

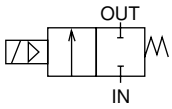
Pilot kick 2-port solenoid valve for dry air
General purpose

ADK11-Z Series

- NC (open when energized)
- Port size: Rc1/4 to Rc1
- Diaphragm drive

JIS symbol

● NC (open when energized)



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Item	Standard specifications
Working fluid	For dry air (atmospheric dew point -60°C and over)/inert gas/low vacuum [1.33 x 10^3 Pa (abs)]
Working pressure differential MPa	0 to 0.7 (refer to max. working pressure differential in individual specifications.)
Max. working pressure MPa	2 (≈290 psi, 20 bar)
Proof pressure (water pressure) MPa	4 (≈580 psi, 40 bar)
Fluid temperature °C	Nitrile rubber: -10 (14°F) to 40 (104°F) (no freezing), Fluoro rubber: 5 (41°F) to 40 (104°F)
Ambient temperature °C	-10 (14°F) to 40 (104°F)
Thermal class	Class 130 (B)
Atmosphere	Place free of corrosive gas and explosive gas
Valve structure	Pilot kick poppet/diaphragm drive
Valve seat leakage cm^3/min(ANR)	1 or less (8A/10A: at 0.02 to 0.7 MPa, 15A to 25A: at 0.02 to 0.6 MPa)*
Mounting orientation	Unrestricted

* When used at a pressure less than 0.02 MPa, the sealant may be unstable. Contact CKD in this case.

Individual specifications

1 MPa = 10 bar

Item / Model No.	Port size	Orifice size (mm)	Min. working pressure differential (MPa)	Max. working pressure differential (MPa)	Rated voltage	Power consump (W) AC	Power consump (W) DC	Weight (kg)
ADK11-8A-*****Z	Rc1/4	12	0	0.7 (≈100 psi)	100 VAC 50/60 Hz 200 VAC 50/60 Hz 12 VDC 24 VDC 48 VDC 100 VDC	15.5	14	0.8
-10A-*****Z	Rc3/8	12		0.7 (≈100 psi)				0.8
-15A-*****Z	Rc1/2	16		0.6 (≈87 psi)				1.0
-20A-*****Z	Rc3/4	23		0.6 (≈87 psi)				1.1
-25A-*****Z	Rc1	28		0.6 (≈87 psi)				1.5

*1 : The model numbers above show the basic port size (Rc). Refer to How to order for other combinations.
*2 : The voltage fluctuation range must be within ±10% of the rated voltage.
*3 : The leakage current must be less than or equal to the values shown below.

Leakage current: Voltage / Model No.	100 VAC	200 VAC	12 VDC	24 VDC	48 VDC	100 VDC
ADK11-8A to 25A-*****Z	10 mA or less	5 mA or less	40 mA or less	20 mA or less	10 mA or less	5 mA or less

Flow characteristics

Model No.	Port size	Orifice size (mm)	Flow characteristics		
			C[dm³/(s·bar)]	b	S(mm²)
ADK11-8A-*****Z	Rc1/4	12	9.2	0.36	-
ADK11-10A-*****Z	Rc3/8	12	11	0.46	-
ADK11-15A-*****Z	Rc1/2	16	20	0.31	-
ADK11-20A-*****Z	Rc3/4	23	-	-	162
ADK11-25A-*****Z	Rc1	28	-	-	231

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

How to order

ADK11 - 15 A - H 3A B G S Z - DC24V

- ADK11: Model No.
- 15: Ⓐ Port size
- A: Ⓑ Thread
- H: Ⓒ Body/sealant combination
- 3A: Ⓓ Coil housing
- B: Ⓔ Mounting plate
- G: Ⓕ Other options
- S: Ⓖ With surge suppressor
- Z
- DC24V: Ⓗ Rated voltage

Code	Description
Ⓐ Port size	
8	1/4
10	3/8
15	1/2
20	3/4
25	1

Ⓑ Thread	
A	Rc
G	G
N	NPT

Ⓒ Body/sealant combination

	Body	Seal	Treatment	Remarks
H	Bronze	Nitrile rubber	Oil-prohibited	—
J		Fluoro rubber		—
L	Stainless steel	Nitrile rubber		—
M		Fluoro rubber		—

Refer to Intro Page 39 for reference on material combinations.

Ⓓ to Ⓗ

Refer to page 363 for details on the coil housing, other options and voltage, etc.

[Example of model No.]

ADK11-15A-H3ABSZ-DC24V

Model : ADK11

Ⓐ Port size	: 1/2
Ⓑ Thread	: Rc
Ⓒ Body/sealant combination	: Body - bronze, sealant - nitrile rubber
Ⓓ Coil housing	: Open frame lead wire for DC voltage
Ⓔ Mounting plate	: With mounting plate
Ⓕ Other options	: None
Ⓖ Surge suppressor	: With surge suppressor
Ⓗ Rated voltage	: 24 VDC

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

Ⓓ Coil housing			Ⓔ	Ⓕ Other options					Ⓖ	Ⓗ Rated voltage
Description			Mounting plate	Cable gland (marine cable gland) A-15a	A-15b	A-15c	Conduit (conduit piping) CTC-19	G 1 / 2	With surge suppressor	Description
3A	Open frame	Lead wire (IP65 or equivalent)	B	D	E	F	G	H	S	12 VDC, 24 VDC, 48 VDC, 100 VDC
3M		With HP terminal box (G1/2)								
3N		HP terminal box with lamp (G1/2)								12 VDC, 24 VDC, 100 VDC
3I		HP terminal box (IP65 or equivalent) (G1/2)								12 VDC, 24 VDC, 48 VDC, 100 VDC
3J		HP terminal box with lamp (IP65 or equivalent) (G1/2)								12 VDC, 24 VDC, 100 VDC
5A	Open frame (diode integrated)	Lead wire (IP65 or equivalent)	B	D	E	F	G	H		100 VAC, 200 VAC
5M		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)								

⚠ Refer to the following cautions for Ⓓ to Ⓗ.

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

G H		● Conduit ● G(CTC19) ● H(G1/2)

Refer to page 330 for coil selection.

⚠ Precautions for model No. selection

Notes for Ⓓ

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

Notes for Items Ⓔ to Ⓖ

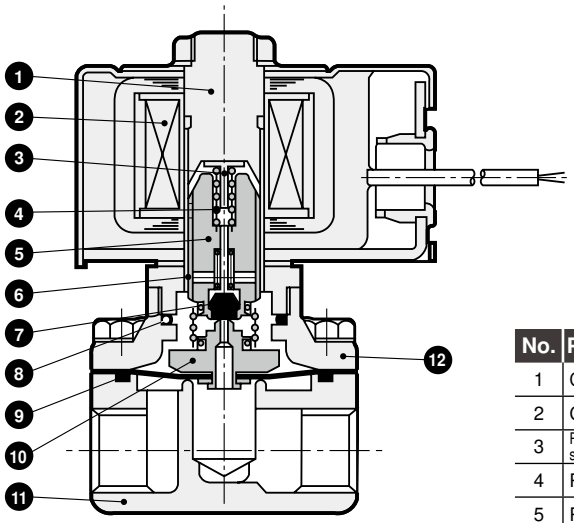
*2 : For Ⓕ, select an option from D, E, F, G and H.
*3 : The surge suppressor is attached with the lead wire coil. When selecting a coil with a terminal box, the surge suppressor is mounted in the terminal box.
*4 : Surge suppressor is incorporated as standard in the coil with diode.
*5 : Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.

Notes for Ⓗ

*6 : 100 VAC coil is compatible with 100 VAC 50/60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz.
*7 : For voltages other than above, contact CKD.
*8 : The lead wire is available in the standard 300 mm length, and 500mm, 1000 mm, 2000 mm and 3000 mm lengths. Contact CKD for more information.

Internal structure and parts list

● ADK11-Z Series



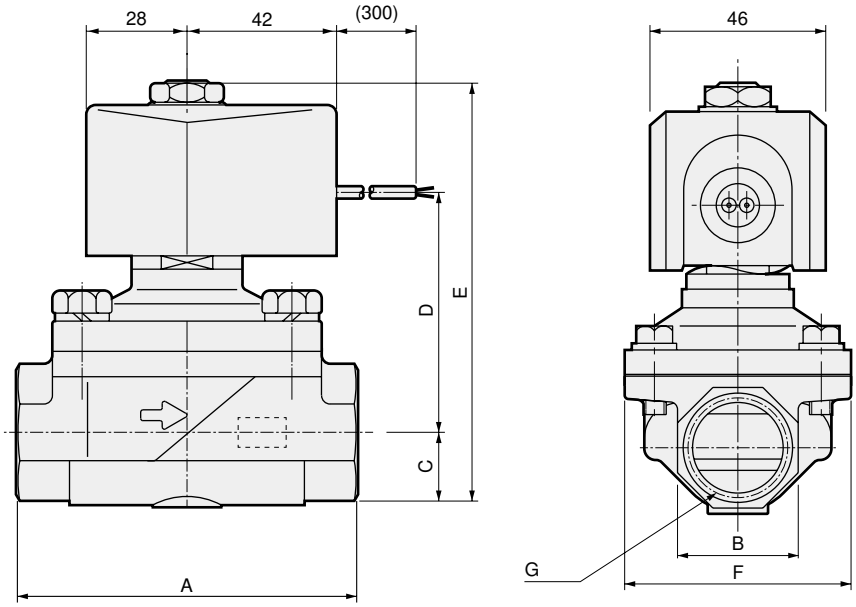
The figure shows ADK11-8A/10A.

No.	Part name	Material	
1	Core assembly	SUS405 or equiv./316/403	Stainless steel
2	Coil assembly	-	-
3	Residual magnetism suppressor	PPS	Polyphenylene sulfide
4	Plunger spring	SUS304	Stainless steel
5	Plunger	SUS405 or equiv.	Stainless steel
6	Wear ring	POM	Acetal resin
7	Valve seal	NBR(FKM)	NBR: Nitrile rubber (FKM: Fluoro rubber)
8	O-ring	NBR(FKM)	
9	O-ring	NBR(FKM)	
10	Diaphragm assembly	SUS304, NBR(FKM)	Stainless steel, nitrile rubber (Fluoro rubber)
11	Body	CAC408(SCS13)	Bronze (stainless steel)
12	Body	C3771(SCS13)	Copper alloy (stainless steel)

( ) shows options.

Dimensions CAD

● Open frame lead wire
ADK11-*-* 3A/5A ***Z



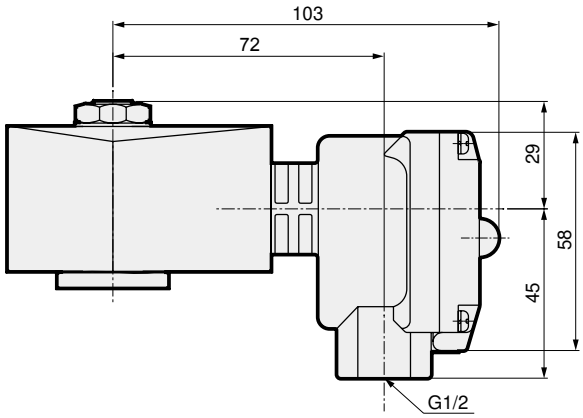
Model No.	A	B	C	D	E	F	G
ADK11-8A-*****Z	50	23	11.5	52	92.5	46	Rc1/4
ADK11-10A-*****Z	50	23	11.5	52	92.5	46	Rc3/8
ADK11-15A-*****Z	71	27(29)	14.5	57	100.5	50	Rc1/2
ADK11-20A-*****Z	80	32(35)	17.5	60.5	107	60	Rc3/4
ADK11-25A-*****Z	90	41(45)	21.5(22.5)	66	116.5(117.5)	71	Rc1

*1: Dimensions shown in ( ) are for stainless steel body.

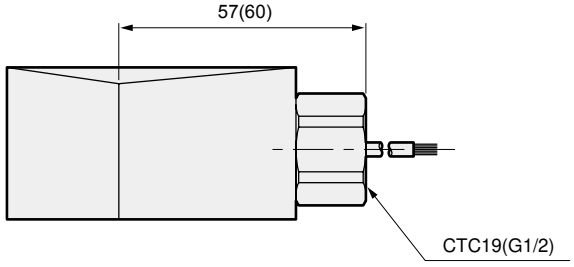
Optional dimensions

* Refer to the open frame lead wire dimensions on page 364 for common dimensions.

● Open frame + HP terminal box
ADK11-*-* 3 M 5 N ***Z



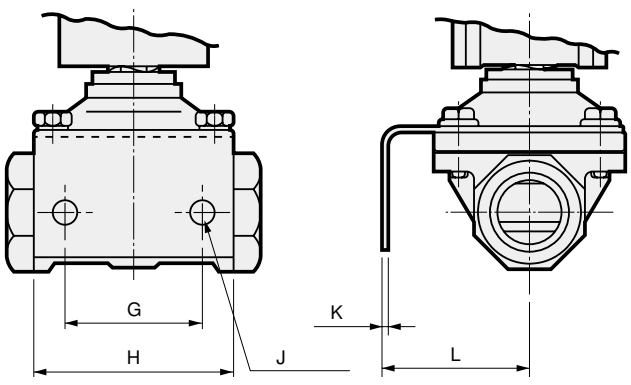
● Open frame + conduit
ADK11-*-* 3A G 5A H



Dimensions shown in ( ) are for G1/2.

● Mounting plate
ADK11-*-** B **Z

Material : Steel
Zinc plated



Model No.	G	H	J	K	L
ADK11-8A-**B**Z	30	50	ø7	2	33.5
ADK11-10A-**B**Z	30	50	ø7	2	33.5
ADK11-15A-**B**Z	40	56	ø9	3.2	45
ADK11-20A-**B**Z	45	63	ø9	3.2	50
ADK11-25A-**B**Z	50	75	ø11	3.2	56

Mounting plate model	Compatibility
ADK11-8A-MOUNT-PLATE-KIT	● ADK11-8A Z Series
ADK11-10A-MOUNT-PLATE-KIT	● ADK11-10A Z Series
ADK11-15A-MOUNT-PLATE-KIT	● ADK11-15A Z Series
ADK11-20A-MOUNT-PLATE-KIT	● ADK11-20A Z Series
ADK11-25A-MOUNT-PLATE-KIT	● ADK11-25A Z Series