

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

ADK11/ADK12 Series

- NC (normally closed) type, NO (normally open) type
- Port size: Rc1/4 to Rc1
- Diaphragm structure
- CE Excluding ADK12



Bronze, ethylene propylene diene rubber

JIS symbol Common specifications ADK11: NC (normally closed) type ltem Standard specifications Optional specifications Air, low vacuum (1.33 x 103 Pa (abs)), water, kerosene, oil (50 mm²/s or less) Working fluid Hot water 0 to 1.0 (refer to max, working pressure differential in individual specifications.) Working pressure differential range MPa Max, working pressure MPa 2 Withstanding pressure (water) MPa 4 ADK12: NO (normally open) type Fluid temperature (Note 1) °C -10 to 60 -10 to 90 Ambient temperature °C -10 to 60 OUT Heat proof class в н Place free of corrosive gas and explosive gas Atmosphere IN Pilot kick type poppet, diaphragm structure Valve structure 1 or less (air) Valve seat leakage (Note 2) cm³/min. (ANR) Mounting attitude Free

Bronze, nitrile rubber

Body, sealant Note 1: No freezing

Note 2: For ADK11 (NC (normally closed) type), these values apply to pneumatic pressure 0.02 to 1.0 MPa, and for ADK12 (NO (normally open) type), these apply to pneumatic pressure 0.02 to 0.6 MPa. When used at a pressure less than 0.02 MPa, the sealant may be unstable. Consult with CKD in this case.

Individual specifications																	
Item		0.10	Min. working	Max	. worki	ing pre	ssure	diff. (N	/IPa)		Арра	irent p	ower	(VA)	Power consu	umption (W)	Weight
	Port	Orifice (mm)	pressure diff.	A	lir	Water, H	erosene	Oil (50	mm²/s)	Rated voltage	Hole	ding	Star	ting	AC	DC	(kg)
Model no.	size	(11111)	(MPa)	AC	DC	AC	DC	AC	DC		50 Hz	60 Hz	50 Hz	60 Hz	50/60 Hz		(ng)
NC (normally closed) type																	
ADK11-8A	Rc1/4	12			0.7		0.7	0.7	0.0	100 VAC 50/60 Hz	24	19	61	54	10/8	,11*2	0.65
ADK11-10A	Rc3/8	12			0.7		0.7	0.7	0.6	110 VAC 60 Hz	24	19	61	54	10/8	(10.4)	0.65
ADK11-15A	Rc1/2	16	0	1		1				200 VAC 50/60 Hz							0.9
ADK11-20A	Rc3/4	23			0.6		0.6	0.6	0.5	220 VAC 60 Hz	25	21	84	75	10/8.5	14*3 [17]	1.0
ADK11-25A	Rc1	28								12 VDC							1.4
NO (normally open)	type									24 VDC							
ADK12-15A	Rc1/2	16								48 VDC							1.0
ADK12-20A	Rc3/4	23	0	0.6	0.6	0.6	0.6	0.5	0.5	100 VDC	30	25	180	150	13/11	14	1.2
ADK12-25A	Rc1	28															1.6
44 Th																	

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

*2: The value in () is the power consumption for the type with DIN terminal box.

*3: The value in [] is the power consumption for the coil with diode.

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

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

*6: Consider using the AB71 Series if the pressure is 0.02 MPa or less.

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

Individual specifications

Optional specifications

Sealant	Fluoro	rubber	Ethylene propylene diene rubber					
Coil (heat proof class)	В	Н	В	Н				
Fluid temperature °C	5 to 60	5 to 90	-10 to 60 (Note 1)	-10 to 90 (Note 1)				
Ambient temperature °C	-10 to 60							
Valve seat leakage (Note 2) cm3/min. (ANR)	1 or less (air)							

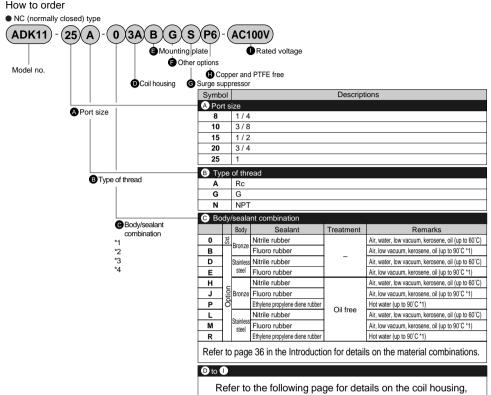
Note 1: No freezing

Note 2: For ADK11 (NC (normally closed) type), these values apply to pneumatic pressure 0.02 to 1.0 MPa, and for ADK12 (NO (normally open) type), these apply to pneumatic pressure 0.02 to 0.6 MPa. When used at a pressure less than 0.02 MPa, the sealant may be unstable. Consult with CKD in this case.

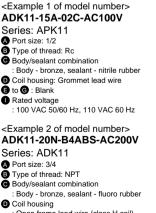
Flow characteristics

Model no.	Port size	Orifice	Flow characteristics						
Model no.	FUILSIZE	(mm)	C [dm3/(s·bar)]	b	Cv flow factor	S (mm ²)			
NC (normally closed) type									
ADK11-8A	Rc1/4	12	9.2	0.36	2.0	-			
ADK11-10A	Rc3/8	12	11	0.46	2.4	-			
ADK11-15A	Rc1/2	16	20	0.31	4.5	-			
ADK11-20A	Rc3/4	23	-	1	8.6	162			
ADK11-25A	Rc1	28	-	-	12.0	231			
NO (normally open) type									
ADK12-15A	Rc1/2	16	20	0.31	4.5	-			
ADK12-20A	Rc3/4	23	-	1	8.6	162			
ADK12-25A	Rc1	28	-	-	12.0	231			

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



other options and voltage, etc.



- : Open frame lead wire (class H coil)
- Mounting plate: Selected
- Other options: Blank
- G Surge suppressor: Selected
- Rated voltage
 - : 200 VAC 50/60 Hz, 220 VAC 60 Hz

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A Note on model no. selection

Note on **O**

- *1: [©]: When selecting 4A, 4M or 4N.
- *2: Only (Å) (port size) 15 (1/2), 20 (3/4) or 25 (1) is available for C P/R.
- *3: The maximum working pressure differential is 0.6 MPa for the ethylene propylene diene rubber seal combination (© P/R).
- *4: The ethylene propylene diene rubber seal combination (© P/R) cannot be used with air. (Compressed air contains oil, and ethylene propylene diene rubber is not oil-resistant.)

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

) Co	oil housin	ig				Other c	<u>.</u>	_		G		I Rated voltage	USB/0
				g plate		able gla ine cable		_	nduit luit pipe)	pressor	PTFE free		FAB/0
escri	riptions			Mounting plate	A-15a	A-15b	A-15c		T	Surge suppressor	Copper and PTFE free	Descriptions	FGB/
_		met lead v										100 VAC, 200 VAC	
		erminal bo	()	в						s	P6	100 VAC, 200 VAC,	FVB
		erminal bo	(0)							4 -	1.	12 VCD, 24 VDC, 48 VDC, 100 VDC	FWB/
	DIN LE	Lead	ox + small light (Pg11)					G	H	<u> </u>	+	100 VAC, 200 VAC, 24 VDC 100 VAC, 200 VAC	
1	0.000		erminal box (G1/2)	.1		-	1	H	<u> </u>			100 VAC, 200 VAC 12 VCD, 24 VDC, 48 VDC, 100 VDC	FHB
1	Open frame ty		erminal box + light (G1/2)	-						s	P6	100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC	FLB
-		·· –	inal box (IP65 or equivalent) (G1/2)		D	E	F					100 VAC, 200 VAC, 12 VDC, 24 VDC, 48 VDC, 100 VDC	FL0
	Obtion		al box + light (IP65 or equivalent) (G1/2)	-								100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC	AB
	Open	Lead						G	н	S			
1	frame ty	, PO	erminal box (G1/2)	-	D	E	F				P6	100 VAC, 200 VAC	AG
1	(Heat proof clar		erminal box + light(G1/2)	—	-			-			_		AP/
		Lead		-				G	н				AD
1	Open frame tv		erminal box (G1/2) erminal box + light (G1/2)								P6	100 VAC, 200 VAC	APK/
1	(Diode integra		inal box + light (G1/2)	-	D	E	F				F V	100 VAC, 200 VAC	ADK
	ľ	' IF terrin	al box + light (1P65 or equivalent) (G1/2)	-									For dry ai
<u> </u>		=	. DUK T IBIK (II W W VIP	<u> </u>		L					A /	Refer to the following precautions for \textcircled{D} to \textcircled{D} .	Explos
			1				1					<u> </u>	proof HVB/
	147	-					ı			net		Conduit	HVL
		0	Grommet lead wire	± 300 m	ım		1		G H		FO	G (CTC19)	SAB/ SVB
		9					1					• H (G1/2)	NP/N
+			<u> </u>			\neg	I						NP/N.
	Per s		 DIN terminal box 				l						CHB
ł				_	_		l						MXB
T							ı						Other
A	ENT.	4	Open frame grommot load wire	· - 0 m			1						systen PD/F
4		0	grommet lead wire • 4A (heat proof class	ss H)	n		1						PD/F PJ
A			5A (diode integrated	d)			i	•	• ! - t		- 4	· · · ·	CVE CVS
N		1 E	Open frame HP terr	- al t	· .			4	NOL	3 ON I	moae	el no. selection	CPE/
Ň			 4M, 4N (heat proof 	f class ⊦	H)		1	Nc	ote on (D			CPD
1 1			 5M, 5N (diode integ 				1			M, 5N, 5 diode.		5J are coils for which AC power is converted to DC	Medi analy
						ī	I						Cust orde
I J I			 Open frame HP terr (IP65 or equivalent) 		юх		1			t one or			
J			 51, 5J (diode integral 				1					D, E, F, G and H for $\widehat{\mathbb{F}}$. or is an accessory for the lead wire coil. When	
									select	ting a co	oil with t	terminal box, the surge suppressor is mounted in	
										rminal b andard, t		rge suppressor is incorporated in the coil with	e valve
ſ	Rofer	to nac	ge 224 for coil se	alect	ion				diode	and the	e 24 VD	DC coil (D 2H), so the surge suppressor symbol S	valve
	10101	10 pay	E 224 101 0011 00	1000	Un.					ot be sel		-proof coating) is available as a measure against	N S

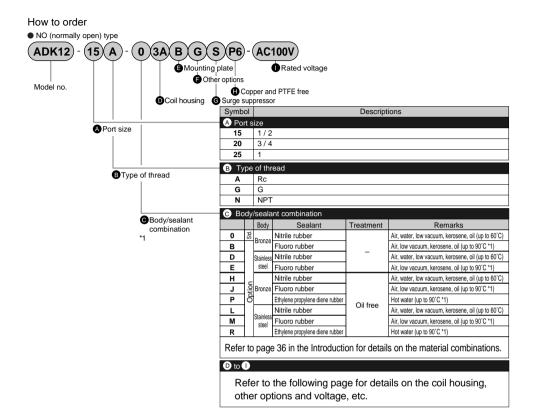
*9: Tropicalization (rust-proof coating) is available as a measure against rust. Contact CKD for more information.

Note on **①**

- *10: 100 VAC coil is compatible with 100 VAC 50/60 Hz and 110 VAC 60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz and 220 VAC 60 Hz. Note that the coils © 5A/6M/5N/5V/5J can be used only with 100 VAC 50/60 Hz or 200 VAC 50/60 Hz.
- *11: For voltages other than above, consult with CKD.
- *12: 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.

CKD 285

HNB/G



<Example 1 of model number> ADK12-20A-03A-DC24V

- Series: ADK12
- Series: ADK
- A Port size: 3/4
- B Type of thread: Rc
- Body/sealant combination : Body - bronze, sealant - nitrile rubber
- Coil housing: Open frame lead wire
- **B** to **B**: Blank
- Rated voltage: 24 VDC

<Example 2 of model number> ADK12-15G-B3NBD-AC100V Series: ADK12

Port size: 1/2
 Type of thread: G
 Padu/acalant combined

- Body/sealant combination
 Body bronze, sealant fluoro rubber
 Coil housing: Open frame type
- with HP terminal box + light (G1/2)
- B Mounting plate: Selected
- Other options: Cable gland A-15a
- G Surge suppressor: Blank
- Rated voltage
 - : 100 VAC 50/60 Hz, 110 VAC 60 Hz





For D to D, the combinations indicated with symbols can be manufactured.	
Note that if options \textcircled{E} to \textcircled{H} are not required, no symbol is indicated.	

) Coi	jil k	housing			E	Other c	options	3		G		 Rated voltage 	USB/
				late		able gla			nduit	ssor	Efree		
escriptior	ons			ng p	(Marin	ine cable	gland)	(Condu	uit pipe)	uppre	nd PTF	Descriptions	FAB
				Mounting plate	A-15a	A-15b	A-15c	CTC19	G1/2	Surge suppressor	Copper and PTFE free		FGB
	Std.		Lead wire					G	н	'		100 VAC, 200 VAC	FVB
3M	,	Open	HP terminal box (G1/2)	4								12 VDC, 24 VDC, 48 VDC, 100 VDC	Fv6
3N	,	frame type	HP terminal box + light (G1/2)		D	E	F			S	P6	100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC	FWB/G
31	,		HP terminal box (IP65 or equivalent) (G1/2)	,						4		100 VAC, 200 VAC, 12 VDC, 24 VDC, 48 VDC, 100 VDC	
3J	,		HP terminal box + light (IP65 or equivalent) (G1/2)		-		_			<u> </u>	—	100 VAC, 200 VAC, 12 VDC, 24 VDC, 100 VDC	FHB
A	E.	Open fromo tuno	Lead wire	в				G	н	S			
IM IN		(Heat proof class H)	HP terminal box (G1/2)	/ -	D	E	F				P6	100 VAC, 200 VAC	FLB
in iA	٩	(hoos process)	HP terminal box + light (G1/2) Lead wire	+	-			G	н	-	┣─	+	AB
5M	,		HP terminal box (G1/2)			-	-	H					
5N		Open frame type	HP terminal box + light (G1/2)	, 							P6	100 VAC, 200 VAC	AG
51					D	E	F					100 110, 200 110	
5J	,		HP terminal box + light (IP65 or equivalent) (G1/2)	<u>/</u>									AP/ AD
			Open frame				I					Refer to the following precautions for (1) to (1).	APH ADI For dry :
3A 4A 5A	İ		 Open frame grommet lead wire 4A (heat proof clas 5A (diode integrate 	ss H)	n		I		G H		Fo	Conduit G (CTC19) H (G1/2)	Expl proc
3M	=		<u> </u>			_			_	-	-		HVI
3N 4M 4N	1		Open frame HP ter 4M, 4N (heat proof 5M, 5N (diode inter	f class H	H)								SAE SVE
5M 5N				grateu,									NP/ NVF
31	-		Open frame HP ter										СН
3J 5I 5J	1		(IP65 or equivalent • 5I, 5J (diode integra	nt)									MX
	—		l										Oth syst
													PD

Refer to page 224 for coil selection.

A Note on model no. selection

Note on D

*2: 5A, 5M, 5N, 5I and 5J are coils for which AC power is converted to DC with a diode.

Note on **(B** to **(C)**

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

Note on 0

- 7: 100 VAC coil is compatible with 100 VAC 50/60 Hz and 110 VAC 60 Hz, and 200 VAC coil is compatible with 200 VAC 50/60 Hz and 220 VAC 60 Hz. Note that the coils \odot 54/54/05/05/JC an be used only with 100 VAC 50/60 Hz or 200 VAC 50/60 Hz.
- *8: For voltages other than above, consult with CKD.
- *9: 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.

PJ CVE/ CVSE CPE/

CPD

Medical analysis

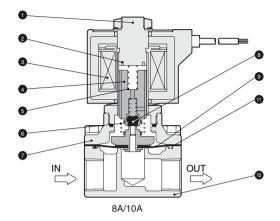
Custom

order

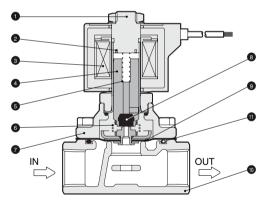
HNB/G

Internal structure and parts list

• ADK11-8A/10A



ADK11-15A/20A/25A





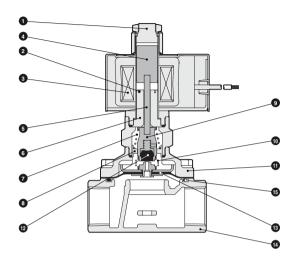
No.	Parts name	Material	
1	Core assembly	SUS405 or equivalent, SUS316L, SUS403	Stainless steel
2	Shading coil *1	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)
3	Coil	-	-
4	Plunger assembly	SUS405 or equivalent, SUS304, NBR (SUS405 or equivalent, SUS304, FKM or EPDM) *2,3	Stainless steel
5	Plunger spring	SUS304	Stainless steel
6	Kick spring	SUS304	Stainless steel
7	Stuffing	C3771 (SCS13)	Brass (stainless steel casting)
8	Sealant	NBR (FKM, EPDM)	Nitrile rubber (fluoro rubber or ethylene propylene diene rubber)
9	Diaphragm assembly	SUS303, SUS304, NBR (SUS303, SUS304, FKM or EPDM) *3	Stainless steel, nitrile rubber (stainless steel, fluoro rubber or ethylene propylene diene rubber)
10	Body	CAC408 (SCS13)	Bronze casting (stainless steel casting)
11	O ring	NBR (FKM, EPDM)	Nitrile rubber (fluoro rubber or ethylene propylene diene rubber)

() shows options.
 *1: When using the DC coil or a coil with diode, no shedding coil is used.
 *2: SUS304 is not used for port size 15 (1/2) to 25 (1).
 *3: EPDM is not compatible with port size 8 (1/4) and 10 (3/8).



Internal structure and parts list

ADK12 Series



No.	Parts name	Material	
1	Core assembly	SUS403, SUS316L, SUS304 *1	Stainless steel
2	Shading coil *2	Cu (Ag for stainless steel body)	Copper (silver for stainless steel body)
3	Coil	-	-
4	Plunger	SUS405 or equivalent	Stainless steel
5	Push rod	SUS304	Stainless steel
6	Fixed ferrous core	SUS405 or equivalent	Stainless steel
7	Spring	SUS304	Stainless steel
8	Spring holder	POM (SUS303)	Acetal resin (stainless steel)
9	NO valve assembly	SUS303, SUS304, NBR (SUS303, SUS304, FKM or EPDM)	Stainless steel, nitrile rubber (stainless steel, fluoro rubber or ethylene propylene diene rubber)
10	Kick spring	SUS304	Stainless steel
11	Stuffing	C3771 (SCS13)	Brass (stainless steel casting)
12	Sealant	NBR (FKM, EPDM)	Nitrile rubber (fluoro rubber or ethylene propylene diene rubber)
13	Diaphragm assembly	SUS303, SUS304, NBR (SUS303, SUS304, FKM or EPDM)	Stainless steel, nitrile rubber (stainless steel, fluoro rubber or ethylene propylene diene rubber)
14	Body	CAC408 (SCS13)	Bronze casting (stainless steel casting)
15	Oring	NBR (FKM, EPDM)	Nitrile rubber (fluoro rubber or ethylene propylene diene rubber)

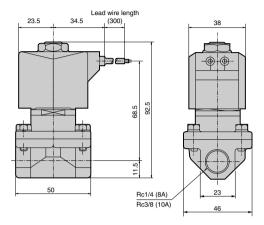
() shows options. *1: When the body/sealant combination symbol is other than O and H, the material is SUS430, SUS316L, SUS304.

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

HNB/G

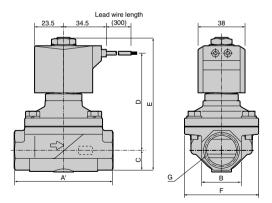
Dimensions: ADK11 Series

 Grommet lead wire type ADK11-8A/10A-*2C



Note 1: The dimensions are the same for the G or NPT thread port size.

 Grommet lead wire type ADK11-15A/20A/25A-*2C



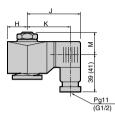
Note 1: The dimensions are the same for the G or NPT thread port size. Note 2: Dimensions shown in () are for SUS body.

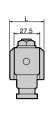
Model no.	Α	В	С	D	Е	F	G
ADK11-15A-02C	71	27 (29)	14.5	75.5	102	50	Rc1/2
ADK11-20A-02C	80	32 (35)	17.5	79	108.5	60	Rc3/4
ADK11-25A-02C	90	41 (45)	22.5	84.5	119	71	Rc1

Optional dimensions: ADK11 Series



ADK11-8A to 25A-* 2E 2G 2H



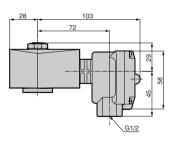


CAD

Dimensions shown in () are for G1/2.

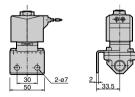
Model no.	н	J	к	L	М
ADK11-8A~25A-*2 -AC	23.5	65.5	54 (53.5)	38	22
ADK11-8A/10A-*2-DC	23.5	66	54.5 (54)	38	22
ADK11-15A~25A-*2-DC	28	72	60.5 (60)	46	22

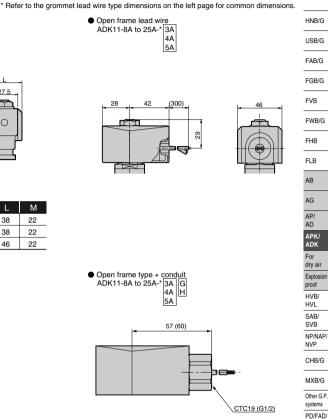
 Open frame type + HP terminal box ADK11-8A to 25A-* 3 M / 4M 5 N 4N



.1

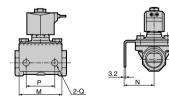
Mounting plate ADK11-8A/10A-*** B





Dimensions shown in () are for G1/2.

 Mounting plate ADK11-15A/20A/25A-*** B



Model no.	М	Ν	Р	Q
ADK11-15A-***B	56	45	40	ø9
ADK11-20A-***B	63	50	45	ø9
ADK11-25A-***B	75	56	50	ø11

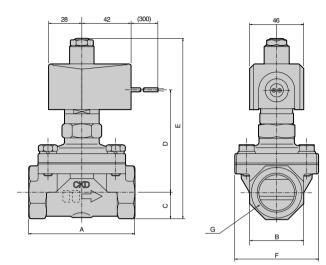
PJ CVE/ CVSE CPE/ CPD Medical analysis Custom order



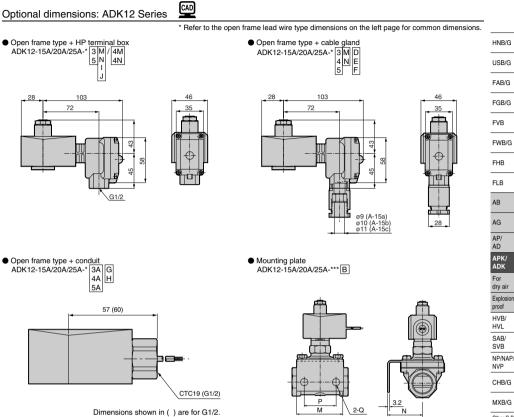
CAD

Dimensions: ADK12 Series

 Open frame lead wire type ADK12-15A/20A/25A-*3A



Model no.	А	В	С	D	Е	F	G
ADK12-15A-03A	71	27 (29)	14.5	77	134.5	50	Rc1/2
ADK12-20A-03A	80	32 (35)	17.5	80.5	141	60	Rc3/4
ADK12-25A-03A	90	41 (45)	22.5	86	151.5	71	Rc1



Model no.	М	N	Р	Q
ADK12-15A-***B	56	45	40	ø9
ADK12-20A-***B	63	50	45	ø9
ADK12-25A-***B	75	56	50	ø11

Other G.P systems PD/FAD/ PJ CVE/ CVSE CPE/ CPD Medical analysis Custom order