



Discrete direct acting 2 port solenoid valve
(general purpose valve)

AB31-AB41 Series ● NC (normally closed) type

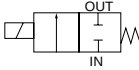
AB42 Series ● NO (normally open) type

● Port size: Rc1/8 to Rc1/2

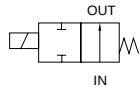


JIS symbol

● AB31/41: NC (normally closed) type



● AB42: NO (normally open) type



Common specifications

Item	Standard specifications		Optional specifications	
Working fluid	Air, low vacuum (1.33 x 10 ⁴ Pa (abs)), water, kerosene, oil (50 mm ² /s or less)		Hot water	Steam
Working pressure differential range MPa	0 to 5 (refer to max. working pressure differential in individual specifications.)			
Withstanding pressure (water) MPa	25			
Fluid temperature (Note 1) °C	-10 to 60		-10 to 90	-10 to 184
Ambient temperature °C	-20 to 60		-20 to 100	
Heat proof class	B		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 attitude	Free			
Body, sealant	Brass, nitrile rubber		Brass, ethylene propylene diene rubber	Brass, PTFE

Note 1: No freezing

Individual specifications

Item	Port size	Orifice (mm)	Max. working pressure differential (MPa)							Max. working pressure (MPa)	Rated voltage	Apparent power (VA)				Power consumption (W)		Weight (kg)
Model no.			Air		Water, hot water, kerosene		Oil (50 mm ² /s)		Steam			Holding	Starting			AC	DC	
			AC	DC	AC	DC	AC	DC	AC			50 Hz	60 Hz	50 Hz	60 Hz	50/60 Hz		
NC (normally closed) type																		
AB31- ⁰¹ ₀₂ -1 -2 -3 -4 -5 -6	Rc1/8 Rc1/4	1.5	2.5	2.5	2.5	2.5	2.5	2.5	1.0	5 (5 fluid; 1 for steam)	100 VAC 50/60 Hz	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	1.0									
		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									
AB41- ⁰² ₀₃ -1 -2 -3 -4 -5 -6 -7	Rc1/4 Rc3/8	1.5	5.0	4.0	4.5	4.0	4.0	4.0	1.0	5 (5 fluid; 1 for steam)	110 VAC 60 Hz	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	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									
AB41- ⁰³ ₀₄ -8	Rc3/8 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}		220 VAC 60 Hz							0.54	
NO (normally open) type											12 VDC 24 VDC 48 VDC 100 VDC							
AB42- ⁰² ₀₃ -1 -2 -3 -4 -5 -6 -7	Rc1/4 Rc3/8	1.5	2.0	2.0	2.0	2.0	2.0	2.0	1.0	2 (5 fluid; 1 for steam)	100 VDC	22	18	35	29	8.7/6.7	15.5 (14)	0.50 (Rc1/4) 0.52 (Rc3/8)
		2.0	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									
		3.5	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									
		5.0	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									

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

*2: The port size symbol 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 must be within $\pm 10\%$ of the rated voltage.

*5: Power consumption of coil housing 2E/2G/2H is indicated.

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

*7: Power consumption of coil housing 6C/6E/6G/6H is indicated.

*8: The DC voltage of coil housing 2E/2G/2H and the max. working pressure differential of coil housing 6C/6G/6H are indicated.

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

Sealant material	Fluoro rubber		Ethylene propylene diene rubber		PTFE	
Coil (heat proof class)	B	H	B	H	B	H
Fluid temperature (Note 1) °C	-10 to 60	-10 to 90	-10 to 60	-10 to 90	-10 to 60	-10 to 184
Ambient temperature °C	-20 to 60	-20 to 100 (Note 2)	-20 to 60	-20 to 100 (Note 2)	-20 to 60	-20 to 100 (Note 2)
Valve seat leakage cm ³ /min. (ANR)	0.2 or less (air)				300 or less (air)	

Note 1: No freezing

Note 2: The range is -20 to 80°C when using the HP terminal box with indicator light for the coil housing.

Flow characteristics

Model no.	Port size	Orifice (mm)	Flow characteristics		
			C [dm ³ /(s·bar)]	b	Cv flow factor
NC (normally closed) type					
AB31-⁰¹₀₂-1	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 (1.5)	0.49 (0.47)	0.42 (0.40)
-5		4.0	2.1 (1.9)	0.48 (0.47)	0.54 (0.48)
-6		5.0	3.0 (2.6)	0.42 (0.38)	0.8 (0.62)
AB41-⁰²₀₃-1	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 (1.5)	0.49 (0.47)	0.42 (0.40)
-5		4.0	2.1 (1.9)	0.48 (0.47)	0.54 (0.48)
-6		5.0	3.0 (2.6)	0.42 (0.38)	0.8 (0.62)
-7		7.0	4.8 (4.6)	0.29 (0.37)	1.0 (0.82)
AB41-⁰³₀₃-8	Rc3/8 Rc1/2	10.0	9.3 (8.1)	0.36 (0.31)	1.88 (1.5)
NO (normally open) type					
AB42-⁰²₀₃-1	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 (1.5)	0.49 (0.47)	0.4
-5		4.0	2.1 (1.9)	0.48 (0.47)	0.47
-6		5.0	3.0 (2.6)	0.42 (0.38)	0.63 (0.62)
-7	7.0	4.8 (4.6)	0.29 (0.37)	1.0 (0.82)	

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

*2: Values shown in () are for stainless steel body.

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/
AD

APK/
ADK

For
dry air

Explosion
proof

HVB/
HVL

SAB/
SVB

NP/NAP/
NVP

CHB/G

MXB/G

Other G.P.
systems

PD/FAD/
PJ

CVE/
CVSE

CPE/
CPD

Medical
analysis

Custom
order

General purpose valve
Direct acting 2 port solenoid valve

AB31/41/42 Series

How to order

● NC (normally closed) type

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

AB41
Model no.

D Coil housing G Other options J Voltage
E Manual override (locking) H Surge suppressor
F Mounting plate I Copper and PTFE free

Model no.		
AB31	AB41	AB41
		Low pressure large flow rate

A Port size

B Orifice

C Body/sealant combination

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

Symbol	Descriptions	Symbol	Descriptions	Symbol	Descriptions
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			
1	ø1.5	●	●
2	ø2	●	●
3	ø3	●	●
4	ø3.5	●	●
5	ø4	●	●
6	ø5	●	●
7	ø7	●	●
8	ø10		

C Body/sealant combination			
Blank	Body	Sealant	Treatment
B	Brass or bronze	Nitrile rubber	-
*2		Fluoro rubber	
C		PTFE	
V		Fluoro rubber	
D	Stainless steel	Nitrile rubber	-
*5		Fluoro rubber	
E		PTFE	
F		PTFE	
W	Option	Fluoro rubber	Vacuum inspection
H		Nitrile rubber	
J		Fluoro rubber	
K		PTFE	
P	Brass	Ethylene propylene diene rubber	Oil free
L		Nitrile rubber	
M		Fluoro rubber	
N		PTFE	
R	Stainless steel	Ethylene propylene diene rubber	

Refer to page 36 in the Introduction for details on the material combinations.

D to J

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.

Note on model no. selection

Note on C

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

<Example 1 of model number>

AB31-02-3-AC100V
Model no.: AB31

- A Port size: Rc1/4
B Orifice: ø3
C Body/sealant combination: Body - brass, sealant - nitrile rubber
D Coil housing: Grommet lead wire
E to J: Blank
J Rated voltage: 100 VAC 50/60Hz, 110 VAC 60Hz

<Example 2 of model number>

AB41-02-3-AC100V
Model no.: AB41

- A Port size: Rc1/4
B Orifice: ø3
C Body/sealant combination: Body - brass, sealant - nitrile rubber
D Coil housing: Grommet lead wire
E Manual override (locking): Selected
F to H: Blank
I Surge suppressor: Selected
J Rated voltage: 100 VAC 50/60Hz, 110 VAC 60Hz

For ④ to ⑤, the combinations indicated with symbols can be manufactured.
Note that if options ⑥ to ① are not required, no symbol is indicated.

D		Coil housing		E	F	G Other options				H	I	J Rated voltage
Descriptions		Manual override (locking)	Mounting plate	Cable gland		Conduit		Surge suppressor	Copper and PTFE Res	Descriptions		
				(Marine cable gland)		(Conduit pipe)						
				A-15a	A-15b	A-15c	CTC19				G1/2	
Blank	Std	Grommet lead wire		A	B				S	P6	100 VAC, 200 VAC	
2E		DIN terminal box (G1/2)									100 VAC, 200 VAC	
2G		DIN terminal box (Pg11)									12 VDC, 24 VDC, 48 VDC, 100 VDC	
2H		DIN terminal box + small light (Pg11)				H					100 VAC, 200 VAC, 24 VDC	
3A	Open frame type	Lead wire		A	B	G			S	P6	100 VAC, 200 VAC	
3M		HP terminal box (G1/2)									12 VDC, 24 VDC, 48 VDC, 100 VDC	
3N		HP terminal box + light (G1/2)									100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC	
3I		HP terminal box (P65 or equivalent) (G1/2)									100 VAC, 200 VAC, 12 VDC, 24 VDC, 48 VDC, 100 VDC	
3J		HP terminal box + light (P65 or equivalent) (G1/2)									100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC	
4A	Option	Lead wire		A	B	G			S	P6	100 VAC, 200 VAC	
4M		HP terminal box (G1/2)				D						
4N		HP terminal box + light (G1/2)				E						
5A	Open frame type (diode integrated)	Lead wire		A	B	G			P6	100 VAC, 200 VAC		
5M		HP terminal box (G1/2)										
5N		HP terminal box + light (G1/2)				D						
5I		HP terminal box (P65 or equivalent) (G1/2)				E						
5J		HP terminal box + light (P65 or equivalent) (G1/2)				F						
6C		Grommet lead wire 7W		A	B				S	P6	12 VDC, 24 VDC	
6E		DIN terminal box (G1/2) 7W										
6G		DIN terminal box (Pg11) 7W										
6H		DIN terminal box + small light (Pg11) 7W				H						
											24 VDC	

Refer to the following precautions for ④ to ⑤.

Blank 6C		Grommet lead wire 300 mm
2E 2G 2H 6E 6G 6H		DIN terminal box
3A 4A 5A		- Open frame type grommet lead wire 300 mm 4A (heat proof class H) 5A (diode integrated)
3M 3N 4M 4N 5M 5N		- Open frame HP terminal box 4M, 4N (heat proof class 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)
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Note on model no. selection

Note on ④

- *8: Leave blank for the standard coil housing. However, to select options in ⑥ to ①, indicate 00 for ④.
- *9: 5A, 5M, 5N, 5I and 5J are coils for which AC power is converted to DC with a diode.
- *10: A DC coil for steam is available for AB41. Contact CKD for more information.
- *11: 6C, 6E, 6G or 6H can be selected for only AB41.
- *12: The coil housings 6C, 6E and 6G are 12 VDC and 24 VDC dedicated. 6H is 24 VDC dedicated.

Note on ⑥ to ①

- *13: The manual override (⑥ A) is not available for the low pressure large flow rate AB41-8.
- *14: When ④ is C, F, K, N, V or W, the manual override (⑥ A) is not available.
- *15: Select one among D, E, F, G and H for ⑥.
- *16: The surge suppressor is an accessory for the lead wire coil. When selecting a coil with terminal box, the surge suppressor is mounted in the terminal box.
- *17: As standard, the surge suppressor is incorporated in the coil with diode and the 24 VDC coil (⑥ 2H/6H), so the surge suppressor symbol S cannot be selected.
- *18: ① P6 is available only when ④ is L, M or R.
- *19: Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.
Note that the tropicalization is not available when the manual override option A and the coil option 6C/6E/6G/6H are selected.

Note on ②

- *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. Note that the coils ② 5A/5M/5N/5I/5J can be used only with 100 VAC 50/60 Hz or 200 VAC 50/60 Hz.
- *21: For voltages other than above, consult with 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.

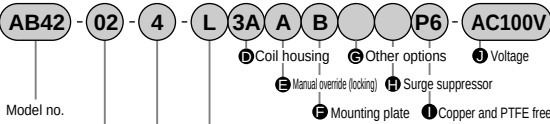
Refer to page 122 for coil selection.

HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/
AD
APK/
ADK
For
dry air
Explosion
proof
HVB/
HVL
SAB/
SVB
NP/NAP/
NVP
CHB/G
MXB/G
Other G.P.
systems
PDI/FAD/
PJ
CVE/
CVSE
CPE/
CPD
Medical
analysis
Custom
order

General purpose valve
Direct acting 2 port Solenoid valve

How to order

● NO (normally open) type



Symbol	Descriptions	Symbol	Descriptions	Symbol	Descriptions
A Port size					
02	Rc1/4	2G	G 1/4	2N	1/4NPT
03	Rc3/8	3G	G 3/8	3N	3/8NPT
B Orifice					
1	ø1.5				
2	ø2				
3	ø3				
4	ø3.5				
5	ø4				
6	ø5				
7	ø7				
C Body/sealant combination					
Blank	Body	Sealant	Treatment	Remarks	
Option	Brass	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)	
		Fluoro rubber		Medium vacuum	
	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)	
		Fluoro rubber		Medium vacuum	
	Brass	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 diene rubber		Hot water (up to 90°C *2)	
	Stainless steel	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 diene rubber		Hot water (up to 90°C *2)	
Refer to page 36 in the Introduction for details on the material combinations.					
D to J					
Refer to the following page for details on the coil housing, other options and voltage, etc.					

<Example 1 of model number>

AB42-02-1-AC100V
Model no.: AB42

- ① Port size: Rc1/4
② Orifice: ø1.5
③ Body/sealant combination: Body - brass, sealant - nitrile rubber
④ Coil housing: Grommet lead wire
⑤ Manual override (locking): Blank
⑥ Rated voltage: 100 VAC 50/60Hz, 110 VAC 60Hz

<Example 2 of model number>

AB42-03-6-000AS-AC100V
Model no.: AB42

- ① Port size: Rc3/8
② Orifice: ø5
③ Body/sealant combination: Body - brass, sealant - nitrile rubber
④ Coil housing: Grommet lead wire
⑤ Manual override (locking): Selected
⑥ Surge suppressor: Blank
⑦ Rated voltage: 100 VAC 50/60Hz, 110 VAC 60Hz

▲ Note on model no. selection

Note on ③

- *1: Leave blank for standard. However, to select options in ④ to ⑦, indicate 0 for ③.
*2: When 4A, 4M or 4N is selected for ④.
*3: For option symbols V and W, vacuum is inspected at "leakage amount: 1.33 x 10⁻⁶ Pa·m³/s or less".
*4: The ethylene propylene diene rubber seal combination (③ P/R) cannot be used with air. (Compressed air contains oil, and ethylene propylene diene rubber is not oil-resistant.)

For ④ to ⑨, the combinations indicated with symbols can be manufactured.
Note that if options ⑤ to ① are not required, no symbol is indicated.

D	Coil housing		E	F	G Other options					H	I	J Rated voltage		
Descriptions			Manual override (locking)	Mounting plate	Cable gland			Conduit		Surge suppressor	Copper and PTFE free	Descriptions		
					(Marine cable gland)			(Conduit pipe)						
			A-15a	A-15b	A-15c	CTC19	G1/2							
Blank	Option	Grommet lead wire	A	B						S	P6	100 VAC, 200 VAC		
2E		DIN terminal box (G1/2)										100 VAC, 200 VAC		
2G		DIN terminal box (Pg11)										12 VDC, 24 VDC, 48 VDC, 100 VDC		
2H		DIN terminal box + small light (Pg11)										100 VAC, 200 VAC, 24 VDC		
3A		Lead wire										100 VAC, 200 VAC		
3M		Open frame type	HP terminal box (G1/2)	A	B	D	E	F			S	P6	12 VDC, 24 VDC, 48 VDC, 100 VDC	
3N			HP terminal box + light (G1/2)										100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC	
3I			HP terminal box (IP65 or equivalent) (G1/2)										100 VAC, 200 VAC, 12 VDC, 24 VDC, 48 VDC, 100 VDC	
3J			HP terminal box + light (IP65 or equivalent) (G1/2)										100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC	
4A		Open frame type (heat proof class H)	Lead wire	A	B				G	H	S	P6	100 VAC, 200 VAC	
4M			HP terminal box (G1/2)						D	E				F
4N			HP terminal box + light (G1/2)											
5A		Open frame type (diode integrated)	Lead wire	A	B				G	H		P6	100 VAC, 200 VAC	
5M			HP terminal box (G1/2)											
5N			HP terminal box + light (G1/2)											
5I	HP terminal box (IP65 or equivalent) (G1/2)													
5J	HP terminal box + light (IP65 or equivalent) (G1/2)													

⚠ Refer to the following precautions for ④ to ⑨.

Blank		● Grommet lead wire 300 mm
2E 2G 2H		● DIN terminal box
3A 4A 5A		● Open frame type grommet lead wire 300 mm ● 4A (heat proof class H) ● 5A (diode integrated)
3M 3N 4M 4N 5M 5N		● Open frame HP terminal box ● 4M, 4N (heat proof class 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)
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⚠ Note on model no. selection

Note on ④

- *5: Leave blank for the standard coil housing. However, to select options in ⑤ to ①, indicate 00 for ④.
*6: 5A, 5M, 5N, 5I and 5J are coils for which AC power is converted to DC with a diode.

Note on ⑤ to ①

- *7: When ③ is C, F, K, N, V or M, the manual override (⑤ A) is not available.
*8: Select one among D, E, F, G and H for ⑥.
*9: The surge suppressor is an accessory for the lead wire coil. When selecting a coil with terminal box, the surge suppressor is mounted in the terminal box.
*10: As standard, the surge suppressor is incorporated in the coil with diode and the 24 VDC coil (④ 2H), so the surge suppressor symbol S cannot be selected.
*11: ① P6 is available only when ③ is L.
*12: Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.
Note that the tropicalization is not available when the manual override option A is selected.

Note on 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. Note that the coils ④ 5A/5M/5N/5I/5J can be used only with 100 VAC 50/60 Hz or 200 VAC 50/60 Hz.
*14: For voltages other than above, consult with 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.

* Refer to page 122 for coil selection.

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/
AD

APK/
ADK

For
dry air

Explosion
proof

HVB/
HVL

SAB/
SVB

NP/NAP/
NVP

CHB/G

MXB/G

Other G.P.
systems

PD/FAD/
PJ

CVE/
CVSE

CPE/
CPD

Medical
analysis

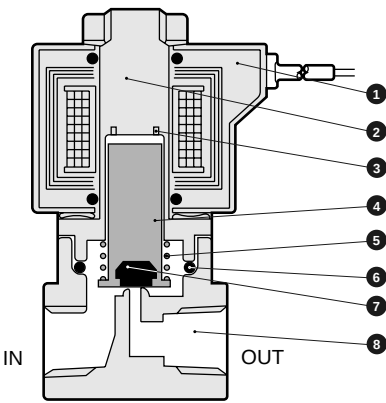
Custom
order

General purpose valve

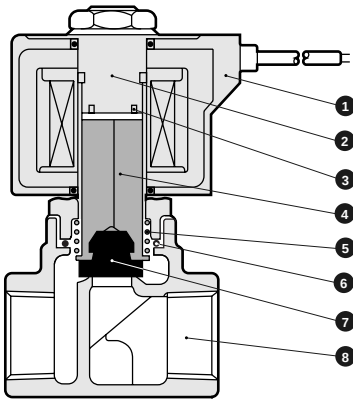
Direct acting 2 port solenoid valve

Internal structure and parts list

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



- AB41-03/04-8

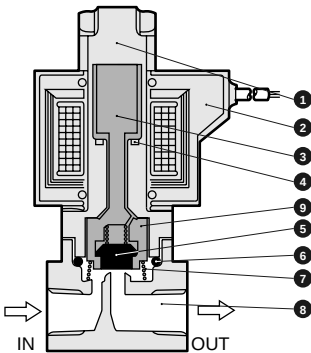


No.	Parts name	Material	No.	Parts name	Material
1	Coil	—	5	Plunger spring	SUS304
2	Core assembly	SUS405 or equivalent, 316L, 403 *1	6	O ring	NBR (FKM, EPDM, PTFE) (size: ASS68-019)
3	Shading coil	Cu (Ag for stainless steel body) †	7	Sealant	NBR (FKM, EPDM, PTFE)
4	Plunger	SUS405 or equivalent	8	Body	C3771 or CAC408 (SCS13) †

*1: When the body/sealant combination symbol is other than blank or H, or when the coil housing is 6C, 6E, 6G or 6H, the material is SUS405 or equivalent, 316L, 430.
*2: () shows option. Note that PTFE is not available for AB41-8-8.

Internal structure and parts list

● AB42



No.	Parts name	Material	No.	Parts name	Material
1	Core assembly	SUS405 or equivalent, 316L, 304, Stainless steel	6	O ring	NBR (FKM, EPDM, PTFE) (size: AS568-019)
2	Coil	—	7	Spring	SUS304
3	Plunger	SUS405 or equivalent	8	Body	C3771 (SUS303)
4	Shading coil	Cu (Ag for stainless steel body)	9	NO valve	POM (SUS303, PFA)
5	Sealant	NBR (FKM, EPDM, PTFE)			

() shows option.

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/
AD

APK/
ADK

For
dry air

Explosion
proof

HVB/
HVL

SAB/
SVB

NP/NAP/
NVP

CHB/G

MXB/G

Other G.P.
systems

PD/FAD/
PJ

CV/
CVSE

CPE/
CPD

Medical
analysis

Custom
order

General purpose valve
Direct acting 2 port solenoid valve

AB31/41/42 Series

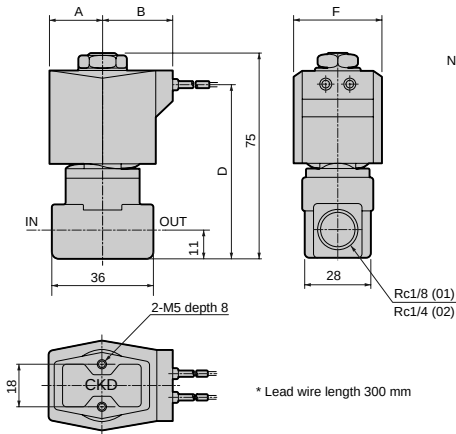
Dimensions: AB31 Series



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

Note 1: The AB31 Series is an open when energized type 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.

Note 2: The dimensions are the same for the G or NPT thread port size.



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

Optional dimensions: AB31 Series

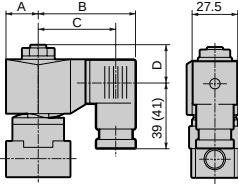


* Refer to the grommet lead wire type dimensions on the left page for common dimensions.

● DIN terminal box

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

2	E
G	
H	



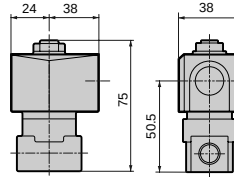
Dimensions shown in () are for G1/2.

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 type

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

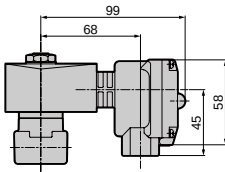
3A	
4A	
5A	



● Open frame type + HP terminal box

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

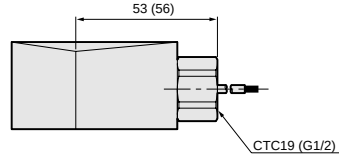
3	M	4M
5	N	4N
	I	J



● Open frame type + conduit

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

3A	G
4A	H
5A	

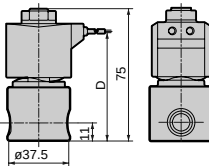


Dimensions shown in () are for G1/2.

● Stainless steel body

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

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



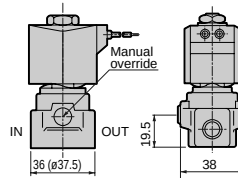
Model no.	D
Blank	63

● Manual override (locking)

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

A

Figure shows the brass body.

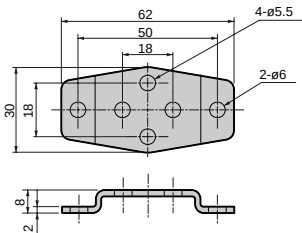


Dimensions shown in () are for stainless steel body.

● Mounting plate

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

B



Mounting plate No. 1 GE-100106

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/
AD

APK/
ADK

For
dry air

Explosion
proof

HVB/
HVL

SAB/
SVB

NP/NAP/
NVP

CHB/G

MXB/G

Other G.P.
systems

PD/FAD/
PJ

CVB/
CVSE

CPE/
CPD

Medical
analysis

Custom
order

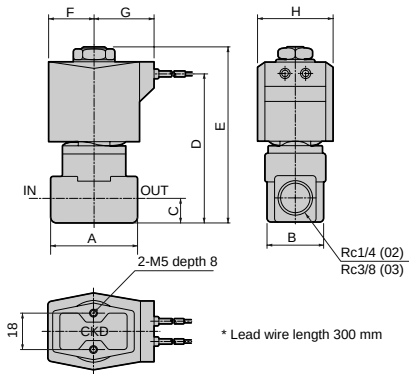
General purpose valve
Direct acting 2 port solenoid valve

AB31/41/42 Series

Dimensions: AB41 Series

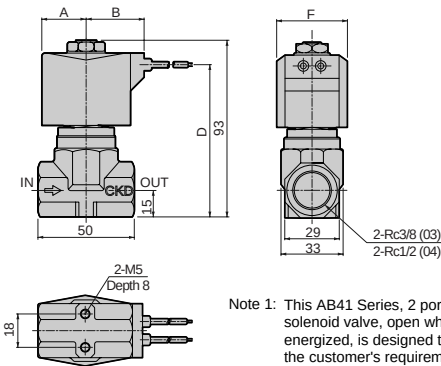


- Grommet lead wire type
AB41-02/03-1 to 7-*[Blank]·[6C]



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 type
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	38

Note 1: This AB41 Series, 2 port solenoid valve, open when energized, is designed to meet the customer's requirement according to working fluid, body and seal materials, relation between flow rate and the required pressure (converted to orifice diameter and pressure), and ambient temperature and conditions (converted to coil specifications).

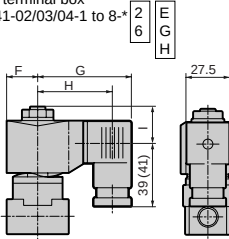
Note 2: The dimensions are the same for the G or NPT thread port size.



Optional dimensions: AB41 Series

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

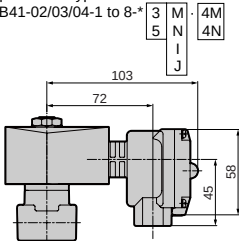
- DIN terminal box
AB41-02/03/04-1 to 8-*



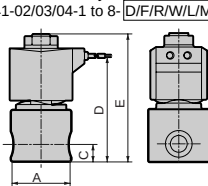
Dimensions shown in () are for G1/2.

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

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



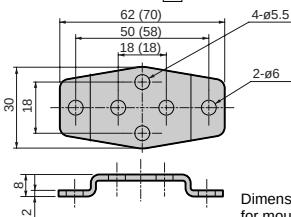
- Stainless steel body
AB41-02/03/04-1 to 8-*



Model no.	A	C	D	E
AB41-02-1 to 6-AC	ø37.5	11	68	80.5
AB41-02-7-AC	ø45.0	12	71	83.5
-03-1 to 7-AC				
AB41-03-8-AC	50*1	15	80	93
-04-8-AC				

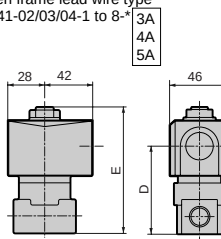
*1: The max. dimension is ø54.

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



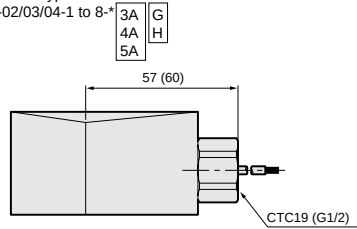
Dimensions shown in () are for mounting plate No. 2.

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



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

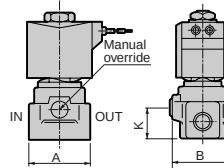
- Open frame type + conduit
AB41-02/03/04-1 to 8-*



Dimensions shown in () are for G1/2.

- Manual override (locking)
AB41-02/03-1 to 7-***

Figure shows the brass body.



Note: No manual override is available for AB41-03/04-8.

Model no.	A	B	K
AB41-02-1 to 6-***A	36 (ø37.5)	38	19.5
AB41-02-7-***A			
-03-1 to 7-***A	40 (ø45.0)	40	22.5

Dimensions shown in () are for stainless steel body.

Model no.	Applicable model
Mounting plate No. 1	● AB41-02/03-1 to 7 Series
GE-100106	● Stainless steel body AB41-02-1 to 6- [D/E/F/L/M/N/R/W]
Mounting plate No. 2	● AB41-03/04-8 Series
GE-100159	● Stainless steel body AB41-02-7- [D/E/F/L/M/N/R/W] AB41-03-1 to 7- [D/E/F/L/M/N/R/W]

HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/
AD
APK/
ADK
For
dry air
Explosion
proof
HVB/
HVL
SAB/
SVB
NP/NAP/
NVP
CHB/G
MXB/G
Other G.P.
systems
PD/FAD/
PJ
CVE/
CVSE
CPE/
CPD
Medical
analysis
Custom
order

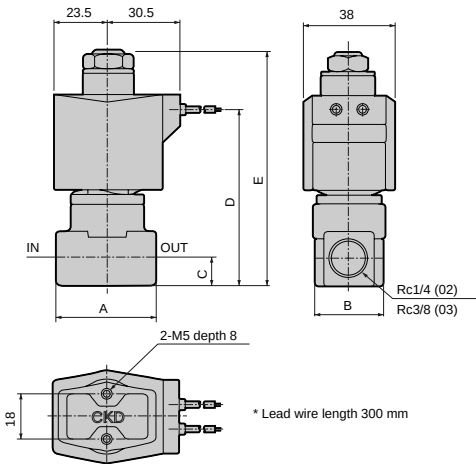
General purpose valve
Direct acting 2 port solenoid valve

AB31/41/42 Series

Dimensions: AB42 Series



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



<Reference> 2 port direct acting valve, closed when energized, is open when de-energized. This type is commonly used to be continuously energized. The dimensions are the same for the G or NPT thread port size.

Note 1: The dimensions are the same for the G or NPT thread port size.

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

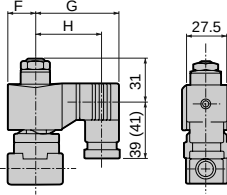
Optional dimensions: AB42 Series



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

● DIN terminal box

AB42-02/03-1 to 7-*

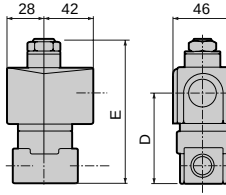


Dimensions shown in () are for G1/2.

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

● Open frame lead wire type

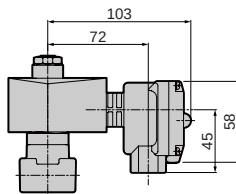
AB42-02/03-1 to 7-*



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

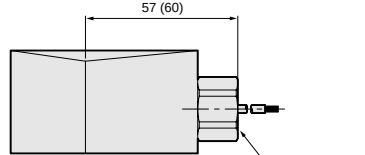
● Open frame type + HP terminal box

AB42-02/03-1 to 7-*



● Open frame type + conduit

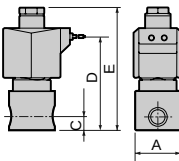
AB42-02/03-1 to 7-*



Dimensions shown in () are for G1/2.

● Stainless steel body

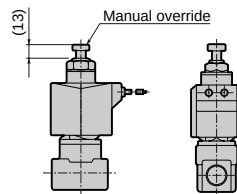
AB42-02/03-1 to 7-*



Model no.	A	C	D	E
AB42-02-1 to 6	ø37.5	11	72	94
AB42-02-7	ø45.0	12	75	97
AB42-03-1 to 7	ø45.0	12	75	97

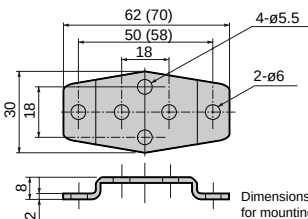
● Manual override (locking)

AB42-02/03-1 to 7-*



● Mounting plate

AB42-02/03-1 to 7-*



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

Code	Applicable model
Mounting plate No. 1 GE-100106	● 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	● 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

HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/
AD
APK/
ADK
For
dry air
Explosion
proof
HVB/
HVL
SAB/
SVB
NP/NAP/
NVP
CHB/G
MXB/G
Other G.P.
systems
PD/FAD/
PJ
CVE/
CVSE
CPE/
CPD
Medical
analysis
Custom
order

General purpose valve
Direct acting 2 port Solenoid valve