



Discrete valve: Sub-plate porting 5 port pilot operated pneumatic valve

4F4/5/6/7 Series

● Applicable cylinder bore size: ø63 to ø250

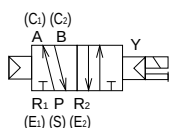


Refer to Intro 17 for details.

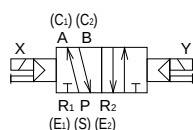


JIS symbol

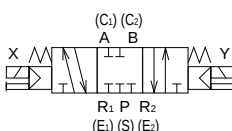
- 5 port valve
2-position single solenoid



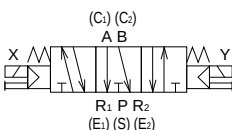
- 2-position double solenoid



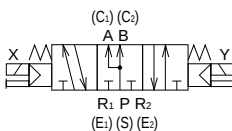
- 3-position
all ports closed



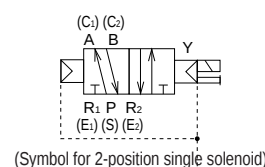
- 3-position A/B/R connection



- 3-position P/A/B connection



- External pilot



(Symbol for 2-position single solenoid)

Common specifications

Descriptions	
Valve and operation type	Pilot operated spool valve
Working fluid	Compressed air
Max. working pressure MPa	1.0
Min. working pressure MPa	Refer to the individual specifications below.
Withstanding pressure MPa	1.5
Ambient temperature °C	-10 to 60 (no freezing)
Fluid temperature °C	5 to 60
Lubrication	Not required (when lubricating, use turbine oil ISO VG32.)
Protective structure	Dust proof
Vibration/impact m/s²	50 or less / 300 or less
Working environment	Containing corrosive gas is impermissible.

Note 1: Ambient temperature refers to the temperature for storage and installation, and differs from fluid temperature, which applies during operation.

Note 2: The working pressure range is 0 to 1.0 MPa when the external pilot (option symbol: K) is selected. Set the external pilot pressure between 0.15 and 1.0 MPa.

Electric specifications

Descriptions			4F4 to 7
Rated voltage	AC	100, 200 (50 / 60Hz)	
	V DC	12, 24	
Rated voltage fluctuation range			±10%
Starting current	AC	100 V	0.170 / 0.140
		200 V	0.090 / 0.070
	A DC	12 V	0.500
		24 V	0.250
Holding current	AC	100 V	0.100 / 0.080
		200 V	0.050 / 0.040
	A DC	12 V	0.500
		24 V	0.250
Power consumption	AC	100 V	5.0 / 4.0
		200 V	5.0 / 4.0
	W DC	12 V	6
		24 V	6
Heat proof class			B (molded coil)

Note1: The 100 VAC 50/60 Hz rated voltage can be used at 110 VAC 60 Hz, and 200 VAC 50/60 Hz can be used at 220 VAC 60 Hz.

Individual specifications

Descriptions			4F4		4F5		4F6		4F7				
Min. working pressure MPa	2-position	Single solenoid	0.10		0.10		0.15		0.15				
		Double solenoid											
	3-position	All ports closed	0.15		0.15								
		A/B/R connection											
		P/A/B connection											
Port size	Note 1		Rc 1/4	Rc 3/8	Rc 3/8	Rc 1/2	Rc 1/2	Rc 3/4	Rc 3/4	Rc 1			
Response time		Note 2		ms		60		70		200		300	
Weight	kg	2-position	Single solenoid		1.06		1.50		2.30		4.20		
			Double solenoid		1.30		1.70		2.60		4.50		
	3-position		1.70		2.00		3.10		5.60				

Note 1: G threads and NPT threads are available for the piping port threads. Contact CKD for information.

Note 2: Response time is the value when supply pressure 0.5 MPa, not lubricated and ON. The value varies depending on pressure and quality of lubricant.

4F4 to 7 Series

Discrete valve: Sub-plate porting

Flow characteristics

Model no.		Solenoid position	Port size	C (dm³/ (s·bar))	b	S (mm²)
4F4	2-position	Single solenoid	Rc1/4 Rc3/8	5.0	0.21	-
		Double solenoid				
	3-position	All ports closed		4.7	0.24	
		A/B/R connection		5.3	0.29	
		P/A/B connection		5.3	0.29	
4F5	2-position	Single solenoid	Rc3/8 Rc1/2	10	0.32	-
		Double solenoid				
	3-position	All ports closed		9.7	0.28	
		A/B/R connection		9.8	0.25	
		P/A/B connection				
4F6	2-position	Single solenoid	Rc1/2 Rc3/4	18	0.31	-
		Double solenoid				
	3-position	All ports closed		15	0.23	
		A/B/R connection				
		P/A/B connection				
4F7	2-position	Single solenoid	Rc3/4 Rc1	-	-	160
		Double solenoid				
	3-position	All ports closed				
		A/B/R connection				
		P/A/B connection				

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

Copper and PTFE free

- Flow path free of copper-based and PTFE-based materials

** - Voltage - **P6**

MN3E0
MN4E0
4GA/B
M4GA/B
MN4GA/B
4GA/B (Master)
W4GA/B2
W4GB4
MN3S0
MN4S0
4TB
4L2-4/ LMF0
4SA/B0
4SA/B1
4KA/B
4F
PV5G/ CMF
PV5/ CMF
3MA/B0
3PA/B
P/M/B
NP/NAP/ NVP
4F*0E
HMV HSV
2QV 3QV
SKH
PCD/ FS/FD
Ending

Discrete
5 port pilot operated valve

4F4 to 7 Series

Discrete valve: Sub-plate porting

Discrete valve: How to order sub-plate porting

4F4 1 0 - 08 - M2 L - AC100V

A Model no.

B Solenoid position

C Port size

D Manual override

E Electric connection

Note 1: The DC type with DIN terminal box with light (L) has a built-in surge suppressor.
(Refer to page 887 for the circuit diagram of the type with a surge suppressor and light.)

F Other options

G Voltage

A Model no.

4	4	4	4
F	F	F	F
4	5	6	7

Symbol	Descriptions				
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B Solenoid position

1	2-position single solenoid	●	●	●	●
2	2-position double solenoid	●	●	●	●
3	3-position all ports closed	●	●	●	●
4	3-position A/B/R connection	●	●	●	●
5	3-position P/A/B connection	●	●	●	●

C Port size Note 3

08	Rc1/4	●			
10	Rc3/8	●	●		
15	Rc1/2		●	●	
20	Rc3/4			●	●
25	Rc 1				●

D Manual override

Blank	Locking	●	●	●	●
M2	Non-locking	●	●	●	●
M3	Locking with manual lever Note 4	●	●	●	●

E Electric connection

Blank	DIN terminal box (Pg11)	●	●	●	●
L	DIN terminal box (Pg11) with light Note 1	●	●	●	●
F	DIN terminal box (G1/2)	●	●	●	●
E	Grommet lead wire	●	●	●	●
E1	Conduit lead wire (CTC19)	●	●	●	●
E2	Conduit lead wire (G1/2)	●	●	●	●
B1	Round terminal box (G3/4)	●	●	●	●
B	Round terminal box (G1/2)	●	●	●	●
BL	Round terminal box (G1/2) with light Note 5	●	●	●	●
G	Round terminal box with gland (A-15a)	●	●	●	●
GL	Round terminal box with gland (A-15a), light Note 5	●	●	●	●

F Other options

Blank	No option	●	●	●	●
K	External pilot Note 2	●	●	●	●
P	Mounting bracket (U bracket)	●	●	●	●
S	Surge suppressor (variable resistor) attached	●	●	●	●
H	Check valve attached (only for 3-position all ports closed)	●	●	●	●
N	Plug attached (3 port valve)	●	●	●	●
NC	3 way valve with plug assembly (C1: A. E1: R1)	●	●	●	●
NO	3 way valve with plug assembly (C2: B. E2: R2)	●	●	●	●

G Voltage

AC100V	100 VAC 50/60Hz	●	●	●	●
AC200V	200 VAC 50/60Hz	●	●	●	●
DC12V	12 VDC	●	●	●	●
DC24V	24 VDC	●	●	●	●
AC110V	110 VAC 50/60Hz	●	●	●	●
AC220V	220 VAC 50/60Hz	●	●	●	●

⚠ Note on model no. selection

Note 2: Consult CKD for details on using vacuum with the external pilot (K) and exhaust pressurizing.

Note 3: G threads and NPT threads are available for the piping port threads. Contact CKD for information.

Note 4: When selecting the DIN terminal box for the lock type with a manual lever, the terminal box must face outward during use.

Note 5: BL and GL 12VDC are not available.

<Example of model number>

4F440-08-M2P-AC100V

A Model: 4F4

B Solenoid position : 3-position A/B/R connection

C Port size : Rc1/4

D Manual override : Non-locking

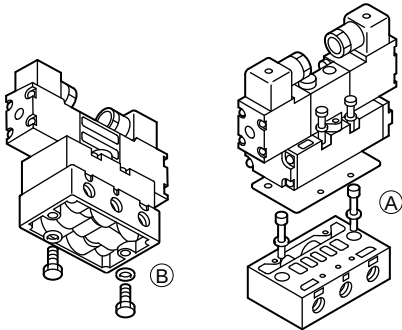
E Electric connection: Blank for DIN terminal box (Pg11)

F Other options : Mounting bracket

G Voltage : 100 VAC

How to install discrete 4F4 to 7

● Installation



	For B	For A
4F4	M 8	M 6
4F5	M 8	M 6
4F6	M10	M 8
4F7	M12	M10

MN3E0
MN4E0
4GA/B
M4GA/B
MN4GA/B
4GA/B (Master)
W4GA/B2
W4GB4
MN3S0
MN4S0
4TB
4L2-4/ LMF0
4SA/B0
4SA/B1
4KA/B
4F
PV5G/ CMF
PV5/ CMF
3MA/B0
3PA/B
P/M/B
NP/NAP/ NVP
4F*0E
HMV HSV
2QV 3QV
SKH
PCD/ FS/FD
Ending

Discrete
5 port pilot operated valve