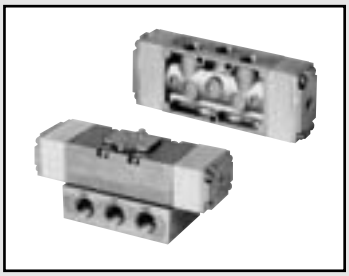


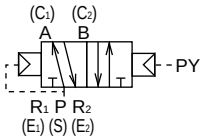
Discrete master valve / manifold
5 port pilot operated valve pneumatic valve
4F Series

● Applicable cylinder bore size: ø10 to ø250

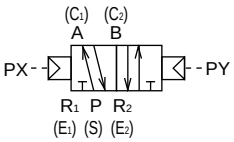
RoHS

● JIS symbol

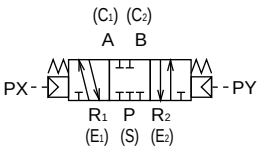
2-position single solenoid



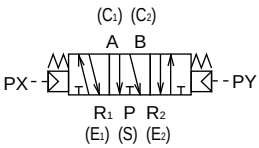
2-position double solenoid



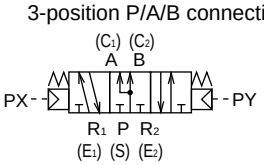
3-position all ports closed



3-position A/B/R connection



3-position P/A/B connection



Common specifications

Descriptions	
Valve type / operation method	Pilot operated soft spool
Working fluid	Compressed air
Max. working pressure MPa	1.0
Min. working pressure MPa	Refer to the main pressure on the table below.
Ambient temperature °C	-10 to 60 (no freezing)
Fluid temperature °C	5 to 60
Lubrication	Not required (when lubricating, use turbine oil ISO VG32.)
Vibration/impact m/s²	50 or less / 300 or less
Working environment	Corrosion-free environment

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

Individual specifications (discrete valve, manifold)

Pos. / No. of solenoid					Model no.		Specifications					
							Note 1 Port size					
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	Series model no.		Supply port S	Cylinder port C	Exhaust port E Pilot exhaust port PE	Pilot port	Main pressure MPa	Pilot signal pressure MPa
●					4F0 Series	A4F011	M5, Rp1/8	M5, Rp1/8	M5	Rc1/8	0.15 to 1.0	P ≧0.6 x main pressure + 0.06
	●					4F021					0 to 1.0	P ≧0.15
●					4F1 Series	4F111	Rp1/8 Rp1/4	Rp1/8 Rp1/4	Rp1/8	Rc1/8	0.15 to 1.0	P ≧0.6 x main pressure + 0.06
	●					4F121						P ≧0.15
		●				4F131					0 to 1.0	P ≧0.2
			●			4F141						
●					4F2 Series	4F211	Rp1/4	Rp1/4	E: Rp1/4 PE: Rp1/8	Rc1/8	0.15 to 1.0	P ≧0.6 x main pressure + 0.06
	●					4F221						P ≧0.15
		●				4F231					0 to 1.0	P ≧0.2
			●			4F241						
●					4F3 Series	4F311	Rp1/4 Rp3/8	Rp1/4 Rp3/8	E: Rp1/4 Rp3/8 PE: Rp1/8	Rc1/8	0.15 to 1.0	P ≧0.6 x main pressure + 0.06
	●					4F321						P ≧0.15
		●				4F331					0 to 1.0	P ≧0.2
			●			4F341						
				●		4F351						
●					4F4 Series	4F411	Rc1/4 Rc3/8	Rc1/4 Rc3/8	E: Rp1/4 Rc3/8 PE: Rc1/8	Rc1/8	0.15 to 1.0	P ≧0.6 x main pressure + 0.06
	●					4F421						P ≧0.15
		●				4F431					0 to 1.0	P ≧0.2
			●			4F441						
				●		4F451						
●					4F5 Series	4F511	Rc3/8 Rc1/2	Rc3/8 Rc1/2	E: Rc3/8 Rc1/2 PE: Rc1/8	Rc1/8	0.15 to 1.0	P ≧0.6 x main pressure + 0.06
	●					4F521						P ≧0.15
		●				4F531					0 to 1.0	P ≧0.2
			●			4F541						
				●		4F551						
●					4F6 Series	4F611	Rc1/2 Rc3/4	Rc1/2 Rc3/4	E: Rc1/2 Rc3/4 PE: Rc1/4	Rc1/8	0.15 to 1.0	P ≧0.6 x main pressure + 0.06
	●					4F621						P ≧0.15
		●				4F631					0 to 1.0	P ≧0.2
			●			4F641						
				●		4F651						
●					4F7 Series	4F711	Rc3/4 Rc1	Rc3/4 Rc1	E: Rc3/4 Rc1 PE: Rc1/4	Rc1/8	0.15 to 1.0	P ≧0.6 x main pressure + 0.06
	●					4F721						P ≧0.15
		●				4F731					0 to 1.0	P ≧0.2
			●			4F741						
				●		4F751						

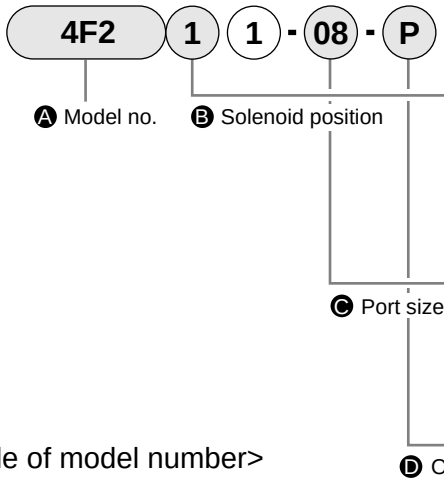
Note 1: Other port size options are available in addition to those in the above table. Refer to the How to order on page 964.

Flow characteristics

Series	Model no.	Port size	C (dm³/(s·bar))	b	S (mm²)
4F0	A4F011	M5	0.61	0.35	-
	4F021				
	A4F011	Rp1/8	0.74	0.27	-
	4F021				
4F1	4F111	Rp1/8 Rp1/4	2.0	0.33	-
	4F121				
	4F131		1.5	0.31	
	4F141		1.6	0.29	
4F2	4F211	Rp1/4	3.0	0.33	-
	4F221				
	4F231		2.5	0.43	
	4F241				
4F3	4F311	Rp1/4	3.9	0.42	-
	4F321				
	4F331		4.0	0.35	
	4F341		4.5	0.42	
	4F351		4.0	0.35	
	4F311	Rp3/8	5.8	0.30	-
	4F321				
	4F331		4.4	0.42	
	4F341		5.1	0.46	
	4F351		4.4	0.42	
4F4	4F411	Rc1/4 Rc3/8	5.0	0.21	-
	4F421				
	4F431		4.7	0.24	
	4F441		5.3	0.29	
	4F451		5.3	0.29	
4F5	4F511	Rc3/8 Rc1/2	10	0.32	-
	4F521				
	4F531		9.7	0.28	
	4F541		9.8	0.25	
	4F551				
4F6	4F611	Rc1/2 Rc3/4	18	0.31	-
	4F621				
	4F631		15	0.23	
	4F641				
	4F651				
4F7	4F711	Rc3/4 Rc1	-	-	160
	4F721				
	4F731				
	4F741				
	4F751				

Note 1: Effective sectional area S and sonic conductance C are converted as S ≒ 5.0 x C.

How to order discrete valve, body porting



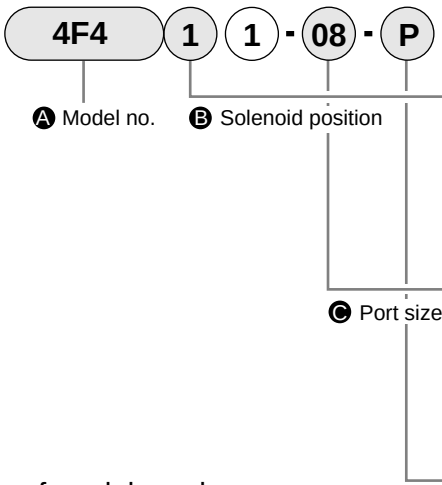
Symbol	Descriptions	Ⓐ Model no. Body porting 4F0	4F1	4F2	4F3
Ⓑ Solenoid position					
1	2-position single solenoid	●	●	●	●
2	2-position double solenoid	●	●	●	●
3	3-position all ports closed		●	●	●
4	3-position A/B/R connection		●	●	●
5	3-position P/A/B connection				●
Ⓒ Port size					
M5	M5	●			
06	Rp 1/8	●	●		
08	Rp 1/4		●	●	●
10	Rp 3/8				●
Ⓓ Option					
Blank	None	●	●	●	●
P	Mounting bracket (2-position single solenoid)	●	●	●	●
P1	Mounting bracket	●	●	●	●
N	Plug attached (3 port valve)	●	●	●	●
H	Check valve attached (only for 3-position all ports closed)			●	●
NC	3 way valve plug assembly (C1: A, E1: R1)	●	●	●	●
NO	3 way valve plug assembly (C2: B, E2: R2)	●	●	●	●

<Example of model number>

4F111-06-P

Ⓐ Model: 4F1
Ⓑ Solenoid position : 2-position single solenoid
Ⓒ Port size : Rp1/8
Ⓓ Option : With P type mounting bracket

How to order discrete valve, sub-plate porting



Symbol	Descriptions	Ⓐ Model no. Sub-plate porting 4F4	4F5	4F6	4F7
Ⓑ 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	●	●	●	●
Ⓒ Port size					
08	Rc 1/4	●			
10	Rc 3/8	●	●		
15	Rc 1/2		●	●	
20	Rc 3/4			●	●
25	Rc 1				●
Ⓓ Option					
Blank	None	●	●	●	●
P	Mounting bracket	●	●	●	●
N	Plug attached (3 port valve)	●	●	●	●
H	Check valve attached (3-position all ports closed)	●	●	●	●
NC	3 way valve plug assembly (C1: A, E1: R1)	●	●	●	●
NO	3 way valve plug assembly (C2: B, E2: R2)	●	●	●	●

<Example of model number>

4F411-08-P

Ⓐ Model: 4F4
Ⓑ Solenoid position : 2-position single solenoid
Ⓒ Port size : Rp1/4
Ⓓ Option : With P type mounting bracket

How to order manifold, body porting

● Master valve for manifold

4F2 1 1 - 08 - ( ) ---------- Refer to cautions below.

4F3 1 8 - 08 - ( ) —— I

● Manifold

M 4F3 1 1 - 08 - ( ) - 3 - CU - S1 S2 S3 S4 S5 MP

4F3: Up to S5
4F1/2: Up to S4
4F0: Up to S2

Indicate the quantity and display position of each valve function for the mixed manifold.
Refer to page 922.

Ⓐ Model no.
Ⓑ Solenoid position
Ⓒ Port size
Ⓓ Other options
Ⓔ Station number
Ⓕ Exhaust mounting

Symbol	Descriptions	Ⓐ Model no. Body porting 4F0	4F1	4F2	4F3
Ⓑ 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				●
8	Mix manifold	●	●	●	●
Ⓒ Port size					
M5	M5	●			
06	Rp 1/8	●	●		
08	Rp 1/4		●	●	●
10	Rp 3/8				●
Ⓓ Other options					
Blank	No option	●	●	●	●
NC	3 way valve plug assembly (C1: A, E1: R1)	●	●	●	●
NO	3 way valve plug assembly (C2: B, E2: R2)	●	●	●	●
Ⓔ Station number					
2	2 stations	●	●	●	●
to	to				
10	10 stations				
Ⓕ Exhaust mounting style					
CL	Common exhaust / L bracket (2-position single solenoid)	●	●	●	●
CU	Common exhaust / U bracket	●	●	●	●
IL	Individual exhaust / L bracket (2-position single solenoid)	●	●	●	●
IU	Individual exhaust / U bracket	●	●	●	●
C	Common exhaust			●	●
I	Individual exhaust		●	●	●

⚠ Note on model no. selection

Use the discrete master valve for manifolds as shown below depending on the model.

■ For 4F0 to 4F1

4F1 B 1 - C

When used as repair parts, purchase the optional gasket kit based on the model below.

M4F0-GASKET-KIT
M4F1-GASKET-KIT
M4F1-I-GASKET-KIT

■ For 4F2/4F3

Exhaust mounting CL, CU, IL, IU

4F3 B 1 - C

When used as repair parts, purchase the optional gasket kit based on the model below.

M4F2-GASKET-KIT
M4F3-GASKET-KIT

For exhaust mounting mathod C, I

4F3 B 8 - C — F

(If C is selected for item "F", indicate no symbol, and if I is selected, indicate "I".)

The gasket kit is included.

<Example of model number>

M4F341-08-NO-5-C

Ⓐ Model: M4F3
Ⓑ Solenoid position : 3-position A/B/R connection
Ⓒ Port size : Rp1/4
Ⓓ Other options : 3 way valve plug assembly (C2: B, E2: R2)
Ⓔ Station number : 5 station
Ⓕ Exhaust method : Common exhaust

How to order manifold, sub-plate porting

● Master valve for manifold

4F4 1 8 - 00 - ( )

● Manifold

M 4F4 1 1 - 08 - ( ) - 3 - C - S1 S2 S3 S4 S5 MP

Indicate the quantity and display position of each valve function for the mixed manifold.
Refer to page 949.

Ⓐ Model no.

Ⓑ Solenoid position

Ⓒ Port size

Ⓓ Other options

Ⓔ Station number

Ⓕ Exhaust mounting method

Symbol	Descriptions	Ⓐ Model no. Sub-plate porting 4F4	4F5	4F6	4F7
Ⓑ 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	●	●	●	●
8	Mix manifold	●	●	●	●
Ⓒ Port size					
08	Rc 1/4	●			
08Y	Rp 1/4 (cylinder port rear side)	●			
10	Rc 3/8		●		
10Y	Rc 3/8 (cylinder port rear side)		●		
D15	Rc 1/2			●	
E20	Rc 3/4				●
Ⓓ Other options					
Blank	No option	●	●	●	●
NC	3 way valve plug assembly (C1: A, E1: R1)	●	●	●	●
NO	3 way valve plug assembly (C2: B, E2: R2)	●	●	●	●
Ⓔ Station number					
2	2 stations	●	●	●	●
to	to				
10	10 stations				
Ⓕ Exhaust mounting style					
C	Common exhaust	●	●	●	●

<Example of model number>

M4F441-08-NC-5-C

Ⓐ Model: M4F4
Ⓑ Solenoid position : 3-position A/B/R connection
Ⓒ Port size : Rp1/4
Ⓓ Other options : 3 way valve plug assembly (C1: A, E1: R1)
Ⓔ Station number : 5 station
Ⓕ Exhaust method : Common exhaust