



Direct acting 2-port solenoid valve
(General purpose valve)

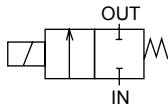
AB21 Series

- NC
- Port size: Rc1/8, Rc1/4



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
SAB/
NAB
LAD/
NAD
Water-
Rela
NP/INP/
NVP
SNP
CHB/G
MXB/G
Other
valves
SWD/
MWD
DustColl
CVE/
CVSE
CCH/
CPE/D
LifeSci
Gas-
Combus
Auto-
Water
SpecFld
Custom
Ending

JIS symbol



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	AB21
Working fluid	Air/water/kerosene/oil (50 mm ² /s or less)
Working pressure differential MPa	0 to 1.5 (refer to max. working pressure differential in individual specifications)
Max. working pressure MPa	1.5 (≈220 psi, 15 bar)
Proof pressure (water pressure) MPa	3 (≈440 psi, 30 bar)
Fluid temperature °C	-10 (14°F) to 40 (104°F) (no freezing)
Ambient temperature °C	-20 (-4°F) to 50 (122°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 ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions Model No.	Port size	Orifice size (mm)	Max. working pressure differential (MPa)						Rated voltage	Apparent power (VA)				Power consumption (W)		Weight (kg)
			Air		Water/kerosene		Oil (50 mm ² /s)			When holding		When starting		AC 50/60 Hz	DC	
			AC	DC	AC	DC	AC	DC		50 Hz	60 Hz	50 Hz	60 Hz			
AB21-01-1	Rc1/8	1.5	1.5	1.0	1.5	1.0	0.9	1.0	100 VAC 50/60 Hz *2	11	9	15.4	12.6	5.5/4.2	7	0.23 (Aluminum)
AB21-01-2		2.0	1.0	0.6	1.0	0.6	0.5	0.6								
AB21-01-3		3.0	0.7	0.2	0.4	0.2	0.25	0.2								
AB21-01-5		4.0	0.4	0.1	0.2	0.1	0.1	0.1								
AB21-02-1	Rc1/4	1.5	1.5	1.0	1.5	1.0	0.9	1.0	200 VAC 50/60 Hz *2	11	9	15.4	12.6	5.5/4.2	7	0.36 (Copper alloy)
AB21-02-2		2.0	1.0	0.6	1.0	0.6	0.5	0.6								
AB21-02-3		3.0	0.7	0.2	0.4	0.2	0.25	0.2								
AB21-02-5		4.0	0.4	0.1	0.2	0.1	0.1	0.1								

Flow characteristics

Model No.	Port size	Orifice size (mm)	Flow characteristics		
			C[dm ³ /(s·bar)]	b	Cv
NC					
AB21-01-1	Rc1/8	1.5	0.29	0.51	0.1
AB21-01-2		2.0	0.53	0.55	0.15
AB21-01-3		3.0	1.1	0.52	0.3
AB21-01-5		4.0	1.8	0.35	0.4
AB21-02-1	Rc1/4	1.5	0.29	0.51	0.1
AB21-02-2		2.0	0.53	0.55	0.15
AB21-02-3		3.0	1.1	0.52	0.3
AB21-02-5		4.0	1.8	0.35	0.4

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

*2 : The 100 VAC (50/60 Hz) can be used with 110 VAC (60 Hz). The 200 VAC (50/60 Hz) can be used with 220 VAC (60 Hz).

How to order

AB21 - **01** - **1** - **A** **00B** - **AC100V**

Model No.

A Port size

B Orifice size

C Body/sealant combination

*1

*2

D Option

E Rated voltage
*3

Code	Content		
A Port size			
01	Rc1/8		
02	Rc1/4		
B Orifice size			
1	φ1.5		
2	φ2		
3	φ3		
5	φ4		
C Body/sealant combination			
	Body	Seal	Remarks
Blank	Aluminum	Nitrile rubber	Air/kerosene/oil
2		Fluoro rubber	Air/kerosene/oil
A	Copper alloy	Nitrile rubber	Air/water/kerosene/oil
B		Fluoro rubber	Air/water/kerosene/oil
Refer to Intro Page 39 for reference on material combinations.			
D Option			
Blank	None		
00B	With mounting plate		
E Rated voltage			
AC100V	100 VAC 50/60 Hz, 110 VAC 60 Hz	For other voltages, contact CKD.	
AC200V	200 VAC 50/60 Hz, 220 VAC 60 Hz		
DC24V	24 VDC		

[Example of model No.]

AB21-01-1-A00B-AC100V

Model: AB21

- A** Port size : Rc1/8
- B** Orifice size : φ1.5
- C** Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
- D** Option : Mounting plate
- E** Rated voltage : 100 VAC 50/60 Hz, 110 VAC 60 Hz

⚠ Precautions for model No. selection

- *1 : For **B** 1 (φ1.5 orifice), only Item **C** A/B are available.
- *2 : When the fluid is water, select the copper alloy (option code: A or B) body.
- *3 : The voltage fluctuation range must be within ±10% of the rated voltage.
- *4 : Leave Item **C** blank for standard. However, to select 00B for Item **D**, indicate 0 for Item **C**.

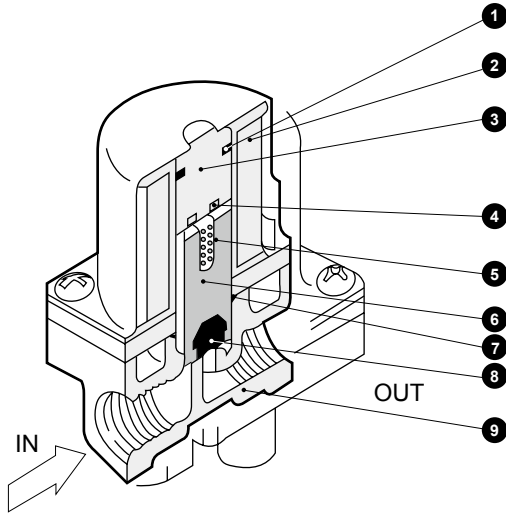
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/AD
APK/ADK
DryAir
EX-XPLNprf
XPLNprf
HVB/HVL
S [◇] B/NAB
LAD/NAD
Water-Rela
NP/NAP/NVP
SNP
CHB/G
MXB/G
Other valves
SWD/MWD
DustColl
CVE/CVSE
CCH / CPE/D
LifeSci
Gas-Combus
Auto-Water
SpecFld
Custom
Ending

AB21 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
- SAB/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
- SpecFld
- Custom
- Ending

Internal structure and parts list

● AB21 Series

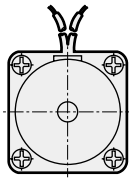


No.	Part name	Material
1	O-ring	Fluoro rubber
2	Coil	-
3	Core assembly	Stainless steel
4	Shading coil	Copper
5	Plunger spring	Stainless steel
6	Plunger	Stainless steel
7	O-ring	Nitrile or fluoro rubber
8	Seal	Nitrile or fluoro rubber
9	Body	Aluminum or copper alloy

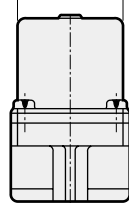
Dimensions



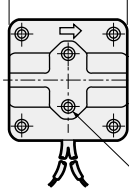
● AB21-01/02-1 to 5-*



φ35.5

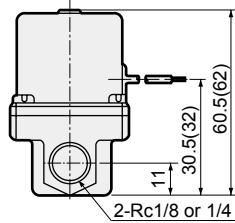


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2-M5 depth 8

* Lead wire length
250 mm

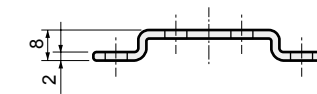
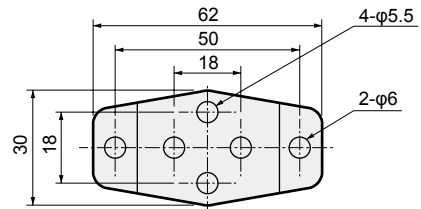


2-Rc1/8 or 1/4

Dimensions shown in () are for copper alloy body.

● With mounting plate

AB21-01/02-1 to 5-*00B



Mounting plate
No.1
GE-100106

MEMO

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

SpecFld

Custom

Ending



Direct acting 2-port solenoid valve, single unit
(General purpose valve)

AB31/AB41 Series ● NC

AB42 Series ● NO

● Port size: Rc1/8 to Rc1/2



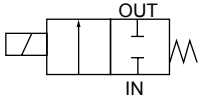
Refer to the Ending for details.



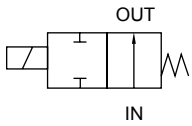
- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- SAB/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combust
- Auto-Water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

JIS symbol

● AB31/41: NC



● AB42: NO



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	Standard specifications		Optional specifications	
Working fluid	Air/low vacuum [1.33 x 10 ² Pa (abs)]/water/kerosene/oil (50 mm ² /s or less)		Hot water	Steam
Working pressure differential MPa	0 to 5 (refer to max. working pressure differential in individual specifications.)			
Proof pressure (water pressure) MPa	25 (≈3600 psi, 250 bar)			
Fluid temperature (*1) °C	-10 (14°F) to 60 (140°F)	-10 (14°F) to 90 (194°F)	-10 (14°F) to 184 (363.2°F)	
Ambient temperature °C	-20 (-4°F) to 60 (140°F)		-20 (-4°F) to 100 (212°F)	
Thermal class	Class 130 (B)		Class 180 (H)	
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 (air)		300 or less (air)	
Mounting orientation	Unrestricted			
Body/seal material	Copper alloy/nitrile rubber		Copper alloy/EPM rubber	Copper alloy/PTFE

*1: No freezing.

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	Port size	Orifice size (mm)	Max. working pressure differential (MPa)								Max. working pressure (MPa)	Rated voltage	Apparent power (VA)				Power consump (W)		Weight (kg)
			Air		Water/hot water/kerosene		Oil (50 mm ² /s)		Steam				Holding	Starting	AC	DC			
			AC	DC	AC	DC	AC	DC	AC	DC							50/60 Hz	DC	
NC																			
AB31- ⁰¹ / ₀₂ -1	Rc1/8	1.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.0	5 (≈730 psi, 50 bar) Fluid: Steam For 1	100 VAC 50/60 Hz *9	12	10	17	14	5.2/3.8	11 (8.1)*5	0.35
		2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.0									
		3.0	1.0	0.5	0.7	0.5	0.5	0.5	0.5	0.7									
		4.0	0.4	0.25	0.3	0.25	0.25	0.25	0.25	0.3									
		5.0	0.2	0.15	0.15	0.15	0.15	0.15	0.15	0.15									
		6.0	0.2	0.15	0.15	0.15	0.15	0.15	0.15	0.15									
AB41- ⁰² / ₀₃ -1	Rc1/4	1.5	5.0	4.0	4.5	4.0	4.0	4.0	4.0	1.0	5 (≈730 psi, 50 bar) Fluid: Steam For 1	100 VAC 50/60 Hz *9	18	15	29	24	6.7/5.7	11 (10.4)*5 (7)*7	0.43 (Rc1/4) 0.45 (Rc3/8)
		2.0	3.0	2.5	2.7	2.5	2.5	2.5	2.5	1.0									
		3.0	1.5	0.9	1.3	0.9	0.9	0.9	0.9	1.0									
		3.5	1.2	0.6	0.9	0.6	0.6	0.6	0.6	0.9									
		4.0	1.0	0.5	0.7	0.5	0.5	0.5	0.5	0.7									
		5.0	0.6	0.25	0.4	0.25	0.25	0.25	0.25	0.4									
		7.0	0.25	0.1	0.2	0.1	0.15	0.1	0.2	0.2									
AB41- ⁰³ / ₀₄ -8	Rc3/8	10.0	0.1	0.05 (0.03)*8	0.1	0.05 (0.03)*8	0.05	0.05 (0.03)*8	0.05	0.2	12 VDC 24 VDC 48 VDC								0.54
	Rc1/2	10.0	0.1	0.05 (0.03)*8	0.1	0.05 (0.03)*8	0.05	0.05 (0.03)*8	0.05	0.2									
NO																			
AB42- ⁰² / ₀₃ -1	Rc1/4	1.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2 (≈290 psi, 20 bar) Fluid: Steam For 1	100 VDC	22	18	35	29	8.7/6.7	15.5 (14)*5	0.50 (Rc1/4) 0.52 (Rc3/8)
		2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0									
		3.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7									
		3.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5									
		4.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4									
		5.0	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25									
		7.0	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15									

*1 : The model numbers above are for the basic port size (Rc) and orifice size. Refer to How to order for other combinations (e.g., for steam).

*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 : Refer to DC column for the max. working pressure differential of coil with diode.

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

*5 : Power consumption of coil housings 2E/2G/2H.

*6 : When using at low vacuum, vacuum the OUT port side.

*7 : Power consumption of coil housings 6C/6E/6G/6H.

*8 : DC voltage of coil housings 2E/2G/2H, and max. working pressure differential of coil housings 6C/6E/6G/6H.

*9 : The 100 VAC (50/60 Hz) can be used with 110 VAC (60 Hz). The 200 VAC (50/60 Hz) can be used with 220 VAC (60 Hz). However, this does not apply to coil housings 5A/5M/5N/5I/5J.

Optional specifications (fluid temperature, ambient temperature, valve seat leakage)

Sealant	Fluoro rubber		Ethylene propylene rubber		PTFE	
Coil (thermal class)	Class 130 (B)	Class 180 (H)	Class 130 (B)	Class 180 (H)	Class 130 (B)	Class 180 (H)
Fluid temperature (*1) °C	-10 to 60	-10 to 90	0 to 60 (*3)	0 to 90 (*3)	-10 to 60	-10 to 184
Ambient temperature °C	-20 to 60	-20 to 100 (*2)	-20 to 60	-20 to 100 (*2)	-20 to 60	-20 to 100 (*2)
Valve seat leakage cm ³ /min(ANR)	0.2 or less (air)				300 or less (air)	

*1 : No freezing.

*2 : -20 to 80°C when coil housing is HP terminal box with light.

*3 : The lowest temperature is 0°C since the fluid is water.

Flow characteristics

Model No.	Port size	Orifice size (mm)	Flow characteristics		
			C[dm ³ /(s·bar)]	b	Cv
NC					
AB31- ⁰¹ ₀₂ -1	Rc1/8 Rc1/4	1.5	0.29	0.53	0.1
-2		2.0	0.53	0.52	0.15
-3		3.0	1.1	0.52	0.31
-4		3.5	1.7	0.49	0.42
-5		4.0	2.1	0.48	0.54
-6		5.0	3.0	0.42	0.8
-7		7.0	4.8	0.29	1.0
AB41- ⁰² ₀₃ -1	Rc1/4 Rc3/8	1.5	0.29	0.53	0.1
-2		2.0	0.53	0.52	0.15
-3		3.0	1.1	0.52	0.31
-4		3.5	1.7	0.49	0.42
-5		4.0	2.1	0.48	0.54
-6		5.0	3.0	0.42	0.8
-7		7.0	4.8	0.29	1.0
AB41- ⁰³ ₀₄ -8	Rc3/8 Rc1/2	10.0	9.3	0.36	1.88
			[8.1]	[0.31]	[1.5]
NO					
AB42- ⁰² ₀₃ -1	Rc1/4 Rc3/8	1.5	0.29	0.53	0.1
-2		2.0	0.53	0.52	0.15
-3		3.0	1.1	0.52	0.31
-4		3.5	1.7	0.49	0.42
-5		4.0	2.1	0.48	0.54
-6		5.0	3.0	0.42	0.8
-7		7.0	4.8	0.29	1.0
			[4.6]	[0.37]	[0.82]

*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
SpecFld
Custom
Ending

AB31/41/42 Series

How to order

● NC

AB31 - **02** - **3** - **0** **3A** **A** **B** **G** **S** - **AC100V**

AB41

Model No.

D Coil housing **G** Other options **I** Rated voltage

E Manual override (locking) **H** With surge suppressor

F Mounting plate

A Port size

B Orifice size

C Body/sealant combination

*1
*2
*3
*4
*5
*6
*7

[Example of model No. 1]

AB41-02-3-000AS-AC100V

Model: AB41

A Port size : Rc1/4

B Orifice size : φ3

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

D Coil housing : Grommet lead wire

E Manual override (locking) : With

F / **G** / **H** : None

H Surge suppressor : With surge suppressor

I Rated voltage : 100 VAC 50/60 Hz,
110 VAC 60 Hz

⚠ Precautions for model No. selection

Notes for **C**

- *1 : Leave blank for standard. However, to select options in **D**, **E**, **F**, **G** or **H**, indicate 0 for Item **C**.
- *2 : When Item **D** 4A/4M/4N is selected.
- *3 : The body for low pressure large flow rate AB41-⁰⁰-8 is bronze (standard) or stainless steel (optional).
- *4 : For option codes V and W, vacuum is inspected at "leakage rate: 1.33 x 10⁻⁶ Pa·m³/s or less".
- *5 : When using low pressure large flow rate AB41-⁰⁰-8 with Item **C** VW, DC voltage type and Item **D** 5A/5M/5N/5I/5J are not available.
- *6 : The ethylene propylene rubber seal combination (Item **C** P/R) cannot be used with air. (Compressed air contains oil, and ethylene propylene rubber is not oil-resistant.)
- *7 : When Item **C** is C, F, K, P, N or R, the Item **D** coil housings 6C, 6E, 6G and 6H cannot be selected.

Notes for **D**

- *8 : Leave blank for the standard coil housing. However, to select options in **E**, **F**, **G** or **H**, indicate 00 for Item **D**.
- *9 : Coils for 5A/5M/5N/5I/5J have a diode to convert AC to DC voltage.
- *10 : A DC coil for steam is available for AB41. Contact CKD for more information.
- *11 : For 6C/6E/6G/6H, only AB41 is available.
- *12 : The coil housings 6C, 6E and 6G are 12 VDC and 24 VDC dedicated. 6H is 24 VDC dedicated.

Model No.		
AB31	AB41	AB41 Low pressure large flow

Code	Content	Code	Content	Code	Content	AB31	AB41	AB41 Low pressure large flow
A 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			●

B Orifice size								
1	φ 1.5					●	●	
2	φ 2					●	●	
3	φ 3					●	●	
4	φ 3.5					●	●	
5	φ 4					●	●	
6	φ 5					●	●	
7	φ 7						●	
8	φ10							●

C Body/sealant combination								
Blank	Std.	Body	Seal	Treatment	Remarks			
		Copper alloy or bronze	Nitrile rubber	-	Air/water/low vacuum/kerosene (up to 60°C)	●	●	●
B	Fluoro rubber		Air/low vacuum/kerosene (up to 90°C *2)		●	●	●	
C	PTFE		Steam (up to 184°C *2)		●	●		
V		Stainless steel	Fluoro rubber	Vacuum inspection	Low vacuum	●	●	●
D			Nitrile rubber	-	Air/water/low vacuum/kerosene (up to 60°C)	●	●	●
E			Fluoro rubber		Air/low vacuum/kerosene (up to 90°C *2)	●	●	●
F		PTFE	Steam (up to 184°C *2)		●	●		
W		Copper alloy	Fluoro rubber	Vacuum inspection	Low vacuum	●	●	●
H			Nitrile rubber	Oil free	Air/water/low vacuum/kerosene (up to 60°C)	●	●	●
J			Fluoro rubber		Air/low vacuum/kerosene (up to 90°C *2)	●	●	●
K		PTFE	Steam (up to 184°C *2)		●	●		
P		Stainless steel	Ethylene propylene rubber	Oil free	Hot water (up to 90°C *2)	●	●	●
L			Nitrile rubber		Air/water/low vacuum/kerosene (up to 60°C)	●	●	●
M			Fluoro rubber		Air/low vacuum/kerosene (up to 90°C *2)	●	●	●
N		Copper alloy	PTFE	-	Steam (up to 184°C *2)	●	●	
R			Ethylene propylene rubber		Hot water (up to 90°C *2)	●	●	●

Refer to Intro Page 39 for reference on material combinations.

D Coil housing								
Blank	Std.	Content						
		Grommet lead wire				●	●	●
2E		With DIN terminal box (G1/2)				●	●	●
2G		With DIN terminal box (Pg11)				●	●	●
2H		DIN terminal box with small lamp (Pg11)				●	●	●
3A	Option	Open frame	Lead wire			●	●	●
3M			With HP terminal box (G1/2)			●	●	●
3N			HP terminal box with lamp (G1/2)			●	●	●
3I			HP terminal box (IP65 or equivalent) (G1/2)			●	●	●
3J			HP terminal box with lamp (IP65 or equivalent) (G1/2)			●	●	●
4A			Lead wire			●	●	●
4M	Option	Open frame (Thermal class 180 (H))	With HP terminal box (G1/2)			●	●	●
4N			HP terminal box with lamp (G1/2)			●	●	●
5A			Lead wire			●	●	●
5M	Option	Open frame (diode integrated)	With HP terminal box (G1/2)			●	●	●
5N			HP terminal box with lamp (G1/2)			●	●	●
5I			HP terminal box (IP65 or equivalent) (G1/2)			●	●	●
5J		HP terminal box with lamp (IP65 or equivalent) (G1/2)				●	●	●
6C		Grommet lead wire 7W					●	
6E		With DIN terminal box (G1/2) 7W					●	
6G		With DIN terminal box (Pg11) 7W					●	
6H		DIN terminal box with small lamp (Pg11) 7W					●	

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

		Model No.		
		AB31	AB41	AB41 Low pressure large flow
Code	Content			
E Manual override (locking)				
Blank	None	●	●	●
A	With manual override	●	●	
F Mounting plate				
Blank	None	●	●	●
B	With mounting plate	●	●	●
G For cable gland and conduit combinations, refer to the compatible coil housings below.				
Blank	None	●	●	●
D	A-15a Marine cable gland	●	●	●
E	A-15b Marine cable gland	●	●	●
F	A-15c Marine cable gland	●	●	●
G	CTC19 Conduit piping	●	●	●
H	G1/2 Conduit piping	●	●	●
H For surge suppressor combinations, refer to the compatible coil housings below.				
Blank	Without surge suppressor	●	●	●
S	With surge suppressor	●	●	●
I Rated voltage				
Refer to the table on the right for the voltage.				

● Compatible coil housing

		Blank	2E	2G	2H	3A	3M	3N	3I	3J	4A	4M	4N	5A	5M	5N	5I	5J	6C	6E	6G	6H	
G Cable gland/conduit																							
D	A-15a						●	●	●	●		●	●		●	●	●	●					
E	A-15b						●	●	●	●		●	●		●	●	●	●					
F	A-15c						●	●	●	●		●	●		●	●	●	●					
G	CTC19					●					●			●									
H	G1/2				●	●					●			●									●
H For surge suppressor compatible coil housings, refer to page 156.																							
S	With surge suppressor	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

⚠ Precautions for model No. selection







Notes for E to H

- *13: Manual override (Item E A) cannot be mounted on the low pressure large flow rate AB41-03-8.
- *14: When Item C is C, F, K, N, V or W, the manual override (Item E A) is not available.
- *15: For G, select an option from D, E, F, G and H.
- *16: 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.
- *17: As standard, the surge suppressor is built into the the coil with diode and the 24 VDC coil (Item D 2H/6H), so the surge suppressor code S cannot be selected.
- *18: 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) and the coil option 6C/6E/6G/6H are selected.

Notes for I

- *20: 100 VAC coil is compatible with 100 VAC 50/60 Hz and 110 VAC 60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz and 220 VAC 60 Hz. However, coils for Item D 5A/5M/5N/5I/5J can be used with 100 VAC 50/60 Hz and 200 VAC 50/60 Hz only.
- *21: For voltages other than above, contact CKD.
- *22: 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.

I Rated voltage	
Blank	100 VAC, 200 VAC
2E	100 VAC, 200 VAC, 12 VDC, 24 VDC, 48 VDC, 100 VDC
2G	100 VAC, 200 VAC, 12 VDC, 24 VDC, 48 VDC, 100 VDC
2H	100 VAC, 200 VAC, 24 VDC
3A	100 VAC, 200 VAC, 12 VDC, 24 VDC, 48 VDC, 100 VDC
3M	100 VAC, 200 VAC, 12 VDC, 24 VDC, 48 VDC, 101 VDC
3N	100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC
3I	100 VAC, 200 VAC, 12 VDC, 24 VDC, 48 VDC, 101 VDC
3J	100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC
4A	100 VAC, 200 VAC
4M	100 VAC, 200 VAC
4N	100 VAC, 200 VAC
5A	100 VAC, 200 VAC
5M	100 VAC, 200 VAC
5N	100 VAC, 200 VAC
5I	100 VAC, 200 VAC
5J	100 VAC, 200 VAC
6C	12 VDC, 24 VDC
6E	12 VDC, 24 VDC
6G	12 VDC, 24 VDC
6H	24 VDC

Blank 6C		● Grommet lead wire 300 mm
2E 2G 2H 6E 6G 6H		● DIN terminal box
3A 4A 5A		● Open frame lead wire 300 mm ● 4A (Thermal class 180 (H)) ● 5A (diode integrated)
3M 3N 4M 4N 5M 5N		● Open frame HP terminal box ● 4M, 4N (Thermal class 180 (H)) ● 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 148 for coil selection.

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
SAB/NAB
LAD/NAD
Water-Rela
NP/NAP/NVP
SNP
CHB/G
MXB/G
Other valves
SWD/MWD
DustCoil
CVE/CVSE
CCH/CPE/D
LifeSci
Gas-Combus
Auto-Water
SpecFld
Custom
Ending

AB31/41/42 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 Δ 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
- SpecFld
- Custom
- Ending

How to order

● NO

AB42 - **02** - **4** - **L** **3A** **A** **B** - **AC100V**

Model No.

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

A Port size

B Orifice size

C Body/sealant combination

- *1
- *2
- *3
- *4

Code	Content	Code	Content	Code	Content
A Port size					
02	Rc1/4	2G	G1/4	2N	1/4NPT
03	Rc3/8	3G	G3/8	3N	3/8NPT

B Orifice size	
1	φ1.5
2	φ2
3	φ3
4	φ3.5
5	φ4
6	φ5
7	φ7

C Body/sealant combination				
	Body	Seal	Treatment	Remarks
Blank	Std. Copper alloy	Nitrile rubber	-	Air/water/low vacuum/kerosene (up to 60°C)
		Fluoro rubber		Air/low vacuum/kerosene (up to 90°C *2)
		PTFE		Steam (up to 184°C *2)
		V	Fluoro rubber	Vacuum inspection
D	Std. Stainless steel	Nitrile rubber	-	Air/water/low vacuum/kerosene (up to 60°C)
		Fluoro rubber		Air/low vacuum/kerosene (up to 90°C *2)
		PTFE		Steam (up to 184°C *2)
		W	Fluoro rubber	Vacuum inspection
H	Option Copper alloy	Nitrile rubber	Oil free	Air/water/low vacuum/kerosene (up to 60°C)
		Fluoro rubber		Air/low vacuum/kerosene (up to 90°C *2)
		PTFE		Steam (up to 184°C *2)
		Ethylene propylene rubber		Hot water (up to 90°C *2)
	Std. Stainless steel	Nitrile rubber		Air/water/low vacuum/kerosene (up to 60°C)
		Fluoro rubber		Air/low vacuum/kerosene (up to 90°C *2)
		PTFE		Steam (up to 184°C *2)
		Ethylene propylene rubber		Hot water (up to 90°C *2)

Refer to Intro Page 39 for reference on material combinations.

D to I

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

[Example of model No. 1]

AB42-02-1-AC100V

Model: AB42

- A** Port size : Rc1/4
- B** Orifice size : φ1.5
- C** Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
- D** Coil housing : Grommet lead wire
- E** to **H** : None
- I** Rated voltage : 100 VAC 50/60 Hz, 110 VAC 60 Hz

[Example of model No. 2]

AB42-03-6-000AS-AC100V

Model: AB42

- A** Port size : Rc3/8
- B** Orifice size : φ5
- C** Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
- D** Coil housing : Grommet lead wire
- E** Manual override (locking) : Selected
- F** / **G** : None
- H** Surge suppressor : With surge suppressor
- I** Rated voltage : 100 VAC 50/60 Hz, 110 VAC 60 Hz

⚠ Precautions for model No. selection






Notes for **C**

- *1 : Leave blank for standard. However, to select options in **D**, **E**, **F**, **G** or **H**, indicate 0 for Item **C**.
- *2 : When Item **D** 4A/4M/4N is selected.
- *3 : For option codes V and W, vacuum is inspected at "leakage rate: 1.33 x 10⁻⁶ Pa·m³/s or less".
- *4 : The ethylene propylene rubber seal combination (Item **C** P/R) cannot be used with air. (Compressed air contains oil, and ethylene propylene rubber 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.

④ Coil housing		⑤	⑥	⑦ Other options			⑧	⑨ Rated voltage			
Content	Std	Manual override (Locking)	Mounting plate	Cable gland			Conduit		With surge suppressor	Content	
				(marine cable gland)			(conduit piping)				
				A-15a	A-15b	A-15c	CTC19	G1/2			
Blank	Grommet lead wire	A	B				G	H	S	100 VAC, 200 VAC	
2E	With DIN terminal box (G1/2)									100 VAC, 200 VAC	
2G	With DIN terminal box (Pg11)									12 VDC, 24 VDC, 48 VDC, 100 VDC	
2H	DIN terminal box with small lamp (Pg11)									100 VAC, 200 VAC, 24 VDC	
3A	Open frame	A	B	D E F			G	H	S	100 VAC, 200 VAC	
3M										Lead wire (IP65 or equivalent)	12 VDC, 24 VDC, 48 VDC, 100 VDC
3N										With HP terminal box (G1/2)	100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC
3I										HP terminal box with lamp (G1/2)	100 VAC, 200 VAC, 12 VDC, 24 VDC, 48 VDC, 100 VDC
3J										HP terminal box (IP65 or equivalent) (G1/2)	100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC
4A	Open frame (Thermal class 180 (H))	A	B	D E F			G	H	S	100 VAC, 200 VAC	
4M										Lead wire	100 VAC, 200 VAC
4N										With HP terminal box (G1/2)	100 VAC, 200 VAC
5A	Open frame (diode integrated)	A	B	D E F			G	H	S	100 VAC, 200 VAC	
5M										Lead wire (IP65 or equivalent)	100 VAC, 200 VAC
5N										With HP terminal box (G1/2)	100 VAC, 200 VAC
5I										HP terminal box with lamp (G1/2)	100 VAC, 200 VAC
5J	HP terminal box (IP65 or equivalent) (G1/2)	100 VAC, 200 VAC	100 VAC, 200 VAC								
5J	HP term box, lamp (IP65, equiv) (G1/2)	100 VAC, 200 VAC	100 VAC, 200 VAC								

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

Blank		● Grommet lead wire 300 mm
2E 2G 2H		● DIN terminal box
3A 4A 5A		● Open frame lead wire 300 mm ● 4A (Thermal class 180 (H)) ● 5A (diode integrated)
3M 3N 4M 4N 5M 5N		● Open frame HP terminal box ● 4M, 4N (Thermal class 180 (H)) ● 5M, 5N (diode integrated)
3I 3J 5I 5J		● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

Refer to page 148 for coil selection.

G H		● Conduit ● G(CTC19) ● H(G1/2)
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⚠ Precautions for model No. selection

Notes for ④

- *5 : Leave blank for the standard coil housing. However, to select options in ⑤, ⑥, ⑦ or ⑧, indicate 00 for Item ④.
- *6 : Coils for 5A/5M/5N/5I/5J have a diode to convert AC to DC voltage.

Notes for ⑤ to ⑧

- *7 : When Item ③ is C, F, K, N, V or W, the manual override (Item ⑤ A) is not available.
- *8 : For Item ③, select an option from D, E, F, G and H.
- *9 : 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.
- *10 : As standard, the surge suppressor is built into the coil with diode and the 24 VDC coil (Item ④ 2H), so the surge suppressor S cannot be selected.
- *11 : 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

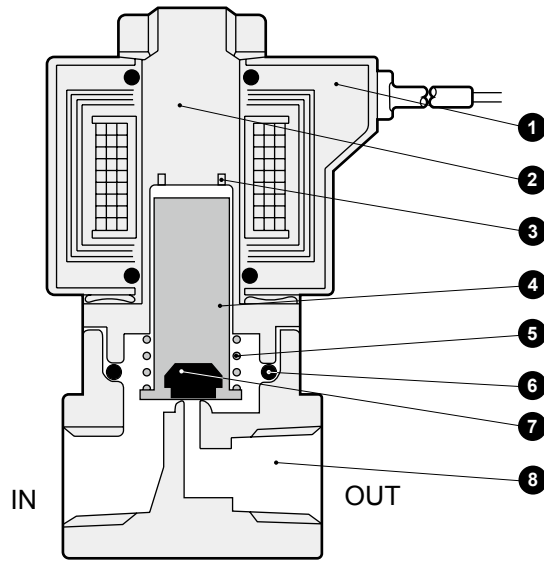
- *13 : 100 VAC coil is compatible with 100 VAC 50/60 Hz and 110 VAC 60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz and 220 VAC 60 Hz. However, coils for Item ④ 5A/5M/5N/5I/5J can be used with 100 VAC 50/60 Hz and 200 VAC 50/60 Hz only.
- *14 : For voltages other than above, contact CKD.
- *15 : 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 ^Δ B/ NAB
LAD/ NAD
Water- Rela
NP/NAP/ NVP
SNP
CHB/G
MXB/G
Other valves
SWD/ MWD
DustCoil
CVE/ CVSE
CCH / CPE/D
LifeSci
Gas- Combus
Auto- Water
SpecFld
Custom
Ending

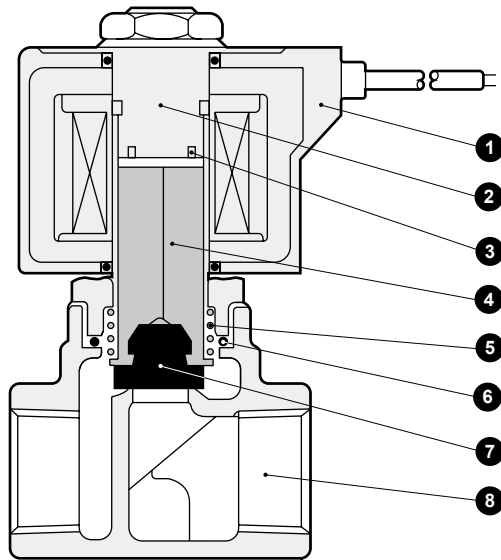
AB31/41/42 Series

Internal structure and parts list

- AB31 Series
- AB41-02/03-1 to 7



- AB41-03/04-8



No.	Part name	Material	No.	Part name	Material
1	Coil	-	5	Plunger spring	SUS304
2	Core assembly	SUS405 or equivalent/316L/403 *1	6	O-ring	NBR (FKM/EPDM/PTFE) (Size: AS568-019)
3	Shading coil	Cu (Ag for stainless steel body) / Copper (silver for stainless steel body)	7	Seal	NBR (FKM/EPDM/PTFE)
4	Plunger	SUS405 or equiv.	8	Body	C3771 or CAC408*3 (SUS303)

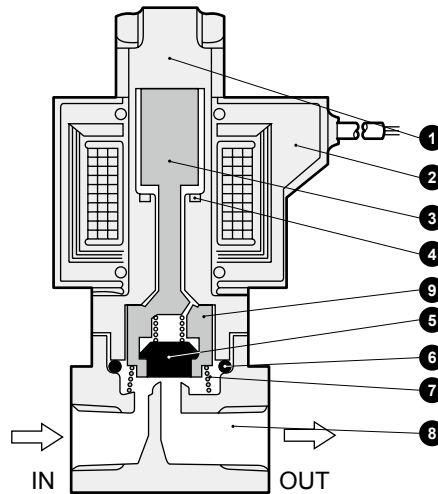
Stainless steel
 NBR: Nitrile rubber
 FKM: Fluoro rubber
 EPDM: Ethylene propylene rubber
 PTFE: Tetrafluoroethylene resin
 Copper alloy or bronze *3 (stainless steel)

*1 : When the body/sealant combination code is other than blank and H, or the coil housing code is 6C, 6E, 6G or 6H, the material is SUS405 or equivalent/ SUS316L/SUS430.
 *2 : () shows options. However, AB41-03-8 PTFE is not available.
 *3 : CAC408 for AB41-03-8 (bronze)

- 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
- SAB/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-Combust
- Auto-Water
- SpecFld
- Custom
- Ending

Internal structure and parts list

● AB42



No.	Part name	Material	No.	Part name	Material	
1	Core assembly	SUS405 or equiv./316L/304	Stainless steel	6	O-ring	NBR (FKM/EPDM/PTFE) (Size: AS568-019)
2	Coil	-	-	7	Spring	SUS304
3	Plunger	SUS405 or equiv.	Stainless steel	8	Body	C3771(SUS303)
4	Shading coil	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)	9	NO Valve	POM (SUS303/PFA)
5	Seal	NBR (FKM/EPDM/PTFE)	NBR: nitrile rubber (EPDM: ethylene propylene rubber) (FKM: fluoro rubber) (PTFE: tetrafluoroethylene resin)			Option code : Blank/O/D/H/L/V/W: POM resin : Others: Stainless steel/PFA resin

() shows options.

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
SpecFld
Custom
Ending

AB31/41/42 Series

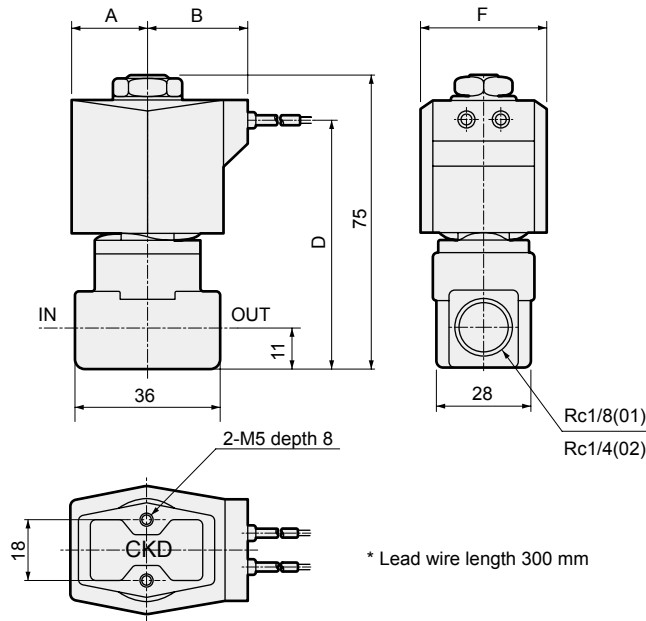


Dimensions: AB31 Series

● Grommet lead wire
AB31-01/02-1 to 6-* Blank

*1 : The AB31 Series is an NC 2-port solenoid valve. The body and sealant materials are combined according to the working fluid, and the orifice and pressure are selected according to the relation of the required flow rate and pressure. The coil specifications are determined according to the fluid temperature and ambient conditions, allowing the optimum valve to be selected.

*2 : The dimensions are the same for port sizes of G and NPT threads.



Model No.	A	B	D	F
AB31-01-1 to 6-AC -02-1 to 6-AC	20	27	63	34

- 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 $\hat{\Delta}$ 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
- SpecFld
- Custom
- Ending

Optional dimensions: AB31 Series

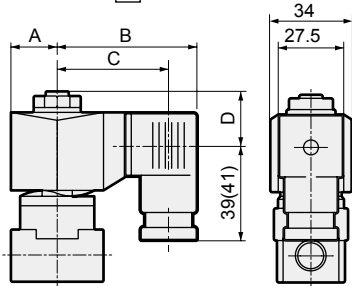


* Refer to the dimensions of grommet lead wire on the left page for common dimensions.

● With DIN terminal box

AB31-01/02-1 to 6-*

2	E
	G
	H



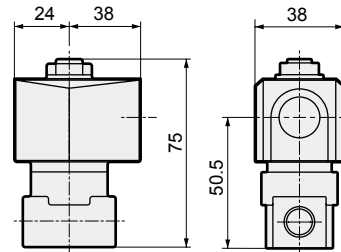
Dimensions shown in () are for G1/2.

Voltage	A	B	C	D
AC (2E/2G/2H)	20	62	50.5(50)	20.5
DC (2E/2G/2H)	21	63.5	52(51.5)	20.5

● Open frame lead wire

AB31-01/02-1 to 6-*

3A
4A
5A



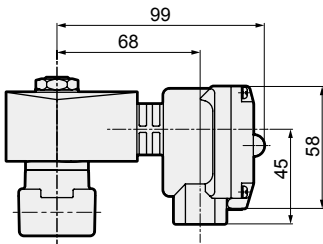
● Open frame + HP terminal box

AB31-01/02-1 to 6-*

3	M
5	N
	I
	J

 /

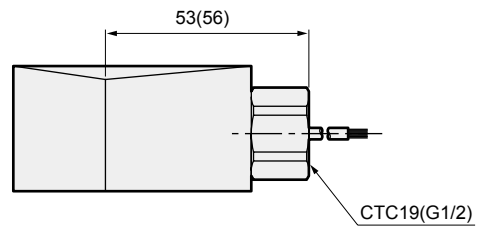
4M
4N



● Open frame + conduit

AB31-01/02-1 to 6-*

3A	G
4A	H
5A	

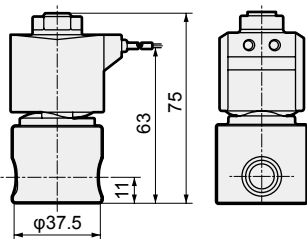


Dimensions shown in () are for G1/2.

● Stainless steel body + grommet lead wire

AB31-01/02-1 to 6-

D/E/F/R/W/L/M/N

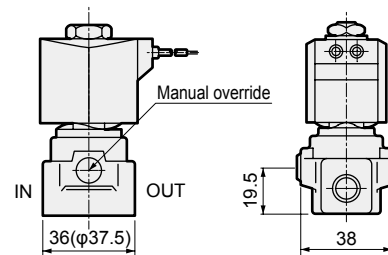


● Manual override (locking)

AB31-01/02-1 to 6-***

A

The figure shows copper alloy body.



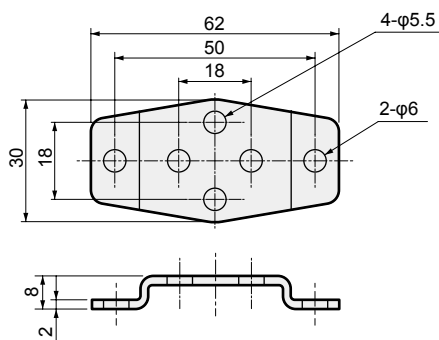
Dimensions shown in () are for stainless steel body.

● Mounting plate

AB31-01/02-1 to 6-***

B

Material: Steel
Zinc plated



Mounting plate No.1 GE-100106

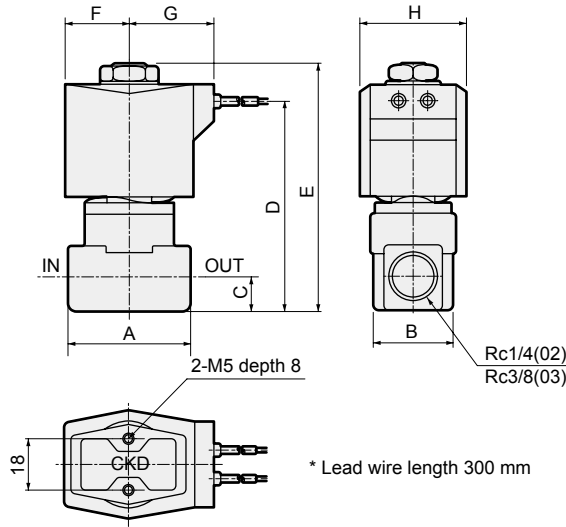
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/AD
APK/ADK
DryAir
EX-XPLNprf
XPLNprf
HVB/HVL
SΔB/NAB
LAD/NAD
Water-Rela
NP/NAP/NVP
SNP
CHB/G
MXB/G
Other valves
SWD/MWD
DustColl
CVE/CVSE
CCH/CPE/D
LifeSci
Gas-Combus
Auto-Water
SpecFld
Custom
Ending

AB31/41/42 Series



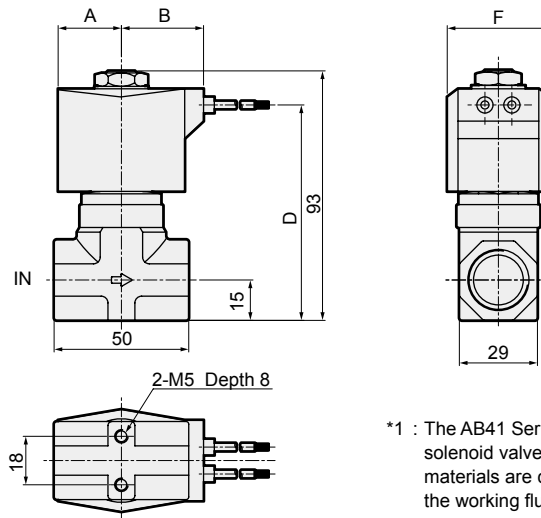
Dimensions: AB41 Series

● Grommet lead wire
AB41-02/03-1 to 7-* Blank / 6C



Model No.	A	B	C	D	E	F	G	H
AB41-02-1 to 6-AC	36	28	11	68	80.5	23.5	30.5	38
AB41-02-7-AC -03-1 to 7-AC	40	28	12	71	83.5	23.5	30.5	38
AB41-02-1 to 6-6C-DC	36	28	11	68	80.5	24	30.5	39
AB41-02-7-6C-DC -03-1 to 7-6C-DC	40	28	12	71	83.5	24	30.5	39

● Grommet lead wire
AB41-03/04-8-* Blank / 6C



Model No.	A	B	D	F
AB41-03-8-AC -04-8-AC	23.5	30.5	80	38
AB41-03-8-6C-DC -04-8-6C-DC	24	30.5	80	39

*1 : The AB41 Series is an NC 2-port solenoid valve. The body and sealant materials are combined according to the working fluid, and the orifice and pressure are selected according to the relation of the required flow rate and pressure. The coil specifications are determined according to the fluid temperature and ambient conditions, allowing the optimum valve to be selected.

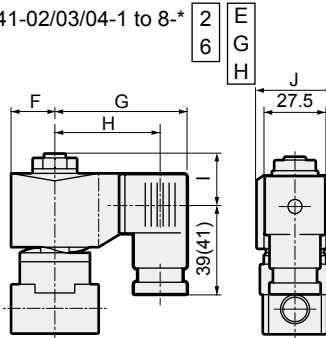
*2 : The dimensions are the same for port sizes of G and NPT threads.

Optional dimensions: AB41 Series



* Refer to the dimensions of grommet lead wire on the left page for common dimensions.

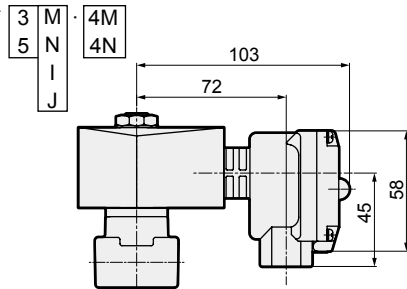
- With DIN terminal box
AB41-02/03/04-1 to 8-*



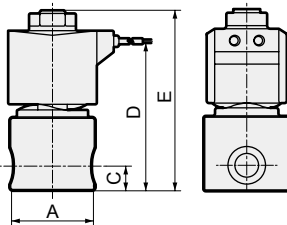
Dimensions shown in () are for G1/2.

Voltage	F	G	H	I	J
AC (2E/2G/2H)	23.5	65.5	54(53.5)	22	38
DC (2E/2G/2H)	23.5	66	54.5(54)	22	38
DC (6E/6G/6H)	24	68	56.5(56)	22	39

- Open frame + HP terminal box
AB41-02/03/04-1 to 8-*



- Stainless steel body + grommet lead wire
AB41-02/03/04-1 to 8-D/F/R/W/L/M/N/E

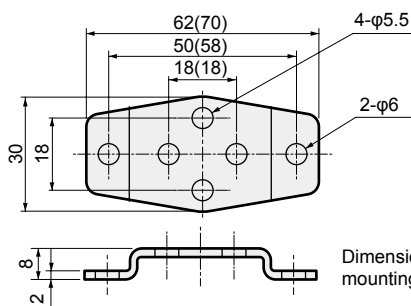


Model No.	A	C	D	E
AB41-02-1 to 6-AC	φ37.5	11	68	80.5
AB41-02-7-AC -03-1 to 7-AC	φ45.0	12	71	83.5
AB41-03-8-AC -04-8-AC	50 ^{*1}	15	80	93

*1: The max. dimension is φ54.

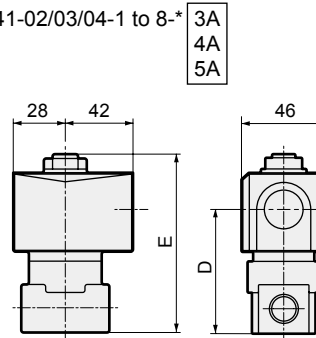
- Mounting plate
AB41-02/03/04-1 to 8-***B

Material: Steel
Zinc plated



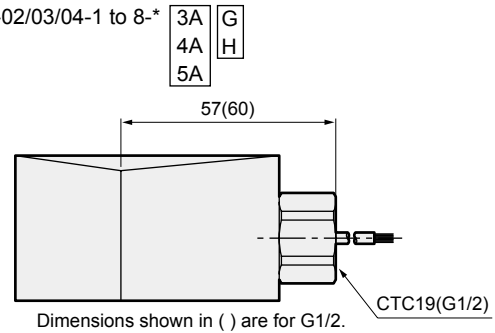
Dimensions shown in () are for mounting plate No. 2.

- Open frame lead wire
AB41-02/03/04-1 to 8-*



Model No.	D	E
AB41-02-1 to 6-* <u>A</u>	52.0	80.5
AB41-02-7-* <u>A</u> -03-1 to 7-* <u>A</u>	55.0	83.5
AB41-03/04-8-* <u>A</u>	64	93

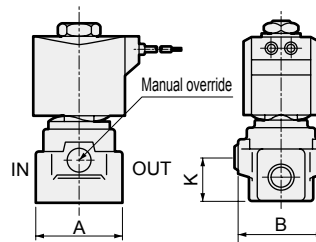
- Open frame + conduit
AB41-02/03/04-1 to 8-*



Dimensions shown in () are for G1/2.

- Manual override (locking)

AB41-02/03-1 to 7-***A
The figure shows copper alloy body.



Note: The manual override is not supplied with AB41-03/04-8.

Model No.	A	B	K
AB41-02-1 to 6-*** <u>A</u>	36(φ37.5)	38	19.5
AB41-02-7-*** <u>A</u> -03-1 to 7-*** <u>A</u>	40(φ45.0)	40	22.5

Dimensions shown in () are for stainless steel body.

Model No.	Compatibility
Mounting plate No. 1 GE-100106	<ul style="list-style-type: none"> ● AB41-02/03-1 to 7 Series ● Stainless steel body AB41-02-1 to 6-<u>D/E/F/L/M/N/R/W</u>
Mounting plate No. 2 GE-100159	<ul style="list-style-type: none"> ● AB41-03/04-8 Series ● Stainless steel body AB41-02-7-<u>D/E/F/L/M/N/R/W</u> AB41-03-1 to 7-<u>D/E/F/L/M/N/R/W</u>

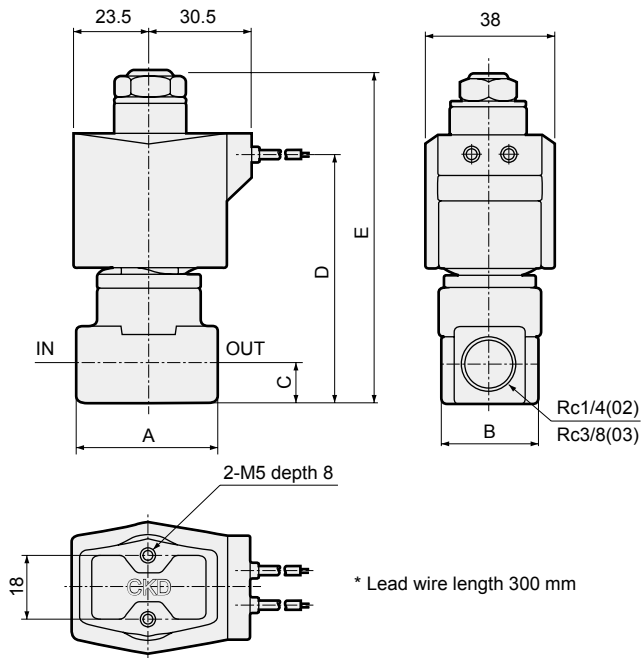
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/ AD
APK/ ADK
DryAir
EX- XPLNprf
XPLNprf
HVB/ HVL
S ^Δ B/ NAB
LAD/ NAD
Water- Rela
NP/NAP/ NVP
SNP
CHB/G
MXB/G
Other valves
SWD/ MWD
DustColl
CVE/ CVSE
CCH/ CPE/D
LifeSci
Gas- Combus
Auto- Water
SpecFld
Custom
Ending

AB31/41/42 Series



Dimensions: AB42 Series

- Grommet lead wire
AB42-02/03-1 to 7



[Reference] Normally-open direct acting 2-port valve is open when not energized and closed when energized. This structure is suitable for use in the open state for long periods.

*1 : The dimensions are the same for port sizes of G and NPT threads.

Model No.	A	B	C	D	E
AB42-02-1 to 6	36	28	11	72	94
AB42-02-7	40	28	12	75	97
AB42-03-1 to 7	40	28	12	75	97

- 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
- SAB/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
- SpecFld
- Custom
- Ending

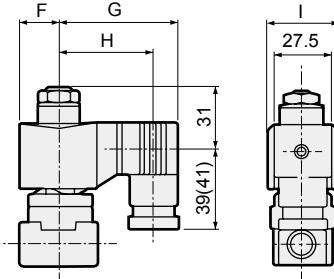
Optional dimensions: AB42 Series



* Refer to the dimensions of grommet lead wire on the left page for common dimensions.

● With DIN terminal box

AB42-02/03-1 to 7-*

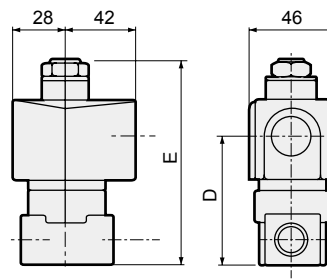


Dimensions shown in () are for G1/2.

Voltage	F	G	H	I
AC	23.5	65.5	54(53.5)	38
DC	28	72	60.5(60)	46

● Open frame lead wire

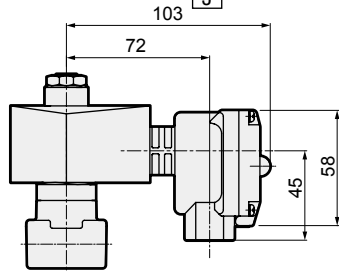
AB42-02/03-1 to 7-*



Model No.	D	E
AB42-02-1 to 6	56	94
AB42-02-7	59	97
AB42-03-1 to 7	59	97

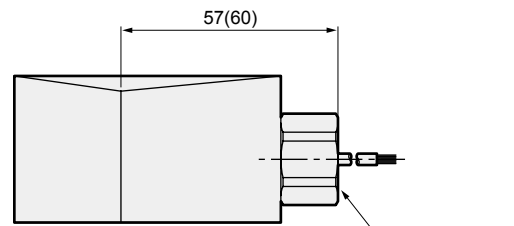
● Open frame + HP terminal box

AB42-02/03-1 to 7-*



● Open frame + conduit

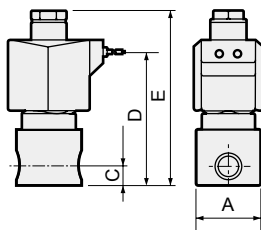
AB42-02/03-1 to 7-*



Dimensions shown in () are for G1/2.

● Stainless steel body + grommet lead wire

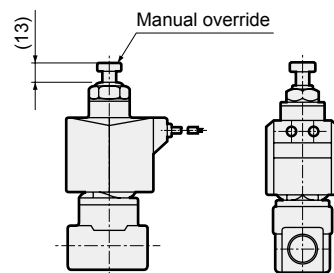
AB42-02/03-1 to 7- [D/E/F/R/W/L/M/N]



Model No.	A	C	D	E
AB42-02-1 to 6	φ37.5	11	72	94
AB42-02-7	φ45.0	12	75	97
AB42-03-1 to 7	φ45.0	12	75	97

● Manual override (locking)

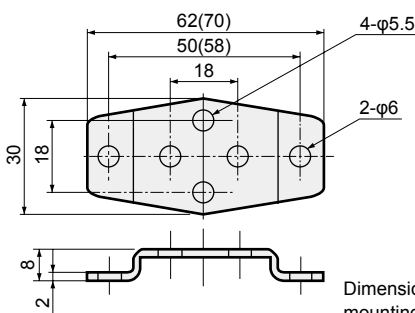
AB42-02/03-1 to 7-*** [A]



● Mounting plate

AB42-02/03-1 to 7-*** [B]

Material: Steel
Zinc plated



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

Category	Compatibility
Mounting plate No. 1 GE-100106	<ul style="list-style-type: none"> ● AB42-02/03-1 to 7 Series ● Stainless steel body AB42-02-1 to 6- [D/E/F/L/M/N/R/W]
Mounting plate No. 2 GE-100159	<ul style="list-style-type: none"> ● Stainless steel body AB42-02-7- [D/E/F/L/M/N/R/W] AB42-03-1 to 7- [D/E/F/L/M/N/R/W]

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
SpecFld
Custom
Ending



Large bore size direct acting 2-port solenoid valve
(general purpose valve)

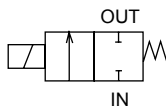
AB71 Series

- NC
- Port size: Rc1/2, Rc3/4, Rc1



- 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 $\hat{\Delta}$ 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
- SpecFld
- Custom
- Ending

JIS symbol



Specifications

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

Descriptions		AB71-15-12	AB71-20-15	AB71-25-18
Working fluid		Air/water/kerosene/oil (20 mm ² /s)		
Working pressure	Air	AC:0 to 0.1, DC:0 to 0.08	AC:0 to 0.07, DC:0 to 0.04	AC:0 to 0.04, DC:0 to 0.03
	Fluids	AC:0 to 0.08, DC:0 to 0.08	AC:0 to 0.05, DC:0 to 0.04	AC:0 to 0.03, DC:0 to 0.03
Proof pressure (water pressure)	MPa	1 (\approx 150 psi, 10 bar)		
Fluid viscosity	mm ² /s	20 or less		
Fluid temperature	$^{\circ}$ C	-5 (23 $^{\circ}$ F) to 60 (140 $^{\circ}$ F) (no freezing)		
Ambient temperature	$^{\circ}$ C	-10 (14 $^{\circ}$ F) to 60 (140 $^{\circ}$ F)		
Valve seat leakage	cm ³ /min(ANR)	0.2 or less (air)		
Port size		Rc1/2	Rc3/4	Rc1
Orifice size	mm	12	15	18
Mounting orientation		Limited to the range of vertical direction with the coil on top to horizontal direction.		
Weight	kg	1.0	1.2	1.6

Electrical specifications

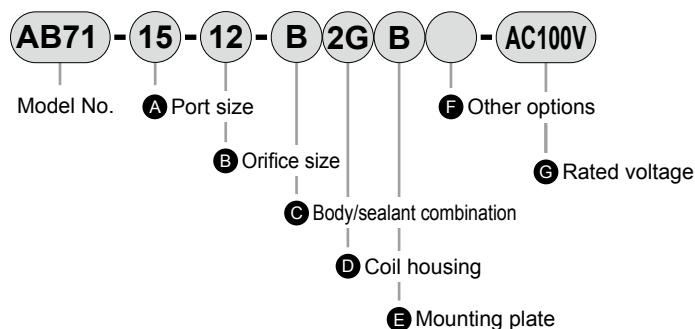
Rated voltage		100 VAC50/60 Hz, 200 VAC50/60 Hz, 110 VAC60 Hz, 220 VAC60 Hz, 12 VDC, 24 VDC, 48 VDC, 100 VDC		
Apparent power	When holding (50/60 Hz)	32/26		
	When starting (50/60 Hz)	123/106		
Power consumption	W	AC:13/11(50/60 Hz), DC:20		

Flow characteristics

Model No.	Port size	Orifice size (mm)	Flow characteristics			
			C[dm ³ /(s·bar)]	b	Cv	S(mm ²)
AB71-15-12	Rc1/2	12	15	0.21	2.8	-
AB71-20-15	Rc3/4	15	-	-	4.3	106
AB71-25-18	Rc1	18	-	-	6.3	148

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

How to order



Code	Content
A Port size	
15	Rc1/2
20	Rc3/4
25	Rc1
B Orifice size	
12	φ12 (AB71-15 [port size Rc1/2] only)
15	φ15 (AB71-20 [port size Rc3/4] only)
18	φ18 (AB71-25 [port size Rc1] only)
C Body/sealant combination	
	Body Body Seal Treatment
B	Bronze Copper alloy Fluoro rubber -
J	Bronze Copper alloy Fluoro rubber Oil free

[Example of model No.]

AB71-15-12-B2EB-AC100V

Model: AB71

- A** Port size : Rc1/2
- B** Orifice size : φ12
- C** Body/sealant combination : Body - bronze, stuffing - copper alloy, seal - fluoro rubber
- D** Coil housing : With DIN terminal box (G1/2)
- E** Mounting plate : With
- F** Other options : None
- G** Rated voltage : 100 VAC 50/60 Hz, 110 VAC 60 Hz

D Coil housing			E	F Other options			G Rated voltage			
Content			Mounting plate	Cable gland		Conduit		Content		
				(marine cable gland)		(conduit piping)				
2C	Std.	Grommet lead wire	B	A-15a	A-15b	A-15c	CTC19	G1/2	100 VAC, 200 VAC	
2E	Option	With DIN terminal box (G1/2)		B	D	E	F	G		H
2G		With DIN terminal box (Pg11)								
2H		DIN terminal box with small lamp (Pg11)								
3A	Open Frame	Lead wire (IP65 or equivalent)	B						D	
3M		With HP terminal box (G1/2)		12 VDC, 24 VDC, 48 VDC, 100 VDC						
3N	HP terminal box with lamp (G1/2)	100 VAC, 200 VAC, 24 VDC, 100 VDC								
5A	Open Frame (diode integrated)	Lead wire (IP65 or equivalent)		B	D	E	F	G		H
5M		With HP terminal box (G1/2)								
5N		HP terminal box with lamp (G1/2)								

For Items (D) to (G), the combinations indicated with codes are available.
Note that if options for Items (E) and (F) are not required, they should be left blank.

⚠ Precautions for model No. selection

Notes for (C)

*1 : Refer to Intro Page 39 for reference on material combinations.

Notes for (D)

- *2 : Refer to page 148 for coil selection.
- *3 : Coils for 5A/5M/5N have a diode to convert AC to DC voltage.
- *4 : When the fluid is air, 5A type is recommended.
- *5 : For availability of coil of thermal class H, contact CKD.

Notes for (F)

*6 : For Item (F), select an option from D, E, F, G and H.

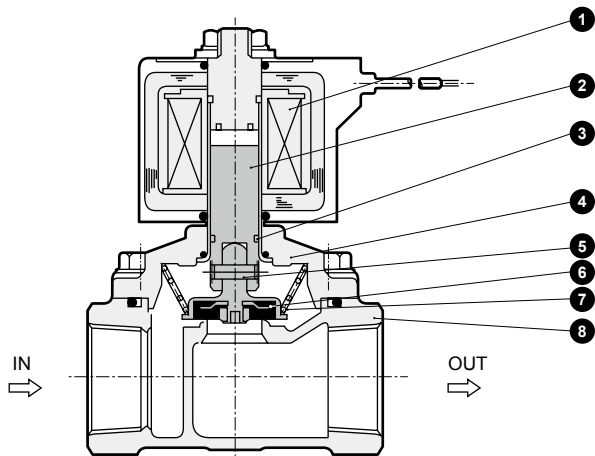
Notes for (G)

- *7 : 100 VAC coil is compatible with 100 VAC 50/60 Hz and 110 VAC 60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz and 220 VAC 60 Hz. However, (D) 5A/5K/5H coils can be used with 100 VAC 50/60 Hz or 200 VAC 50/60 Hz.
- *8 : For voltages other than above, contact CKD.
- *9 : The lead wire is available in 300 mm length (standard) and 500 mm length. 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
SDB/NAB
LAD/NAD
Water-Rela
NP/NAP/NVP
SNP
CHB/G
MXB/G
Other valves
SWD/MWD
DustCoil
CVE/CVSE
CCH/CPE/D
LifeSci
Gas-Combus
Auto-Water
SpecFld
Custom
Ending

AB71 Series

Internal structure and parts list



No.	Part name	Material
1	Coil	-
2	Plunger	SUS405 Stainless steel
3	Wear ring	PTFE Tetrafluoroethylene resin
4	Stuffing assembly (Core assembly)	C3771 SUS405, Cu Copper alloy Stainless steel, copper
5	Spring pin	SUS420 Stainless steel
6	Main valve	SUS304, FKM Stainless steel, fluoro rubber
7	Main valve spring	SUS304 Stainless steel
8	Body	CAC407 Bronze

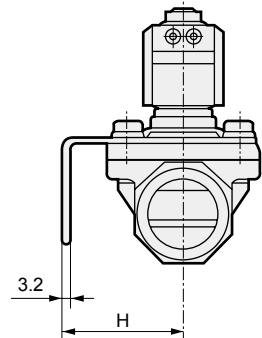
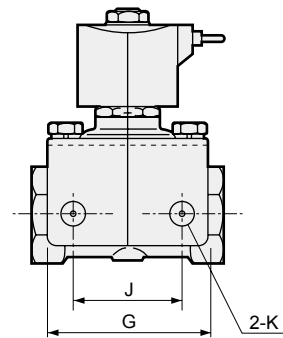
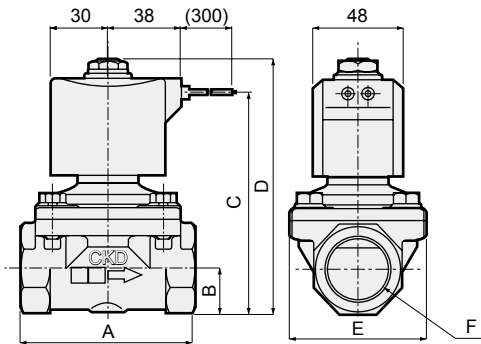
Dimensions



● Grommet lead wire
AB71-**-**2C

● With mounting plate
AB71-**-** B

Material: Steel
Zinc plated



Model No.	A	B	C	D	E	F	G	H	J	K
AB71-15-12	71	14.5	95	110.5	50	Rc1/2	56	45	40	φ9
AB71-20-15	80	17.5	101	116	60	Rc3/4	63	50	45	φ9
AB71-25-18	90	22.5	111	126	71	Rc1	75	56	50	φ11

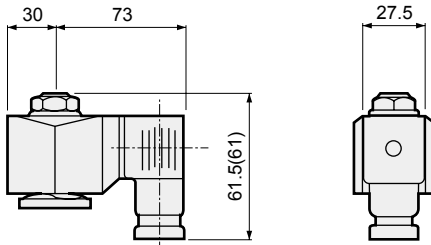
Optional dimensions



- With DIN terminal box

AB71-**-**2

E
G
H

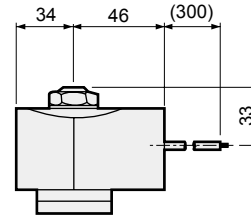


Dimensions shown in () are for G1/2.

- Open frame lead wire

AB71-**-**

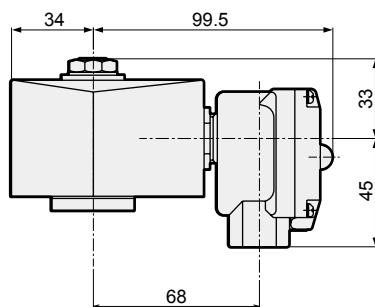
3A
5A



- Open frame + HP terminal box

AB71-**-**

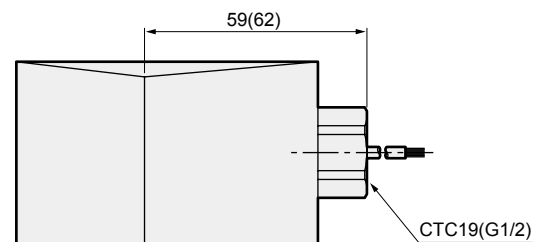
3	M
5	N



- Open frame + conduit

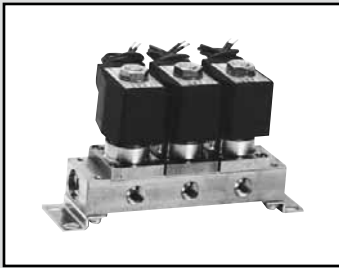
AB71-**-**

3A	G
5A	H



Dimensions shown in () are for G1/2.

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



Direct acting 2-port solenoid valve, manifold/actuator
(General purpose valve)

GAB312/GAB352/GAB412/GAB452 Series

● NC

● Common supply (port C pressurization), individual supply (port A pressurization)

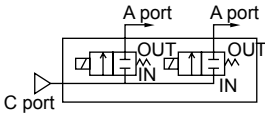
CE Refer to the Ending for details.



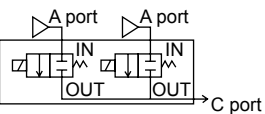
- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/
AD
- APK/
ADK
- DryAir
- EX-
XPLNprf
- XPLNprf
- HVB/
HVL
- LAD/
NAD
- Water-
Rela
- NP/NAP/
NVP
- SNP
- CHB/G
- MXB/G
- Other
valves
- SWD/
MWD
- DustColl
- CVE/
CVSE
- CCH /
CPE/D
- LifeSci
- Gas-
Combus
- Auto-
Water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

JIS symbol

● GAB312/412
(Common supply/port C pressurization)



● GAB352/452
(Individual supply/port A pressurization)



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	Standard specifications	Optional specifications	
Working fluid	Air/low vacuum [1.33 x 10 ² Pa (abs)]/water/kerosene/oil (50 mm ² /s or less)	Hot water	Steam
Working pressure differential MPa	0 to 5 (refer to max. working pressure differential in individual specifications.)		
Max. working pressure MPa	5 (≈730 psi, 50 bar)	1 (≈150 psi, 10 bar)	
Proof pressure (water pressure) MPa	10 (≈1500 psi, 100 bar)		
Fluid temperature (*1) °C	-10 (14°F) to 60 (140°F)	-10 (14°F) to 90 (194°F)	-10 (14°F) to 184 (363.2°F)
Ambient temperature °C	-20 (-4°F) to 60 (140°F)	-20 (-4°F) to 100 (212°F)	
Thermal class	Class 130 (B)	Class 180 (H)	
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 (air)	300 or less (air)	
Mounting orientation	Unrestricted		
Body/seal material	Copper alloy/nitrile rubber	Copper alloy/EPM rubber	Copper alloy/PTFE

*1: No freezing.

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Model No.	Port size	Orifice size (mm)	Max. working pressure differential (MPa)							Rated voltage	Apparent power (VA)				Power consumption (W)	
			Air		Water(hot)/Kerosene		Oil (50 mm ² /s)		Steam		When holding		When starting		AC	DC
			AC	DC	AC	DC	AC	DC	AC		50 Hz	60 Hz	50 Hz	60 Hz	50/60 Hz	DC
GAB312/352-1	-	1.5	2.5	2.5	2.5	2.5	2.5	2.5	1.0	100 VAC 50/60 Hz *8	12	10	17	14	5.2/3.8	11 (8.1)*5
		2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.0							
		3.0	1.0	0.5	0.7	0.5	0.5	0.5	0.7							
		3.5	0.6	0.4	0.5	0.4	0.4	0.4	0.5							
		4.0	0.4	0.25	0.3	0.25	0.25	0.25	0.3							
		5.0	0.2	0.15	0.15	0.15	0.15	0.15	0.15							
GAB412/452-1	-	1.5	5.0	4.0	4.5	4.0	4.0	4.0	1.0	200 VAC 50/60 Hz *8	18	15	29	24	6.7/5.7	11 (10.4)*5 (7)*7
		2.0	3.0	2.5	2.7	2.5	2.5	2.5	1.0							
		3.0	1.5	0.9	1.3	0.9	0.9	0.9	1.0							
		3.5	1.2	0.6	0.9	0.6	0.6	0.6	0.9							
		4.0	1.0	0.5	0.7	0.5	0.5	0.5	0.7							
		5.0	0.6	0.25	0.4	0.25	0.25	0.25	0.4							
		7.0	0.25	0.1	0.2	0.1	0.15	0.1	0.2							

*1 : The model numbers above are for basic orifice sizes. Refer to How to order for other combinations (e.g., for steam).

*2 : For port size, refer to How to order (page 174) and dimensions (page 178).

*3 : Refer to DC column for the max. working pressure differential of coil with diode.

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

*5 : Power consumption of coil housings 2E/2G/2H.

*6 : When using at low vacuum, vacuum the OUT port side.

*7 : Power consumption of coil housings 6C/6E/6G/6H.

*8 : The 100 VAC (50/60 Hz) can be used with 110 VAC (60 Hz). The 200 VAC (50/60 Hz) can be used with 220 VAC (60 Hz). However, this does not apply to coil housings 5A/5M/5N/5I/5J.

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	0.34	1.4	2.0	2.8	3.2	4.0	4.6	5.2	6.0	6.3
GAB412 GAB452	0.42	1.6	2.2	3.1	3.6	4.5	5.1	5.8	6.7	7.1

Optional specifications (fluid temperature, ambient temperature, valve seat leakage)

Sealant	Fluoro rubber		Ethylene propylene rubber		PTFE	
Coil (thermal class)	Class 130 (B)	Class 180 (H)	Class 130 (B)	Class 180 (H)	Class 130 (B)	Class 180 (H)
Fluid temperature (*1) °C	-10 to 60	-10 to 90	0 to 60 (*3)	0 to 90 (*3)	-10 to 60	-10 to 184
Ambient temperature °C	-20 to 60	-20 to 100 (*2)	-20 to 60	-20 to 100 (*2)	-20 to 60	-20 to 100 (*2)
Valve seat leakage cm ³ /min(ANR)	0.2 or less (air)				300 or less (air)	

*1 : No freezing.

*2 : -20 to 80°C when coil housing is HP terminal box with lamp.

*3 : The lowest temperature is 0°C since the fluid is water.

Flow characteristics

Model No.	Port size	Orifice size (mm)	Flow characteristics		
			C[dm ³ /(s·bar)]	b	Cv
GAB312/352-1	-	1.5	0.29	0.53	0.10
		2.0	0.53	0.52	0.15
		3.0	1.1	0.52	0.31
		3.5	1.5	0.47	0.40
		4.0	1.9	0.47	0.48
		5.0	2.6	0.38	0.62
GAB412/452-1	-	1.5	0.29	0.53	0.10
		2.0	0.53	0.5	0.15
		3.0	1.1	0.52	0.31
		3.5	1.5	0.47	0.40
		4.0	1.9	0.47	0.48
		5.0	2.6	0.38	0.62
		7.0	4.6	0.37	0.82

*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 \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
SpecFld
Custom
Ending

GAB312/352/412/452 Series

How to order

● Common supply (port C pressurization)

GAB312 - 1 - 5 - B 3A A G S - AC100V

● Individual supply (port A pressurization)

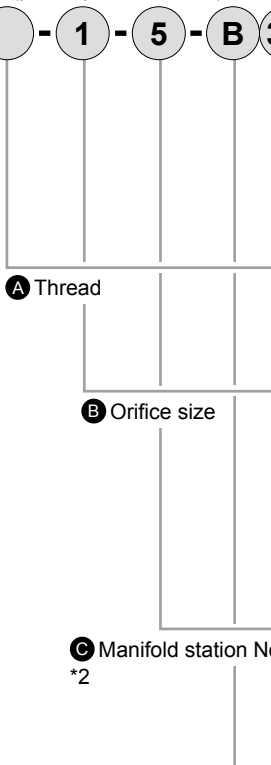
GAB352

● Common supply (port C pressurization)

GAB412

● Individual supply (port A pressurization)

GAB452



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

Model No.	
GAB312	GAB412
GAB352	GAB452

Code	Content	GAB312	GAB412			
A Thread						
Blank	Rc	●	●			
G	G	●	●			
N	NPT	●	●			
B Orifice size						
1	φ1.5	●	●			
2	φ2	●	●			
3	φ3	●	●			
4	φ3.5	●	●			
5	φ4	●	●			
6	φ5	●	●			
7	φ7		●			
C Manifold station No.						
2 to 10	2 stations to 10 stations	●	●			
0	Actuator only	●	●			
D Body/sealant combination						
	Body	Seal	Treatment	Remarks	GAB312	GAB412
Blank	Std. Copper alloy	Nitrile rubber	-	Air/water/low vacuum/kerosene (up to 60°C)	●	●
		Fluoro rubber		Air/low vacuum/kerosene (up to 90°C *4)	●	●
		PTFE		Steam (up to 184°C *4)	●	●
D	Stainless steel	Nitrile rubber	-	Air/water/low vacuum/kerosene (up to 60°C)	●	●
		Fluoro rubber		Air/low vacuum/kerosene (up to 90°C *4)	●	●
		PTFE		Steam (up to 184°C *4)	●	●
Option	Copper alloy	Nitrile rubber	Oil free	Air/water/low vacuum/kerosene (up to 60°C)	●	●
		Fluoro rubber		Air/low vacuum/kerosene (up to 90°C *4)	●	●
		PTFE		Steam (up to 184°C *4)	●	●
	Stainless steel	Ethylene propylene rubber		Hot water (up to 90°C *4)	●	●
		Nitrile rubber		Air/water/low vacuum/kerosene (up to 60°C)	●	●
		Fluoro rubber		Air/low vacuum/kerosene (up to 90°C *4)	●	●
R	Stainless steel	PTFE	-	Steam (up to 184°C *4)	●	●
		Ethylene propylene rubber		Hot water (up to 90°C *4)	●	●

Refer to Intro Page 39 for reference on material combinations.

E to I
Refer to the following page 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 : Leave blank for standard. However, to select options in (E), (F), (G) or (H), indicate 0 for Item (D).
- *4 : When Item (D) 4A/4M/4N is selected.
- *5 : The ethylene propylene rubber seal combination (Item (D) P/R) cannot be used with air. (Compressed air contains oil, and ethylene propylene rubber is not oil-resistant.)
- *6 : When Item (D) is C, F, K, P, N or R, the Item (E) coil housings 6C, 6E, 6G and 6H cannot be selected.
- *7 : For PTFE seal, O-ring material of sub-plate connection will be FKM.

[Example of model No. 1]
GAB312G-1-3-AC200V

Model: GAB312 (common supply, port C pressurization)

- A** Thread : G
- B** Orifice size : φ1.5
- C** Manifold station No. : 3 stations
- D** Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
- E** Coil housing : Grommet lead wire
- F to H** : None
- G** Rated voltage : 200 VAC 50/60 Hz, 220 VAC 60 Hz

[Example of model No. 2]
GAB352-5-2-000AS-AC200V

Model: GAB352 (individual supply/port A pressurization)



- A** Thread : Rc
- B** Orifice size : φ4
- C** Manifold station No. : 2 stations
- D** Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
- E** Coil housing : Grommet lead wire
- F** Manual override (locking) : Selected
- G** Other options : None
- H** Surge suppressor : With surge suppressor
- I** Rated voltage : 200 VAC 50/60 Hz, 220 VAC 60 Hz

- 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
- SAB/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-Combust
- Auto-Water
- SpecFld
- Custom
- Ending


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

(E) Coil housing		(F) Manual override (Locking)	(G) Other options					(H) With surge suppressor	(I) Rated voltage		
Content		A	Cable gland			Conduit		S	Content		
			(marine cable gland)			(conduit piping)					
			A-15a	A-15b	A-15c	CTC19	G1/2				
Blank	Std. Grommet lead wire	A							100 VAC, 200 VAC		
2E	With DIN terminal box (G1/2)								100 VAC, 200 VAC		
2G	With DIN terminal box (Pg11)								12 VDC, 24 VDC, 48 VDC, 100 VDC		
2H	DIN terminal box with small lamp (Pg11)							H	100 VAC, 200 VAC, 24 VDC		
3A	Open frame	A				G		H	100 VAC, 200 VAC		
3M			Lead wire (IP65 or equivalent)							12 VDC, 24 VDC, 48 VDC, 100 VDC	
3N			With HP terminal box (G1/2)	D	E	F			S	100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC	
3I			HP terminal box with lamp (G1/2)							100 VAC, 200 VAC, 12 VDC, 24 VDC, 48 VDC, 100 VDC	
3J			HP terminal box (IP65 or equivalent) (G1/2)							100 VAC, 200 VAC, 12 VDC, 24 VDC, 48 VDC, 100 VDC	
	HP term box, lamp (IP65, equiv) (G1/2)							100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC			
4A	Option Open frame (Thermal class 180 (H))	A				G		H	100 VAC, 200 VAC		
4M			Lead wire							100 VAC, 200 VAC	
4N			With HP terminal box (G1/2)	D	E	F				100 VAC, 200 VAC	
	HP terminal box with lamp (G1/2)							100 VAC, 200 VAC			
5A	Open frame (diode integrated)	A				G		H	100 VAC, 200 VAC		
5M			Lead wire (IP65 or equivalent)							100 VAC, 200 VAC	
5N			With HP terminal box (G1/2)	D	E	F				100 VAC, 200 VAC	
5I			HP terminal box with lamp (G1/2)							100 VAC, 200 VAC	
5J			HP terminal box (IP65 or equivalent) (G1/2)							100 VAC, 200 VAC	
	HP term box, lamp (IP65, equiv) (G1/2)							100 VAC, 200 VAC			
6C	Grommet lead wire 7W	A							12 VDC, 24 VDC		
6E	With DIN terminal box (G1/2) 7W								12 VDC, 24 VDC		
6G	With DIN terminal box (Pg11) 7W								12 VDC, 24 VDC		
6H	DIN terminal box with small lamp (Pg11) 7W							H	24 VDC		

Refer to the following cautions for Items (E) to (I).

Blank 6C		● Grommet lead wire 300 mm
2E 2G 2H 6E 6G 6H		● DIN terminal box
3A 4A 5A		● Open frame lead wire 300 mm ● 4A (Thermal class 180 (H)) ● 5A (diode integrated)
3M 3N 4M 4N 5M 5N		● Open frame HP terminal box ● 4M, 4N (Thermal class 180 (H)) ● 5M, 5N (diode integrated)
3I 3J 5I 5J		● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

Refer to page 148
for coil selection.

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

Precautions for model No. selection

Notes for (E)

- *8 : Leave blank for the standard coil housing. However, to select options in (F), (G) or (H), indicate 00 for Item (E).
- *9 : Coils for 5A/5M/5N/5I/5J have a diode to convert AC to DC voltage.
- *10: A DC coil for steam is available for GAB4*2. Contact CKD for more information.
- *11: The coil housings 6C, 6E and 6G are 12 VDC and 24 VDC dedicated. 6H is 24 VDC dedicated.
- *12: For 6C/6E/6G/6H, only GAB4*2 is available.

Notes for (F) to (H)

- *13: When Item (D) is C, F, K or N, the manual override (Item (F)A) is not available.
- *14: For Item (G), select an option from D, E, F, G and H.
- *15: 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.
- *16: As standard, the surge suppressor is built into the coil with diode and the 24 VDC coil (Item (E)2H/6H), so surge suppressor code S cannot be selected.
- *17: 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) and the coil option 6C/6E/6G/6H are selected.

Notes for (I)

- *18: 100 VAC coil is compatible with 100 VAC 50/60 Hz and 110 VAC 60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz and 220 VAC 60 Hz. However, coils for Item (E) 5A/5M/5N/5I/5J can be used with 100 VAC 50/60 Hz and 200 VAC 50/60 Hz only.
- *19: For voltages other than above, contact CKD.
- *20: 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.

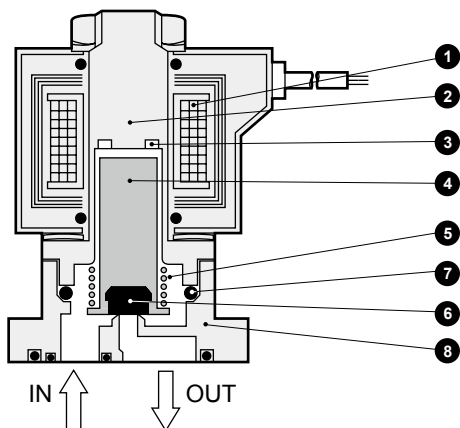
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/ AD
APK/ ADK
DryAir
EX- XPLNprf
XPLNprf
HVB/ HVL
SDB/ NAB
LAD/ NAD
Water- Rela
NP/NAP/ NVP
SNP
CHB/G
MXB/G
Other valves
SWD/ MWD
DustCoil
CVE/ CVSE
CCH / CPE/D
LifeSci
Gas- Combus
Auto- Water
SpecFld
Custom
Ending

GAB312/352/412/452 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 \updownarrow 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
- SpecFld
- Custom
- Ending

Internal structure and parts list

● GAB312/GAB352/GAB412/GAB452 actuator



No.	Part name	Material
1	Coil	-
2	Core assembly	SUS405 or equiv./316L/403 *1
3	Shading coil	Cu (Ag for stainless steel body) / Copper (silver for stainless steel body)
4	Plunger	SUS405 or equiv.
5	Plunger spring	SUS304
6	Seal	NBR (FKM/EPDM/PTFE)
7	O-ring	NBR (FKM/EPDM/PTFE) (Size: AS568-019)
8	Body	C3771(SCS13)

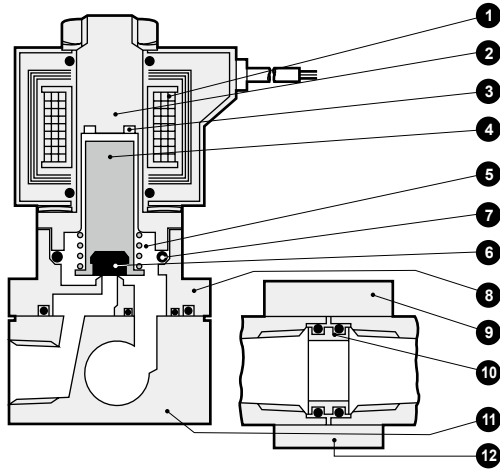
*1 : When the body/sealant combination code is other than blank and H, or the coil housing code is 6C, 6E, 6G or 6H, the material is SUS405 or equivalent/SUS316L/SUS430.

*2 : () shows options.

*3 : 4 body mounting screws and 2 O-rings are attached to the actuator only.

Internal structure and parts list

● GAB312/GAB352/GAB412/GAB452 manifold



No.	Part name	Material
1	Coil	-
2	Core assembly	SUS405 or equiv./316L/403 *1
3	Shading coil	Cu (Ag for stainless steel body) / Copper (silver for stainless steel body)
4	Plunger	SUS405 or equiv.
5	Plunger spring	SUS304
6	Seal	NBR (FKM/EPDM/PTFE)
7	O-ring	NBR (FKM/EPDM/PTFE) (Size: AS568-019)
8	Body	C3771(SCS13)
9	Holder	SPCC
10	Connector	C3604(SUS304)
11	Sub-plate	C3604(SUS303)
12	Connecting plate	SPCC

*1 : When the body/sealant combination code is other than blank and H, or the coil housing code is 6C, 6E, 6G or 6H, the material is SUS405 or equivalent/SUS316L/SUS430.

*2 : () shows options.

- 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
- SpecFld
- Custom
- Ending

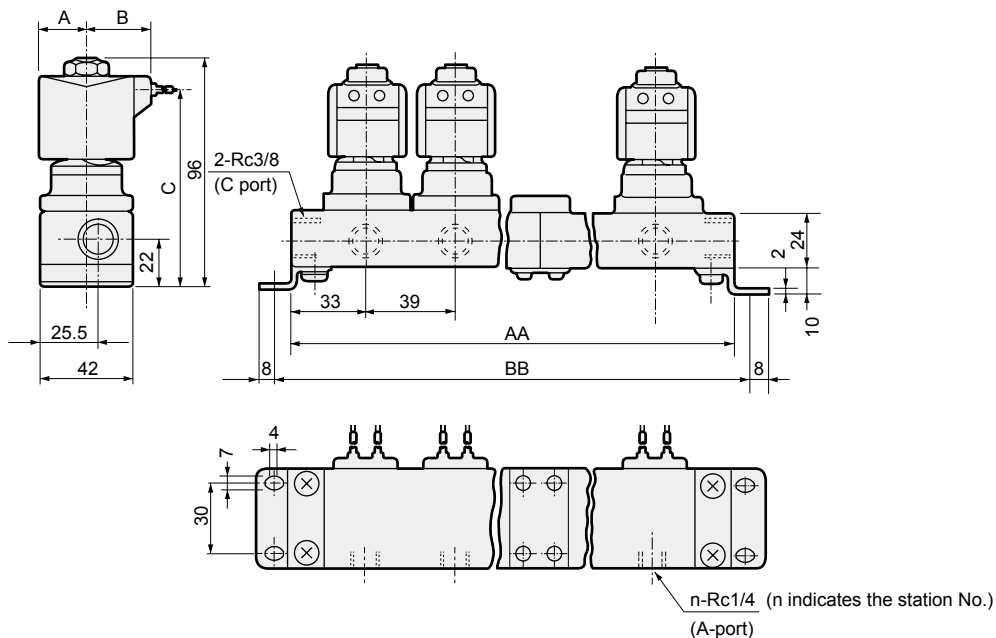
GAB312/352/412/452 Series



Dimensions: GAB312/352 Series

● Manifold (grommet lead wire)

GAB312/352-1 to 6- [2 to 10] - * [Blank]



Station No.	AA	BB	Manifold configuration	Station No.	AA	BB	Manifold configuration
2	106	122	2 stations x 1	7	329	345	5 stations + 2 stations
3	145	161	3 stations x 1	8	368	384	5 stations + 3 stations
4	212	228	2 stations x 2	9	435	451	3 stations x 3
5	223	239	5 stations x 1	10	446	462	5 stations x 2
6	290	306	3 stations x 2	Contact CKD for 11 stations or more.			

Model No.	A	B	C
Blank	20	27	84

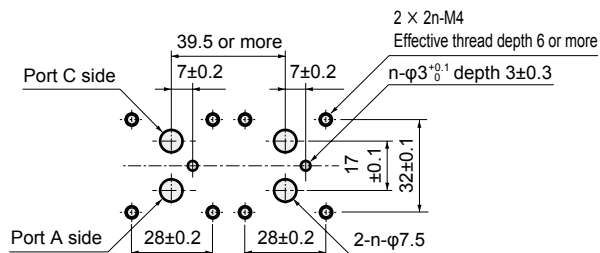
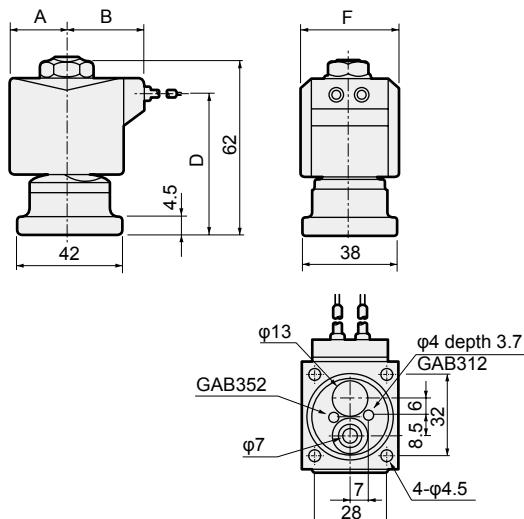
*1 : Manifold configuration combines 2-station, 3-station and 5-station units.

*2 : The dimensions are the same for port sizes of G and NPT threads.

● Actuator (grommet lead wire)

GAB312/352-1 to 6- [0] - * [Blank]

● Recommended dimensions for actuator mounting



■ Machining drawing when using 2 actuators

Model No.	A	B	D	F
Blank	20	27	50	34

GAB312/352/412/452 Series

Optional dimensions: GAB312/352 Series

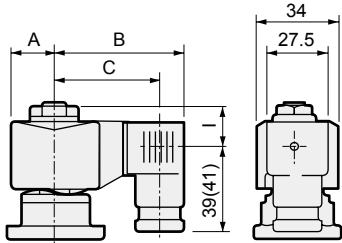


* Refer to the dimensions of grommet lead wire on the left page for common dimensions.

● With DIN terminal box

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

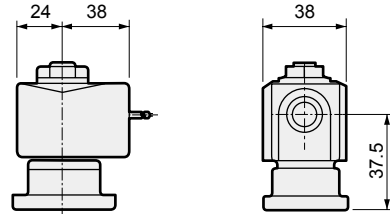
2	E
	G
	H



● Open frame lead wire

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

3A
4A
5A



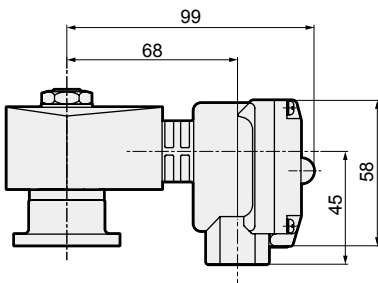
Dimensions shown in () are for G1/2.

Voltage	A	B	C	I
AC (2E/2G/2H)	20	62	50.5(50)	20.5
DC (2E/2G/2H)	21	63.5	52(51.5)	20.5

● Open frame + HP terminal box

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

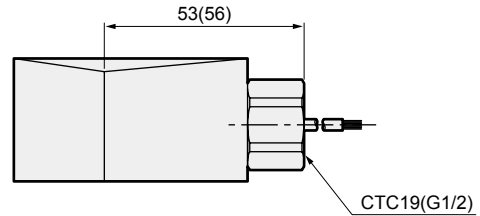
3	M	4M
5	N	4N
	I	
	J	



● Open frame + conduit

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

3A	G
4A	H
5A	

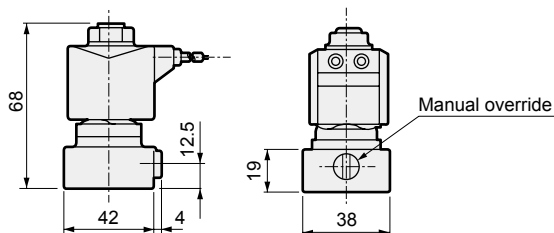


Dimensions shown in () are for G1/2.

● Manual override (locking)

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

A



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
SAB/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
SpecFld
Custom
Ending

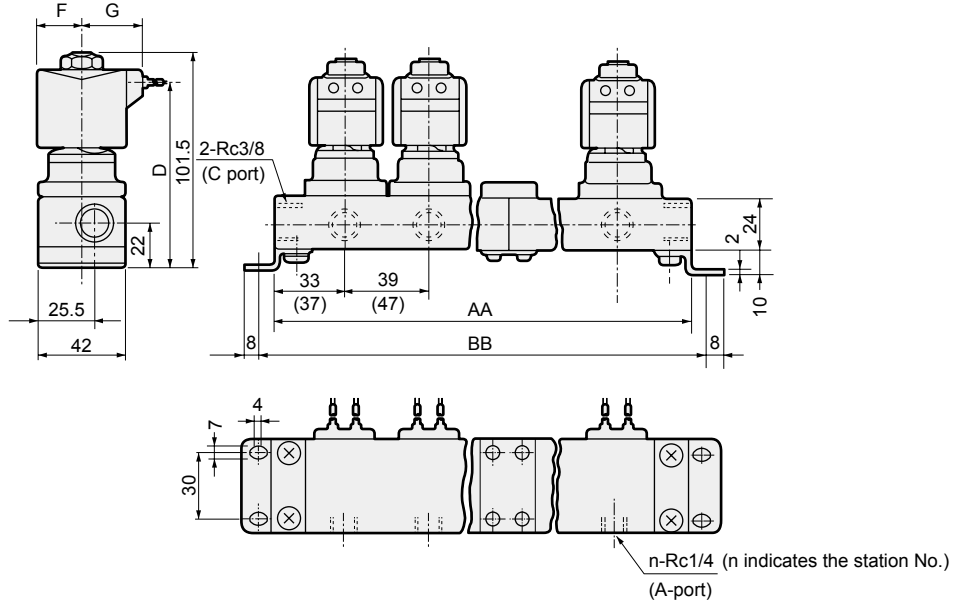
GAB312/352/412/452 Series



Dimensions: GAB412/452 Series

● Manifold (grommet lead wire)

GAB412/452-1 to 7- [2 to 10] - * [Blank] / [6C]



Station No.	AA	BB	Manifold configuration	Station No.	AA	BB	Manifold configuration
2	106(122)	122(138)	2 stations x 1	7	329(385)	345(401)	5 stations + 2 stations
3	145(169)	161(185)	3 stations x 1	8	368(432)	384(448)	5 stations + 3 stations
4	212(244)	228(260)	2 stations x 2	9	435(507)	451(523)	3 stations x 3
5	223(263)	239(279)	5 stations x 1	10	446(526)	462(542)	5 stations x 2
6	290(338)	306(354)	3 stations x 2	Contact CKD for 11 stations or more.			

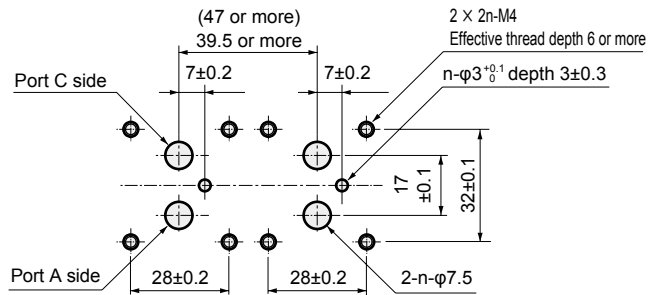
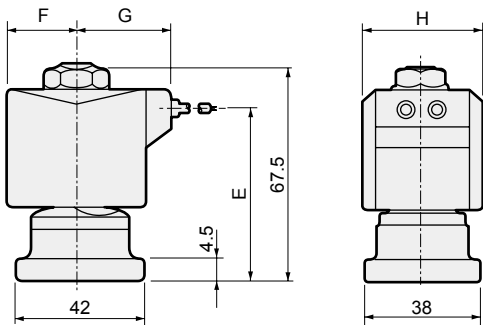
Model No.	F	G	D
Blank	23.5	30.5	89
6C	24	30.5	87.5

*1 : Manifold configuration combines 2-station, 3-station and 5-station units.
 *2 : Dimensions shown in () are for open frame.
 *3 : The dimensions are the same for port sizes of G and NPT threads.

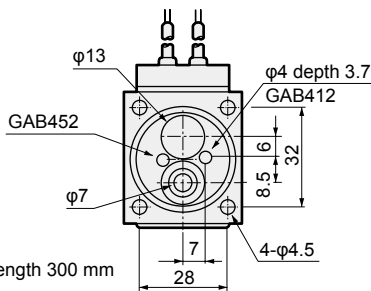
● Actuator (grommet lead wire)

GAB412/452-1 to 7-0 - * [Blank] / [6C]

● Recommended dimensions for actuator mounting



■ Machining drawing when using 2 actuators



* Lead wire length 300 mm

Model No.	F	G	E	H
Blank	23.5	30.5	55	38
6C	24	30.5	55	39

GAB312/352/412/452 Series

Optional dimensions: GAB412/452 Series

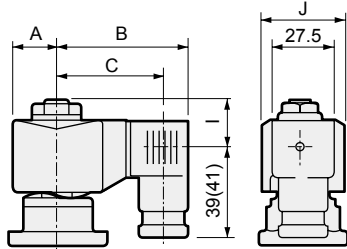


* Refer to the dimensions of grommet lead wire on the left page for common dimensions.

● With DIN terminal box

GAB412/452-1 to 7-0 to 10-*

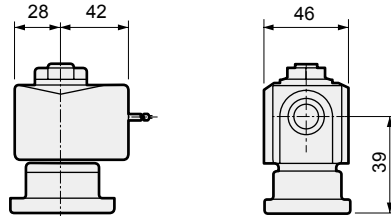
2	E
6	G
	H



● Open frame lead wire

GAB412/452-1 to 7-0 to 10-*

3A
4A
5A



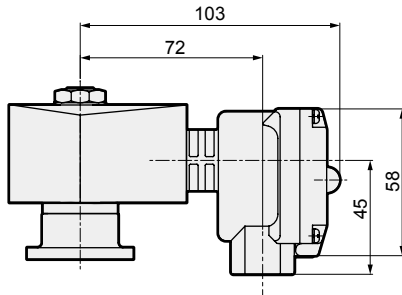
Dimensions shown in () are for G1/2.

Voltage	A	B	C	I	J
AC (2E/2G/2H)	23.5	65.5	54(53.5)	22	38
DC (2E/2G/2H)	23.5	66	54.5(54)	22	38
DC (6E/6G/6H)	24	68	56.5(56)	22	39

● Open frame + HP terminal box

GAB412/452-1 to 7-0 to 10-*

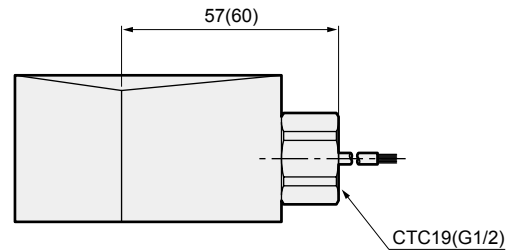
3	M	4M
5	N	4N
	I	
	J	



● Open frame + conduit

GAB412/452-1 to 7-0 to 10-*

3A	G
4A	H
5A	

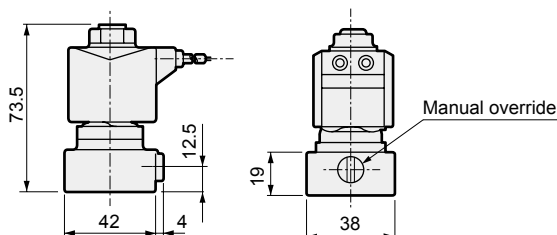


Dimensions shown in () are for G1/2.

● Manual override (locking)

GAB412/452-1 to 7-0 to 10-***

A



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
SpecFld
Custom
Ending



Direct acting 2-port solenoid valve, manifold/actuator
(General purpose valve)

GAB422 Series

- NO
- Common supply (port C pressurization)

CE Refer to the Ending for details.

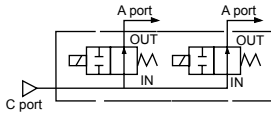


- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- SAB/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combus
- Auto-Water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

Manifold circuit configuration Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

- GAB422
(Common supply/port C pressurization)



Descriptions	Standard specifications	Optional specifications	
Working fluid	Air/low vacuum (1.33 x 10 ⁵ Pa (abs)) / water/kerosene/oil (50 mm ² /s or less)	Hot water	Steam
Working pressure differential MPa	0 to 2 (refer to max. working pressure differential in individual specifications.)		
Max. working pressure MPa	2 (≈290 psi, 20 bar)	1 (≈150 psi, 10 bar)	
Proof pressure (water pressure) MPa	10 (≈1500 psi, 100 bar)		
Fluid temperature (*1) °C	-10 (14°F) to 60 (140°F)	-10 (14°F) to 90 (194°F)	-10 (14°F) to 184 (363.2°F)
Ambient temperature °C	-20 (-4°F) to 60 (140°F)	-20 (-4°F) to 100 (212°F)	
Thermal class	Class 130 (B)	Class 180 (H)	
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 (air)	300 or less (air)	
Mounting orientation	Unrestricted		
Body/seal material	Copper alloy/nitrile rubber	Copper alloy/EPM rubber	Copper alloy/PTFE

*1 : No freezing.

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	Port size	Orifice size (mm)	Max. working pressure differential (MPa)							Rated voltage	Apparent power (VA)				Power consumption (W)	
			Air		Water(hot)/Kerosene		Oil (50 mm ² /s)		Steam		When holding		When starting		AC	DC
			AC	DC	AC	DC	AC	DC	AC		50 Hz	60 Hz	50 Hz	60 Hz	50/60 Hz	DC
GAB422-1	-	1.5	2.0	2.0	2.0	2.0	2.0	2.0	2.0	100 VAC 50/60 Hz *7 200 VAC 50/60 Hz *7 12 VDC 24 VDC 48 VDC 100 VDC	22	18	35	29	8.7/6.7	15.5 (14)
GAB422-2		2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0							
GAB422-3		3.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7							
GAB422-4		3.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5							
GAB422-5		4.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4							
GAB422-6		5.0	0.25	0.25	0.25	0.25	0.25	0.25	0.25							
GAB422-7		7.0	0.15	0.15	0.15	0.15	0.15	0.15	0.15							

*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 184) and dimensions (page 188).

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

*4 : Values shown in () are for the DC voltage type with DIN terminal box.

*5 : Refer to DC column for the max. working pressure differential of coil with diode.

*6 : When using at low vacuum, vacuum the OUT port side.

*7 : The 100 VAC (50/60 Hz) can be used with 110 VAC (60 Hz). The 200 VAC (50/60 Hz) can be used with 220 VAC (60 Hz). However, this does not apply to coil housings 5A/5M/5N/5I/5J.

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
GAB422	0.47	1.7	2.4	3.3	3.8	4.8	5.5	6.2	7.2	7.6

Optional specifications (fluid temperature, ambient temperature, valve seat leakage)

Sealant	Fluoro rubber		Ethylene propylene rubber		PTFE	
	Class 130 (B)	Class 180 (H)	Class 130 (B)	Class 180 (H)	Class 130 (B)	Class 180 (H)
Coil (thermal class)						
Fluid temperature (*1) °C	-10 to 60	-10 to 90	0 to 60 (*3)	0 to 90 (*3)	-10 to 60	-10 to 184
Ambient temperature °C	-20 to 60	-20 to 100 (*2)	-20 to 60	-20 to 100 (*2)	-20 to 60	-20 to 100 (*2)
Valve seat leakage cm ³ /min(ANR)	0.2 or less (air)				300 or less (air)	

*1 : No freezing.

*2 : -20 to 80°C when coil housing is HP terminal box with lamp.

*3 : The lowest temperature is 0°C since the fluid is water.

Flow characteristics

Model No.	Port size	Orifice size (mm)	Flow characteristics		
			C[dm ³ /(s·bar)]	b	Cv
GAB422-1	-	1.5	0.29	0.53	0.10
-2		2.0	0.53	0.52	0.15
-3		3.0	1.1	0.52	0.31
-4		3.5	1.5	0.47	0.40
-5		4.0	1.9	0.47	0.48
-6		5.0	2.6	0.38	0.62
-7		7.0	4.6	0.37	0.82

*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
SpecFld
Custom
Ending

GAB422 Series

How to order

GAB422 - **2** - **5** - **0** **3A** **A** **G** **S** - **AC100V**

Model No.

E Coil housing **H** With surge suppressor

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

G Other options

A Thread

B Orifice size

C Manifold station No.
*2

D Body/sealant combination
*3
*4
*5
*6

Code	Content
A Thread	
Blank	Rc
G	G
N	NPT

B Orifice size	
1	φ1.5
2	φ2
3	φ3
4	φ3.5
5	φ4
6	φ5
7	φ7

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

D Body/sealant combination						
	Body	Seal	Treatment	Remarks		
Blank	Std.	Copper alloy	-	Nitrile rubber	Air/water/low vacuum/kerosene (up to 60°C)	
				Fluoro rubber	Air/low vacuum/kerosene (up to 90°C *4)	
				PTFE	Steam (up to 184°C *4)	
D	Stainless steel	-	-	Nitrile rubber	Air/water/low vacuum/kerosene (up to 60°C)	
				Fluoro rubber	Air/low vacuum/kerosene (up to 90°C *4)	
				PTFE	Steam (up to 184°C *4)	
H	Option	Copper alloy	Oil free	Nitrile rubber	Air/water/low vacuum/kerosene (up to 60°C)	
				Fluoro rubber	Air/low vacuum/kerosene (up to 90°C *4)	
				PTFE	Steam (up to 184°C *4)	
P	-	Copper alloy	Oil free	Ethylene propylene rubber	Hot water (up to 90°C *4)	
				Stainless steel	Nitrile rubber	Air/water/low vacuum/kerosene (up to 60°C)
					Fluoro rubber	Air/low vacuum/kerosene (up to 90°C *4)
N	-	Stainless steel	Oil free	PTFE	Steam (up to 184°C *4)	
				Ethylene propylene rubber	Hot water (up to 90°C *4)	

Refer to Intro Page 39 for reference on material combinations.

E to I
For details on the coil housing, other options and voltage, etc., refer to the following page.

⚠ 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 : Leave blank for standard. However, to select options in (E),(F),(G) or (H), indicate 0 for Item (D).
- *4 : When Item (D) 4A/4M/4N is selected.
- *5 : The ethylene propylene rubber seal combination (Item (D) P/R) cannot be used with air. (Compressed air contains oil, and ethylene propylene rubber is not oil-resistant.)
- *6 : For PTFE seal, O-ring material of sub-plate connection will be FKM.

[Example of model No. 1] GAB422N-2-6-AC100V

Model : GAB422 (normally open/common supply)

- A** Thread : NPT
- B** Orifice size : φ2
- C** Manifold station No. : 6 stations
- D** Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
- E** Coil housing : Grommet lead wire
- F** to **H** : None
- I** Rated voltage : 100 VAC 50/60 Hz, 110 VAC 60 Hz

[Example of model No. 2] GAB422-3-0-000AS-AC100V






Model : GAB422 (normally open/common supply)

- A** Thread : Rc
- B** Orifice size : φ3
- C** Manifold station No. : Actuator only
- D** Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
- E** Coil housing : Grommet lead wire
- F** Manual override (locking) : Selected
- G** Other options : None
- H** Surge suppressor : With surge suppressor
- I** Rated voltage : 100 VAC 50/60 Hz, 110 VAC 60 Hz


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

E Coil housing		F	G Other options				H	I Rated voltage		
Content	Manual override (Locking)	Cable gland			Conduit		With surge suppressor	Content		
		(marine cable gland)	(conduit piping)							
		A-15a	A-15b	A-15c	CTC 19	G 1/2				
Blank	Std. Grommet lead wire	A						S	100 VAC, 200 VAC	
2E	With DIN terminal box (G1/2)								100 VAC, 200 VAC	
2G	With DIN terminal box (Pg11)								12 VDC, 24 VDC, 48 VDC, 100 VDC	
2H	DIN terminal box with small lamp (Pg11)						H		100 VAC, 200 VAC, 24 VDC	
3A	Option Open frame	A				G	H	S	100 VAC, 200 VAC	
3M			Lead wire (IP65 or equivalent)							12 VDC, 24 VDC, 48 VDC, 100 VDC
3N			With HP terminal box(G1/2)							100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC
3I			HP terminal box with lamp (G1/2)	D	E	F				100 VAC, 200 VAC, 12 VDC, 24 VDC, 48 VDC, 100 VDC
3J			HP terminal box (IP65 or equivalent)(G1/2)							100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC
4A	Option Open frame (Thermal class 180 (H))	A				G	H	S	100 VAC, 200 VAC	
4M			Lead wire							
4N			With HP terminal box(G1/2)	D	E	F				
5A	Option Open frame (diode integrated)	A				G	H	S	100 VAC, 200 VAC	
5M			Lead wire (IP65 or equivalent)							
5N			With HP terminal box(G1/2)	D	E	F				
5I			HP terminal box with lamp (G1/2)							
5J	HP terminal box (IP65 or equivalent)(G1/2)									

Refer to the following cautions for Items (E) to (I).

Blank		● Grommet lead wire 300 mm
2E 2G 2H		● DIN terminal box
3A 4A 5A		● Open frame lead wire 300 mm ● 4A (Thermal class 180 (H)) ● 5A (diode integrated)
3M 3N 4M 4N 5M 5N		● Open frame HP terminal box ● 4M, 4N (Thermal class 180 (H)) ● 5M, 5N (diode integrated)
3I 3J 5I 5J		● Open frame HP terminal box (IP65 or equivalent) ● 5I, 5J (diode integrated)

Refer to page 148 for coil selection.

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

Precautions for model No. selection

Notes for (E)

- *7 : Leave blank for the standard coil housing. However, to select options in (F), (G) or (H), indicate 00 for Item E.
- *8 : Coils for 5A/5M/5N/5I/5J have a diode to convert AC to DC voltage.

Notes for (F) to (H)

- *9 : When Item (D) is C, F, K or N, the manual override (Item (F) A) is not available.
- *10: For Item (G), select an option from D, E, F, G and H.
- *11: 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.
- *12: As standard, the surge suppressor is built into the coil with diode and the 24 VDC coil (Item (E) 2H), so the surge suppressor S cannot be selected.
- *13: 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 (I)

- *14: 100 VAC coil is compatible with 100 VAC 50/60 Hz and 110 VAC 60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz and 220 VAC 60 Hz. However, coils for Item (E) 5A/5M/5N/5I/5J can be used with 100 VAC 50/60 Hz and 200 VAC 50/60 Hz only.
- *15: For voltages other than above, contact CKD.
- *16: 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.

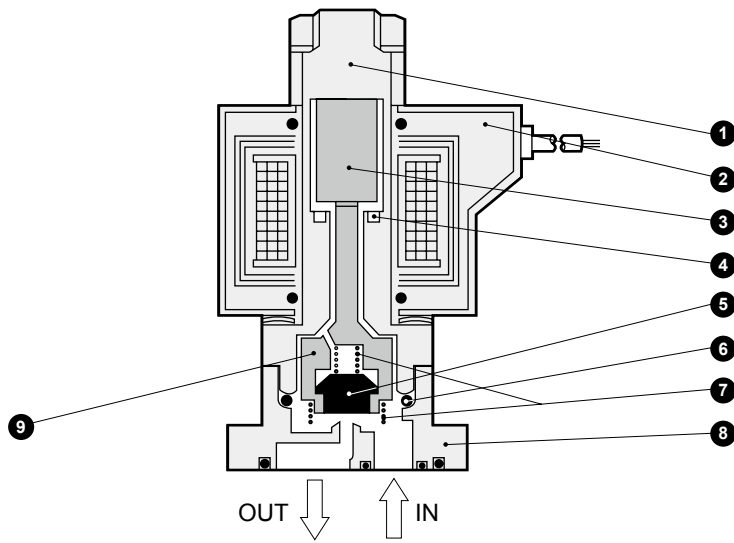
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/
AD
APK/
ADK
DryAir
EX-
XPLNprf
XPLNprf
HVB/
HVL
S B/
NAB
LAD/
NAD
Water-
Rela
NP/NAP/
NVP
SNP
CHB/G
MXB/G
Other
valves
SWD/
MWD
DustCoil
CVE/
CVSE
CCH /
CPE/D
LifeSci
Gas-
Combus
Auto-
Water
SpecFld
Custom
Ending

GAB422 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
- SAB/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
- SpecFld
- Custom
- Ending

Internal structure and parts list

● GAB422 actuator



No.	Part name	Material	No.	Part name	Material
1	Core assembly	SUS405 or equiv./316L/304	8	Body	C3771(SCS13)
2	Coil	-	9	NO Valve	POM (SUS303/PFA)
3	Plunger	SUS405 or equiv.			
4	Shading coil	Cu (Ag for stainless steel body)			
5	Seal	NBR (FKM/EPDM/PTFE)			
6	O-ring	NBR (FKM/EPDM/PTFE) (Size: AS568-019)			
7	Spring	SUS304			

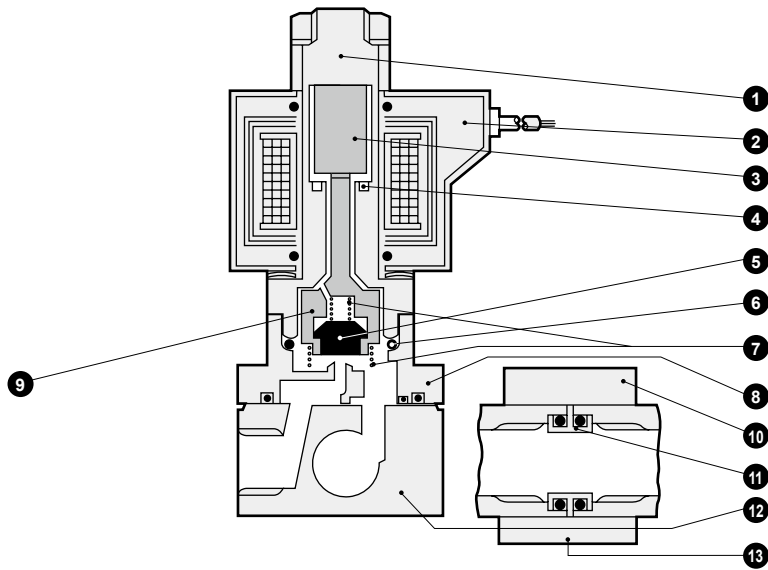
Copper alloy (stainless steel)
 Option code
 1: Blank/OD/H/L: Polyacetal resin
 2: Other than the above: Stainless steel/perfluoroalkoxy resin

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

() shows options.

Internal structure and parts list

● GAB422 manifold



No.	Part name	Material	No.	Part name	Material		
1	Core assembly	SUS405 or equiv./316L/304	Stainless steel	8	Body	C3771(SCS13)	Copper alloy (stainless steel)
2	Coil	-	-	9	NO Valve	POM (SUS303/PFA)	Option code Blank/O/D/H/L: Polyacetal resin Other than the above: Stainless steel/perfluoroalkoxy resin
3	Plunger	SUS405 or equiv.	Stainless steel	10	Holder	SPCC	Steel
4	Shading coil	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)	11	Connector	C3604(SUS304)	Copper alloy (stainless steel)
5	Seal	NBR (FKM/EPDM/PTFE)	NBR: Nitrile rubber FKM: Fluoro rubber EPDM: Ethylene propylene rubber PTFE: Tetrafluoroethylene resin	12	Sub-plate	C3604(SUS303)	Copper alloy (stainless steel)
6	O-ring	NBR (FKM/EPDM/PTFE) (Size: AS568-019)		13	Connecting plate	SPCC	Steel
7	Spring	SUS304	Stainless steel				

() shows options.

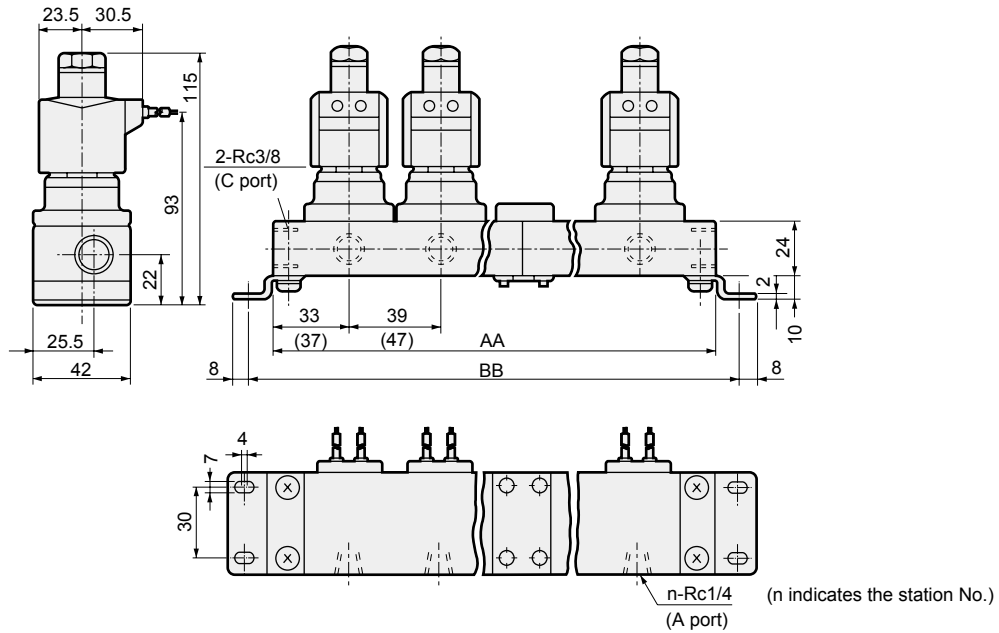
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/ AD
APK/ ADK
DryAir
EX- XPLNprf
XPLNprf
HVB/ HVL
S \diamond B/ NAB
LAD/ NAD
Water- Rela
NP/NAP/ NVP
SNP
CHB/G
MXB/G
Other valves
SWD/ MWD
DustColl
CVE/ CVSE
CCH / CPE/D
LifeSci
Gas- Combus
Auto- Water
SpecFld
Custom
Ending

GAB422 Series



Dimensions: Manifold

- Grommet lead wire
GAB422-1 to 7-2 to 10



Station No.	AA	BB	Manifold configuration	Station No.	AA	BB	Manifold configuration
2	106(122)	122(138)	2 stations x 1	7	329(385)	345(401)	5 stations + 2 stations
3	145(169)	161(185)	3 stations x 1	8	368(432)	384(448)	5 stations + 3 stations
4	212(244)	228(260)	2 stations x 2	9	435(507)	451(523)	3 stations x 3
5	223(263)	239(279)	5 stations x 1	10	446(526)	462(542)	5 stations x 2
6	290(338)	306(354)	3 stations x 2	Contact CKD for 11 stations or more.			

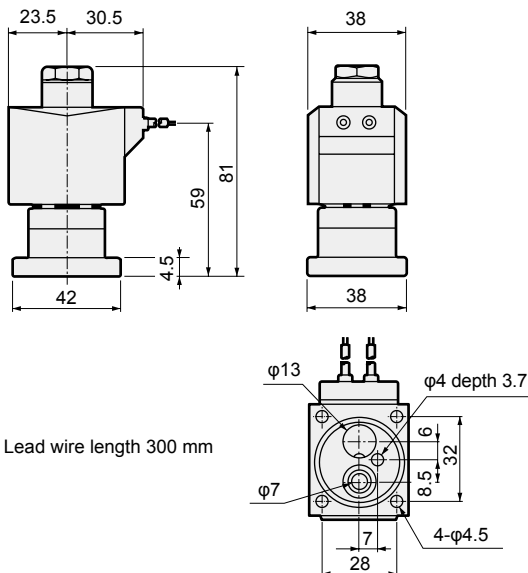
- *1 : Manifold configuration combines 2-station, 3-station and 5-station units.
- *2 : Dimensions shown in () are for open frame.
- *3 : Dimensions for open frame will be applied to the DC voltage type of GAB422 Series with DIN terminal box.
- *4 : The dimensions are the same for port sizes of G and NPT threads.

Dimensions: Actuator

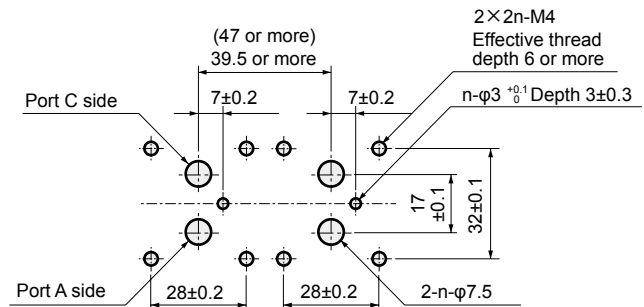


- Grommet lead wire
GAB422-1 to 7-0

- Recommended dimensions for actuator mounting



* Lead wire length 300 mm



■ Machining drawing when using 2 actuators

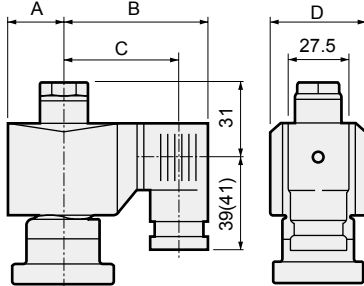
Optional dimensions



* Refer to the dimensions of grommet lead wire on the left page for common dimensions.

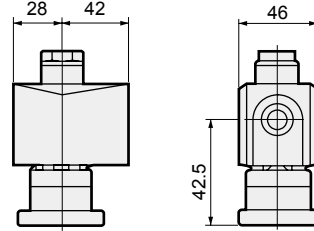
- With DIN terminal box
GAB422-1 to 7-0 to 10-*

2E
2G
2H



- Open frame lead wire
GAB422-1 to 7-0 to 10-*

3A
4A
5A

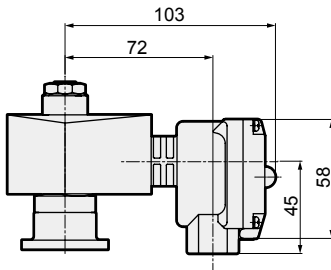


Dimensions shown in () are for G1/2.

Voltage	A	B	C	D
AC	23.5	65.5	54(53.5)	38
DC	28	72	60.5(60)	46

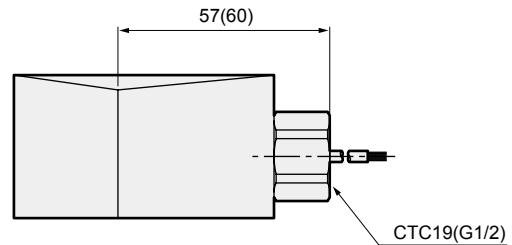
- Open frame + HP terminal box
GAB422-1 to 7-0 to 10-*

3M / 4M
5N / 4N
1I
J



- Open frame + conduit
GAB422-1 to 7-0 to 10-*

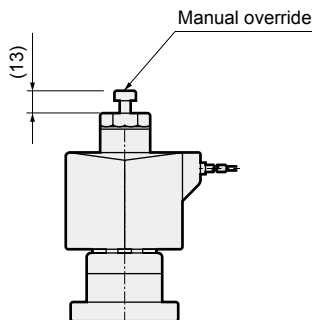
3A	G
4A	H
5A	



Dimensions shown in () are for G1/2.

- Manual override (locking)
GAB422-1 to 7-0 to 10-***A

A



EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/ AD
APK/ ADK
DryAir
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XPLNprf
HVB/ HVL
SAB/ NAB
LAD/ NAD
Water- Rela
NP/NAP/ NVP
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