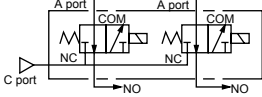
GAG33*/GAG43*-Z Series

- NC pressurization
- Common supply/individual exhaust



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 [1.33×10^2 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	NO port size	Orifice size (mm)		Max. working pressure differential (MPa)	Rated voltage	Power consumption (W)	
Model No.		TOP	BODY			AC50/60 Hz	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)	12 VDC 24 VDC 48 VDC 100 VDC		
-5-Z		3.5	3.0	0.4 (≈58 psi, 4 bar)			
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
		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[dm ³ /(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 $S \approx 5.0 \times C$.

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.

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

GAG33*/GAG43*-Z Series

How to order

● Common supply/individual exhaust (port C pressurization)

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

GAG43

F Coil housing **I** With surge suppressor
G Manual override (locking) **J** Rated voltage
H Other options

Model No.

A NO port size

B Thread

C Orifice size

D Manifold
 *2 station No.

E Body/sealant
 combination
 *3

[Example of model No. 1]

GAG331-1-4-H5AZ-AC200V

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

A NO port size : 1/8
B Thread : Rc
C Orifice size : TOP-ø1.5, BODY-ø1.5
D Manifold station No.: 4 stations
E Body/sealant combination

: Body - copper alloy,
 sealant - nitrile rubber

F Coil housing : Open frame
 (diode integrated) lead wire
 for AC voltage

G to **I** : None

J 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)

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

Code	Description	GAG33	GAG43				
A NO port size							
1	1/8	●					
2	1/4	●	●				
3	3/8		●				
B Thread							
Blank	Rc	●	●				
G	G	●	●				
N	NPT	●	●				
C Orifice size							
	GAG33*		GAG43*				
	TOP	BODY	TOP	BODY			
1	ø1.5	ø1.5	-	-	●		
2	ø2.0	ø2.0	-	-	●		
4	-	-	ø3.0	ø3.0		●	
5	-	-	ø3.5	ø3.0		●	
D Manifold station No.							
2	2 stations						
to	to				●	●	
10	10 stations						
0	Actuator only				●	●	
E 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.							
F to J							
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.

⚠ Precautions for model No. selection

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

Notes for **D** to **E**




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

(F) Coil housing			(G)	(H) Other options					(I)	(J) 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)								
3N		HP terminal box with lamp (G1/2)		D	E	F				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)								
5N		HP terminal box with lamp (G1/2)		D	E	F				
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 (F) to (J).

3A 5A		<ul style="list-style-type: none"> ● Open frame ● Lead wire 300 mm ● 5A (diode integrated)
3M 3N 5M 5N		<ul style="list-style-type: none"> ● Open frame HP terminal box ● 5M, 5N (diode integrated)
3I 3J 5I 5J		<ul style="list-style-type: none"> ● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

G H		<ul style="list-style-type: none"> ● Conduit ● G(CTC19) ● H(G1/2)
--------	--	--

Refer to page 330 for coil selection.

⚠ Precautions for model No. selection

Notes for Item (F)

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

Notes for Items (H) to (I)

*5 : For Item (H), 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 (J)

*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.

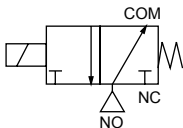
EXA
 FWD
 HNB/G
 USB/G
 FAB/G
 FGB/G
 FVB
 FWB/G
 FHB
 FLB
 AB
 AG
 AP/
AD
 APK/
ADK
 DryAir
 EX-
XPLNprf
 XPLNprf
 HVB/
HVL
 S ◇ B/
NAB
 LAD/
NAD
 Water-
Rela
 NP/NAP/
NVP
 SNP
 CHB/G
 MXB/G
 Other
valves
 SWD/
MWD
 DustColl
 CVE/
CVSE
 CCH/
CPE/D
 LifeSci
 Gas-
Combus
 Auto-
Water
 Outdoor
 SpecFld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



Direct acting 3-port solenoid valve for dry air, actuator
 General purpose
GAG34*/GAG44*-Z Series
 ● NO pressurization



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	Port size	Orifice size (mm)		Max. working pressure differential (MPa)	Rated voltage	Power consumption (W)		Weight (kg)
Model No.		TOP	BODY			AC50/60 Hz	DC	
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)	200 VAC 50/60 Hz			
-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)				12 VDC 24 VDC 48 VDC 100 VDC
-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)	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	100 VAC	200 VAC	12 VDC	24 VDC	48 VDC	100 VDC
	Model No.						
	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[dm ³ /(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 $S \approx 5.0 \times C$.

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.

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

GAG34/GAG44*-Z Series

How to order

GAG34 **1** **-** **1** **-** **0** **-** **H** **5A** **A** **H** **S** **Z** **-** **AC100V**

GAG44

Model No.

Actuator only
(Fixed symbol)

E Coil housing **H** With surge suppressor

F Manual override (locking) **I** Rated voltage

G Other options

Model No.

GAG34* GAG44*

Code	Description		
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 ⑤ to ⑪, the combinations indicated with codes are available.
Note that if options for Items ⑥ to ⑧ are not required, they should be left blank.

⑤ Coil housing			⑥	⑦ Other options					⑧	⑨ 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)								
3N		HP terminal box with lamp (G1/2)		D	E	F				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)								
5N		HP terminal box with lamp (G1/2)		D	E	F				
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 ⑤ to ⑪.

3A 5A		<ul style="list-style-type: none"> ● Open frame Lead wire 300 mm ● 5A (diode integrated)
3M 3N 5M 5N		<ul style="list-style-type: none"> ● Open frame HP terminal box ● 5M, 5N (diode integrated)
3I 3J 5I 5J		<ul style="list-style-type: none"> ● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

G H		<ul style="list-style-type: none"> ● Conduit ● G(CTC19) ● H(G1/2)
--------	--	--

Refer to page 330 for coil selection.

⚠ Precautions for model No. selection

Notes for Item ⑤

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

Notes for Items ⑦ to ⑨

*4 : For Item ⑦, 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 ⑨

*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.

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