



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

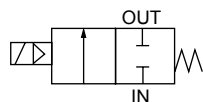
APK11 Series

- NC
- Port size: Rc1/4 to Rc1
- Piston drive

Refer to the Ending for details.



JIS symbol



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 ⁵ Pa (abs))/water/kerosene/oil (20mm ² /s or less)	Steam
Working pressure differential MPa	0 to 1.0 (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	4 (≈580 psi, 40 bar)	
Fluid temperature °C	-10 (14°F) to 60 (140°F) (*1)	5 (41°F) to 180 (356°F)
Ambient temperature °C	-10 (14°F) to 60 (140°F)	
Thermal class	Class 130 (B)	Class 180 (H)
Atmosphere	Place free of corrosive gas and explosive gas	
Valve structure	Pilot kick poppet, piston drive	
Valve seat leakage (*2) cm ³ /min(ANR)	0.2 or less (air)	400 or less (air)
Mounting orientation	Limited to the range of vertical orientation with the coil on top to horizontal orientation (*3).	
Body/seal material	Bronze/nitrile rubber	Bronze/PTFE

*1 : No freezing.

*2 : Value at pneumatic pressure of 0.05 to 1.0 MPa. When used at a pressure less than 0.05 MPa, the sealant may be unstable. Contact CKD in this case.

*3 : Limited to vertical orientation when used at a pressure less than 0.05 MPa.

Mounting orientation



Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Model No. Descriptions	Port size	Orifice size (mm)	Min. working pressure differential (MPa)	Max. working pressure differential (MPa)								Rated voltage	Apparent power (VA)				Power consump (W)		Weight (kg)									
				Air		Water/kerosene		Oil (20 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											
APK11-8A	Rc1/4	12	0	1.0	0.7	0.7	0.6	1.0	0.6	1.0	100 VAC 50/60 Hz *5 200 VAC 50/60 Hz *5 12 VDC 24 VDC 48 VDC 100 VDC	24	19	61	54	10/8	11	0.7										
APK11-10A	Rc3/8	12																0.7										
APK11-15A	Rc1/2	16																0.6	0.6	0.5	1.0	32	26	123	106	13/11	20	1.0
APK11-20A	Rc3/4	23																1.3										
APK11-25A	Rc1	28																1.7										

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

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

*5 : 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

Sealant	Fluoro rubber		PTFE	
Coil (thermal class)	Class 130 (B)	Class 180 (H)	Class 130 (B)	Class 180 (H)
Fluid temperature °C	5 to 60	5 to 90	-10 to 60 (*1)	5 to 180
Ambient temperature °C	-10 to 60			
Valve seat leakage (*2) cm ³ /min (ANR)	0.2 or less (air)		400 or less (air)	

*1 : No freezing.

*2 : Value at pneumatic pressure of 0.05 to 1.0 MPa. When used at a pressure less than 0.05 MPa, the sealant may be unstable. Contact CKD in this case.

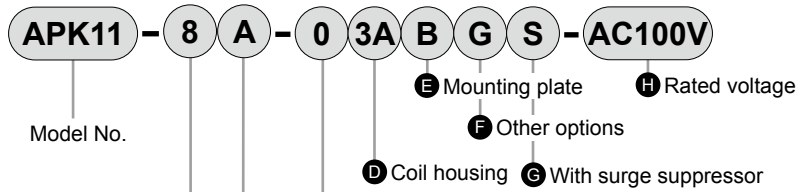
Flow characteristics

Model No.	Port size	Orifice size (mm)	Flow characteristics			
			C[dm ³ /(s·bar)]	b	Cv	S(mm ²)
APK11-8A	Rc1/4	12	9.4	0.41	2.2	-
APK11-10A	Rc3/8	12	15	0.37	2.7	-
APK11-15A	Rc1/2	16	20	0.31	4.5	-
APK11-20A	Rc3/4	23	-	-	8.6	162
APK11-25A	Rc1	28	-	-	12	231

*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

How to order



Code	Content					
A Port size						
8	1/4					
10	3/8					
15	1/2					
20	3/4					
25	1					
B Thread						
A	Rc					
G	G					
N	NPT					
C Body/sealant combination						
	Body	Valve seal	O-ring	Treatment	Remarks	
0	Std	Bronze	Nitrile rubber	Nitrile rubber	-	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *1)
			PTFE	Fluoro rubber		Steam (up to 180°C *1)
B	Std	Bronze	Nitrile rubber	Nitrile rubber	-	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *1)
			PTFE	Fluoro rubber		Steam (up to 180°C *1)
C	Std	Bronze	Nitrile rubber	Nitrile rubber	-	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *1)
			PTFE	Fluoro rubber		Steam (up to 180°C *1)
D	Option	Stainless steel	Nitrile rubber	Nitrile rubber	Oil free	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *1)
			PTFE	PTFE		Steam (up to 180°C *1)
E	Option	Stainless steel	Nitrile rubber	Nitrile rubber	Oil free	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *1)
			PTFE	PTFE		Steam (up to 180°C *1)
F	Option	Stainless steel	Nitrile rubber	Nitrile rubber	Oil free	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *1)
			PTFE	PTFE		Steam (up to 180°C *1)
H	Option	Bronze	Nitrile rubber	Nitrile rubber	Oil free	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *1)
			PTFE	Fluoro rubber		Steam (up to 180°C *1)
J	Option	Bronze	Nitrile rubber	Nitrile rubber	Oil free	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *1)
			PTFE	Fluoro rubber		Steam (up to 180°C *1)
K	Option	Bronze	Nitrile rubber	Nitrile rubber	Oil free	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *1)
			PTFE	Fluoro rubber		Steam (up to 180°C *1)
L	Option	Stainless steel	Nitrile rubber	Nitrile rubber	Oil free	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *1)
			PTFE	PTFE		Steam (up to 180°C *1)
M	Option	Stainless steel	Nitrile rubber	Nitrile rubber	Oil free	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *1)
			PTFE	PTFE		Steam (up to 180°C *1)
N	Option	Stainless steel	Nitrile rubber	Nitrile rubber	Oil free	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *1)
			PTFE	PTFE		Steam (up to 180°C *1)
Refer to Intro Page 39 for reference on material combinations.						
D to H						
Refer to the following page for details on the coil housing, other options and voltage, etc.						

[Example of model No. 1]
APK11-20A-02C-AC100V

Model : APK11

- A** Port size : 3/4
- B** Thread : Rc
- C** Body/sealant combination : Body - bronze, valve seal - nitrile rubber
O-ring - nitrile rubber
- D** Coil housing : Grommet lead wire
- F** to **I** : None
- J** Rated voltage : 100 VAC 50/60 Hz,
110 VAC 60 Hz

[Example of model No. 2]
APK11-10G-C4ABS-AC200V

Model : APK11

- A** Port size : 3/8
- B** Thread : G
- C** Body/sealant combination : Body - bronze, valve seal - PTFE,
O-ring - fluoro rubber
- D** Coil housing : Open frame lead wire (thermal class
180(H) coil)
- E** Mounting plate : With mounting plate
- F** Other options : None
- G** Surge suppressor : With surge suppressor
- H** Rated voltage : 200 VAC 50/60 Hz, 220 VAC 60 Hz

⚠ Precautions for model No. selection






Notes for **C**

- *1 : When Item **C** 4A/4M/4N is selected.
- *2 : When using the PTFE valve seal with thermal class 180(H) coil, the O-ring material is fluoro rubber for steam.


For Items ㉔ to ㉞, the combinations indicated with codes are available.
 Note that if options for Items ㉔ to ㉞ are not required, they should be left blank.

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

Refer to the following cautions for ㉔ to ㉞.

2C		● Grommet lead wire 300 mm
2E 2G 2H		● DIN terminal box
3A 4A 5A		● Open frame Lead wire 300mm ● 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 249 for coil selection.

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

Notes for ㉔

*3 : Coils for 5A/5M/5N have a diode to convert AC to DC voltage.

Notes for ㉔ to ㉔

- *4 : The mounting plate (Item ㉔ B) can be mounted only on Item ㉔ (port size) 8 (1/4) or 10 (3/8).
- *5 : For Item ㉔, select an option from D, E, F, G and H.
- *6 : 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.
- *7 : Surge suppressor is incorporated as standard in the coil with diode.
- *8 : Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.

Notes for ㉔

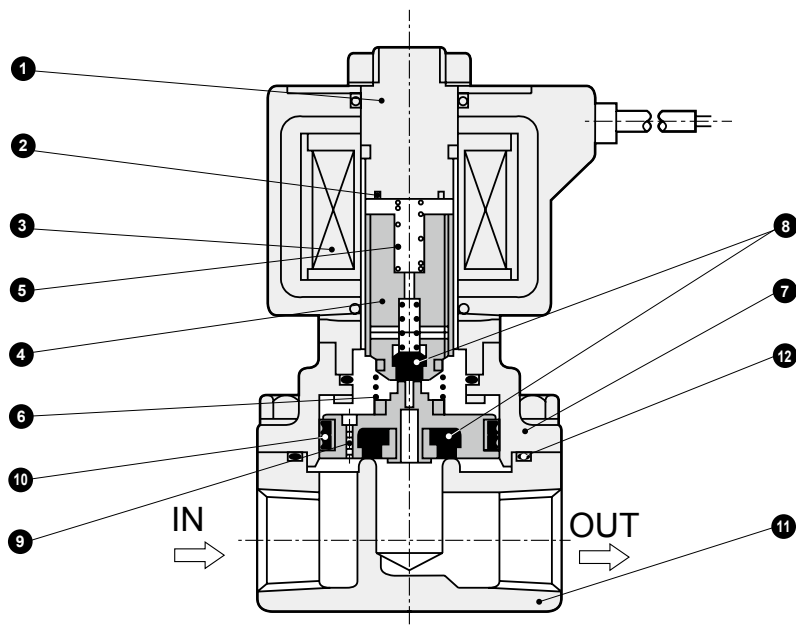
- *9 : 100 VAC coil is compatible with 100 VAC 50/60 Hz and 110 VAC 60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz and 220 VAC 60 Hz. However, coils for Item ㉔ 5A/5M/5N can be used with 100 VAC 50/60 Hz and 200 VAC 50/60 Hz only.
- *10 : For voltages other than above, contact CKD.
- *11 : 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
DustColl
CVE/ CVSE
CCH / CPE/D
LifeSci
Gas- Combus
Auto- Water
SpecFld
Custom
Ending

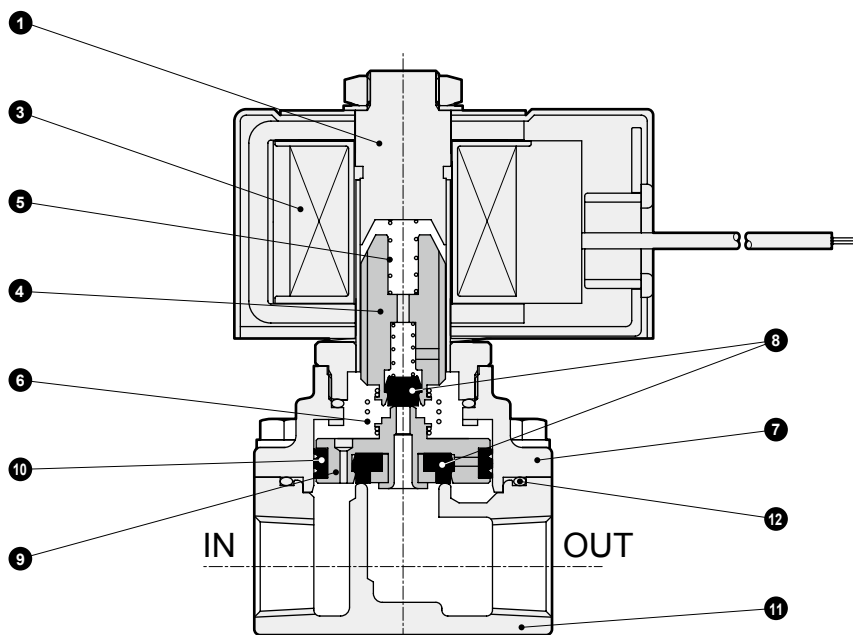
- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/
AD
- APK/
ADK
- DryAir
- EX-
XPLNprf
- XPLNprf
- HVB/
HVL
- S ∇ B/
NAB
- LAD/
NAD
- Water-
Rela
- NP/NAP/
NVP
- SNP
- CHB/G
- MXB/G
- Other
valves
- SWD/
MWD
- DustColl
- CVE/
CVSE
- CCH /
CPE/D
- LifeSci
- Gas-
Combus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

Internal structure and parts list

● APK11-8A/10A (AC)



● APK11-8A/10A (DC/diode integrated)



No.	Part name	Material	
1	Core assembly	SUS405 or equiv./SUS316L/SUS403 *1	Stainless steel
2	Shading coil *2	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)
3	Coil	-	-
4	Plunger assembly	SUS405 or equiv./SUS304/NBR (SUS405 or equiv./SUS304/FKM, PFA or PTFE)	Stainless steel
5	Plunger spring	SUS304	Stainless steel
6	Kick spring	SUS304	Stainless steel
7	Body	CAC408(SCS13)	Bronze casting (stainless steel casting)
8	Seal	NBR(FKM, PTFE)	Nitrile rubber (fluoro rubber or tetrafluoroethylene resin)
9	Main valve assembly	SUS303/SUS304/NBR (SUS303/SUS304/FKM or PTFE)	Stainless steel
10	Seal ring set	SUS304/PTFE	Stainless steel/tetrafluoroethylene resin
11	Body	CAC408(SCS13)	Bronze casting (stainless steel casting)
12	O-ring	NBR(FKM, PTFE)	Nitrile rubber (fluoro rubber or tetrafluoroethylene resin)

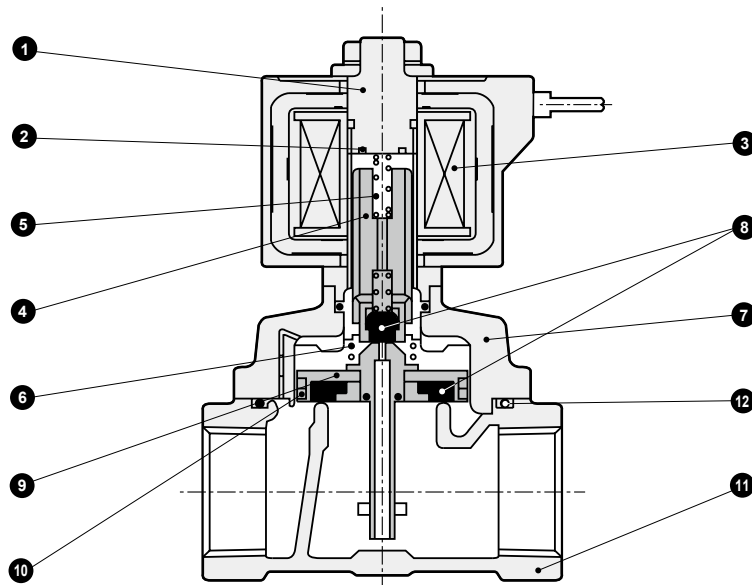
() shows options.

*1 : When the body/sealant combination is other than O and H: SUS405 or equivalent/SUS316L/SUS430.

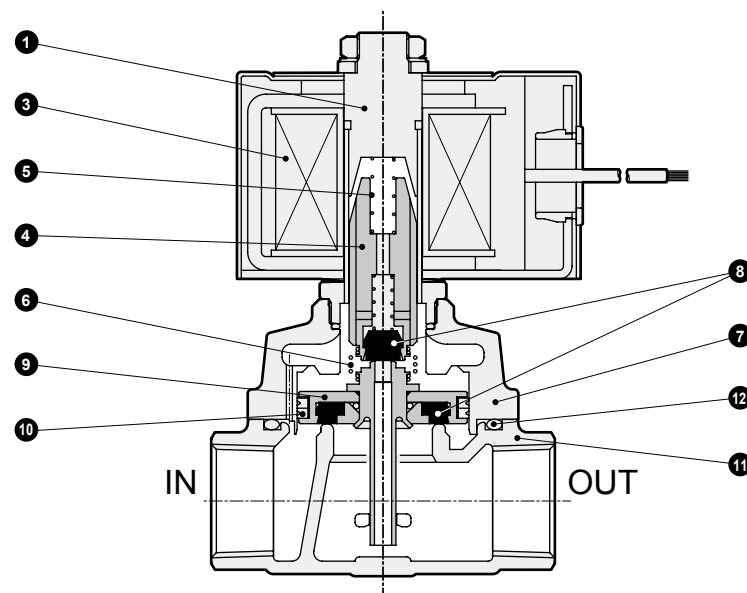
*2 : No shading coil is used for DC coil or coil with diode.

Internal structure and parts list

● APK11-15A/20A/25A (AC)



● APK11-15A/20A/25A (DC/diode integrated)



No.	Part name	Material	
1	Core assembly	SUS405 or equiv./SUS316L/SUS403 *1	Stainless steel
2	Shading coil *2	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)
3	Coil	-	-
4	Plunger assembly	SUS405 or equiv./SUS304/NBR (SUS405 or equiv./SUS304/FKM, PFA or PTFE)	Stainless steel
5	Plunger spring	SUS304	Stainless steel
6	Kick spring	SUS304	Stainless steel
7	Body	CAC408(SCS13)	Bronze casting (stainless steel casting)
8	Seal	NBR(FKM, PTFE)	Nitrile rubber (fluoro rubber or tetrafluoroethylene resin)
9	Main valve assembly	SUS303/SUS304/NBR (SUS303/SUS304/FKM or PTFE)	Stainless steel
10	Seal ring set	SUS304/PTFE	Stainless steel/tetrafluoroethylene resin
11	Body	CAC408(SCS13)	Bronze casting (stainless steel casting)
12	O-ring	NBR(FKM, PTFE)	Nitrile rubber (fluoro rubber or tetrafluoroethylene resin)

() shows options.

*1 : When the body/sealant combination is other than O and H: SUS405 or equivalent/SUS316L/SUS430.

*2 : No shading coil is used for DC coil or coil with diode.

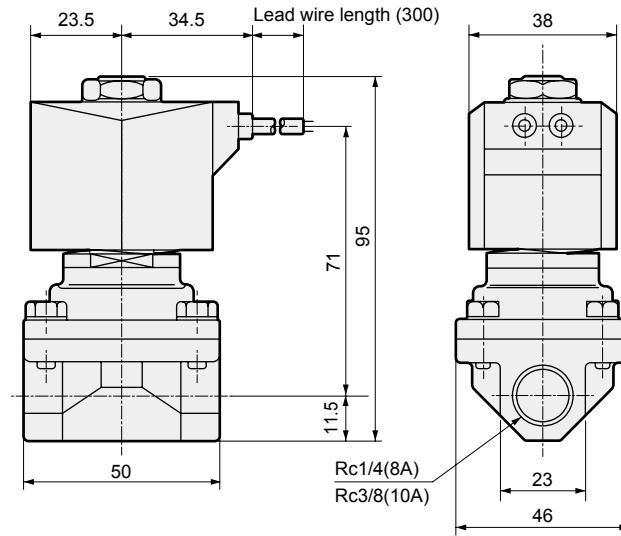
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/ AD
APK/ ADK
DryAir
EX- XPLNprf
XPLNprf
HVB/ HVL
S◇B/ NAB
LAD/ NAD
Water- Rela
NP/NAP/ NVP
SNP
CHB/G
MXB/G
Other valves
SWD/ MWD
DustColl
CVE/ CVSE
CCH / CPE/D
LifeSci
Gas- Combust
Auto- Water
SpecFld
Custom
Ending

APK11 Series

Dimensions

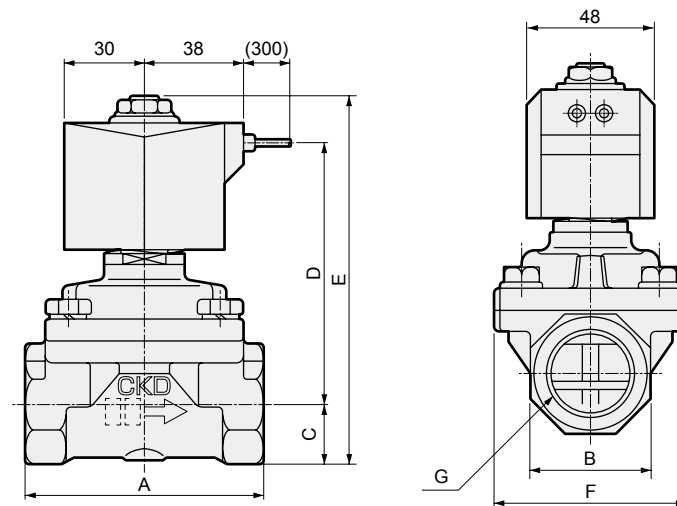
- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK**
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- S ∇ B/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combus
- Auto-Water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

● Grommet lead wire
APK11-8A/10A-*2C



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

● Grommet lead wire
APK11-15A/20A/25A-*2C



Model No.	A	B	C	D	E	F	G
APK11-15A-*2C	71	27(29)	14.5	89	119.5	50	Rc1/2
APK11-20A-*2C	80	32(35)	17.5	93	126.5	60	Rc3/4
APK11-25A-*2C	90	41(45)	21.5(22.5)	99	136.5(137.5)	71	Rc1

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

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

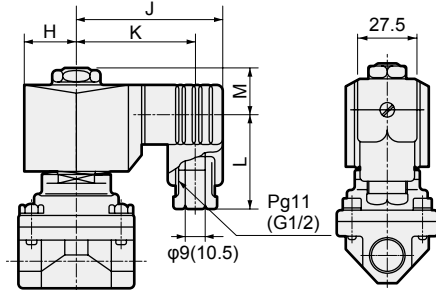
Optional dimensions



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

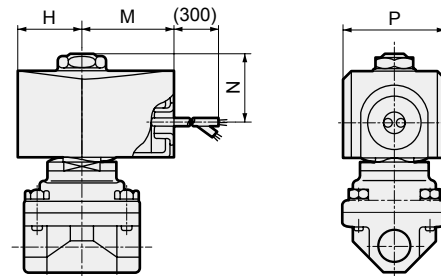
- With DIN terminal box
APK11-8A to 25A-*

2E
2G
2H



- Open frame lead wire
APK11-8A to 25A-*

3A
4A
5A



Dimensions shown in () are for G1/2.

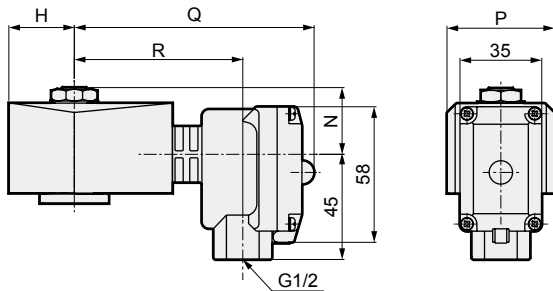
Model No.	H	J	K	L	M
APK11-8A/10A	23.5	65.5	54(53.5)	39(41)	22
APK11-15A/20A/25A	30	73	61.5(61)	39(41)	24

Model No.	H	M	N	P
APK11-8A/10A	28	42	29	46
APK11-15A/20A/25A	34	46	33	56

- Open frame + HP terminal box

APK11-8A to 25A-*

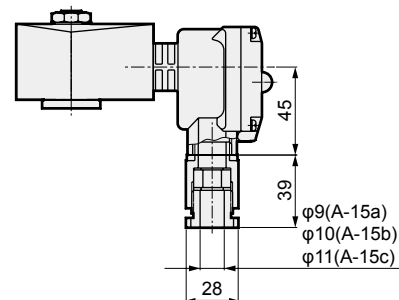
3 M
4 N
5



- Open frame + cable gland

APK11-8A to 25A-*

3 M D
4 N E
5 F

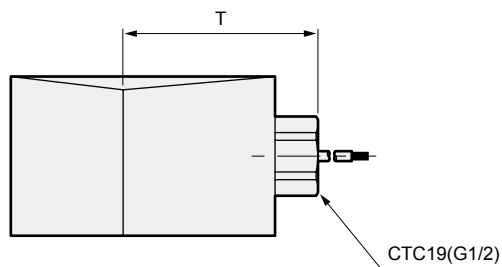


Model No.	H	N	P	Q	R
APK11-8A/10A	28	29	46	103	72
APK11-15A/20A/25A	34	33	56	98	68

- Open frame + conduit

APK11-8A to 25A-*

3A G
4A H
5A



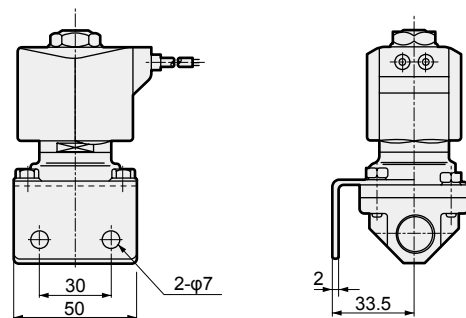
Dimensions shown in () are for G1/2.

Model No.	T
APK11-8A/10A	57(60)
APK11-15A to 25A	59(62)

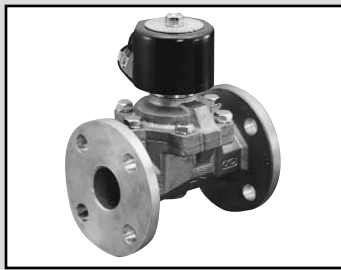
- Mounting plate

APK11-8A/10A-*** B

Material: Steel
Zinc plated



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



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

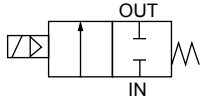
APK21 Series

- NC
- Port size: Rc1¹/₄ to Rc2, 32 to 50 flange
- Piston drive

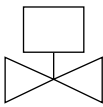


- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- SAB/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combus
- Auto-Water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

JIS symbol



Mounting orientation



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 ⁵ Pa (abs))/water/kerosene/oil (20mm ² /s or less)	Steam
Working pressure differential MPa	0 to 0.7 (refer to max. working pressure differential in individual specifications.)	
Max. working pressure MPa	1 (≈150 psi, 10 bar)	
Proof pressure (water pressure) MPa	3.2 (≈460 psi, 32 bar)	
Fluid temperature °C	-10 (14°F) to 60 (140°F) (*1)	5 (41°F) to 180 (356°F)
Ambient temperature °C	-10 (14°F) to 60 (140°F)	
Thermal class	Class 130 (B)	Class 180 (H)
Atmosphere	Place free of corrosive gas and explosive gas	
Valve structure	Pilot kick poppet, piston drive	
Valve seat leakage (*2) cm ³ /min(ANR)	1 or less (air)	800 or less (air)
Mounting orientation	Limited to vertical orientation with the coil on top	
Body/seal material	Bronze/nitrile rubber	Bronze/PTFE

*1 : No freezing.

*2 : Value at pneumatic pressure of 0.05 to 0.7 MPa. When used at a pressure less than 0.05 MPa, the sealant may be unstable. Contact CKD in this case.

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions Model No.	Port size	Orifice size (mm)	Min. working pressure differential (MPa)	Max. working pressure differential (MPa)								Rated voltage	Apparent power (VA)				Power consump (W)		Weight (kg)															
				Air		Water/kerosene		Oil (20 mm ² /s)		Steam			When holding		When starting		AC 50/60 Hz	DC																
				AC	DC	AC	DC	AC	DC	AC	DC		50 Hz	60 Hz	50 Hz	60 Hz																		
APK21-32A	Rc1 ¹ / ₄	35	0	0.7	0.6	0.7	0.6	0.5	0.5	0.7	100 VAC 50/60 Hz	64	69	274	289	44/48	20	4.5																
APK21-32F	32 flange										200 VAC 50/60 Hz							8																
APK21-40A	Rc1 ¹ / ₂	43									0	0.7	0.6	0.7	0.6	0.5	0.5	0.7	12 VDC	64	69	274	289	44/48	20	5.5								
APK21-40F	40 flange																		24 VDC							9								
APK21-50A	Rc2	53																	0	0.7	0.6	0.7	0.6	0.5	0.5	0.7	48 VDC	64	69	274	289	44/48	20	7
APK21-50F	50 flange																										100 VDC							11.5

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

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

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

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

Optional specifications

Sealant	Fluoro rubber		PTFE	
Coil (thermal class)	Class 130 (B)	Class 180 (H)	Class 130 (B)	Class 180 (H)
Fluid temperature °C	5 to 60	5 to 90	-10 to 60 (*1)	5 to 180
Ambient temperature °C	-10 to 60			
Valve seat leakage (*2) cm ³ /min (ANR)	1 or less (air)		800 or less (air)	

*1 : No freezing.

*2 : Value at pneumatic pressure of 0.05 to 0.7 MPa. When used at a pressure less than 0.05 MPa, the sealant may be unstable. Contact CKD in this case.

Flow characteristics

Model No.	Port size	Orifice size (mm)	Cv	Effective cross-sectional area (mm ²)
APK21-32A	Rc1 ¹ / ₄	35	25	460
APK21-32F	32 flange			
APK21-40A	Rc1 ¹ / ₂	43	34	625
APK21-40F	40 flange			
APK21-50A	Rc2	53	53	975
APK21-50F	50 flange			

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

How to order

APK21 - 32A - 0 3A H S - AC100V

Model No.

A Port size

*1
*2

B Body/sealant combination

*3
*4

D Other options

E With surge suppressor

C Coil housing

F Rated voltage

Code	Content
A Port size	
32A	Rc1 ¹ / ₄
32F	32 flange
40A	Rc1 ¹ / ₂
40F	40 flange
50A	Rc2
50F	50 flange

B Body/sealant combination						
	Body	Valve seal	O-ring	Treatment	Remarks	
0	Std	Bronze	Nitrile rubber	Nitrile rubber	-	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *3)
			PTFE	Fluoro rubber		Steam (up to 180°C *3)
D	Option	Stainless steel	Nitrile rubber	Nitrile rubber	-	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *3)
			PTFE	PTFE		Steam (up to 180°C *3)
H	Option	Bronze	Nitrile rubber	Nitrile rubber	Oil free	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *3)
			PTFE	Fluoro rubber		Steam (up to 180°C *3)
M	Option	Stainless steel	Nitrile rubber	Nitrile rubber	-	Air/water/low vacuum/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		Air/low vacuum/kerosene/oil (up to 90°C *3)
			PTFE	PTFE		Steam (up to 180°C *3)

Refer to Intro Page 39 for reference on material combinations.

C to F

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

[Example of model No. 1]
APK21-32F-03A-DC24V

Model : APK21

- A** Port size : 32 flange
- B** Body/sealant combination : Body - bronze, valve seal - nitrile rubber
O-ring - nitrile rubber
- C** Coil housing : Open frame lead wire
- D** **E** : None
- F** Rated voltage : 24 VDC

[Example of model No. 2]
APK21-50F-B4MD-AC100V

Model : APK21

- A** Port size : 50 flange
- B** Body/sealant combination : Body - bronze, valve seal - fluoro rubber
O-ring - fluoro rubber
- C** Coil housing : Open frame
(Thermal class 180 (H) coil)
HP terminal box (G1/2)
- D** Other options : Cable gland A-15a
- E** Surge suppressor : None
- F** Rated voltage : 100 VAC 50/60 Hz

⚠ Precautions for model No. selection

- *1 : The companion flange is JIS B2210 10K. (Flange is not enclosed with the product and must be purchased separately.)
- *2 : As G and NPT threads can also be used for piping port threads, contact CKD for details.

Notes for **B**



- *3 : When Item **B** 4A/4M/4N is selected.
- *4 : When using the PTFE valve seal with thermal class 180(H) coil, the O-ring material is fluoro rubber for steam.


- 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 © to ƒ, the combinations indicated with codes are available.
 Note that if options ④ and ⑤ are not required, they should be left blank.

© Coil housing			④ Other options				⑤	ƒ Rated voltage
Content			Cable gland		Conduit		With surge suppressor	Content
			(marine cable gland)		(conduit piping)			
			A-15a	A-15b	A-15c	G1/2		
3A	Option 2 Open frame	Lead wire (IP65 or equivalent)				H	S	100 VAC, 200 VAC, 12 VDC, 24 VDC, 48 VDC, 100 VDC
3M		With HP terminal box (G1/2)	D	E	F			
3N		HP terminal box with lamp (G1/2)						
4A	Option 1 Open frame (Thermal class 180 (H))	Lead wire				H	S	100 VAC, 200 VAC
4M		With HP terminal box (G1/2)	D	E	F			
4N		HP terminal box with lamp (G1/2)						
5A	Option 3 Open frame (diode integrated)	Lead wire (IP65 or equivalent)				H		100 VAC, 200 VAC
5M		With HP terminal box (G1/2)	D	E	F			
5N		HP terminal box with lamp (G1/2)						

⚠ Refer to the following cautions for © to ƒ.

3A 4A 5A		<ul style="list-style-type: none"> ● Open frame lead wire 300 mm ● With CTC19 thread for direct conduit piping
3M 3N 4M 4N 5M 5N		<ul style="list-style-type: none"> ● Open frame HP terminal box ● 4M, 4N (Thermal class 180 (H)) ● 5M, 5N (diode integrated)

H		<ul style="list-style-type: none"> ● Conduit (G1/2)
---	--	--

Refer to page 250 for coil selection.

⚠ Precautions for model No. selection

Notes for ©

*5 : Coils for 5A/5M/5N have a diode to convert AC to DC voltage.

Notes for ④/⑤

- *6 : For Item ④, select an option from D, E, F and H.
- *7 : 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.
- *8 : Surge suppressor is incorporated as standard in the coil with diode.
- *9 : Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.

Notes for ƒ

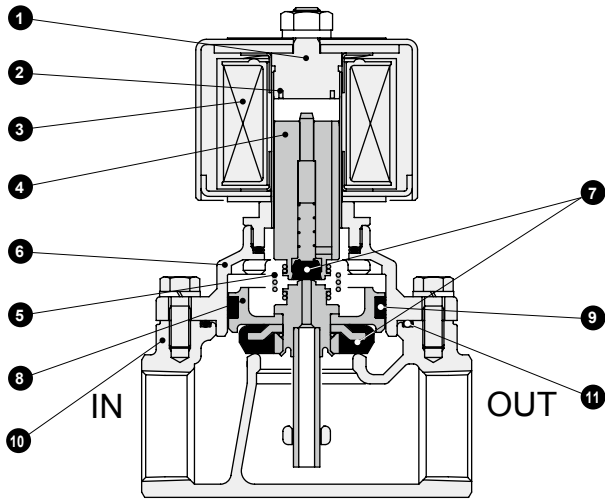
- *10 : For voltages other than above, contact CKD.
- *11 : The lead wire is available in the standard 300 mm length, and 500 mm, 1000 mm, 2000 mm and 3000 mm lengths. Contact CKD for more information.

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
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

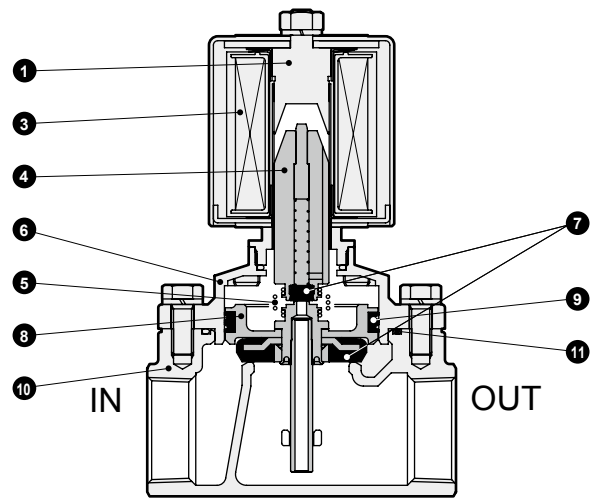
APK21 Series

Internal structure and parts list

● APK21-32A/40A/50A (AC)



● APK21-32A/40A/50A (DC/diode integrated)



No.	Part name	Material
1	Core assembly	SUS405 or equiv./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 equiv./SUS304/C3604/NBR (SUS405 or equiv./SUS304/FKM, PFA or PTFE); Stainless steel
5	Kick spring	SUS304 ; Stainless steel
6	Body	CAC408(SCS13) ; Bronze casting (stainless steel casting)
7	Seal	NBR(FKM, PTFE) ; Nitrile rubber (fluoro rubber or tetrafluoroethylene resin)
8	Main valve assembly	SUS303/SUS304/C3604/NBR (SUS303/SUS304/FKM or PTFE); Stainless steel/copper alloy (stainless steel)
9	Seal ring set	SUS304/PTFE ; Stainless steel/tetrafluoroethylene resin
10	Body	CAC408(SCS13) ; Bronze casting (stainless steel casting)
11	O-ring	NBR(FKM, PTFE) ; Nitrile rubber (fluoro rubber or tetrafluoroethylene resin)

() shows options.

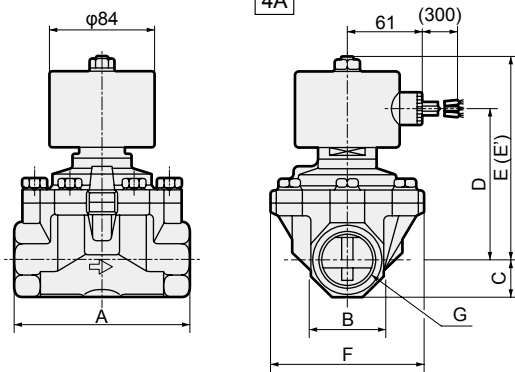
*1 : No shading coil is used for DC coil or coil with diode.

Dimensions



● Open frame lead wire (Rc screw-in)

APK21-32A/40A/50A-*
3A
4A



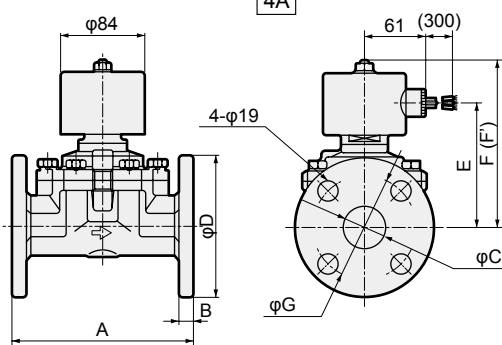
- Conduit size
Thin steel conduit thread
JIS B 0204 CTC19
- Lead wire

30/0.18(0.75 mm²)

Length 300 mm

● Open frame lead wire (flange)

APK21-32F/40F/50F-*
3A
4A



- Conduit size
Thin steel conduit thread
JIS B 0204 CTC19
- Lead wire

30/0.18(0.75 mm²)

Length 300 mm

The dimension (E') applies only to the APK21-32A/40A/50A-*3A DC specifications.

Model No.	A	B	C	D	E	E'	F	G
APK21-32A-*□A	125	54	27	116.5	158.5	183.5	112	Rc1 ¹ / ₄
APK21-40A-*□A	140	60	30	123.5	165.5	190.5	122	Rc1 ¹ / ₂
APK21-50A-*□A	160	74	37	132.5	174.5	199.5	132	Rc2

The dimension (F') applies only to the APK21-32F/40F/50F-*3A DC specifications.

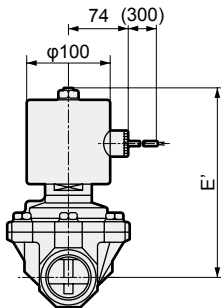
Model No.	A	B	C	D	E	F	F'	G
APK21-32F-*□A	170	12	36	135	116.5	158.5	183.5	100
APK21-40F-*□A	180	14	42	140	123.5	165.5	190.5	105
APK21-50F-*□A	180	14	53	155	132.5	174.5	199.5	120

Optional dimensions



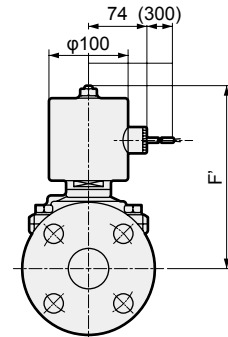
* Refer to the open frame lead wire dimensions on the left page for common dimensions.

- Open frame diode integrated lead wire (Rc screw-in)
APK21-32A/40A/50A-*5A



Model No.	E'
APK21-32A-*5A	183.5
APK21-40A-*5A	190.5
APK21-50A-*5A	199.5

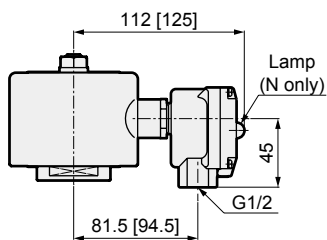
- Open frame diode integrated lead wire (flange)
APK21-32F/40F/50F-*5A



Model No.	F'
APK21-32F-*5A	183.5
APK21-40F-*5A	190.5
APK21-50F-*5A	199.5

- Open frame + HP terminal box
APK21-32^Δ to 50^Δ -*5

3	M
4	N
5	



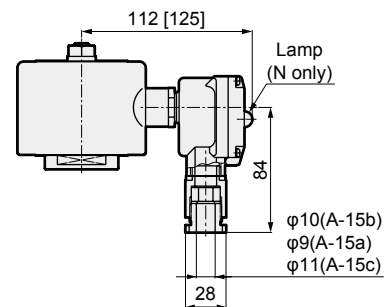
[] shows APK21-32^Δ to 50^Δ -*5

M
N

 type.

- Open frame + cable gland
APK21-32^Δ to 50^Δ -*5

3	M	D
4	N	E
5		F



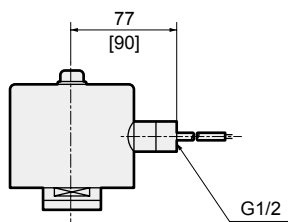
[] shows APK21-32^Δ to 50^Δ -*5

M
N

 type.

- Open frame + conduit
APK21-32^Δ to 50^Δ -*5

3A	H
4A	
5A	



[] shows APK21-32^Δ to 50^Δ -*5

M
N

 type.

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