

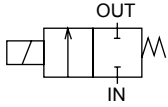
Explosion-proof direct acting 2-port solenoid valve (general purpose valve)

AB41EX4 Series

- Pressure and explosion proof construction Ex d IIB T4 (group IIB/temperature class T4)
- Japan certified test model qualification No. AC: No. TC20594 DC: No. TC20618
- Korea certified test model qualification No. AC: 16-AV4BO-0150X DC: 16-AV4BO-0147X
- NC
- Port size: Rc1/4, Rc3/8



JIS symbol



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	AB41EX4
Working fluid	Air/low vacuum [1.33×10^2 Pa (abs)]/water/kerosene/oil (50 mm ² /s or less)
Working pressure differential MPa	0 to 5 (refer to max. working pressure differential in individual specifications)
Max. working pressure MPa	5 (≈730 psi, 50 bar)
Proof pressure (water pressure) MPa	25 (≈3600 psi, 250 bar)
Fluid temperature °C	-10 (14°F) to 60 (140°F) (no freezing)
Ambient temperature °C	-10 (14°F) to 50 (122°F)
Thermal class	AC: Class 180 (H) AC diode integrated, DC: Class 130 (B)
Atmosphere	Outdoors/explosive gas (group IIB/temperature class T4)
Valve structure	Direct acting poppet structure
Valve seat leakage cm ³ /min(ANR)	0.2 or less (PTFE sealant: 300 or less) (air)
Mounting orientation	Unrestricted
Degree of protection	IP65 or equivalent

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	Port size	Orifice size (mm)	Max. working pressure differential (MPa)						Rated voltage	Apparent power (VA)				Power consumption (W)		Weight (kg)
			Air		Water (hot)/Kerosene		Oil (50 mm ² /s)			When holding		When starting		AC	DC	
			AC	DC	AC	DC	AC	DC		50 Hz	60 Hz	50 Hz	60 Hz	50 Hz/60 Hz	DC	
NC																
AB41EX4- ⁰² / ₀₃ -1	Rc1/4 Rc3/8	1.5	5.0	4.0	4.5	4.0	4.0	4.0	100 VAC 50/60 Hz	18	15	29	24	8/7	11.6	1.2
-2		2.0	3.0	2.5	2.7	2.5	2.5	2.5								
-3		3.0	1.5	0.9	1.3	0.9	0.9	0.9								
-4		3.5	1.2	0.6	0.9	0.6	0.6	0.6								
-5		4.0	1.0	0.5	0.7	0.5	0.5	0.5								
-6		5.0	0.6	0.25	0.4	0.25	0.25	0.25								
-7		7.0	0.25	0.1	0.2	0.1	0.15	0.1								

*1 : The port size model No. is 02 for Rc1/4 (8A) and 03 for Rc3/8 (10A).

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

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

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

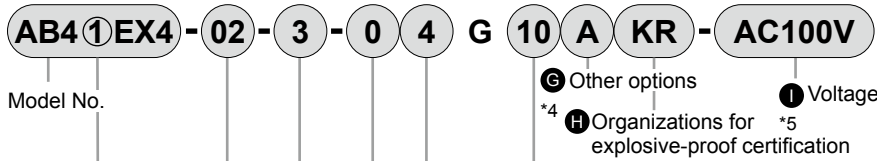
Flow characteristics

Model No.	Port size	Orifice size (mm)	Flow characteristics		
			C [dm ³ /(s·bar)]	b	Cv
NC					
AB41EX4- 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	0.49	0.42
-5		4.0	2.1	0.48	0.54
-6		5.0	3.0	0.42	0.80
-7		7.0	4.8	0.29	1.0
			[4.6]	[0.37]	[0.82]

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

*2: Dimensions shown in [] are for stainless steel body.

How to order



A Actuation

B Port size
*1

C Orifice size

D Body/sealant combination
*2

E Coil
*3

F Applicable cable O.D.

[Example of model No.]

AB41EX4-02-3-04G10AKR-AC100V

Model : AB41EX4

- A** Actuation : NC
- B** Port size : Rc1/4
- C** Orifice size : $\phi 3$
- D** Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
- E** Coil : Thermal class 180 (H) explosion-proof coil (for AC)
- F** Applicable cable O.D. : $\phi 9.5$ to $\phi 10.5$
- G** Other options : Manual override (locking)
- H** Organizations for explosive-proof certification : Korea certification (KOSHA)
- I** Voltage : 100 VAC 50/60 Hz

⚠ Precautions for model No. selection

- *1 : As G and NPT threads can also be used for piping port threads, contact CKD for details.
- *2 : The ethylene propylene rubber seal combination (Item **D** P/R) cannot be used with air. (Compressed air contains oil, and ethylene propylene rubber is not oil-resistant.)
- *3 : For the thermal class B diode integrated coil, the AC power supply voltage is converted into DC coil voltage by the diode.
- *4 : When Item **D** is C, F, K or N, the manual override (Item **G** A, AB) is not available.
- *5 : Other voltages as below are also available. Contact CKD for details.
12, 24, 48, 110, 115, 120, 220, 240, 380, 400, 415, 440, 480, 500 VAC
(with diode) 110, 220 VAC 6, 12, 24, 48, 100, 110, 200, 220 VDC

Code	Content			
A Actuation				
1	NC			
B Port size				
02	Rc1/4			
03	Rc3/8			
C Orifice size				
1	$\phi 1.5$			
2	$\phi 2$			
3	$\phi 3$			
4	$\phi 3.5$			
5	$\phi 4$			
6	$\phi 5$			
7	$\phi 7$			
D Body/sealant combination				
	Body	Seal	Treatment	Remarks
0	Std.			
B	Copper alloy	Nitrile rubber	-	Air/water/low vacuum/kerosene/oil (up to 60°C)
C		Fluoro rubber		-
D		PTFE		-
E	Stainless steel	Nitrile rubber	-	Air/water/low vacuum/kerosene/oil (up to 60°C)
F		Fluoro rubber		-
H		PTFE		-
J	Option Copper alloy	Nitrile rubber	-	Air/water/low vacuum/kerosene/oil (up to 60°C)
K		Fluoro rubber		-
L		PTFE		-
M	Stainless steel	Ethylene propylene rubber	Oil free	-
N		Nitrile rubber		Air/water/low vacuum/kerosene/oil (up to 60°C)
R		Fluoro rubber		-
		PTFE	-	-
		Ethylene propylene rubber	-	-
E Coil				
3	Thermal class 130 (B) explosion-proof coil (for DC)			
4	Thermal class 180 (H) explosion-proof coil (for AC)			
5	Thermal class 130 (B) diode integrated explosion-proof coil (for AC)			
F Applicable cable O.D.				
9	$\phi 7.5$ to $\phi 9.5$			
10	$\phi 9.5$ to $\phi 10.5$			
11	$\phi 10.5$ to $\phi 11.5$			
13	$\phi 11.5$ to $\phi 13.5$			
G Other options				
Blank	Std.	No option		
A	Option	Manual override (locking)		
B		With mounting plate		
AB		With manual override/mounting plate		
H Organizations for explosive-proof certification				
Blank	Japan certification (TIIS)			
KR	Korea certification (KOSHA)			
I Voltage				
AC100V	100 VAC 50/60 Hz			
AC200V	200 VAC 50/60 Hz			

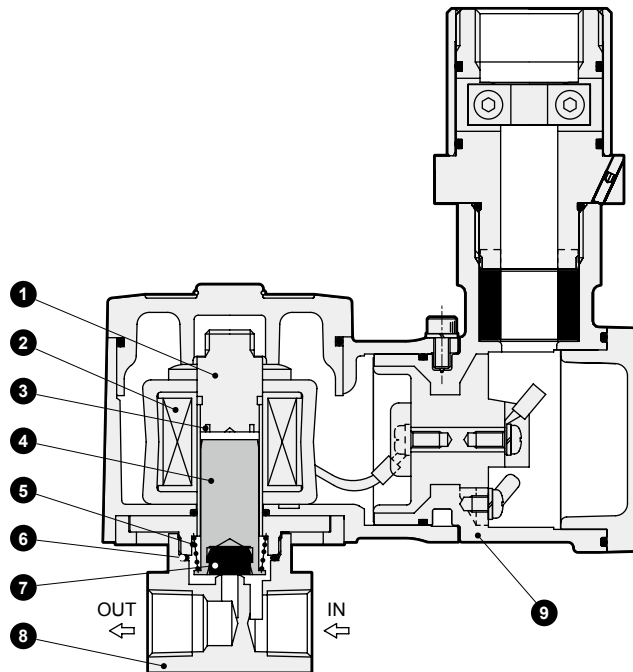
- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- SAB/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustCoil
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combust
- Auto-Water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

AB41EX4 Series

- 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 Δ 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

● AB41EX4 Series



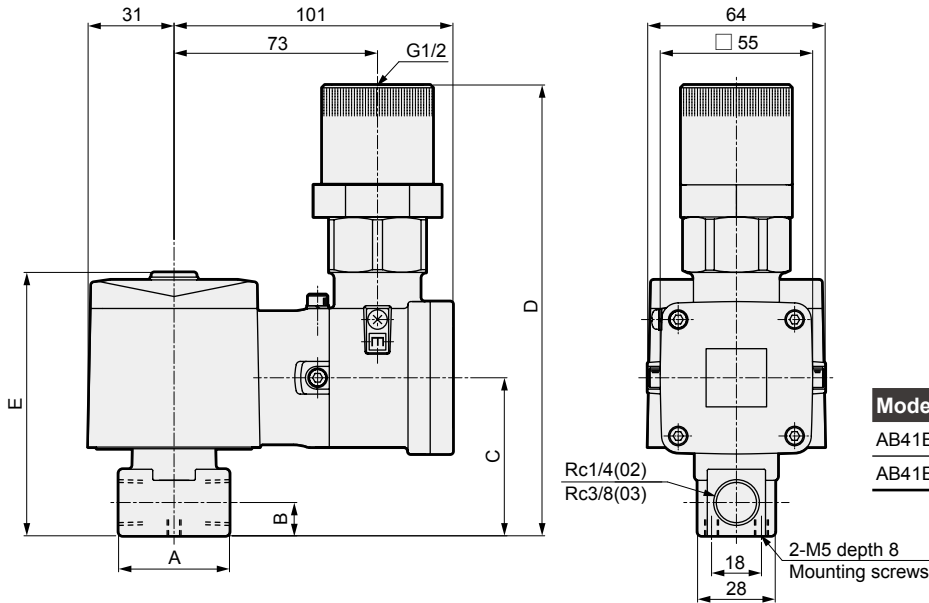
No.	Part name	Material	No.	Part name	Material
1	Core assembly	SUS405 or equiv./316L/403	6	O-ring	NBR (FKM/PTFE/EPDM)
2	Coil assembly	-	7	Valve seal	NBR (FKM/PTFE/EPDM)
3	Shading coil	Cu (Ag for stainless steel body)	8	Body	C3771(SUS303)
4	Plunger	SUS405 or equiv.	9	Coil case	ADC12
5	Plunger spring	SUS304			

NBR: Nitrile rubber
FKM: Fluoro rubber
EPDM: Ethylene propylene rubber
PTFE: Tetrafluoroethylene resin
Copper alloy (stainless steel)

() shows options.

Dimensions

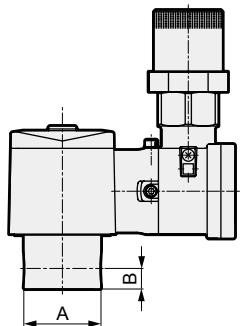
- Standard
AB41EX4



Model No.	A	B	C	D	E
AB41EX4-02-1 to 6	36	11	54	160	92
AB41EX4- ⁰²⁻⁷ _{03-1 to 7}	40	12	57	163	95

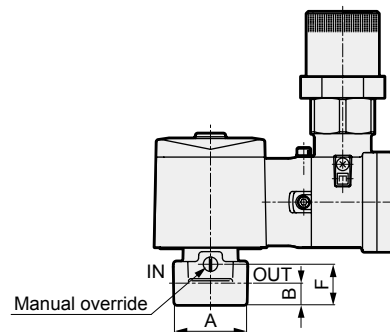
Optional dimensions

- Stainless steel body
AB41EX4-^{*}_{*}-^{*}_[D,E,F,R,L,M,N]



Model No.	A	B
AB41EX4-02-1 to 6	φ37.5	11
AB41EX4- ⁰²⁻⁷ _{03-1 to 7}	φ45	12

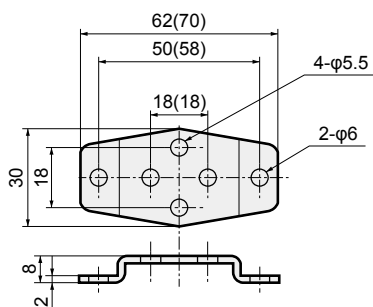
- Manual override (locking)
AB41EX4-^{*}_{*}-^{*}_{***}-^{*}_[A]



Model No.	A	B	F
AB41EX4-02-1 to 6	36	11	19.5
AB41EX4- ⁰²⁻⁷ _{03-1 to 7}	40	12	22.5

- Mounting plate
AB41EX4-^{*}_{*}-^{*}_{***}-^{*}_[B, AB]

Material: Steel
Zinc plated



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

Category	Compatibility
Mounting plate No. 1 GE-100106	● AB41EX4- ⁰² ₀₃ -1 to 7 ● AB41EX4-02-1 to 6
Mounting plate No. 2 GE-100159	● AB41EX4-02-7 ● AB41EX4-03-1 to 7

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

Explosion-proof direct acting 3-port solenoid valve (general purpose valve)

AG41EX4/AG43EX4/AG44EX4 Series



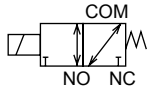
- Pressure and explosion proof construction Ex d IIB T4 (group IIB/temperature class T4)
- Japan certified test model qualification No. AC: No. TC20593 DC: No. TC20617
- Korea certified test model qualification No. AC: AV4BO-0153X DC: 16-AV4BO-0149X
- Universal, NC pressurization, NO pressurization
- Port size: Rc1/4, Rc3/8



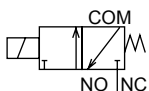
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/
AD
APK/
ADK
DryAir

JIS symbol

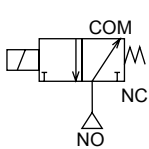
● AG41EX4: Universal



● AG43EX4:NO pressurization



● AG44EX4:NO pressurization



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	AG41EX4/AG43EX4/AG44EX4
Working fluid	Air/low vacuum [1.33×10^2 Pa (abs)]/water/kerosene/oil (50 mm ² /s or less)
Working pressure differential MPa	0 to 1.5 (refer to max. working pressure differential in individual specifications)
Proof pressure (water pressure) MPa	25 (≈3600 psi, 250 bar)
Fluid temperature °C	-10 (14°F) to 60 (140°F) (no freezing)
Ambient temperature °C	-10 (14°F) to 50 (122°F)
Thermal class	AC: Class 180 (H) AC diode integrated, DC: Class 130 (B)
Atmosphere	Outdoors/explosive gas (group IIB/temperature class T4)
Valve structure	Direct acting poppet structure
Valve seat leakage cm ³ /min(ANR)	0.2 or less (PTFE sealant: 300 or less) (air)
Mounting orientation	Unrestricted
Degree of protection	IP65 or equivalent

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	Port size	Orifice size (mm)		Max. working pressure differential (MPa)						Max. working pressure MPa	Rated voltage	Apparent power (VA)				Power consump (W)		Weight (kg)
		TOP	BODY	Air		Water (hot)/Kerosene		Oil (50 mm ² /s)				When holding		When starting		AC	DC	
Model No.				AC	DC	AC	DC	AC	DC			50 Hz	60 Hz	50 Hz	60 Hz	50 Hz/60 Hz	DC	
Universal																		
AG41EX4- ⁰² / ₀₃ -1	Rc1/4	2.0	2.0	1.0	0.7	1.0	0.7	0.4	0.3	1	100 VAC 50/60 Hz	22	17	35	27	10/8	11.6	1.3
-2	Rc3/8	2.3	2.3	0.7	0.4	0.7	0.4	0.25	0.15									
NC pressurization																		
AG43EX4- ⁰² / ₀₃ -4	Rc1/4	3.0	3.0	0.7	0.7	0.7	0.7	0.7	0.7	1	200 VAC 50/60 Hz	22	17	35	27	10/8	11.6	1.3
-5	Rc3/8	3.5	3.0	0.4	0.4	0.4	0.4	0.4	0.4									
NO pressurization																		
AG44EX4- ⁰² / ₀₃ -1	Rc1/4	2.0	2.0	1.2	0.75	1.5	1.0	1.0	0.45	1.5	200 VAC 50/60 Hz	22	17	35	27	10/8	11.6	1.3
-3	Rc3/8	2.0	3.0	1.2	0.75	1.5	0.9	1.0	0.45									
-4	Rc3/8	3.0	3.0	0.4	0.3	0.5	0.3	0.3	0.2									

- *1 : The port size model No. is 02 for Rc1/4 (8A) and 03 for Rc3/8 (10A).
 *2 : Refer to DC column for the max. working pressure differential of coil with diode.
 *3 : The voltage fluctuation range must be within -10 to +10% of the rated voltage.
 *4 : NO port pressurization is not possible for the PTFE seal of AG41EX4.
 *5 : When using at low vacuum, vacuum the port side specified as below.
 Universal: COM/NC/NO port, NC pressurization: NO port, NO pressurization: NC port

Flow characteristics

Model No.	Port size	Orifice size (mm)		Flow characteristics						
		TOP	BODY	C[dm ³ /(s·bar)]		b		Cv		
				TOP	BODY	TOP	BODY	TOP	BODY	
Universal										
AG41EX4- ⁰² / ₀₃ -1	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52	0.15	0.15	
-2	Rc3/8	2.3	2.3	0.74	0.74	0.66	0.53	0.19	0.19	
NC pressurization										
AG43EX4- ⁰² / ₀₃ -4	Rc1/4	3.0	3.0	1.1	1.1	0.72	0.52	0.31	0.31	
-5	Rc3/8	3.5	3.0	1.5	1.1	0.62	0.52	0.40	0.31	
NO pressurization										
AG44EX4- ⁰² / ₀₃ -1	Rc1/4	2.0	2.0	0.53	0.53	0.54	0.52	0.15	0.15	
-3	Rc3/8	2.0	3.0	0.53	1.1	0.54	0.52	0.15	0.31	
-4	Rc3/8	3.0	3.0	1.1	1.1	0.72	0.52	0.31	0.31	

*: Effective cross-sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

AG41EX4/AG43EX4/AG44EX4 Series

How to order

How to order

AG41EX4-02-2-04G10AKR-AC200V

Model No.

A Actuation

B Port size

*2

C Orifice size

D Body/sealant combination

*3

*7

E Coil

*4

G Other options
*5

H Organizations for explosive-proof certification

I Voltage
*6

Model No.

AG41EX4

AG43EX4

AG44EX4

Code		Content			AG41EX4	AG43EX4	AG44EX4	
A Actuation								
1	Universal			●				
3	NC pressurization				●			
4	NO pressurization					●		
B Port size								
02	Rc1/4			●	●	●		
03	Rc3/8			●	●	●		
C Orifice size								
	TOP	BODY						
1	φ2.0	φ2.0		●		●		
2	φ2.3	φ2.3		●				
3	φ2.0	φ3.0				●		
4	φ3.0	φ3.0			●	●		
5	φ3.5	φ3.0			●			
D Body/sealant combination								
	Body	Seal	Treatment	Remarks				
0	Std.	Copper alloy	Nitrile rubber	Air/water/low vacuum/kerosene/oil (up to 60°C)	●	●	●	
B	Option	Copper alloy	Fluoro rubber	-	●	●	●	
C			PTFE	-	●	●		
D			Nitrile rubber	Air/water/low vacuum/kerosene/oil (up to 60°C)	●	●	●	
E	Option	Stainless steel	Fluoro rubber	-	●	●	●	
F			PTFE	-	●	●		
H			Nitrile rubber	Air/water/low vacuum/kerosene/oil (up to 60°C)	●	●	●	
J	Option	Copper alloy	Fluoro rubber	-	●	●	●	
K			PTFE	-	●	●		
P			Ethylene propylene rubber	Oil	-	●	●	●
L	Option	Stainless steel	Nitrile rubber	free	Air/water/low vacuum/kerosene/oil (up to 60°C)	●	●	●
M			Fluoro rubber	-	●	●	●	
N			PTFE	-	●	●		
R			Ethylene propylene rubber	-	●	●	●	
E Coil								
3	Thermal class 130 (B) explosion-proof coil (for DC)			●	●	●		
4	Thermal class 180 (H) explosion-proof coil (for AC)			●	●	●		
5	Thermal class 130 (B) diode integrated explosion-proof coil (for AC)			●	●	●		
F Applicable cable O.D.								
9	φ7.5 to φ9.5			●	●	●		
10	φ9.5 to φ10.5			●	●	●		
11	φ10.5 to φ11.5			●	●	●		
13	φ11.5 to φ13.5			●	●	●		
G Other options								
Blank	Std.	No option			●	●	●	
A	Option	Manual override (locking)			●	●	●	
B		With mounting plate			●	●	●	
AB		Manual override/mounting plate			●	●	●	
H Organizations for explosive-proof certification								
Blank	Japan certification (TIIS)			●	●	●		
KR	Korea certification (KOSHA)			●	●	●		
I Voltage								
AC100V	100 VAC 50/60 Hz			●	●	●		
AC200V	200 VAC 50/60 Hz			●	●	●		

[Example of model No.]

AG41EX4-02-2-04G10AKR-AC200V

Model : AG41EX4

- A** Actuation : Universal
- B** Port size : Rc1/4
- C** Orifice size : TOPφ2.3/BODYφ2.3
- D** Body/sealant combination : Body - copper alloy, sealant - nitrile rubber
- E** Coil : Thermal class 180 (H) explosion-proof coil (for AC)
- F** Applicable cable O.D. : φ9.5 to φ10.5
- G** Other options : Manual override (locking)
- H** Organizations for explosive-proof certification : Korea certification (KOSHA)
- I** Voltage : 200 VAC 50/60 Hz

⚠ Precautions for model No. selection

- *1 : The combinations indicated with ● above are available.
- *2 : Piping port with G or NPT thread is possible only for COM/NC port. Contact CKD for details.
- *3 : The ethylene propylene rubber seal combination (Item **D** P/R) cannot be used with air. (Compressed air contains oil, and ethylene propylene rubber is not oil-resistant.)
- *4 : For the thermal class B diode integrated coil, the AC power supply voltage is converted into DC coil voltage by the diode.
- *5 : When Item **D** is C, F, K or N, the manual override (Item **G** A, AB) is not available.
- *6 : Other voltages as below are also available. Contact CKD for details.
12, 24, 48, 110, 115, 120, 220, 240, 380, 400, 415, 440, 480, 500 VAC
(with diode) 110, 220 VAC 6, 12, 24, 48, 100, 110, 200, 220 VDC
- *7 : Even if nitrile rubber sealant is selected for AG44EX4, the seal material on the NO side will be fluoro rubber.

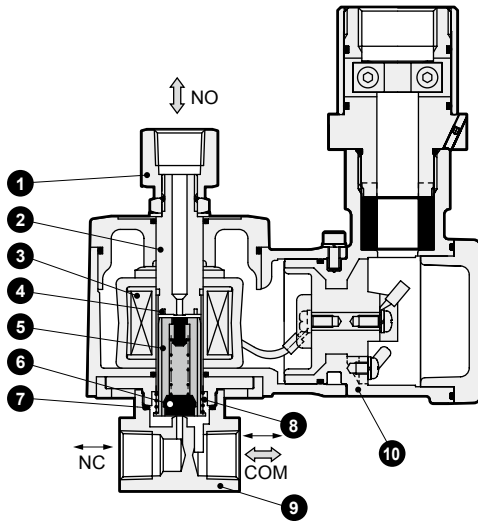
- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- S◇B/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combus
- Auto-Water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

AG41EX4/AG43EX4/AG44EX4 Series

- 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 Δ 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

Internal structure and parts list

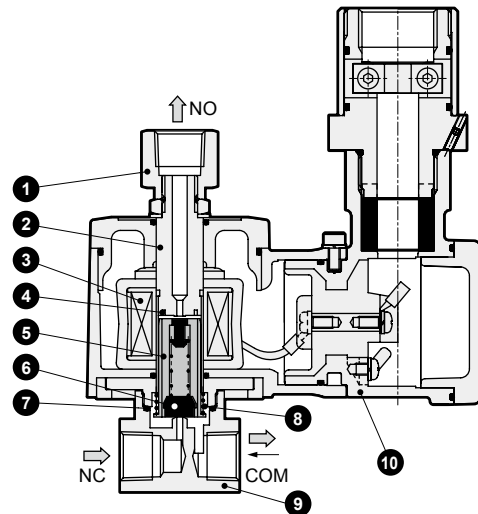
● AG41EX4 Series



No.	Part name	Material	
1	Socket	C3604(SUS303)	Copper alloy (stainless steel)
2	Core assembly	SUS405 or equiv./316L/403	Stainless steel
3	Coil	-	-
4	Shading coil	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)
5	Plunger	SUS405 or equiv.	Stainless steel
6	Valve seal	NBR (FKM/PTFE/EPDM)	NBR : Nitrile rubber FKM : Fluoro rubber
7	O-ring	NBR (FKM/PTFE/EPDM)	EPDM: Ethylene propylene rubber PTFE : Tetrafluoroethylene resin
8	Plunger spring	SUS304	Stainless steel
9	Body	C3771(SUS303)	Copper alloy (stainless steel)
10	Coil case	ADC12	Aluminum die-casting

() shows options.

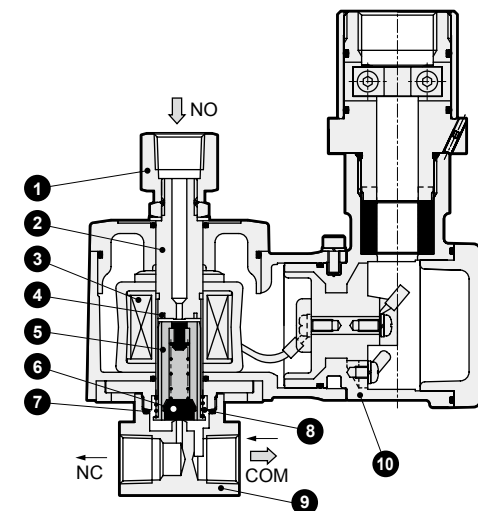
● AG43EX4 Series



No.	Part name	Material	
1	Socket	C3604(SUS303)	Copper alloy (stainless steel)
2	Core assembly	SUS405 or equiv./316L/403	Stainless steel
3	Coil	-	-
4	Shading coil	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)
5	Plunger	SUS405 or equiv.	Stainless steel
6	Valve seal	NBR (FKM/PTFE/EPDM)	NBR : Nitrile rubber FKM : Fluoro rubber
7	O-ring	NBR (FKM/PTFE/EPDM)	EPDM: Ethylene propylene rubber PTFE : Tetrafluoroethylene resin
8	Plunger spring	SUS304	Stainless steel
9	Body	C3771(SUS303)	Copper alloy (stainless steel)
10	Coil case	ADC12	Aluminum die-casting

() shows options.

● AG44EX4 Series



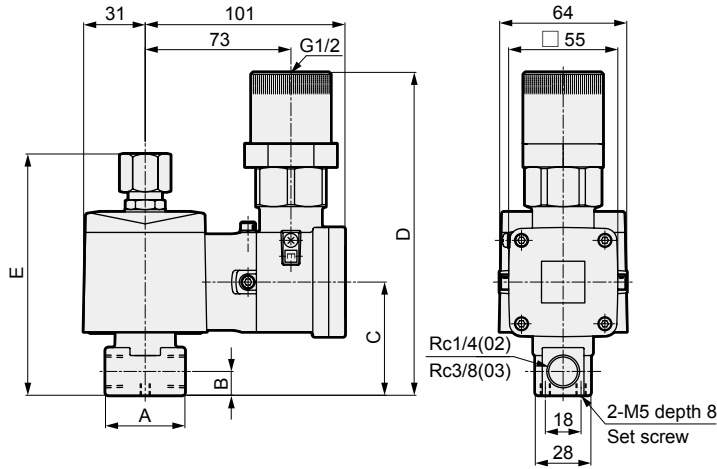
No.	Part name	Material	
1	Socket	C3604(SUS303)	Copper alloy (stainless steel)
2	Core assembly	SUS405 or equiv./316L/403	Stainless steel
3	Coil	-	-
4	Shading coil	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)
5	Plunger	SUS405 or equiv.	Stainless steel
6	Valve seal	NBR (FKM/EPDM)	NBR : Nitrile rubber FKM : Fluoro rubber
7	O-ring	NBR (FKM/EPDM)	EPDM: Ethylene propylene rubber
8	Plunger spring	SUS304	Stainless steel
9	Body	C3771(SUS303)	Copper alloy (stainless steel)
10	Coil case	ADC12	Aluminum die-casting

() shows options.

AG41EX4/AG43EX4/AG44EX4 Series

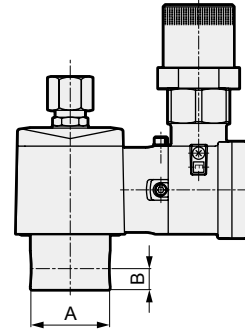
Dimensions and optional dimensions

● Standard
AG4*EX4



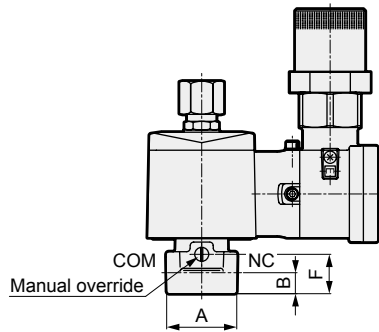
Model No.	A	B	C	D	E
AG41EX4-02-1/2	36	11	54	160	116
AG41EX4-03-1/2	40	12	57	163	122
AG43EX4-02-4/5	36	11	54	160	116
AG43EX4-03-4/5	40	12	57	163	122
AG44EX4-02-1/3/4	36	11	54	160	116
AG44EX4-03-1/3/4	40	12	57	163	122

● Stainless steel body
AG4*E4-**-D,E,F,R
L,M,N



Model No.	A	B
AG41EX4-02-1/2	φ37.5	11
AG41EX4-03-1/2	φ45	12
AG43EX4-02-4/5	φ37.5	11
AG43EX4-03-4/5	φ45	12
AG44EX4-02-1/3/4	φ37.5	11
AG44EX4-03-1/3/4	φ45	12

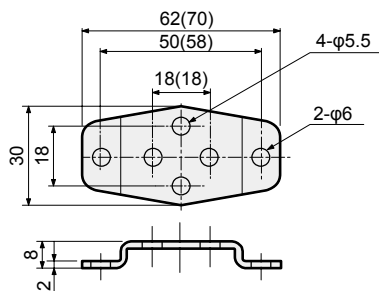
● Manual override (locking)
AG4*EX4-**-***A



Model No.	A	B	F
AG41EX4-02-1/2	36	11	19.5
AG41EX4-03-1/2	40	12	22.5
AG43EX4-02-4/5	36	11	19.5
AG43EX4-03-4/5	40	12	22.5
AG44EX4-02-1/3/4	36	11	19.5
AG44EX4-03-1/3/4	40	12	22.5

● Mounting plate
AG4*EX4-**-***B

Material: Steel
Zinc plated



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

Category	Compatibility
Mounting plate No. 1 GE-100106	● AG41EX4-02-1/2 Copper alloy body
	● AG41EX4-02-1/2 Stainless steel body
	● AG43EX4-02-4/5 Copper alloy body
	● AG43EX4-02-4/5 Stainless steel body
	● AG44EX4-02-1/3/4 Copper alloy body
	● AG44EX4-02-1/3/4 Stainless steel body
Mounting plate No. 2 GE-100159	● AG41EX4-03-1/2 Stainless steel body
	● AG43EX4-03-4/5 Stainless steel body
	● AG44EX4-03-1/3/4 Stainless steel body

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

Explosion-proof pilot operated 2-port solenoid valve (general purpose valve)

AP11EX4 Series

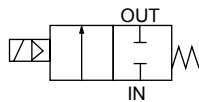


- Pressure and explosion proof construction Ex d IIB T4 (group IIB/temperature class T4)
- NC ● Port size: Rc1/2 to Rc1 ● Piston drive
- Japan certified test model qualification No. AC: No. TC20594 DC: No. TC20618
- Korea certified test model qualification No. AC: 16-AV4BO-0150X DC: 16-AV4BO-0147X



- 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



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	AP11EX4
Working fluid	Air/water/kerosene/oil (50 mm ² /s or less)
Working pressure differential MPa	0.05 to 1.2 (refer to max. working pressure differential in individual specifications)
Max. working pressure MPa	2 (≈290 psi, 20 bar)
Proof pressure (water pressure) MPa	10 (≈1500 psi, 100 bar)
Fluid temperature °C	-10 (14°F) to 60 (140°F) (no freezing)
Ambient temperature °C	-10 (14°F) to 50 (122°F)
Thermal class	AC: Class 180 (H) AC diode integrated, DC: Class 130 (B)
Atmosphere	Outdoors/explosive gas (group IIB/temperature class T4)
Valve structure	Pilot operated poppet, piston drive
Valve seat leakage (*) cm ³ /min(ANR)	0.2 or less (PTFE sealant: 300 or less) (air)
Mounting orientation	Free (within working pressure differential range)
Degree of protection	IP65 or equivalent

*: Value at pneumatic pressure of 0.05 to 1.2 MPa.

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	Port size	Orifice size (mm)	Min. working press diff (MPa)	Max. working pressure differential (MPa)						Rated voltage	Apparent power (VA)				Power consump (W)		Weight (kg)
				Air		Water/kerosene		Oil (50 mm ² /s)			When holding	When starting	AC	DC			
				AC	DC	AC	DC	AC	DC						50 Hz	60 Hz	
NC																	
AP11EX4 -15A	Rc1/2	15	0.05	1.2	0.6	1.0	0.6	0.6	0.6	100 VAC 50/60 Hz	18	15	29	24	8/7	11.6	2.1
-20A	Rc3/4	20															2.5
-25A	Rc1	25															3.2

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

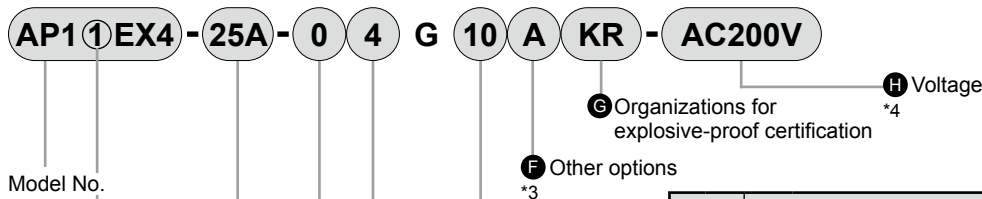
*2 : The voltage fluctuation range must be within -10 to +10% of the rated voltage.

Flow characteristics

Model No.	Port size	Orifice size (mm)	Flow characteristics			
			C[dm ³ /(s·bar)]	b	Cv	S(mm ²)
NC						
AP11EX4 -15A	Rc1/2	15	21	0.22	4.5	-
-20A	Rc3/4	20	-	-	9.3	162
-25A	Rc1	25	-	-	12.0	231

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

How to order



Code	Content				
A Actuation					
1	NC				
B Port size					
15A	Rc1/2				
20A	Rc3/4				
25A	Rc1				
C Body/sealant combination					
	Body	Valve seal	O-ring	Treatment	Remarks
0	Bronze	Nitrile rubber	Nitrile rubber	-	Air/water/kerosene/oil (up to 60°C)
B		Fluoro rubber	Fluoro rubber		-
C		PTFE	Fluoro rubber		-
D	Stainless steel	Nitrile rubber	Nitrile rubber	-	Air/water/kerosene/oil (up to 60°C)
E		Fluoro rubber	Fluoro rubber		-
F		PTFE	PTFE		-
H		Nitrile rubber	Nitrile rubber		Oil free
J	Bronze	Fluoro rubber	Fluoro rubber	-	
K		PTFE	Fluoro rubber	-	
L	Stainless steel	Nitrile rubber	Nitrile rubber	-	
M		Fluoro rubber	Fluoro rubber		-
N		PTFE	PTFE		-
D Coil					
3	Thermal class 130 (B) explosion-proof coil (for DC)				
4	Thermal class 180 (H) explosion-proof coil (for AC)				
5	Thermal class 130 (B) diode integrated explosion-proof coil (for AC)				
E Applicable cable O.D.					
9	φ7.5 to φ9.5				
10	φ9.5 to φ10.5				
11	φ10.5 to φ11.5				
13	φ11.5 to φ13.5				
F Other options					
Blank	Std.	No option			
A		Manual override (locking)			
G Organizations for explosive-proof certification					
Blank	Japan certification (TIIS)				
KR	Korea certification (KOSHA)				
H Voltage					
AC100V	100 VAC 50/60 Hz				
AC200V	200 VAC 50/60 Hz				

[Example of model No.]

AP11EX4-25A-04G10AKR-AC100V

Model : AP11EX4

- A** Actuation : NC
- B** Port size : Rc1
- C** Body/sealant combination : Body - bronze, valve seal - nitrile rubber
: O-ring - nitrile rubber
- D** Coil : Thermal class 180 (H) explosion-proof coil (for AC)
- E** Applicable cable O.D. : φ9.5 to φ10.5
- F** Other options : Manual override (locking)
- G** Organizations for explosive-proof certification : Korea certification (KOSHA)
- H** Voltage : 100 VAC 50/60 Hz

⚠ Precautions for model No. selection

- *1 : As G and NPT threads can also be used for piping port threads, contact CKD for details.
- *2 : For the thermal class B diode integrated coil, the AC power supply voltage is converted into DC coil voltage by the diode.
- *3 : When Item **C** is C, F, K or N, the manual override (**F** A) is not available.
- *4 : Other voltages as below are also available. Contact CKD for details.
12, 24, 48, 110, 115, 120, 220, 240, 380, 400, 415, 440, 480, 500 VAC
(with diode) 110, 220 VAC 6, 12, 24, 48, 100, 110, 200, 220 VDC

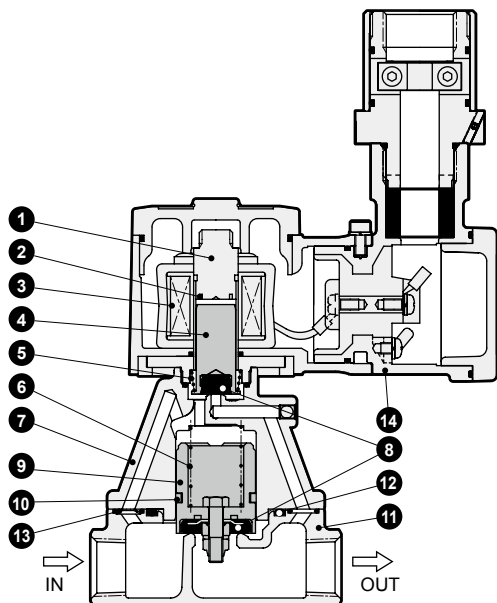
- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- SΔB/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH / CPE/D
- LifeSci
- Gas-Combus
- Auto-Water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

AP11EX4 Series

- 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 \updownarrow 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

● AP11EX4 Series



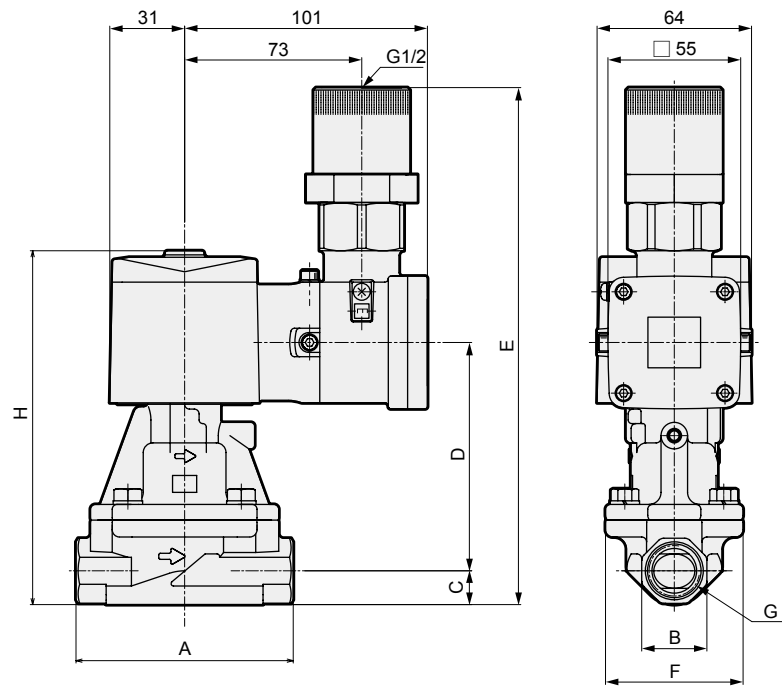
No.	Part name	Material	
1	Core assembly	SUS405 or equiv./ SUS316L/SUS403	Stainless steel
2	Shading coil	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)
3	Coil	-	-
4	Plunger	SUS405 or equiv.	Stainless steel
5	Plunger spring	SUS304	Stainless steel
6	Valve spring	SUS304	Stainless steel
7	Body	CAC408(SCS13) *	Bronze casting (S.S. casting)
8	Valve seal	NBR (FKM, PTFE)	Nitrile rubber (fluoro rubber, tetrafluoroethylene resin)
9	Valve assembly	C3604/SUS303/SUS304 (SUS303/SUS304)	Stainless steel/copper alloy (stainless steel)
10	Piston ring	SUS304/PTFE	Stainless steel/ tetrafluoroethylene resin
11	Body	CAC408(SCS13) *	Bronze casting (S.S. casting)
12	O-ring	NBR (FKM, PTFE)	Nitrile rubber (fluoro rubber, tetrafluoroethylene resin)
13	Orifice plate	SUS304(SUS303)	Stainless steel
14	Coil case	ADC12	Aluminum die-casting

() shows options.

* For port size 8 (1/4) or 10 (3/8), the body material is copper alloy (C3771) as standard, and the orifice plate material is SUS303 (stainless steel) for both the standard and options.

Dimensions

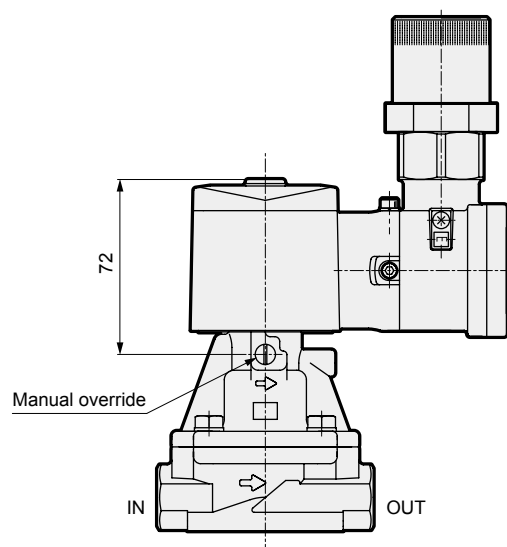
- Standard AP11EX4



Model No.	A	B	C	D	E	F	G	H
AP11EX4-15A	90	27	14	94.5	214.5	57	Rc1/2	146.5
AP11EX4-20A	100	32	17	103.5	226.5	65	Rc3/4	158.5
AP11EX4-25A	110	41	20.5	118	244.5	76	Rc1	176.5

Optional dimensions

- Manual override (locking) AP11EX4-*-*****A**



- 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 Δ 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

Explosion-proof pilot operated 2-port solenoid valve (general purpose valve)

AP21EX4 Series

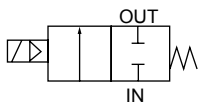


- Pressure and explosion proof construction Ex d IIB T4 (group IIB/temperature class T4)
- NC ● Port size: Rc1¹/₄ to Rc2, 32 to 50 flange ● Piston drive
- Japan certified test model qualification No. AC: No. TC20594 DC: No. TC20618
- Korea certified test model qualification No. AC: 16-AV4BO-0150X DC: 16-AV4BO-0147X



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



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	AP21EX4
Working fluid	Air/water/kerosene/oil (50 mm ² /s or less)
Working pressure differential MPa	0.05 to 1.2 (refer to max. working pressure differential in individual specifications)
Max. working pressure MPa	1.6 (≈230 psi, 16 bar)
Proof pressure (water pressure) MPa	3.2 (≈460 psi, 32 bar)
Fluid temperature °C	-10 (14°F) to 60 (140°F) (no freezing)
Ambient temperature °C	-10 (14°F) to 50 (122°F)
Thermal class	AC: Class 180 (H) AC diode integrated, DC: Class 130 (B)
Atmosphere	Outdoors/explosive gas (group IIB/temperature class T4)
Valve structure	Pilot operated poppet, piston drive
Valve seat leakage (*) cm ³ /min	1 or less (PTFE sealant: 400 or less) (air)
Mounting orientation	Free (within working pressure differential range)
Degree of protection	IP65 or equivalent

*: Value at pneumatic pressure of 0.05 to 1.2 MPa.

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	Port size	Orifice Diameter (mm)	Min. working Pressure difference (MPa)	Max. working pressure differential (MPa)						Rated voltage	Apparent power (VA)				Power consump (W)		Weight (kg)																												
				Air		Water/kerosene		Oil (50 mm ² /s)			When holding		When starting		AC 50 Hz /60 Hz	DC																													
				AC	DC	AC	DC	AC	DC		50 Hz	60 Hz	50 Hz	60 Hz																															
NC																																													
AP21EX4-32A	Rc1 ¹ / ₄	35	0.05	1.2	0.6	1.0	0.6	0.6	0.6	100 VAC 50/60 Hz	18	15	29	24	8/7	11.6	4.2																												
-32F	32 flange																7.7																												
-40A	Rc1 ¹ / ₂	43															0.05	1.2	0.6	1.0	0.6	0.6	0.6	200 VAC 50/60 Hz	18	15	29	24	8/7	11.6	5.2														
-40F	40 flange																														8.7														
-50A	Rc2	53																													0.05	1.2	0.6	1.0	0.6	0.6	0.6	200 VAC 50/60 Hz	18	15	29	24	8/7	11.6	6.7
-50F	50 flange																																												10.7

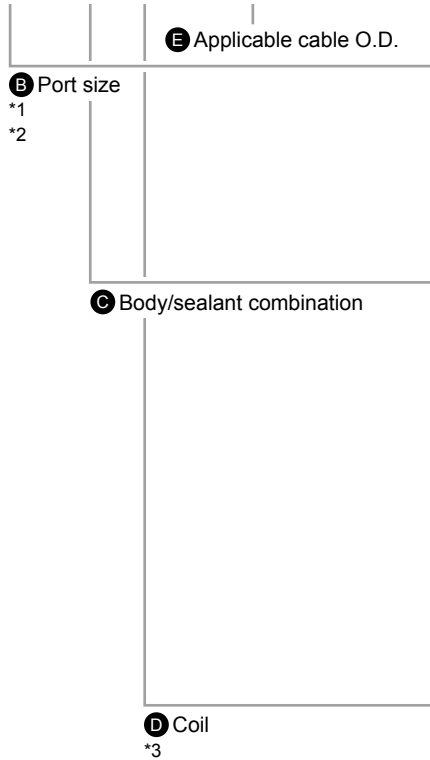
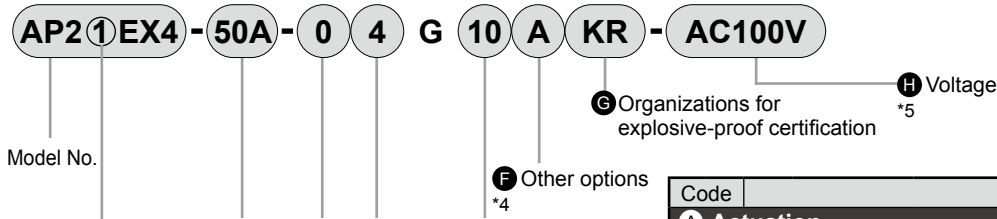
*1 : Refer to DC column for the max. working pressure differential of coil with diode.

*2 : The voltage fluctuation range must be within -10 to +10% of the rated voltage.

Flow characteristics

Model No.	Port size	Orifice size (mm)	Cv	Effective cross-sectional area (mm ²)
NC				
AP21EX4-32A	Rc1 ¹ / ₄	35	25	460
-32F	32 flange			
-40A	Rc1 ¹ / ₂	43	34	625
-40F	40 flange			
-50A	Rc2	53	53	975
-50F	50 flange			

How to order



Code	Content					
A Actuation						
1	NC					
B Port size						
32A	Rc1 ¹ / ₄					
32F	32 flange					
40A	Rc1 ¹ / ₂					
40F	40 flange					
50A	Rc2					
50F	50 flange					
C Body/sealant combination						
	Body	Valve seal	O-ring	Treatment	Remarks	
0	Std.	Bronze	Nitrile rubber	Nitrile rubber	-	Air/water/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		-
			PTFE	Fluoro rubber		-
D	Option	Stainless steel	Nitrile rubber	Nitrile rubber	-	Air/water/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		-
			PTFE	PTFE		-
H	Option	Bronze	Nitrile rubber	Nitrile rubber	Oil free	Air/water/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		-
			PTFE	Fluoro rubber		-
L	Option	Stainless steel	Nitrile rubber	Nitrile rubber	Oil free	Air/water/kerosene/oil (up to 60°C)
			Fluoro rubber	Fluoro rubber		-
			PTFE	PTFE		-
D Coil						
3	Thermal class 130 (B) explosion-proof coil (for DC)					
4	Thermal class 180 (H) explosion-proof coil (for AC)					
5	Thermal class 130 (B) diode integrated explosion-proof coil (for AC)					
E Applicable cable O.D.						
9	φ7.5 to φ9.5					
10	φ9.5 to φ10.5					
11	φ10.5 to φ11.5					
13	φ11.5 to φ13.5					
F Other options						
Blank	Std. No option					
A	Manual override (locking)					
G Organizations for explosive-proof certification						
Blank	Japan certification (TIIS)					
KR	Korea certification (KOSHA)					
H Voltage						
AC100V	100 VAC 50/60 Hz					
AC200V	200 VAC 50/60 Hz					

[Example of model No.]

AP21EX4-50F-04G10AKR-AC100V

Model : AP21EX4

- A** Actuation : NC
- B** Port size : 50 flange
- C** Body/sealant combination : Body - bronze, sealant - nitrile rubber
O-ring - nitrile rubber
- D** Type of coil : Thermal class 180 (H) explosion-proof coil (for AC)
- E** Applicable cable O.D. : φ9.5 to φ10.5
- F** Other options : Manual override (locking)
- G** Organizations for explosive-proof certification : Korea certification (KOSHA)
- H** Voltage : 100 VAC 50/60 Hz

⚠ Precautions for model No. selection

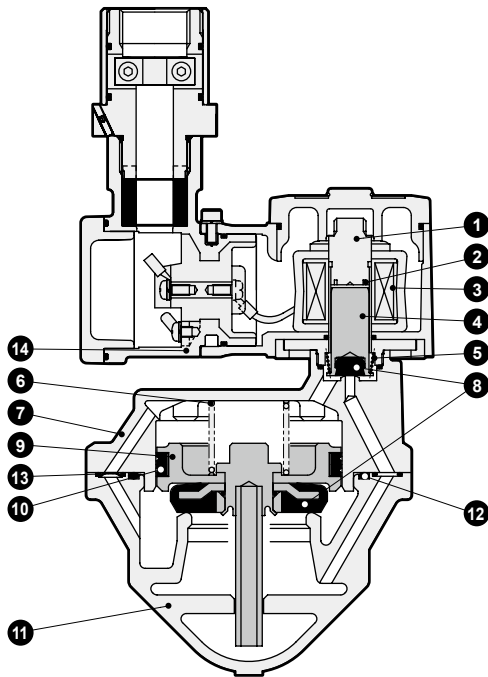
- *1 : The companion flange is JIS B2210 10K. (Flange is not enclosed with the product and must be purchased separately.)
- *2 : As G and NPT threads can also be used for piping port threads, contact CKD for details.
- *3 : For the thermal class B diode integrated coil, the AC power supply voltage is converted into DC coil voltage by the diode.
- *4 : When Item C is C, F, K or N, the manual override (Item F A) is not available.
- *5 : Other voltages as below are also available. Contact CKD for details.
12, 24, 48, 110, 115, 120, 220, 240, 380, 400, 415, 440, 480, 500 VAC
(with diode) 110, 220 VAC 6, 12, 24, 48, 100, 110, 200, 220 VDC

- 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

AP21EX4 Series

Internal structure and parts list

● AP21EX4 Series



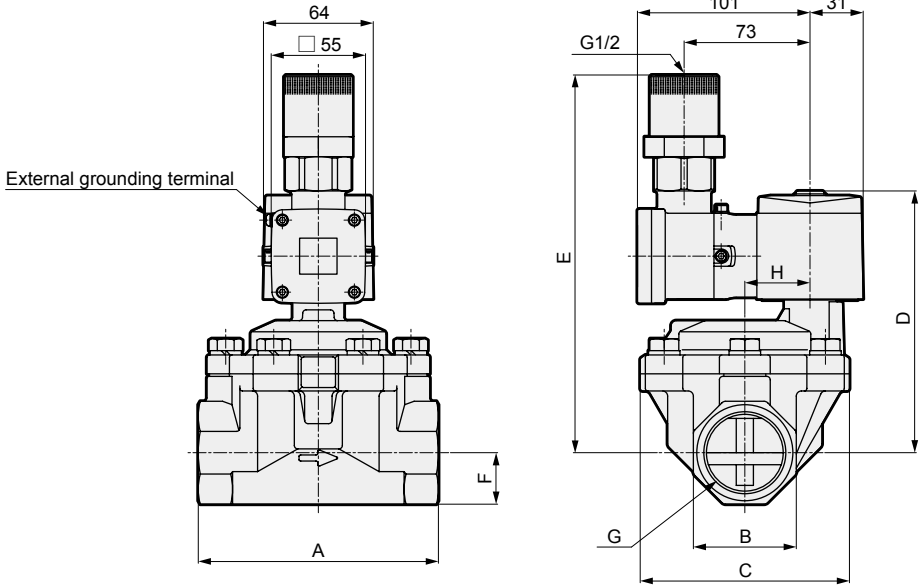
No.	Part name	Material	
1	Core assembly	SUS405 or equiv./SUS316L/ SUS403	Stainless steel
2	Shading coil	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)
3	Coil	-	-
4	Plunger	SUS405 or equiv.	Stainless steel
5	Plunger spring	SUS304	Stainless steel
6	Valve spring	SUS304	Stainless steel
7	Body	CAC408(SCS13)	Bronze casting (S.S. casting)
8	Valve seal	NBR (FKM, PTFE)	Nitrile rubber (fluoro rubber, tetrafluoroethylene resin)
9	Main valve assembly	C3604/SUS303/SUS304 (SUS303/SUS304)	Stainless steel/ Copper alloy (stainless steel)
10	Seal ring set	SUS304/PTFE	Stainless steel/ Tetrafluoroethylene resin
11	Body	CAC408(SCS13)	Bronze casting (S.S. casting)
12	O-ring	NBR (FKM, PTFE)	Nitrile rubber (fluoro rubber, tetrafluoroethylene resin)
13	Orifice plate	SUS304	Stainless steel
14	Coil case	ADC12	Aluminum die-casting

() shows options.

- 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 \updownarrow 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

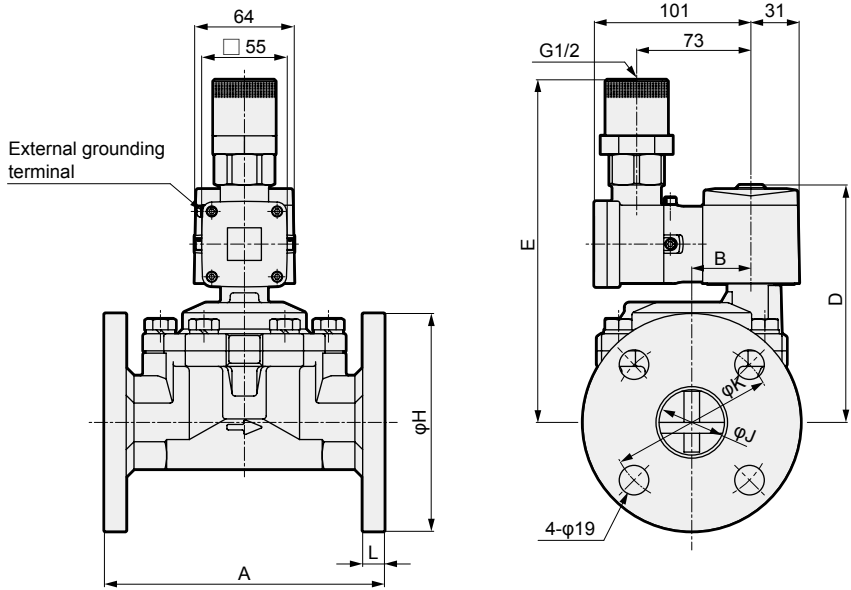
Dimensions

- Standard (Rc screw-in)
AP21EX4-32A/40A/50A



Model No.	A	B	C	D	E	F	G	H
AP21EX4-32A	125	54	112	147	215	27	Rc1/4	32
AP21EX4-40A	140	60	122	153	221	30	Rc1/2	38
AP21EX4-50A	160	74	132	161	229	37	Rc2	45

- Standard (flange)
AP21EX4-32F/40F/50F



Model No.	A	B	D	E	H	J	K	L
AP21EX4-32F	170	32	147	215	135	36	100	12
AP21EX4-40F	180	38	153	221	140	42	105	14
AP21EX4-50F	180	45	161	229	155	53	120	14

- 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

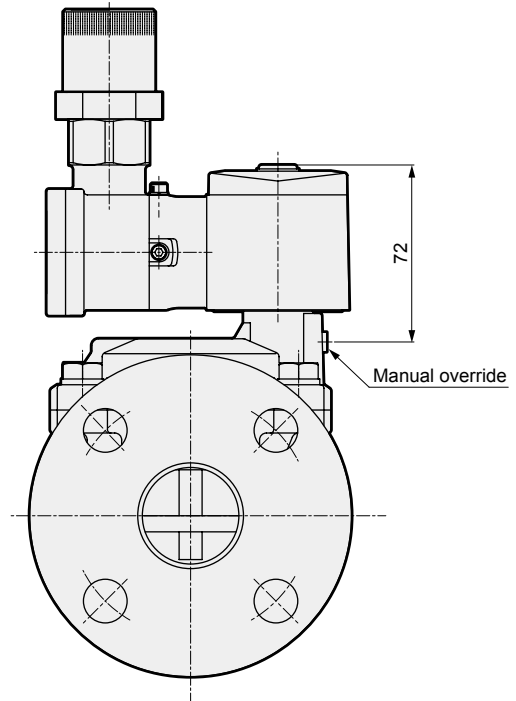
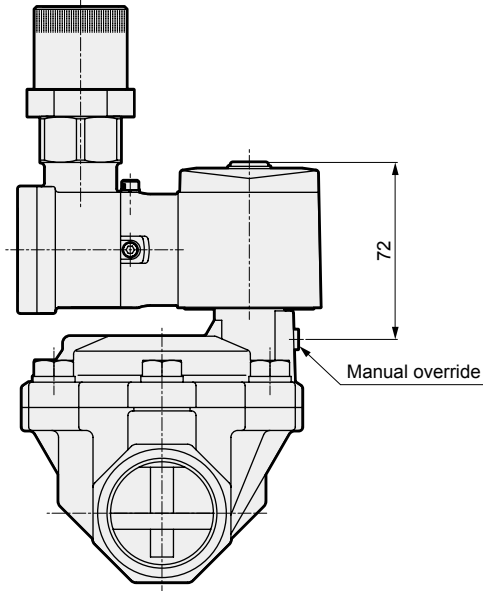
AP21EX4 Series

Optional dimensions



● Manual override (locking) (Rc screw-in)
AP21EX4-32A/40A/50A-*** **A**

● Manual override (locking) (flange)
AP21EX4-32F/40F/50F-*** **A**



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 \updownarrow 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

MEMO

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

Explosion-proof pilot operated 2-port solenoid valve (general purpose valve)

AD11EX4 Series

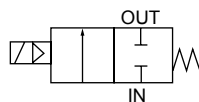


- Pressure and explosion proof construction Ex d IIB T4 (group IIB/temperature class T4)
- NC ● Port size: Rc1/2 to Rc1 ● Diaphragm drive
- Japan certified test model qualification No. AC: No. TC20594 DC: No. TC20618
- Korea certified test model qualification No. AC: 16-AV4BO-0150X DC: 16-AV4BO-0147X



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



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	AD11EX4
Working fluid	Air/water/kerosene/oil (50 mm ² /s or less)
Working pressure differential MPa	0.02 to 1 (refer to max. working pressure differential in individual specifications)
Max. working pressure MPa	2 (≈290 psi, 20 bar)
Proof pressure (water pressure) MPa	8 (≈1200 psi, 80 bar)
Fluid temperature °C	-10 (14°F) to 60 (140°F) (no freezing)
Ambient temperature °C	-10 (14°F) to 50 (122°F)
Thermal class	AC: Class 180 (H) AC diode integrated, DC: Class 130 (B)
Atmosphere	Outdoors/explosive gas (group IIB/temperature class T4)
Valve structure	Pilot operated poppet, diaphragm drive
Valve seat leakage (*) cm ³ /min(ANR)	0.2 or less (air)
Mounting orientation	Free (within working pressure differential range)
Degree of protection	IP65 or equivalent

*: Value at pneumatic pressure of 0.02 to 1 MPa.

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

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 (50 mm ² /s)			When holding		When starting		AC	DC	
				AC	DC	AC	DC	AC	DC		50 Hz	60 Hz	50 Hz	60 Hz	50 Hz /60 Hz	DC	
NC																	
AD11EX4 -15A	Rc1/2	15	0.02 (≈2.9 psi, 0.2 bar)	1	0.6	0.7	0.6	0.6	0.6	100 VAC 50/60 Hz 200 VAC 50/60 Hz	18	15	29	24	8/7	11.6	1.7
-20A	Rc3/4	20															1.9
-25A	Rc1	25															2.3

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

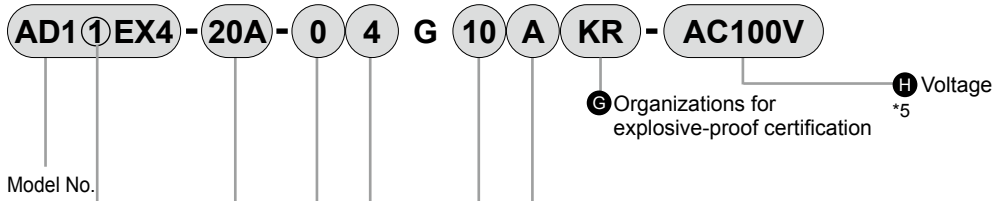
*2 : The voltage fluctuation range must be within -10 to +10% of the rated voltage.

Flow characteristics

Model No.	Port size	Orifice size (mm)	Flow characteristics			
			C[dm ³ /(s·bar)]	b	Cv	S(mm ²)
NC						
AD11EX4 -15A	Rc1/2	15	21	0.22	4.5	-
-20A	Rc3/4	20	-	-	9.3	162
-25A	Rc1	25	-	-	12.0	231

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

How to order



Code		Content	
A Actuation			
1		NC	
B Port size			
15A		Rc1/2	
20A		Rc3/4	
25A		Rc1	
C Body/sealant combination			
	Body	Seal	Remarks
0	Std. Bronze	Nitrile rubber	Air/water/kerosene/oil (up to 60°C)
B	Option Stainless steel	Fluoro rubber	-
D		Nitrile rubber	Air/water/kerosene/oil (up to 60°C)
E		Fluoro rubber	-
H		Nitrile rubber	Air/water/kerosene/oil (up to 60°C)
J	Bronze	Fluoro rubber	-
L	Option Stainless steel	Nitrile rubber	Air/water/kerosene/oil (up to 60°C)
M		Fluoro rubber	-
D Coil			
3	Thermal class 130 (B) explosion-proof coil (for DC)		
4	Thermal class 180 (H) explosion-proof coil (for AC)		
5	Thermal class 130 (B) diode integrated explosion-proof coil (for AC)		
E Applicable cable O.D.			
9	φ7.5 to φ9.5		
10	φ9.5 to φ10.5		
11	φ10.5 to φ11.5		
13	φ11.5 to φ13.5		
F Other options			
Blank	Std.	No option	
A		Manual override (locking)	
G Organizations for explosive-proof certification			
Blank	Japan certification (TIIS)		
KR	Korea certification (KOSHA)		
H Voltage			
AC100V	100 VAC 50/60 Hz		
AC200V	200 VAC 50/60 Hz		

[Example of model No.]

AP11EX4-20A-04G10AKR-AC100V

Model : AP11EX4

- A** Actuation : NC
- B** Port size : Rc 3/4
- C** Body/sealant combination : Body - bronze, sealant - nitrile rubber
- D** Type of coil : Thermal class 180 (H) explosion-proof coil (for AC)
- E** Applicable cable O.D. : φ9.5 to φ10.5
- F** Other options : Manual override (locking)
- G** Organizations for explosive-proof certification : Korea certification (KOSHA)
- H** Voltage : 100 VAC 50/60 Hz

⚠ Precautions for model No. selection

- *1 : As G and NPT threads can also be used for piping port threads, contact CKD for details.
- *2 : For the thermal class B diode integrated coil, the AC power supply voltage is converted into DC coil voltage by the diode.
- *3 : Other voltages as below are also available. Contact CKD for details.
12, 24, 48, 110, 115, 120, 220, 240, 380, 400, 415, 440, 480, 500 VAC
(with diode) 110, 220 VAC 6, 12, 24, 48, 100, 110, 200, 220 VDC

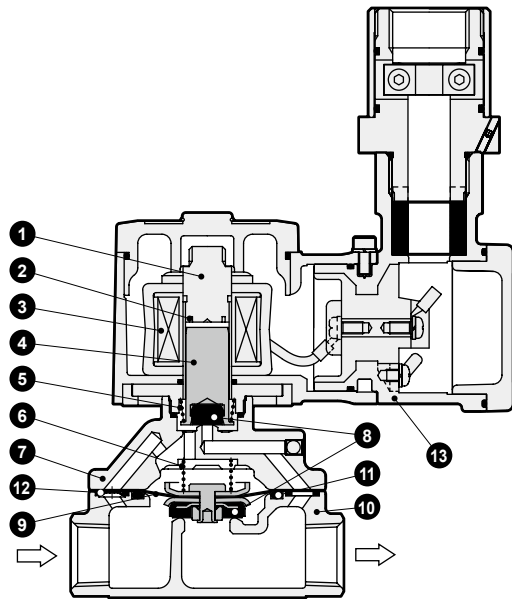
- EXA
- FWD
- HNB/G
- USB/G
- FAB/G
- FGB/G
- FVB
- FWB/G
- FHB
- FLB
- AB
- AG
- AP/AD
- APK/ADK
- DryAir
- EX-XPLNprf
- XPLNprf
- HVB/HVL
- SAB/NAB
- LAD/NAD
- Water-Rela
- NP/NAP/NVP
- SNP
- CHB/G
- MXB/G
- Other valves
- SWD/MWD
- DustColl
- CVE/CVSE
- CCH/CPE/D
- LifeSci
- Gas-Combus
- Auto-Water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

AD11EX4 Series

- 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 $\hat{\Delta}$ 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

● AD11EX4 Series

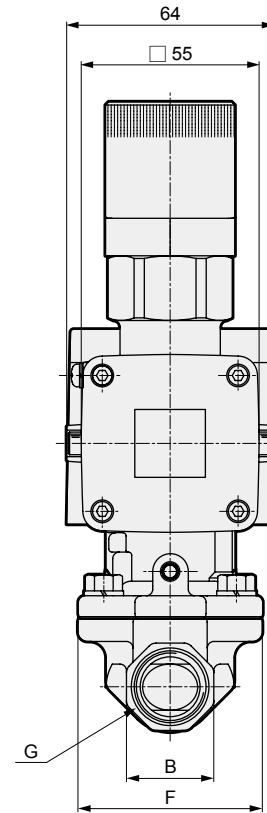
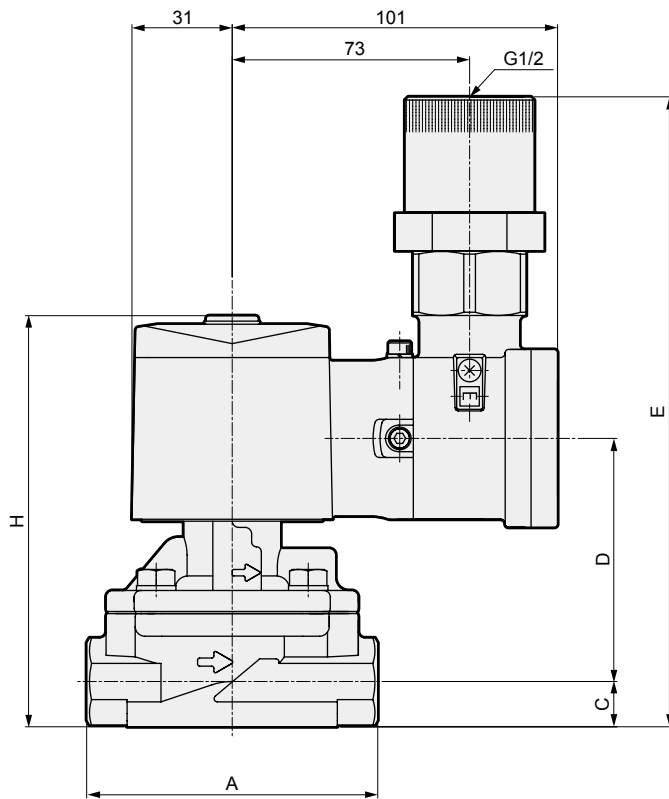


No.	Part name	Material
1	Core assembly	SUS405 or equiv./SUS316L / Stainless steel SUS403
2	Shading coil	Cu (Ag for stainless steel body) / Copper (silver for stainless steel body)
3	Coil	- / -
4	Plunger	SUS405 or equiv. / Stainless steel
5	Plunger spring	SUS304 / Stainless steel
6	Valve spring	SUS304 / Stainless steel
7	Body	CAC408(SCS13) / Bronze casting (S.S. casting)
8	Seal	NBR(FKM) / Nitrile rubber (fluoro rubber)
9	Diaphragm assembly	SUS303/SUS304/NBR / Stainless steel/nitrile rubber (SUS303/SUS304/FKM) / (stainless steel/fluoro rubber)
10	Body	CAC408(SCS13) / Bronze casting (S.S. casting)
11	O-ring	NBR(FKM) / Nitrile rubber (fluoro rubber)
12	Orifice plate	SUS304 / Stainless steel
13	Coil case	ADC12 / Aluminum die-casting

() shows options.

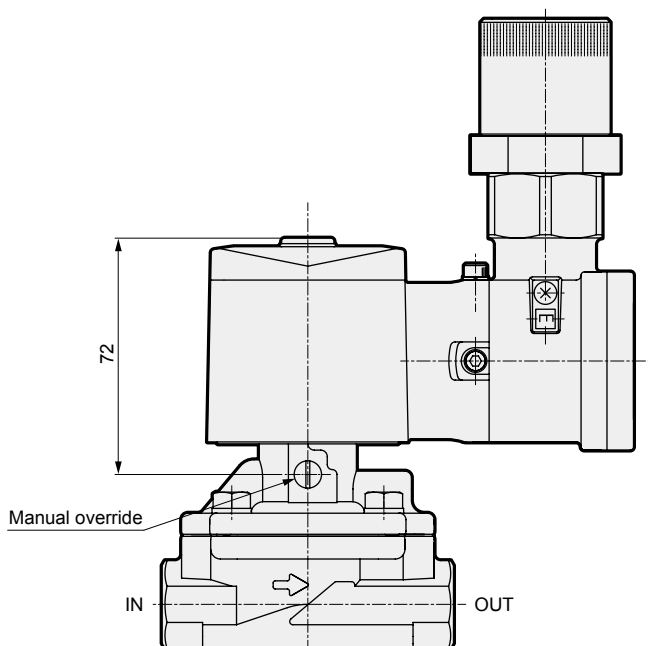
Dimensions and optional dimensions

- Standard
AD11EX4-15A/20A/25A



Model No.	A	B	C	D	E	F	G	H
AD11EX4-15A	90	27	14	75.5	195.5	57	Rc1/2	127.5
AD11EX4-20A	100	32	17	81.5	204.5	65	Rc3/4	136.5
AD11EX4-25A	110	41	20.5	87	213.5	76	Rc1	145.5

- Manual override (locking)
AD11EX4-15A/20A/25A-*** A



- 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

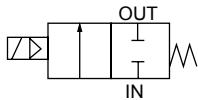


AD21EX4 Series

- Pressure and explosion proof construction Ex d IIB T4 (group IIB/temperature class T4) ● NC
- Port size: Rc1¹/₄ to Rc2, 32 to 50 flange ● Diaphragm drive
- Japan certified test model qualification No. AC: No. TC20594 DC: No. TC20618
- Korea certified test model qualification No. AC: 16-AV4BO-0150X DC: 16-AV4BO-0147X

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



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	AD21EX4
Working fluid	Air/water/kerosene/oil (50 mm ² /s or less)
Working pressure differential MPa	0.02 to 0.7 (refer to max. working pressure differential in individual specifications.)
Max. working pressure MPa	1 (≈150 psi, 10 bar)
Proof pressure (water) MPa	3.2 (≈460 psi, 32 bar)
Fluid temperature °C	-10 (14°F) to 60 (140°F) (no freezing)
Ambient temperature °C	-10 (14°F) to 50 (122°F)
Thermal class	AC: Class 180 (H) AC diode integrated, DC: Class 130 (B)
Atmosphere	Outdoors/explosive gas (group IIB/temperature class T4)
Valve structure	Pilot operated poppet, diaphragm drive
Valve seat leakage (*) cm ³ /min(ANR)	1 or less (air)
Mounting orientation	Free (within working pressure differential range)
Degree of protection	IP65 or equivalent

*: Value at pneumatic pressure of 0.02 to 0.7 MPa.

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Descriptions	Port size	Orifice size (mm)	Min. working pressure difference (MPa)	Max. working pressure differential (MPa)						Rated voltage	Apparent power (VA)				Power consump (W)		Weight (kg)		
				Air		Water/kerosene		Oil (50 mm ² /s)			When holding		When starting		AC	DC			
				AC	DC	AC	DC	AC	DC		50 Hz	60 Hz	50 Hz	60 Hz	50 Hz /60 Hz	DC			
NC																			
AD21EX4 -32A	Rc1 ¹ / ₄	35	0.02	0.7	0.6	0.7	0.6	0.6	0.6	100 VAC 50/60 Hz	18	15	29	24	8/7	11.6	4.0		
-32F	32 flange																	7.5	
-40A	Rc1 ¹ / ₂	43																5.0	
-40F	40 flange																		8.5
-50A	Rc2	53																	6.5
-50F	50 flange																		

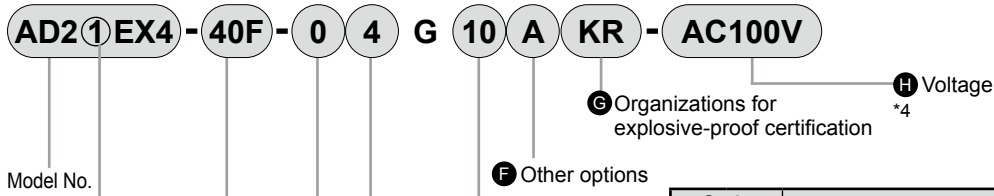
*1 : Refer to DC column for the max. working pressure differential of coil with diode.

*2 : The voltage fluctuation range must be within -10 to +10% of the rated voltage.

Flow characteristics

Model No.	Port size	Orifice size (mm)	Cv	Effective cross-sectional area (mm ²)
NC				
AD21EX4 -32A	Rc1 ¹ / ₄	35	25	460
-32F	32 flange			
-40A	Rc1 ¹ / ₂	43	34	625
-40F	40 flange			
-50A	Rc2	53	53	975
-50F	50 flange			

How to order



Model No.

A Actuation

B Port size

*1
*2

C Body/sealant combination

D Coil
*3

E Applicable cable O.D.

F Other options

G Organizations for explosive-proof certification

H Voltage
*4

Code	Content
A Actuation	
1	NC

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

C Body/sealant combination					
	Body	Seal	Treatment	Remarks	
0	Standard	Bronze	Nitrile rubber	Air/water/kerosene/oil (up to 60°C)	
B		Fluoro rubber	-		
D	Option	Stainless steel	Nitrile rubber	Air/water/kerosene/oil (up to 60°C)	
E		Fluoro rubber	-	-	
H		Bronze	Nitrile rubber	Oil free	Air/water/kerosene/oil (up to 60°C)
J		Fluoro rubber	-		-
L	Stainless steel	Nitrile rubber	-	Air/water/kerosene/oil (up to 60°C)	
M	Fluoro rubber	-	-	-	

D Coil	
3	Thermal class 130 (B) explosion-proof coil (for DC)
4	Thermal class 180 (H) explosion-proof coil (for AC)
5	Thermal class 130 (B) diode integrated explosion-proof coil (for AC)

E Applicable cable O.D.	
9	φ7.5 to φ9.5
10	φ9.5 to φ10.5
11	φ10.5 to φ11.5
13	φ11.5 to φ13.5

F Other options		
Blank	Standard	No option
A		Manual override (locking)

G Organizations for explosive-proof certification		
Blank		Japan certification (TIIS)
KR		Korea certification (KOSHA)

H Voltage	
AC100V	100 VAC 50/60 Hz
AC200V	200 VAC 50/60 Hz

[Example of model No.]

AD21EX4-40F-04G10AKR-AC100V

Model : AD21EX4

- A** Actuation : NC
- B** Port size : 40 flange
- C** Body/sealant combination : Body - bronze, sealant - nitrile rubber
O-ring - nitrile rubber
- D** Type of coil : Thermal class 180 (H) explosion-proof coil (for AC)
- E** Applicable cable O.D. : φ9.5 to φ10.5
- F** Other options : Manual override (locking)
- G** Organizations for explosive-proof certification : Korea certification (KOSHA)
- H** 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.
- *3 : For the thermal class B diode integrated coil, the AC power supply voltage is converted into DC coil voltage by the diode.
- *4 : Other voltages as below are also available. Contact CKD for details.
12, 24, 48, 110, 115, 120, 220, 240, 380, 400, 415, 440, 480, 500 VAC
(with diode) 110, 220 VAC 6, 12, 24, 48, 100, 110, 200, 220 VDC

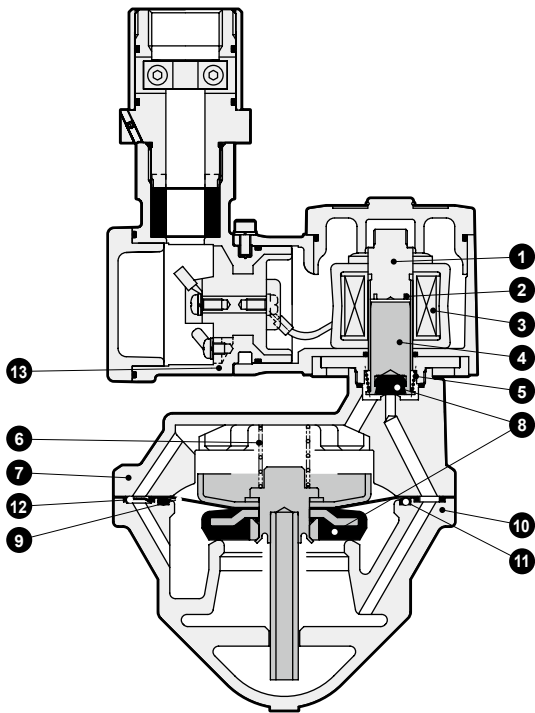
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/AD
APK/ADK
DryAir
EX-XPLNprf
XPLNprf
HVB/HVL
SDB/NAB
LAD/NAD
Water-Rela
NP/NAP/NVP
SNP
CHB/G
MXB/G
Other valves
SWD/MWD
DustColl
CVE/CVSE
CCH/CPE/D
LifeSci
Gas-Combus
Auto-Water
SpecFld
Custom
Ending

AD21EX4 Series

- 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 $\hat{\Delta}$ 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

● AD21EX4 Series

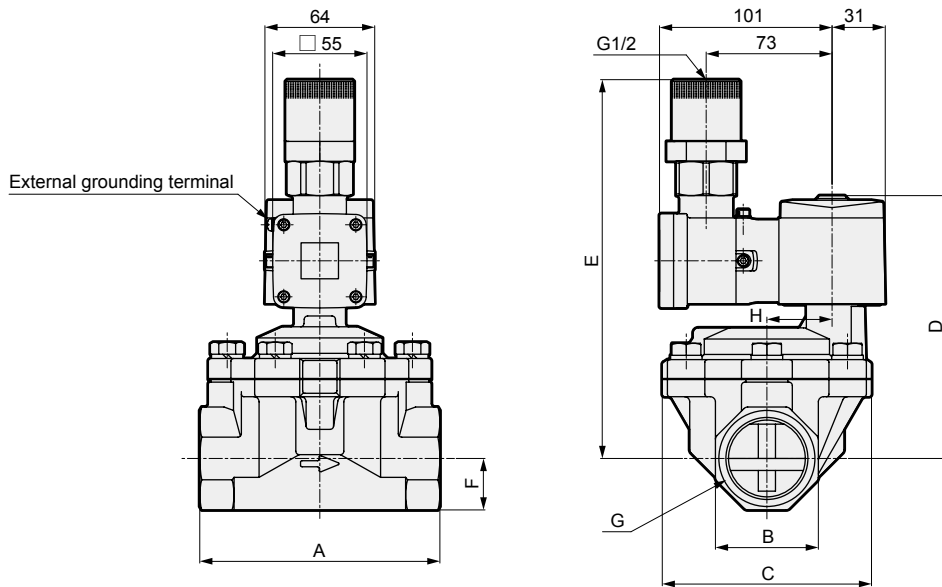


No.	Part name	Material	
1	Core assembly	SUS405 or equiv./SUS316L/ SUS403	Stainless steel
2	Shading coil	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)
3	Coil	-	-
4	Plunger	SUS405 or equiv.	Stainless steel
5	Plunger spring	SUS304	Stainless steel
6	Valve spring	SUS304	Stainless steel
7	Body	CAC408(SCS13)	Bronze casting (S.S. casting)
8	Seal	NBR(FKM)	Nitrile rubber (fluoro rubber)
9	Diaphragm assembly	SUS303/SUS304/NBR (SUS303/SUS304/FKM)	Stainless steel/nitrile rubber (stainless steel/fluoro rubber)
10	Body	CAC408(SCS13)	Bronze casting (S.S. casting)
11	O-ring	NBR(FKM)	Nitrile rubber (fluoro rubber)
12	Orifice plate	SUS304	Stainless steel
13	Coil case	ADC12	Aluminum die-casting

() shows options.

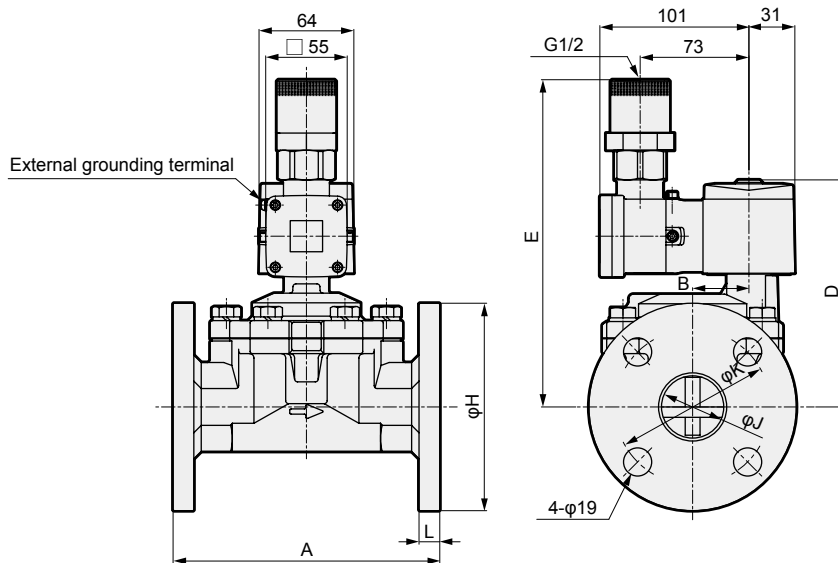
Dimensions

- Standard (Rc screw-in)
AD21EX4-32A/40A/50A



Model No.	A	B	C	D	E	F	G	H
AD21EX4-32A	125	54	112	147.5	215.5	27	Rc1 ¹ / ₄	32
AD21EX4-40A	140	60	122	153.5	221.5	30	Rc1 ¹ / ₂	38
AD21EX4-50A	160	74	132	161.5	229.5	37	Rc2	45

- Standard (flange)
AD21EX4-32F/40F/50F



Model No.	A	B	D	E	H	J	K	L
AD21EX4-32F	170	32	147.5	215.5	135	36	100	12
AD21EX4-40F	180	38	153.5	221.5	140	42	105	14
AD21EX4-50F	180	45	161.5	229.5	155	53	120	14

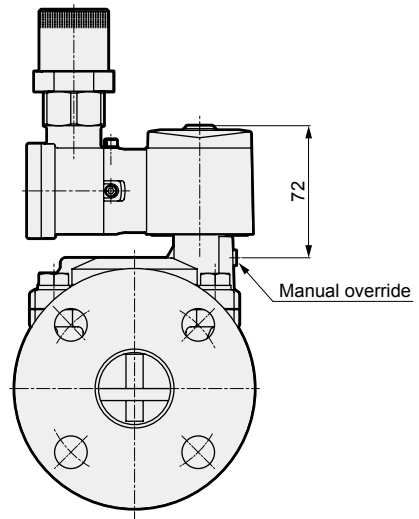
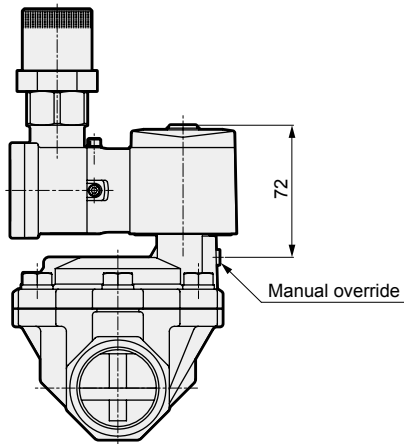
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/ AD
APK/ ADK
DryAir
EX- XPLNprf
XPLNprf
HVB/ HVL
S [◇] B/ NAB
LAD/ NAD
Water- Rela
NP/NAP/ NVP
SNP
CHB/G
MXB/G
Other valves
SWD/ MWD
DustColl
CVE/ CVSE
CCH / CPE/D
LifeSci
Gas- Combus
Auto- Water
SpecFld
Custom
Ending

AD21EX4 Series

Optional dimensions

● Manual override (locking) (Rc screw-in)
AD21EX4-32A/40A/50A-*** **A**

● Manual override (locking) (flange)
AD21EX4-32F/40F/50F-*** **A**



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 \updownarrow 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

MEMO

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

Explosion-proof pilot kick 2-port solenoid valve
(general purpose valve)

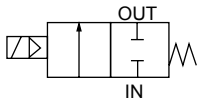


ADK11EX4 Series



- Pressure and explosion proof construction Ex d IIB T4 (group IIB/temperature class T4) ● NC
- Port size: Rc1/2, Rc3/4, Rc1 ● Diaphragm drive
- Japan certified test model qualification No. AC: No. TC20592 DC: No. TC20616
- Korea certified test model qualification No. AC: 16-AV4BO-0152X DC: 16-AV4BO-0148X

JIS symbol



Common specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

Model No.	ADK11EX4	
Working fluid	Air/low vacuum (1.33 x 10 ³ Pa)/water/kerosene/oil (50 mm ² /s or less)	
Working pressure differential MPa	0 to 1 (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	-10 (14°F) to 60 (140°F) (no freezing)	
Ambient temperature °C	-10 (14°F) to 50 (122°F)	
Thermal class	AC: Class 180 (H) AC diode integrated, DC: Class 130 (B)	
Atmosphere	Outdoors/explosive gas (group IIB/temperature class T4)	
Valve structure	Pilot kick poppet, diaphragm drive	
Valve seat leakage (*) cm ³ /min(ANR)	1 or less (air)	
Mounting orientation	Unrestricted	
Degree of protection	IP65 or equivalent	

*: Value at pneumatic pressure of 0.02 to 1 MPa.

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

Individual specifications

1 MPa ≈ 145.0 psi, 1 MPa = 10 bar

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 (50 mm ² /s)			When holding		When starting		AC	DC	
Model No.				AC	DC	AC	DC	AC	DC		50 Hz	60 Hz	50 Hz	60 Hz	50/60 Hz	DC	
NC																	
ADK11EX4 -15A	Rc1/2	16	0	1	0.6	1	0.6	0.6	0.5	100 VAC 50/60 Hz 200 VAC 50/60 Hz	20	16	80	64	10/8.5	15	1.4
-20A	Rc3/4	23															1.5
-25A	Rc1	28															1.9

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

*2 : The voltage fluctuation range must be within -10 to +10% of the rated voltage.

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

Flow characteristics

Model No.	Port size	Orifice size (mm)	Flow characteristics			
			C[dm ³ /(s·bar)]	b	Cv	S(mm ²)
NC						
ADK11EX4 -15A	Rc1/2	16	20	0.31	4.5	-
-20A	Rc3/4	23	-	-	8.6	162
-25A	Rc1	28	-	-	12.0	231

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

How to order

ADK1 ① EX4 - 20A - 0 4 G 10 KR - AC100V

Model No.

Ⓒ Voltage
*5

Ⓕ Organizations for explosive-proof certification

Ⓐ Actuation

Ⓑ Port size
*1

Ⓒ Body/sealant combination
*2
*3

Ⓓ Coil
*4

Ⓔ Applicable cable O.D.

Code	Content				
Ⓐ Actuation					
1	NC				
Ⓑ Port size					
15A	Rc1/2				
20A	Rc3/4				
25A	Rc1				
Ⓒ Body/sealant combination					
	Body	Seal	Treatment		
0	Standard	Bronze	Nitrile rubber	-	Air/water/low vacuum/kerosene/oil (up to 60°C)
B		Fluoro rubber	-		
D	Stainless steel	Nitrile rubber	-	-	Air/water/low vacuum/kerosene/oil (up to 60°C)
E		Fluoro rubber	-		
H	Option	Bronze	Nitrile rubber	Oil free	Air/water/low vacuum/kerosene/oil (up to 60°C)
J		Fluoro rubber	-		
P		EPM rubber	-		
L	Stainless steel	Nitrile rubber	-	-	Air/water/low vacuum/kerosene/oil (up to 60°C)
M		Fluoro rubber	-		
R		EPM rubber	-		
Ⓓ Coil					
3	Thermal class 130 (B) explosion-proof coil (for DC)				
4	Thermal class 180 (H) explosion-proof coil (for AC)				
5	Thermal class 130 (B) diode integrated explosion-proof coil (for AC)				
Ⓔ Applicable cable O.D.					
9	φ7.5 to φ9.5				
10	φ9.5 to φ10.5				
11	φ10.5 to φ11.5				
13	φ11.5 to φ13.5				
Ⓕ Organizations for explosive-proof certification					
Blank	Japan certification (TIIS)				
KR	Korea certification (KOSHA)				
Ⓖ Voltage					
AC100V	100 VAC 50/60 Hz				
AC200V	200 VAC 50/60 Hz				

[Example of model No.]

ADK11EX4-20A-04G10KR-AC100V

Model : ADK11EX4

- Ⓐ Actuation : NC
- Ⓑ Port size : Rc3/4
- Ⓒ Body/sealant combination : Body - bronze/sealant - nitrile rubber
- Ⓓ Coil : Thermal class 180 (H) explosion-proof coil (for AC)
- Ⓔ Applicable cable O.D. : φ9.5 to φ10.5
- Ⓕ Organizations for explosive-proof certification : Korea certification (KOSHA)
- Ⓖ Voltage : 100 VAC 50/60 Hz

⚠ Precautions for model No. selection

- *1 : As G and NPT threads can also be used for piping port threads, contact CKD for details.
- *2 : The max. working pressure differential of the ethylene propylene rubber seal combination (Item Ⓒ P/R) is 0.6 MPa.
- *3 : The ethylene propylene rubber seal combination (Item Ⓒ P/R) cannot be used with air. (Compressed air contains oil, and ethylene propylene rubber is not oil-resistant.)
- *4 : For the thermal class B diode integrated coil, the AC power supply voltage is converted into DC coil voltage by the diode.
- *5 : Other voltages as below are also available. Contact CKD for details.
12, 24, 48, 110, 115, 120, 220, 240, 380, 400, 415, 440, 480, 500 VAC
(with diode) 110, 220 VAC 6, 12, 24, 48, 100, 110, 200, 220 VDC

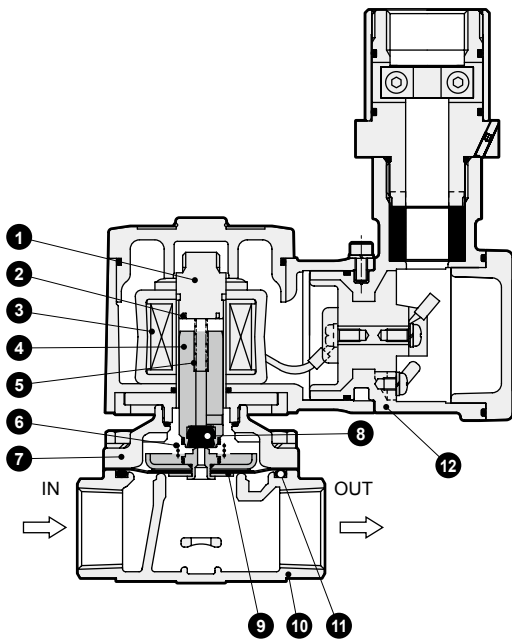
EXA
FWD
HNB/G
USB/G
FAB/G
FGB/G
FVB
FWB/G
FHB
FLB
AB
AG
AP/AD
APK/ADK
DryAir
EX-XPLNprf
XPLNprf
HVB/HVL
SDB/NAB
LAD/NAD
Water-Rela
NP/NAP/NVP
SNP
CHB/G
MXB/G
Other valves
SWD/MWD
DustCoil
CVE/CVSE
CCH/CPE/D
LifeSci
Gas-Combust
Auto-Water
SpecFld
Custom
Ending

ADK11EX4 Series

- 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 \updownarrow 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

● ADK11EX4 Series



No.	Part name	Material	
1	Core assembly	SUS405 or equiv./ SUS316L/SUS403	Stainless steel
2	Shading coil *	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)
3	Coil	-	-
4	Plunger assembly	SUS405 or equiv./NBR (SUS405 or equiv./FKM or EPDM)	Stainless steel
5	Plunger spring	SUS304	Stainless steel
6	Kick spring	SUS304	Stainless steel
7	Body	C3771(SCS13)	Copper alloy (stainless steel casting)
8	Seal	NBR (FKM, EPDM)	Nitrile rubber (fluoro rubber, ethylene propylene rubber)
9	Diaphragm assembly	SUS303/SUS304/NBR (SUS303/SUS304/FKM or EPDM)	Stainless steel/nitrile rubber (Stainless steel/fluoro rubber or ethylene propylene rubber)
10	Body	CAC408(SCS13)	Bronze casting (S.S. casting)
11	O-ring	NBR (FKM, EPDM)	Nitrile rubber (fluoro rubber, ethylene propylene rubber)
12	Coil case	ADC12	Aluminum die-casting

() shows options.

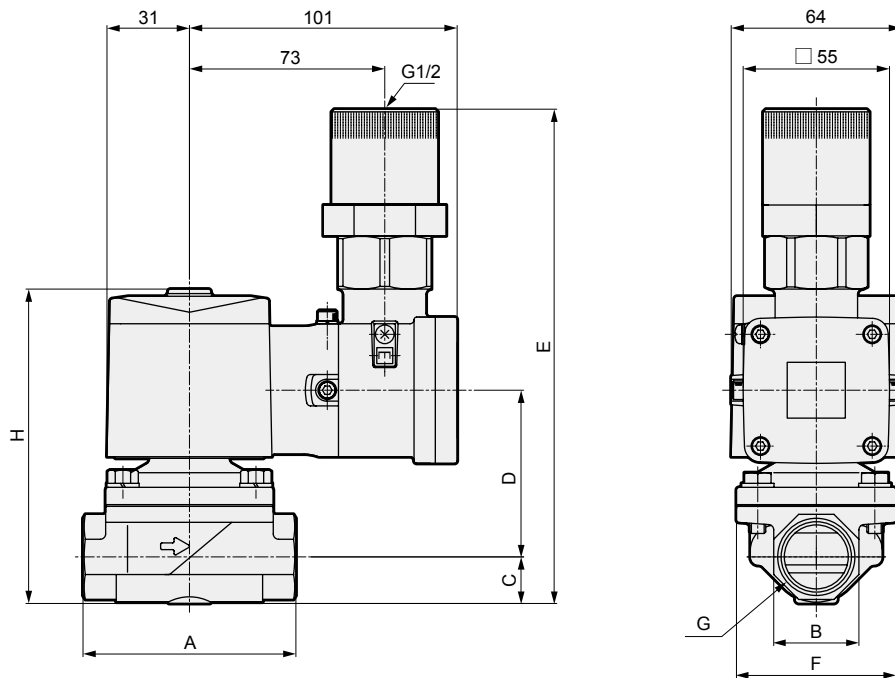
* No shading coil is used for DC coil or coil with diode.

ADK11EX4 Series

Dimensions

Dimensions

- Standard
ADK11EX4-15A/20A/25A



Model No.	A	B	C	D	E	F	G	H
ADK11EX4-15A	71	27(29)	14.5	59	179.5	50	Rc1/2	111.5
ADK11EX4-20A	80	32(35)	17.5	62.5	186	60	Rc3/4	118
ADK11EX4-25A	90	41(45)	21.5(22.5)	68	195.5(196.5)	71	Rc1	127.5(128.5)

Dimensions shown in () are for stainless steel body.

- 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