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

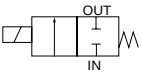
AB31·AB41 Series ● NC (normally closed) type
AB42 Series ● NO (normally open) type

● Port size: Rc1/8 to Rc1/2

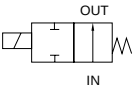
CE RoHS CAD

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 10^2 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 / Model no.	Port size	Orifice (mm)	Max. working pressure differential (MPa) Air AC	Air DC	Water, hot water, kerosene AC	Water, hot water, kerosene DC	Oil (50 mm^2/s) AC	Oil (50 mm^2/s) DC	Steam AC	Max. working pressure (MPa)	Rated voltage	Apparent power (VA) Holding 50 Hz	Holding 60 Hz	Starting 50 Hz	Starting 60 Hz	Power consumption (W) AC 50/60 Hz	Power consumption (W) DC	Weight (kg)
NC (normally closed) type																		
AB31-$^{01}_{02}$-1	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 110 VAC 60 Hz 200 VAC 50/60 Hz 220 VAC 60 Hz 12 VDC 24 VDC 48 VDC 100 VDC	12	10	17	14	5.2/3.8	11 (8.1) *5	0.35
-2		2.0	1.5	1.5	1.5	1.5	1.5	1.5	1.0									
-3		3.0	1.0	0.5	0.7	0.5	0.5	0.5	0.7									
-4		3.5	0.6	0.4	0.5	0.4	0.4	0.4	0.5									
-5		4.0	0.4	0.25	0.3	0.25	0.25	0.25	0.3									
-6		5.0	0.2	0.15	0.15	0.15	0.15	0.15	0.15									
AB41-$^{02}_{03}$-1	Rc1/4 Rc3/8	1.5	5.0	4.0	4.5	4.0	4.0	4.0	1.0			18	15	29	24	6.7/5.7	11 (10.4) *5 (7) *7	0.43 (Rc1/4) 0.45 (Rc3/8)
-2		2.0	3.0	2.5	2.7	2.5	2.5	2.5	1.0									
-3		3.0	1.5	0.9	1.3	0.9	0.9	0.9	1.0									
-4		3.5	1.2	0.6	0.9	0.6	0.6	0.6	0.9									
-5		4.0	1.0	0.5	0.7	0.5	0.5	0.5	0.7									
-6		5.0	0.6	0.25	0.4	0.25	0.25	0.25	0.4									
-7		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										0.54
NO (normally open) type																		
AB42-$^{02}_{03}$-1	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))		22	18	35	29	8.7/6.7	15.5 (14)	0.50 (Rc1/4) 0.52 (Rc3/8)
-2		2.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0									
-3		3.0	0.7	0.7	0.7	0.7	0.7	0.7	0.7									
-4		3.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5									
-5		4.0	0.4	0.4	0.4	0.4	0.4	0.4	0.4									
-6		5.0	0.25	0.25	0.25	0.25	0.25	0.25	0.25									
-7		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 ±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 cm³/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 [dm³/(s·bar)]	b	Cv flow factor
NC (normally closed) type					
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 (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-$^{02}_{03}$-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 (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-$^{03}_{04}$-8	Rc3/8 Rc1/2	10.0	9.3 (8.1)	0.36 (0.31)	1.88 (1.5)
NO (normally open) type					
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 (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 x C.
*2: Values shown in ( ) are for stainless steel body.

How to order

● NC (normally closed) type

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

AB41

Model no.

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

Ⓐ Port size

Symbol	Descriptions	Symbol	Descriptions	Symbol	Descriptions	Model no. AB31	AB41	AB41 Low pressure large flow rate
Ⓐ 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			●

Ⓑ Orifice

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

Ⓒ Body/sealant combination

		Body	Sealant	Treatment	Remarks			
Blank	Std.	Brass or bronze	Nitrile rubber	-	Air, water, low vacuum, kerosene (up to 60˚C)	●	●	●
B	Option	Brass or bronze	Fluoro rubber	-	Air, low vacuum, kerosene (up to 90˚C *2)	●	●	●
C	Option	Brass or bronze	PTFE	-	Steam (up to 184˚C *2)	●	●	
V	Option	Brass or bronze	Fluoro rubber	Vacuum inspection	Medium vacuum	●	●	●
D	Option	Stainless steel	Nitrile rubber	-	Air, water, low vacuum, kerosene (up to 60˚C)	●	●	●
E	Option	Stainless steel	Fluoro rubber	-	Air, low vacuum, kerosene (up to 90˚C *2)	●	●	●
F	Option	Stainless steel	PTFE	-	Steam (up to 184˚C *2)	●	●	
W	Option	Stainless steel	Fluoro rubber	Vacuum inspection	Medium vacuum	●	●	●
H	Option	Brass	Nitrile rubber	Oil free	Air, water, low vacuum, kerosene (up to 60˚C)	●	●	●
J	Option	Brass	Fluoro rubber	Oil free	Air, low vacuum, kerosene (up to 90˚C *2)	●	●	●
K	Option	Brass	PTFE	Oil free	Steam (up to 184˚C *2)	●	●	
P	Option	Brass	Ethylene propylene diene rubber	Oil free	Hot water (up to 90˚C *2)	●	●	●
L	Option	Stainless steel	Nitrile rubber	Oil free	Air, water, low vacuum, kerosene (up to 60˚C)	●	●	●
M	Option	Stainless steel	Fluoro rubber	Oil free	Air, low vacuum, kerosene (up to 90˚C *2)	●	●	●
N	Option	Stainless steel	PTFE	Oil free	Steam (up to 184˚C *2)	●	●	
R	Option	Stainless steel	Ethylene propylene diene rubber	Oil free	Hot water (up to 90˚C *2)	●	●	●

Ⓒ Body/sealant combination
*1
*2
*3
*4
*5
*6
*7

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

Ⓓ to Ⓙ

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.

<Example 1 of model number>

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

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

<Example 2 of model number>

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

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

⚠ Note on model no. selection

Note on Ⓒ

*1: Leave blank for standard. However, to select options in Ⓓ to Ⓘ, indicate 0 for Ⓒ.
*2: When 4A, 4M or 4N is selected for Ⓓ.
*3: The body for the low pressure large flow rate AB41-$^{03}_{04}$-8 is bronze (standard) or stainless steel (optional).
*4: For option symbols V and W, vacuum is inspected at "leakage amount: 1.33 x 10^{-6} Pa·m^3/s or less".
*5: When Ⓒ of the low pressure large flow rate AB41-$^{03}_{04}$-8 is V or W, DC voltage is not available.
*6: The ethylene propylene diene rubber seal combination (Ⓒ P/R) cannot be used with air. (Compressed air contains oil, and ethylene propylene diene rubber is not oil-resistant.)
*7: When Ⓒ is C, F, K, P, N or R, the coil housings Ⓓ 6C, 6E, 6G and 6H cannot be selected.

For Ⓓ to Ⓙ, the combinations indicated with symbols can be manufactured.
Note that if options Ⓔ to Ⓘ are not required, no symbol is indicated.

Ⓓ Coil housing				Ⓔ	Ⓕ	Ⓖ Other options					Ⓗ	Ⓘ	Ⓙ Rated voltage
Descriptions				Manual override (locking)	Mounting plate	Cable gland (Marine cable gland)			Conduit (Conduit pipe)		Surge suppressor	Copper and PTFE free	Descriptions
						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	Option	Open frame type	Lead wire	A	B	D	E	F	G	H	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 (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	D	E	F	G	H	S	P6	100 VAC, 200 VAC
4M			HP terminal box (G1/2)										
4N			HP terminal box + light (G1/2)										
5A		Open frame type (diode integrated)	Lead wire	A	B	D	E	F	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)										
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 Ⓓ to Ⓙ.

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)

Refer to page 122 for coil selection.

G, H

● Conduit
● G (CTC19)
● H (G1/2)

⚠ Note on model no. selection

Note on Ⓓ

*8: Leave blank for the standard coil housing. However, to select options in Ⓔ to Ⓘ, indicate 00 for Ⓓ.
*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 Ⓔ to Ⓘ

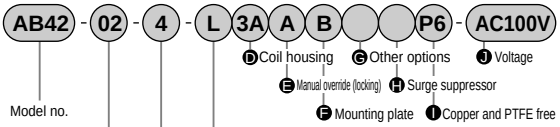
*13: The manual override (Ⓔ A) is not available for the low pressure large flow rate AB41-⌘-8.
*14: When Ⓒ is C, F, K, N, V or W, the manual override (Ⓔ A) is not available.
*15: Select one among D, E, F, G and H for Ⓖ.
*16: The surge suppressor is an accessory for the lead wire coil. When selecting 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 (Ⓓ 2H/6H), so the surge suppressor symbol S cannot be selected.
*18: Ⓘ P6 is available only when Ⓒ 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 Ⓙ

*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 Ⓓ 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.

How to order

● NO (normally open) type



Ⓐ Port size

Ⓑ Orifice

Ⓒ Body/sealant combination

*1

*2

*3

*4

Symbol	Descriptions	Symbol	Descriptions	Symbol	Descriptions
Ⓐ Port size					
02	Rc1/4	**2G**	G 1/4	**2N**	1/4NPT
03	Rc3/8	**3G**	G 3/8	**3N**	3/8NPT

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

Ⓒ Body/sealant combination

	Opt.	Body	Sealant	Treatment	Remarks
Blank	Option	Brass	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			Fluoro rubber	Vacuum inspection	Medium vacuum
D		Stainless steel	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			Fluoro rubber	Vacuum inspection	Medium vacuum
H		Brass	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			Ethylene propylene diene rubber		Hot water (up to 90˚C *2)
L		Stainless steel	Nitrile rubber		Air, water, low vacuum, kerosene (up to 60˚C)
M			Fluoro rubber		Air, low vacuum, kerosene (up to 90˚C *2)
N			PTFE		Steam (up to 184˚C *2)
R			Ethylene propylene diene rubber		Hot water (up to 90˚C *2)

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

Ⓓ to Ⓙ

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

Ⓐ Port size: Rc1/4
Ⓑ Orifice: ø1.5
Ⓒ Body/sealant combination:
Body - brass, sealant - nitrile rubber
Ⓓ Coil housing: Grommet lead wire
Ⓔ to Ⓘ: Blank
Ⓙ Rated voltage: 100 VAC 50/60Hz, 110 VAC 60Hz

<Example 2 of model number>

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

Ⓐ Port size: Rc3/8
Ⓑ Orifice: ø5
Ⓒ Body/sealant combination:
Body - brass, sealant - nitrile rubber
Ⓓ Coil housing: Grommet lead wire
Ⓔ Manual override (locking): Selected
Ⓕ Ⓖ: Blank
Ⓗ Surge suppressor: Selected
Ⓙ Rated voltage: 100 VAC 50/60Hz, 110 VAC 60Hz

⚠ Note on model no. selection

Note on Ⓒ

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

For Ⓓ to Ⓙ, the combinations indicated with symbols can be manufactured.
Note that if options Ⓔ to Ⓘ are not required, no symbol is indicated.

Ⓓ Coil housing				Ⓔ	Ⓕ	Ⓖ Other options					Ⓗ	Ⓘ	Ⓙ Rated voltage
Descriptions				Manual override (locking)	Mounting plate	Cable gland (Marine cable gland)			Conduit (Conduit pipe)		Surge suppressor	Copper and PTFE free	Descriptions
						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**	**H**	**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)			**D**	**E**	**F**					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	Option	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)			**D**	**E**	**F**					
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 Ⓓ to Ⓙ.

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)

* Refer to page 122 for coil selection.

⚠ Note on model no. selection

Note on Ⓓ

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

Note on Ⓔ to Ⓘ

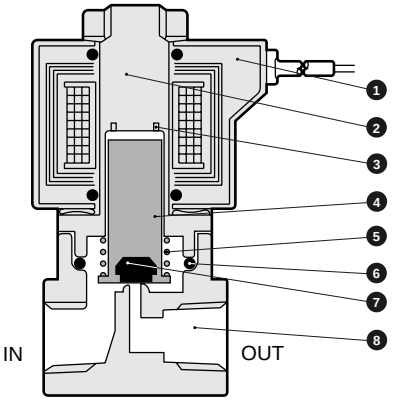
*7: When Ⓒ is C, F, K, N, V or M, the manual override (Ⓔ A) is not available.
*8: Select one among D, E, F, G and H for Ⓖ.
*9: The surge suppressor is an accessory for the lead wire coil. When selecting a coil with terminal box, the surge suppressor is mounted in the terminal box.
*10: As standard, the surge suppressor is incorporated in the coil with diode and the 24 VDC coil (Ⓓ 2H), so the surge suppressor symbol S cannot be selected.
*11: Ⓘ P6 is available only when Ⓒ 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 Ⓙ

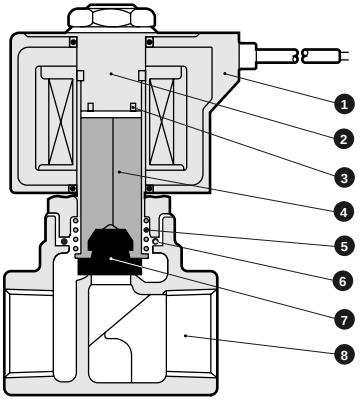
*13: 100 VAC coil is compatible with 100 VAC 50/60 Hz and 110 VAC 60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz and 220 VAC 60 Hz. Note that the coils Ⓓ 5A/5M/5N/5I/5J can be used only with 100 VAC 50/60 Hz or 200 VAC 50/60 Hz.
*14: For voltages other than above, consult with CKD.
*15: 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.

Internal structure and parts list

● AB31 Series
● AB41-02/03-1 to 7



● AB41-03/04-8



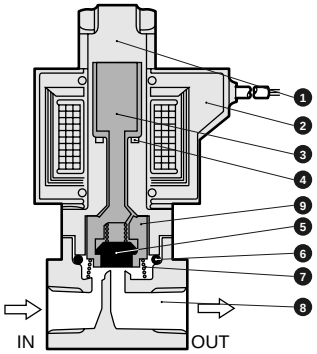
No.	Parts name	Material		No.	Parts name	Material	
1	Coil	—	—	5	Plunger spring	SUS304	Stainless steel
2	Core assembly	SUS405 or equivalent, 316L, 403 *1	Stainless steel	6	O ring	NBR (FKM, EPDM, PTFE) (size: AS568-019)	NBR: Nitrile rubber FKM: Fluoro rubber EPDM: Ethylene propylene diene rubber PTFE: Tetrafluoroethylene resin
3	Shading coil	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)	7	Sealant	NBR (FKM, EPDM, PTFE)	
4	Plunger	SUS405 or equivalent	Stainless steel	8	Body	C3771 or CAC408 (SCS13)	Brass or bronze (stainless steel)

*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-$^{03}_{04}$-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)	NBR: Nitrile rubber (EPDM: Ethylene propylene diene rubber) (FKM: Fluoro rubber) (PTFE: Tetrafluoroethylene resin)
2	Coil	—	—				
3	Plunger	SUS405 or equivalent	Stainless steel	7	Spring	SUS304	Stainless steel
4	Shading coil	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)	8	Body	C3771 (SUS303)	Brass (stainless steel)
5	Sealant	NBR (FKM, EPDM, PTFE)	NBR: Nitrile rubber (EPDM: Ethylene propylene diene rubber) (FKM: Fluoro rubber) (PTFE: Tetrafluoroethylene resin)	9	NO valve	POM (SUS303, PFA)	Option symbol : Blank/0D/HI/LV/W - polyacetal resin : Other than above - stainless steel, perfluoroalkoxy resin

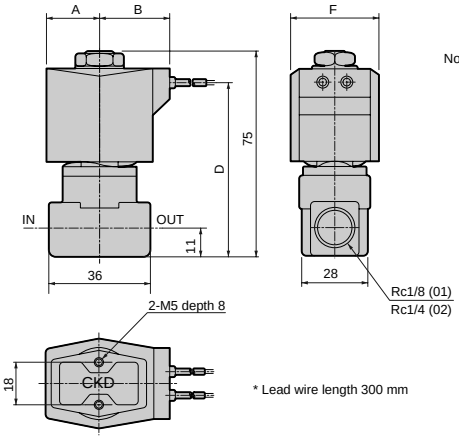
( ) shows option.

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.



* Lead wire length 300 mm

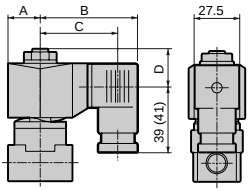
Model no.	A	B	D	F
AB31-01-1 to 6-AC -02-1 to 6-AC	20	27	63	34

Optional dimensions: AB31 Series

CAD

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

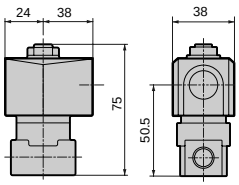
● DIN terminal box
AB31-01/02-1 to 6-*[2 E G H]



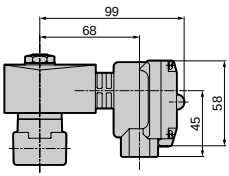
Dimensions shown in ( ) are for G1/2.

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

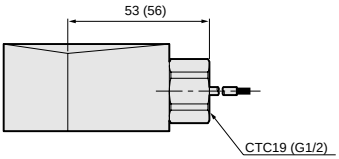
● Open frame lead wire type
AB31-01/02-1 to 6-*[3A 4A 5A]



● Open frame type + HP terminal box
AB31-01/02-1 to 6-*[3 5][M N I J]·[4M 4N]

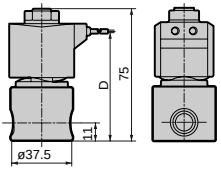


● Open frame type + conduit
AB31-01/02-1 to 6-*[3A 4A 5A][G H]



Dimensions shown in ( ) are for G1/2.

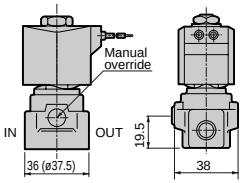
● Stainless steel body
AB31-01/02-1 to 6-[D/E/F/R/W/L/M/N]



Model no.	D
Blank	63

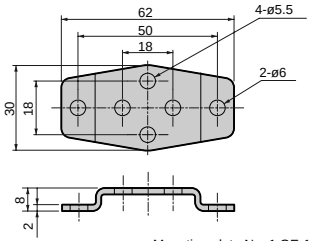
● Manual override (locking)
AB31-01/02-1 to 6-***[A]

Figure shows the brass body.



Dimensions shown in ( ) are for stainless steel body.

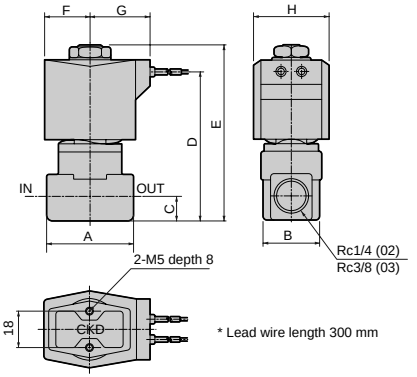
● Mounting plate
AB31-01/02-1 to 6-***[B]



Mounting plate No. 1 GE-100106

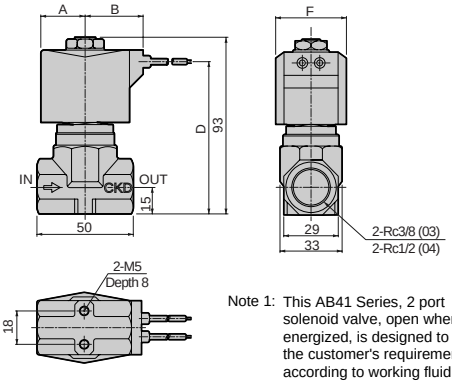
Dimensions: AB41 Series

● 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).

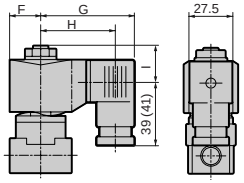
Note 2: The dimensions are the same for the G or NPT thread port size.

Optional dimensions: AB41 Series

CAD

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

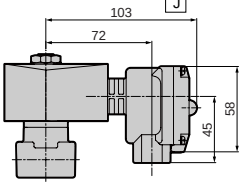
● DIN terminal box
AB41-02/03/04-1 to 8-* [2 6] [E G H]



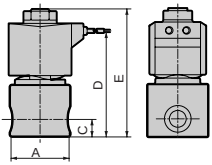
Dimensions shown in ( ) are for G1/2.

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-* [3 5] [M N I J] · [4M 4N]



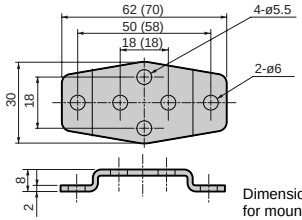
● Stainless steel body
AB41-02/03/04-1 to 8- [D/F/R/W/L/M/N/E]



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

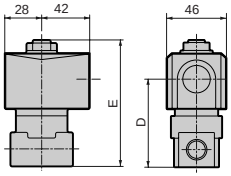
*1: The max. dimension is ø54.

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



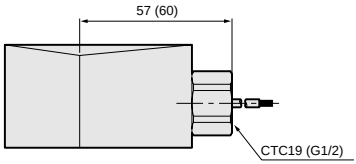
Dimensions shown in ( ) are for mounting plate No. 2.

● Open frame lead wire type
AB41-02/03/04-1 to 8-* [3A 4A 5A]



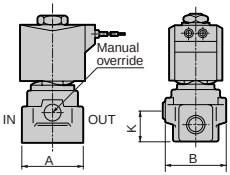
Model no.	D	E
AB41-02-1 to 6- A**	52.0	80.5
AB41-02-7- A -03-1 to 7-** A**	55.0	83.5
AB41-03/04-8- A**	64	93

● Open frame type + conduit
AB41-02/03/04-1 to 8-* [3A 4A 5A] [G H]



Dimensions shown in ( ) are for G1/2.

● Manual override (locking)
AB41-02/03-1 to 7-*** [A]
Figure shows the brass body.



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

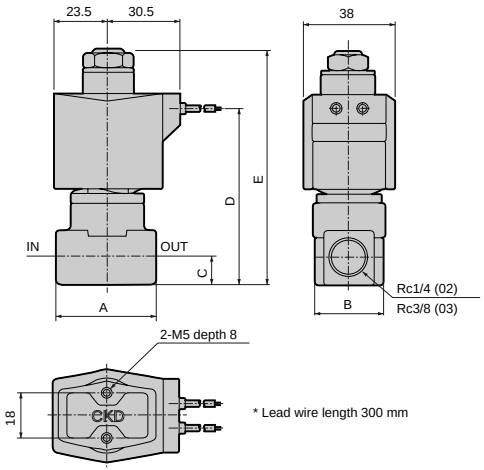
Model no.	A	B	K
AB41-02-1 to 6-*A**	36 (ø37.5)	38	19.5
AB41-02-7-*A -03-1 to 7-***A**	40 (ø45.0)	40	22.5

Dimensions shown in ( ) are for stainless steel body.

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

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.

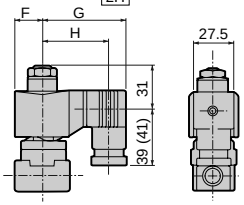
Model no.	A	B	C	D	E
AB42-02-1 to 6	36	28	11	72	94
AB42-02-7	40	28	12	75	97
AB42-03-1 to 7	40	28	12	75	97

Optional dimensions: AB42 Series

CAD

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

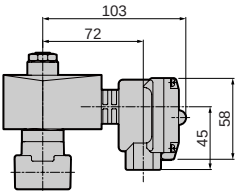
● DIN terminal box
AB42-02/03-1 to 7-* [2E / 2G / 2H]



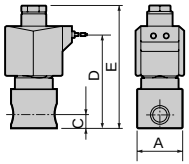
Dimensions shown in ( ) are for G1/2.

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

● Open frame type + HP terminal box
AB42-02/03-1 to 7-* [3 / 5] [M / N / I / J] [4M / 4N]

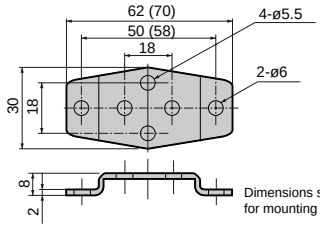


● Stainless steel body
AB42-02/03-1 to 7-[D/E/F/R/W/L/M/N]



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

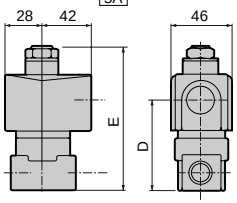
● Mounting plate
AB42-02/03-1 to 7-***[B]



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

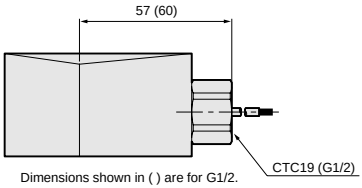
Code	Applicable model
Mounting plate No. 1 GE-100106	● AB42-02/03-1 to 7 Series ● Stainless steel body AB42-02-1 to 6-[D/E/F/L/M/N/R/W]
Mounting plate No. 2 GE-100159	● Stainless steel body AB42-02-7-[D/E/F/L/M/N/R/W] AB42-03-1 to 7-[D/E/F/L/M/N/R/W]

● Open frame lead wire type
AB42-02/03-1 to 7-* [3A / 4A / 5A]



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 + conduit
AB42-02/03-1 to 7-* [3A / 4A / 5A] [G / H]



Dimensions shown in ( ) are for G1/2.

● Manual override (locking)
AB42-02/03-1 to 7-***[A]