



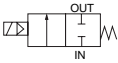
Pilot kick type 2 port solenoid valve
(general purpose valve)

ADK21 Series

- NC (normally closed) type
- Port size: Rc1 1/4 to Rc2, 32 to 50 flange
- Diaphragm structure



JIS symbol



Common specifications

Item	Standard specifications
Working fluid	Air, low vacuum (1.33 x 10 ³ Pa (abs)), water, kerosene, oil (50 mm ² /s or less)
Working pressure differential range MPa	0 to 0.7 (refer to max. working pressure differential in individual specifications.)
Max. working pressure MPa	1
Withstanding pressure (water) MPa	3.2
Fluid temperature °C	-10 to 60 (no freezing)
Ambient temperature °C	-10 to 60
Heat proof class	B
Atmosphere	Place free of corrosive gas and explosive gas
Valve structure	Pilot kick type poppet, diaphragm structure
Valve seat leakage (Note 1) cm ³ /min. (ANR)	1 or less (air)
Mounting attitude	Limited to vertical position with coil facing upward
Body, sealant	Bronze, nitrile rubber

Note 1: This applies to pneumatic pressures between 0.02 and 0.7 MPa. When used at a pressure less than 0.02 MPa, the sealant may be unstable. Consult with CKD in this case.

Individual specifications

Item Model no.	Port size	Orifice (mm)	Min. working pressure diff. (MPa)	Max. working pressure diff. (MPa)						Rated voltage	Apparent power (VA)				Power consumption (W)		Weight (kg)
				Air		Water, kerosene		Oil (50 mm ² /s)			Holding		Starting		AC	DC	
				AC	DC	AC	DC	AC	DC		50 Hz	60 Hz	50 Hz	60 Hz	50/60 Hz	DC	
ADK21-32A	Rc1 1/4	35	0	0.7	0.6	0.7	0.6	0.5	0.5	100 VAC 50/60 Hz	64	69	274	289	44/48	20	4.5
ADK21-32F	32 flange									200 VAC 50/60 Hz							8
ADK21-40A	Rc1 1/2	43								12 VDC							5.5
ADK21-40F	40 flange									24 VDC							9
ADK21-50A	Rc2	53								48 VDC							7
ADK21-50F	50 flange									100 VDC							11.5

*1: The model numbers above show the basic port size. Refer to How to order for other combinations.

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

*3: Voltage fluctuation should be within ±10% of the rated voltage.

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

Optional specifications

Sealant	Fluoro rubber	
Coil (heat proof class)	B	H
Fluid temperature °C	5 to 60	5 to 90
Ambient temperature °C	-10 to 60	
Valve seat leakage (Note 1) cm ³ /min. (AIR)	1 or less (air)	

Note 1: This applies to pneumatic pressures between 0.02 and 0.7 MPa. When used at a pressure less than 0.02 MPa, the sealant may be unstable. Consult with CKD in this case.

Flow characteristics

Model no.	Port size	Orifice (mm)	Cv flow factor	Effective sectional area (mm ²)
ADK21-32A	Rc1 1/4	35	25	460
ADK21-32F	32 flange			
ADK21-40A	Rc1 1/2	43	34	625
ADK21-40F	40 flange			
ADK21-50A	Rc2	53	53	975
ADK21-50F	50 flange			

HNB/G

USB/G

FAB/G

FGB/G

FVB

FWB/G

FHB

FLB

AB

AG

AP/
ADAPK/
ADKFor
dry airExplosion
proofHVB/
HVLSAB/
SVBNP/NAP/
NVP

CHB/G

MXB/G

Other G.P.
systemsPD/FAD/
PJCVE/
CVSECPE/
CPDMedical
analysisCustom
order

General purpose valve
Pilot kick type 2 port solenoid valve

How to order

ADK21 - **32A** - **0** **3A** **H** **S** - **AC100V**

Model no.

- A** Port size
- B** Body/sealant combination
- C** Coil housing
- D** Other options
- E** Surge suppressor
- F** Rated voltage

*1
*2

Symbol	Descriptions
A Port size	
32A	Rc1 1/4
32F	32 flange
40A	Rc1 1/2
40F	40 flange
50A	Rc2
50F	50 flange

*3

B Body/sealant combination					
	Body	Sealant	Treatment	Remarks	
0	Bronze	Nitrile rubber	-	Air, water, low vacuum, kerosene, oil (up to 60°C)	
		Fluoro rubber		Air, low vacuum, kerosene, oil (up to 90°C *3)	
D	Stainless steel	Nitrile rubber		Air, water, low vacuum, kerosene, oil (up to 60°C)	
		Fluoro rubber		Air, low vacuum, kerosene, oil (up to 90°C *3)	
H	Bronze	Nitrile rubber		Oil free	Air, water, low vacuum, kerosene, oil (up to 60°C)
		Fluoro rubber			Air, low vacuum, kerosene, oil (up to 90°C *3)
J	Stainless steel	Nitrile rubber	Air, water, low vacuum, kerosene, oil (up to 60°C)		
		Fluoro rubber	Air, low vacuum, kerosene, oil (up to 90°C *3)		
L	Stainless steel	Nitrile rubber	Air, water, low vacuum, kerosene, oil (up to 60°C)		
		Fluoro rubber	Air, low vacuum, kerosene, oil (up to 90°C *3)		

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

C to F

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

<Example 1 of model number>

ADK21-50F-03A-DC24V

Series: ADK21

- A** Port size : 50 flange
- B** Body/sealant combination : Body - bronze, sealant - nitrile rubber
- C** Coil housing : Open frame lead wire
- D** **E** : None
- F** Rated voltage : 24 VDC

<Example 2 of model number>

ADK21-40F-B4MD-AC200V

Series: ADK21

- A** Port size : 40 flange
- B** Body/sealant combination : Body - bronze, sealant - fluoro rubber
- C** Coil housing : Open frame type (class H coil) with HP terminal box (G1/2)
- D** Other options : Cable gland A-15a
- E** Surge suppressor : Blank
- F** Rated voltage : 200 VAC 50/60 Hz

▲ Note on model no. selection

- *1: The companion flange is JIS B2210 10K. (No flange is enclosed with the product, but must be purchased separately.)
- *2: G and NPT threads are used for piping port. Contact CKD for details.



Note on **B**


- *3: **B**: When selecting 4A, 4M or 4N.

For ③ to ⑥, the combinations indicated with symbols can be manufactured.
Note that if options ① and ② are not required, no symbol is indicated.

③ Coil housing			④ Other options			⑤	⑥ Rated voltage	
Descriptions			Cable gland (Marine cable gland)		Conduit (Conduit pipe)		Surge suppressor	Descriptions
			A-15a	A-15b	A-15c	G1/2		
			A-20a	A-20b	A-20c			
3A	Std	Open frame type	Lead wire			H	S	100 VAC, 200 VAC, 12 VDC, 24 VDC, 48 VDC, 100 VDC
3M		HP terminal box (G1/2)	D	E	F			
3N		HP terminal box + light (G1/2)						100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC
4A	Option	Open frame type	Lead wire			H	S	100 VAC, 200 VAC
4M		HP terminal box (G1/2)	D	E	F			
4N		HP terminal box + light (G1/2)						
5A		Open frame type	Lead wire			H		100 VAC, 200 VAC
5M		HP terminal box (G1/2)	D	E	F			
5N		HP terminal box + light (G1/2)						

▲ Refer to the following precautions for ③ to ⑥.

3A 4A 5A		<ul style="list-style-type: none"> ● Open frame lead wire 300 mm ● Direct conduit wiring thread CTC19 integrated
3M 3N 4M 4N 5M 5N		<ul style="list-style-type: none"> ● Open frame HP terminal box ● 4M, 4N (heat proof class H) ● 5M, 5N (diode integrated)

H		<ul style="list-style-type: none"> ● Conduit (G1/2)
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Refer to page 225 for coil selection.

▲ Note on model no. selection

Note on ③

*4: 5A, 5M and 5N are coils for which AC power is converted to DC with a diode.

Note on ④ and ⑤

- *5: Select one among D, E, F and H for ④.
- *6: 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.
- *7: The surge suppressor is incorporated in the coil with diode as standard.
- *8: Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.

Note on ⑥

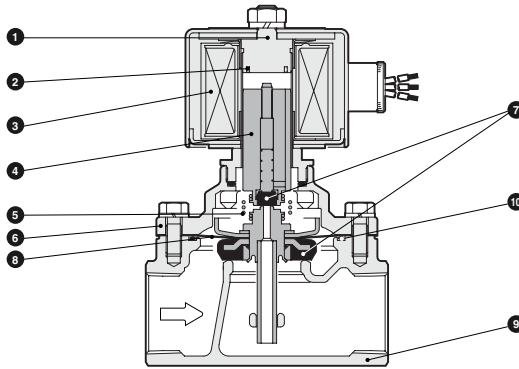
- *9: For voltages other than above, consult with CKD.
- *10: The lead wire is available in the standard 300 mm length, and 500 mm, 1000 mm, 2000 mm and 3000 mm lengths. Contact CKD for more information.

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
Pilot kick type 2 port solenoid valve

Internal structure and parts list

● ADK21 Series



No.	Parts name	Material	
1	Core assembly	SUS405 or equivalent, SUS316L, SUS403	Stainless steel
2	Shading coil *1	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)
3	Coil	-	-
4	Plunger assembly	SUS405 or equivalent, SUS304, C3604, NBR (SUS405 or equivalent, SUS304, FKM)	Stainless steel
5	Kick spring	SUS304	Stainless steel
6	Stuffing	CAC408 (SCS13)	Bronze casting (stainless steel casting)
7	Sealant	NBR (FKM)	Nitrile rubber (fluoro rubber)
8	Diaphragm assembly	SUS303, SUS304, C3604, NBR (SUS303, SUS304, FKM)	Stainless steel, nitrile rubber (stainless steel, fluoro rubber)
9	Body	CAC408 (SCS13)	Bronze casting (stainless steel casting)
10	O ring	NBR (FKM)	Nitrile rubber (fluoro rubber)

() shows options.

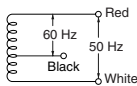
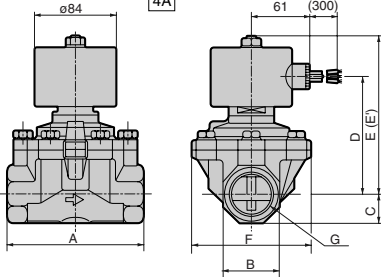
*1: When using the DC coil or a coil with diode, no shedding coil is used.

Dimensions



● Open frame lead wire type (Rc screw-in type)

ADK21-32A/40A/50A-*
3A
4A



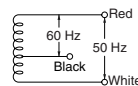
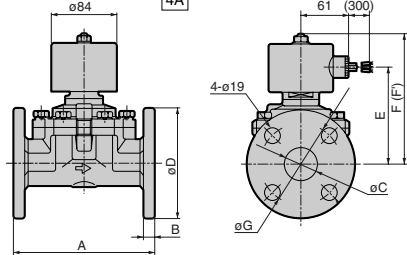
● Conduit size
Sheet steel conduit thread
JIS B0204 CTC19

● Lead wire
30/0.18 (0.75 mm²)

Length 300 mm

● Open frame lead wire type (flange type)

ADK21-32F/40F/50F-*
3A
4A



● Conduit size
Sheet steel conduit thread
JIS B0204 CTC19

● Lead wire
30/0.18 (0.75 mm²)

Length 300 mm

The dimensions (E') apply only to the ADK21-32A/40A/50A-*3A DC specifications.

Model no.	A	B	C	D	E	E'	F	G
ADK21-32A-*□A	125	54	27	116.5	158.5	183.5	112	Rc1 1/4
ADK21-40A-*□A	140	60	30	123.5	165.5	190.5	122	Rc1 1/2
ADK21-50A-*□A	160	74	37	132.5	174.5	199.5	132	Rc2

The dimensions (F') apply only to the ADK21-32F/40F/50F-*3A DC specifications.

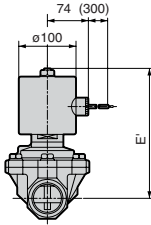
Model no.	A	B	C	D	E	F	F'	G
ADK21-32F-*□A	170	12	36	135	116.5	158.5	183.5	100
ADK21-40F-*□A	180	14	42	140	123.5	165.5	190.5	105
ADK21-50F-*□A	180	14	53	155	132.5	174.5	199.5	120

Optional dimensions



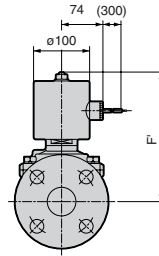
* Refer to the open frame lead wire type dimensions on the left page for common dimensions.

- Open frame diode integrated lead wire type (Rc screw-in type)
ADK21-32A/40A/50A-*5A



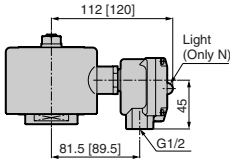
Model no.	E'
ADK21-32A-*5A	183.5
ADK21-40A-*5A	190.5
ADK21-50A-*5A	199.5

- Open frame diode integrated lead wire type (flange type)
ADK21-32F/40F/50F-*5A



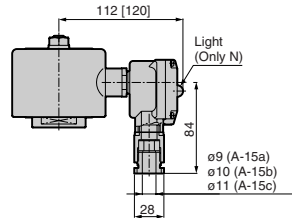
Model no.	F'
ADK21-32F-*5A	183.5
ADK21-40F-*5A	190.5
ADK21-50F-*5A	199.5

- Open frame type + HP terminal box
ADK21-32^Δ to 50^Δ -*5



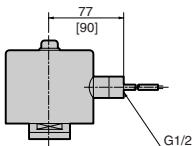
Values in [] are for the APK21-32^Δ to 50^Δ -*5 type.

- Open frame type + cable gland
ADK21-32^Δ to 50^Δ -*5



Values in [] are for the APK21-32^Δ to 50^Δ -*5 type.

- Open frame type + conduit
ADK21-32^Δ to 50^Δ -*5



Values in [] are for the APK21-32^Δ to 50^Δ -*5 type.

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
Pilot kick type 2 port solenoid valve