


Discrete valve: Sub base porting

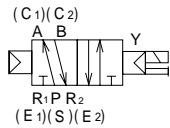
5 port pilot operated valve

4F4/5/6/7 Series

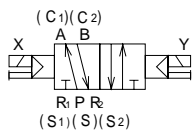
• Applicable cylinder bore size: 63 to 250mm  CAD DATA AVAILABLE.

JIS symbol

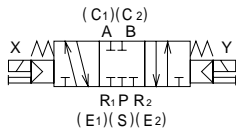
- 5 port valve
- 2-position single



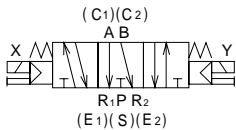
- 2-position double



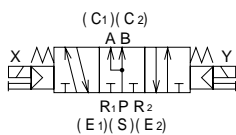
- 3-position
- all ports closed



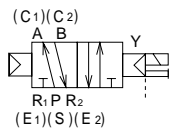
- 3-position A/B/R connection



- 3-position P/A/B connection



- External pilot



(Symbol for 2-position single.)

Common specifications

Descriptions	
Valve and solenoid type	Pilot operated spool valve
Working fluid	Compressed air
Max. working pressure MPa	1.0
Min. working pressure MPa	Refer to following individual specifications.
Withstanding pressure MPa	1.5
Ambient temperature °C	-10 to 60
Fluid temperature °C	5 to 60
Lubrication	Not required
Protection structure	Dust proof
Vibration/impact m/s ² (G)	50 (5) or less/300 (30) or less
Working environment	Not to be subject to corrosive gas

Other specifications (consult with CKD about details.)

Descriptions	Model
Copper and PTFE free	**-[Voltage]-P6

Electrical specifications

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

Reference: AC100V coil is available for AC110V 60Hz, while AC200V is available for AC220V 60Hz.

Individual specifications

Descriptions			4F4		4F5		4F6		4F7	
Min. working pressure MPa	2-position	Single	0.10		0.10		0.15		0.15	
		Double	0.15		0.15		0.15		0.15	
	3-position	All ports closed	0.15		0.15		0.15		0.15	
		A/B/R connection P/A/B connection	0.15		0.15		0.15		0.15	
Port size			Rc 1/4	Rc 3/8	Rc 3/8	Rc 1/2	Rc 1/2	Rc 3/4	Rc 3/4	Rc 1
Effective sectional area mm ²	2-position	Single	32		47		90		160	
		Double	21		41		80		160	
	3-position	All ports closed	22		43		80		160	
		A/B/R connection P/A/B connection	22		43		80		160	
Response time • 1 ms			60		70		200		300	
Mass kg	2-position	Single	1.06		1.50		2.30		4.20	
		Double	1.30		1.70		2.60		4.50	
	3-position		1.70		2.00		3.10		5.60	

• 1: Response time is the value when supply pressure 0.5MPa, pre-lubricated and ON. The value varies depending on supplied pressure and oil quality.

4F4 to 7 Series

Discrete valve: Sub base porting

Discrete valve: Sub base porting How to order

4F4 1 0 - 08 - M2 L S - AC100V

Model

A Solenoid position

B Port size

C Manual override

D Electric connection
 • 1: For DC type of DIN terminal box (L), indicator light surge suppressor is incorporated.
 Please refer to Page 577 about circuit diagram of surge suppressor/indicator light.

E Other options

F Voltage

		Model			
		4F4	4F5	4F6	4F7
		4SA/B0			
		4SA/B1			
		4GA/B			
		MN4GA/B			
		4GA/B (master)			
		MN3S0/ MN4S0			
		4TB			
		4L2-4/ LMF0			
		4KA/B			
		4F			
		PV5/ CMF			
		3MA/B0			
		3PA/B			
		P/MB			
		NP/NAP/ NVP			
		4F**0E			
		HMV/ HSV			
		Uniwire system			
		SKH			
		PCD/ FS/FD			
		5 port pilot operated valve Discrete			
Symbol	Descriptions				
A Solenoid position					
1	2-position single	●	●	●	●
2	2-position double	●	●	●	●
3	3-position all ports closed	●	●	●	●
4	3-position A/B/R connection	●	●	●	●
5	3-position P/A/B connection	●	●	●	●
B Port size					
08	Rc 1/4	●			
10	Rc 3/8	●	●		
15	Rc 1/2		●	●	
20	Rc 3/4			●	●
25	Rc 1				●
C Manual override					
Blank	Locking	●	●	●	●
M2	Non-locking	●	●	●	●
M3	Locking with manual lever	●	●	●	●
D Electric connection					
Blank	DIN terminal box (Pg11)	●	●	●	●
L	DIN terminal box (G1/2) Indicator light • 1	●	●	●	●
F	DIN terminal box (G1/2)	●	●	●	●
E	Grommet lead wire	●	●	●	●
E1	Conduit with lead wire (CTC19)	●	●	●	●
E2	Conduit with lead wire (G1/2)	●	●	●	●
B1	Round terminal box (G3/4)	Assemble to conduit with lead wire (E1).	●	●	●
B	Round terminal box (G1/2)		●	●	●
BL	Round terminal box (G1/2)/light		●	●	●
G	Round terminal box Gland (A-15a)		●	●	●
GL	Round terminal box Gland (A-15a)/light		●	●	●
E Other options					
Blank	No option	●	●	●	●
K	External pilot • 2	●	●	●	●
P	Mounting bracket (U shaped 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 (C1: A. E1: R1) plug assembly	●	●	●	●
NO	3 way valve (C2: B. E2: R2) plug assembly	●	●	●	●
F Voltage					
AC100V	AC100V 50/60Hz	●	●	●	●
AC200V	AC200V 50/60Hz	●	●	●	●
DC 12V	DC 12V	●	●	●	●
DC 24V	DC 24V	●	●	●	●
AC110V	AC110V 50/60Hz	●	●	●	●
AC220V	AC220V 50/60Hz	●	●	●	●

⚠ Caution for model No. selection

• 2: Consult with CKD about vacuuming of external pilot (K).

<Example of model No.>

4F440-08-M2P-AC100V

Model: 4F4

- A** Solenoid position : 3-position A/B/R connection
- B** Port size : Rc1/4
- C** Manual override : Non-locking
- D** Electric connection : Blank for DIN terminal box (Pg11)
- E** Other options : Mounting bracket
- F** Voltage : AC100V

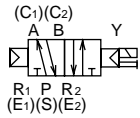
4F4/4F5 Series

Discrete valve: Sub base porting

Internal structure and parts list

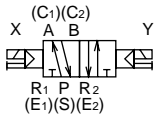
4F410/4F510

• 2-position single



4F420/4F520

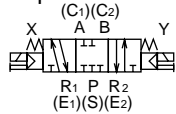
• 2-position double



4F430/4F530

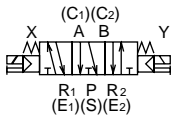
• 3-position

All ports closed



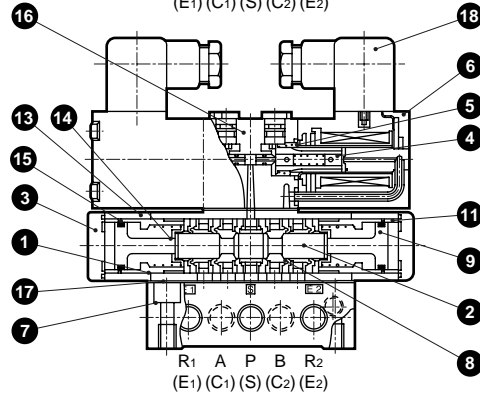
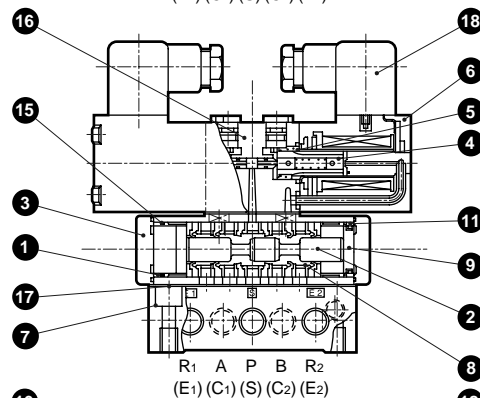
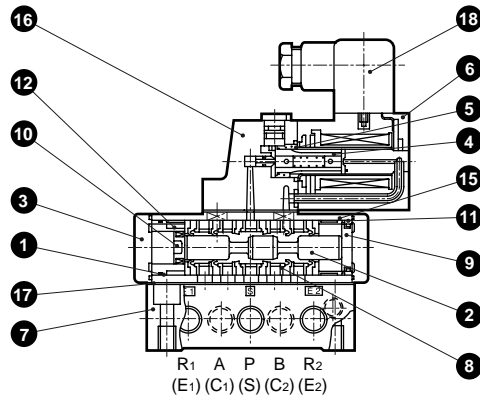
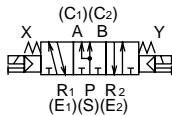
4F440/4F540

A/B/R connection



4F450/4F550

P/A/B connection



Main parts list

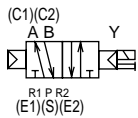
No.	Parts name	Material	No./parts name		8	9	10	6
			Model No.	Repair kits				
1	Body	Aluminum alloy die-casting	4F410	4F410-K	4F9-106	4F9-104	4F9-103	4F4 * 0- Electric connection - Coil-Voltage
2	Valving element (spool)	Aluminum	4F420	4F420-K			-	
3	Cap	Aluminum alloy die-casting	4F430	4F430-K			-	
4	Plunger	-	4F440	4F430-K	4F9-107	4F9-114	-	4F5 * 0- Electric connection - Coil-Voltage
5	Plunger spring	-	4F450	-			-	
7	Sub base	Aluminum alloy die-casting	4F520	4F520-K			-	
8	Seal assembly	-	4F530	4F530-K	4F9-108	4F9-115	4F9-109	4F5 * 0- Electric connection - Coil-Voltage
9	Piston (A) assembly	-	4F540	4F530-K			-	
10	Piston (B) assembly	-	4F550	-			-	
11	Cylinder A	Aluminum	<ul style="list-style-type: none"> • For consumable parts, kit is available. Please replace a whole kit but not a part. (The kit includes packing seal assembly, piston assembly (A) and (B) but not any coil assembly.) • Plunger assembly is attached to coil assembly. 					
12	Cylinder B	Aluminum						
13	Body block	Aluminum alloy die-casting						
14	Spring retainer	Stainless steel						
15	O ring	Nitrile rubber						
16	Pilot valve body assembly	-						
17	Gasket	Nitrile rubber						
18	DIN terminal box	-						

Repair parts list

Internal structure and parts list

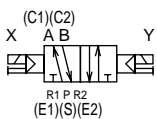
4F610/4F710

- 2-position single



4F620/4F720

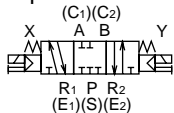
- 2-position double



4F630/4F730

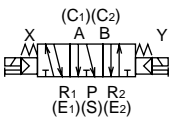
- 3-position

All ports closed



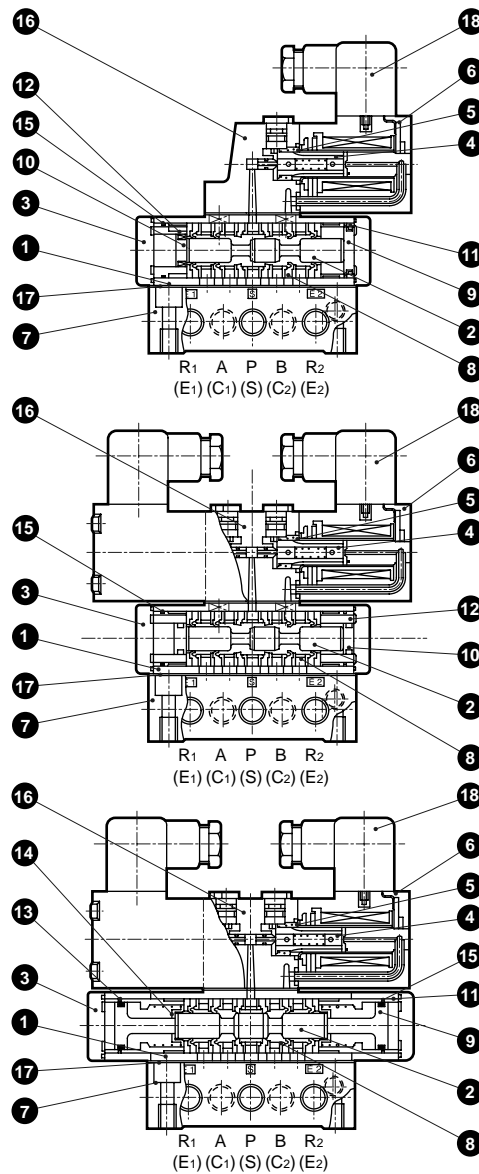
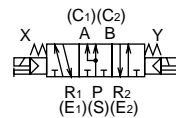
4F640/4F740

A/B/R connection



4F650/4F750

P/A/B connection



4SA/B0

4SA/B1

4GA/B

MN4GA/B

4GA/B (master)

MN3S0/
MN4S0

4TB

4L2-4/
LMFO

4KA/B

4F

PV5/
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/
NVP

4F**0E

HMV/
HSV

Main parts list

Repair parts list

No.	Parts name	Material	No./parts name		8	9	10	6	
			Model No.	Repair kits					
1	Body	Aluminum alloy die-casting	4F610	4F610-K	4F9-118	4F9-117	4F9-116	4F6*0- Electric connection - Coil-Voltage	
2	Valving element (spool)	Aluminum	4F620	4F620-K		-	4F9-116		
3	Cap	Aluminum alloy die-casting	4F630	4F630-K		4F9-122	-		
4	Plunger	-	4F640			4F9-122	-		
5	Plunger spring	-	4F650			-	-		
6	Coil assembly	-	4F710	4F710-K		4F9-121	4F9-120		4F7*0-
7	Sub base	Aluminum alloy die-casting	4F720	4F720-K		-	4F9-120		4F7*0-
8	Seal assembly	-	4F730	4F730-K		4F9-119	-		Electric connection -
9	Piston (A) assembly	-	4F740			4F9-123	-		Coil-Voltage
10	Piston (B) assembly	-	4F750			-	-		Coil-Voltage
11	Cylinder A	Aluminum	<ul style="list-style-type: none"> • For consumable parts, kit is available. Please replace a whole kit but not a part. (The kit includes packing seal assembly, piston assembly (A) and (B) but not any coil assembly.) • Plunger assembly is attached to coil assembly. 						
12	Cylinder B	Aluminum							
13	Body block	Aluminum alloy die-casting							
14	Spring retainer	Stainless steel							
15	O ring	Nitrile rubber							
16	Pilot valve body assembly								
17	Gasket	Nitrile rubber							
18	DIN terminal box	-							

Uniwire system

SKH


PCD/
FS/FD

Discrete
5 port pilot operated valve

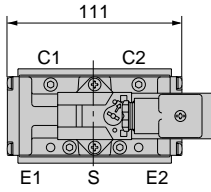
4F4 Series


Discrete valve: Sub base porting

Dimensions

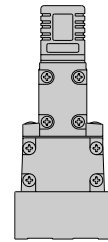
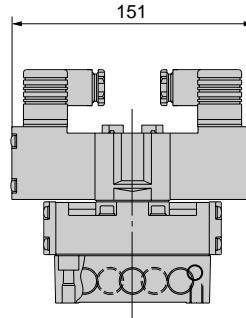
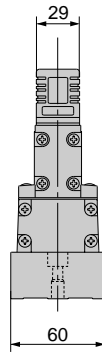
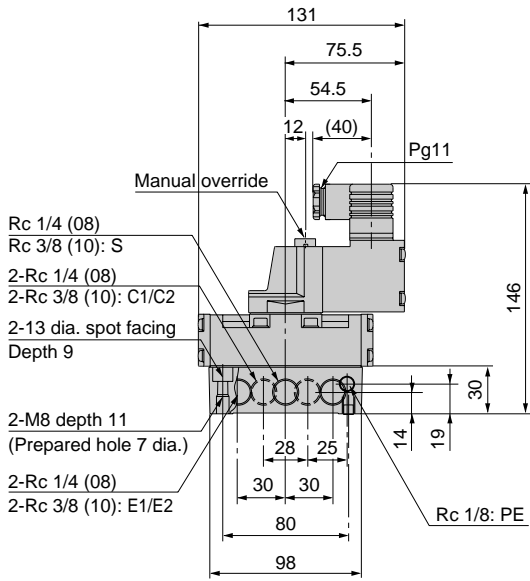
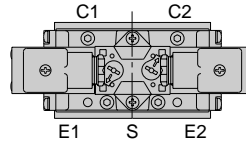
4F410  (File name: Page 638 or Ending 23)


- 2-position single: DIN terminal box



4F420  (File name: Page 638 or Ending 23)

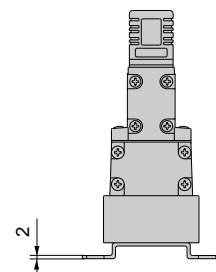
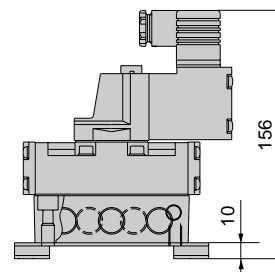
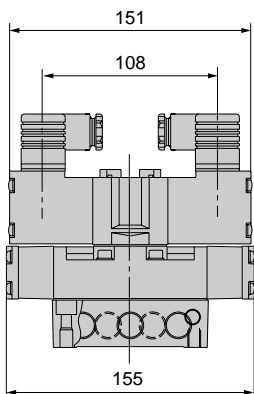
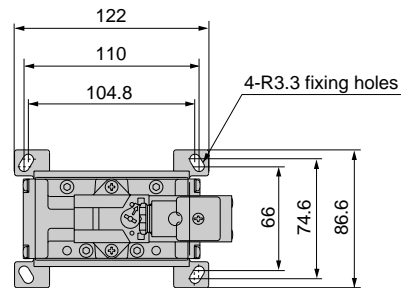
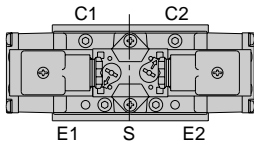
- 2-position double: DIN terminal box



4F4³/₄0  (File name: Page 638 or Ending 23)

- 3-position: DIN terminal box

- Mounting bracket: (P)

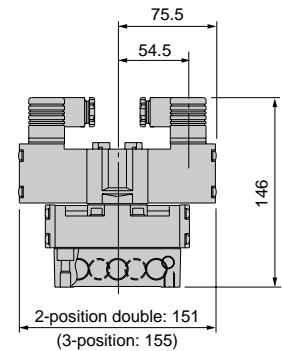
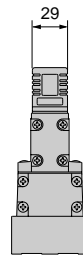
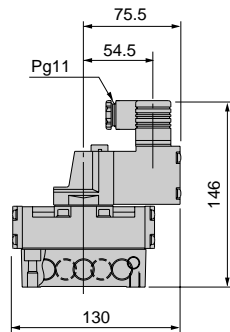


Dimensions

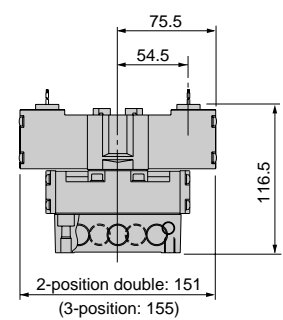
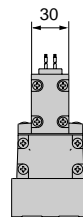
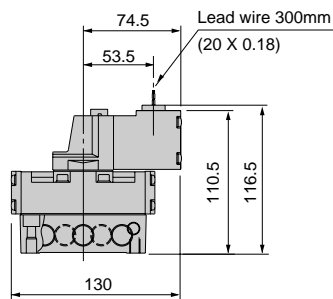
⬇️ 2-position single

⬇️ 2-position double/3-position

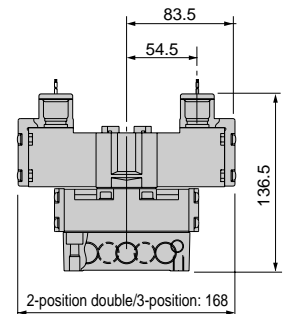
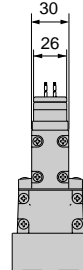
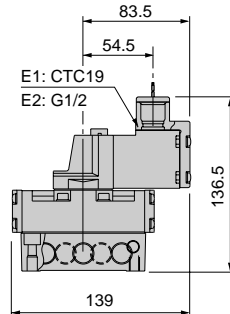
- DIN terminal box indicator light: (L)



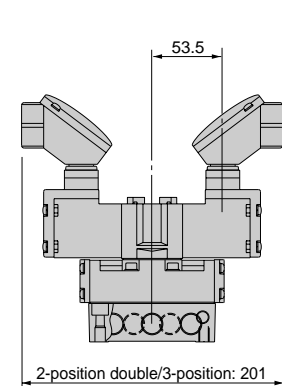
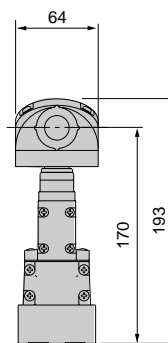
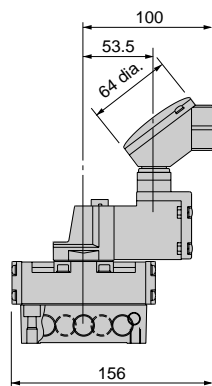
- Grommet lead wire: (E)



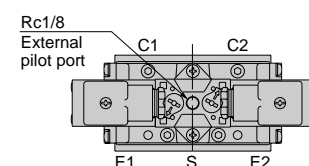
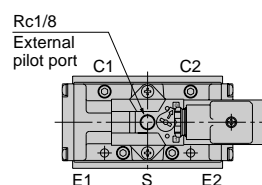
- Conduit with lead wire: (E1/E2)



- Round terminal box: (B1/B/BL)



- External pilot port: (K)



4SA/B0

4SA/B1

4GA/B

MN4GA/B

4GA/B (master)

MN3S0/
MN4S0

4TB

4L2-4/
LMFO

4KA/B

4F

PV5/
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/
NVP

4F**0E

HMV/
HSV

Uniwire
system

SKH


PCD/
FS/FD

5 port pilot operated valve
Discrete


4F5 Series

Discrete valve: Sub base porting

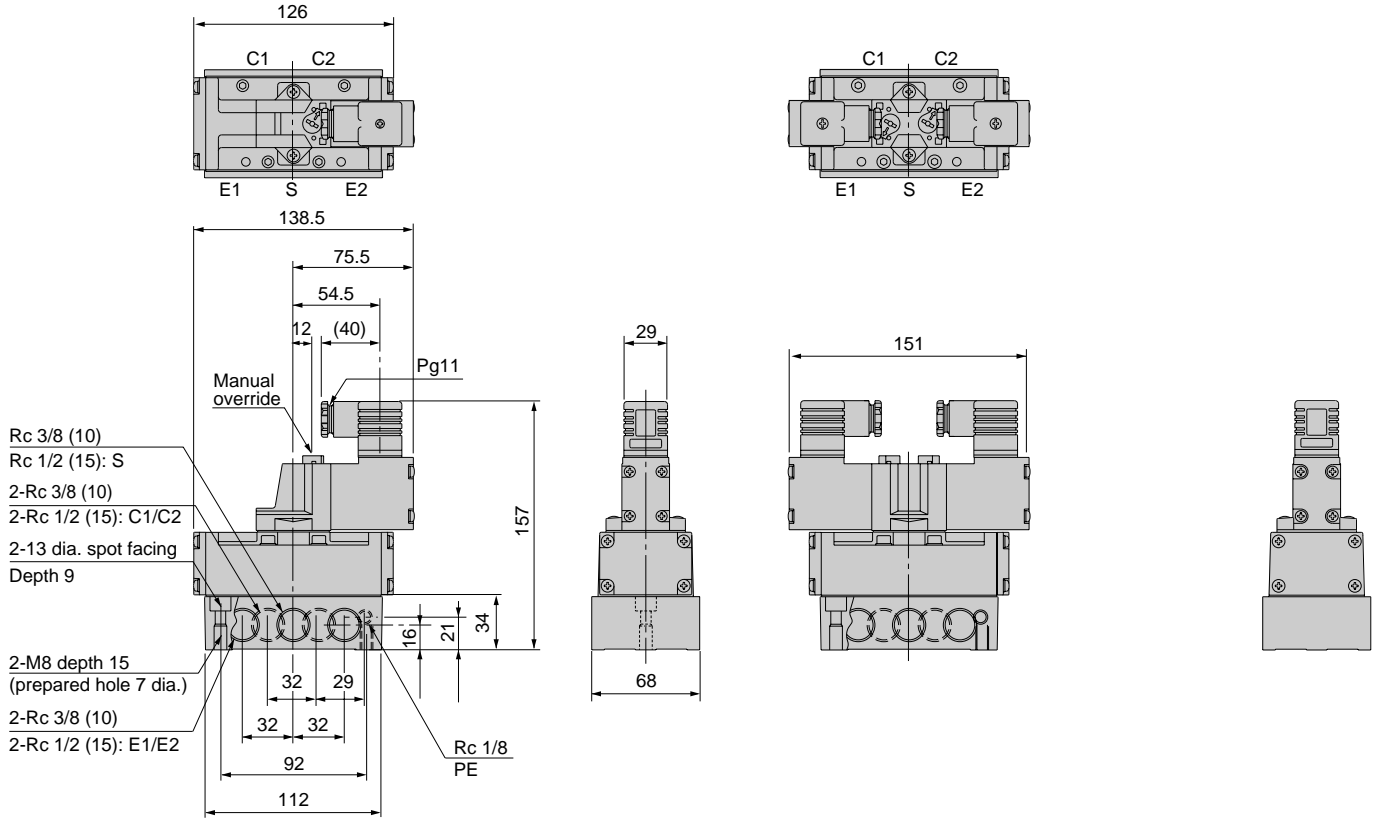
Dimensions


4F510  (File name: Page 638 or Ending 23)

- 2-position single: DIN terminal box

4F520  (File name: Page 638 or Ending 23)

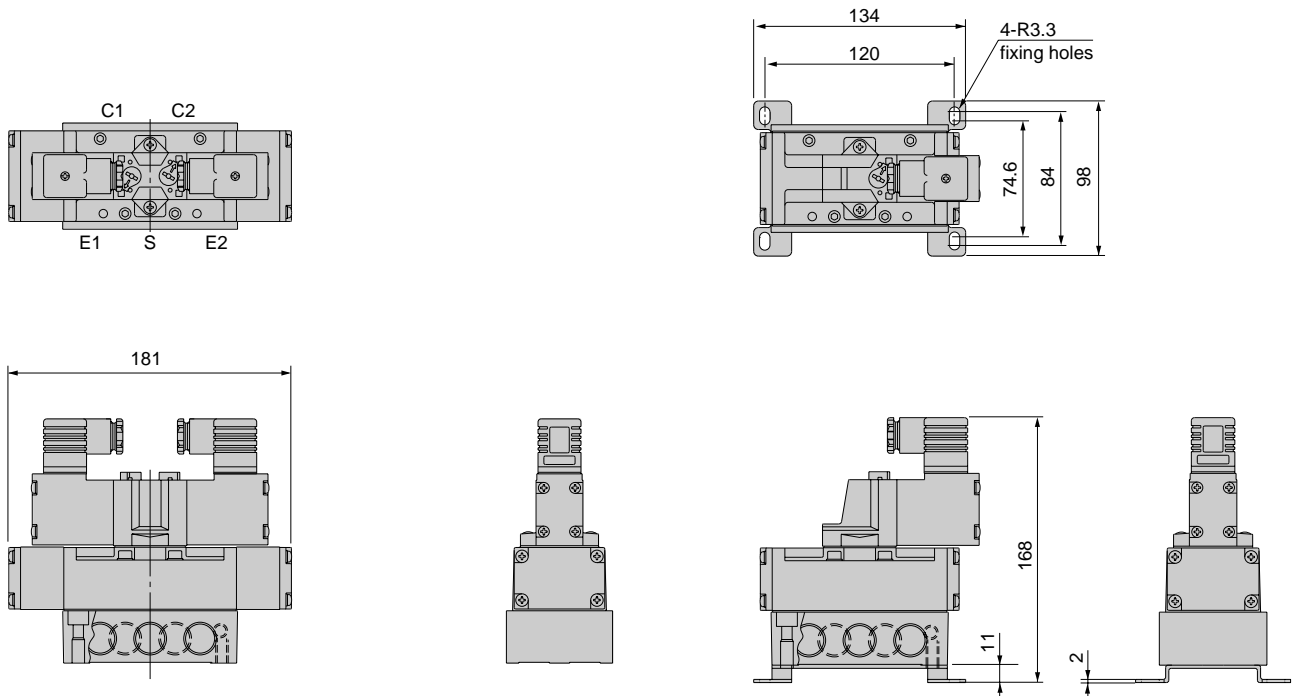
- 2-position double: DIN terminal box



4F5 $\frac{3}{4}$ 0  (File name: Page 638 or Ending 23)

- 3-position: DIN terminal box

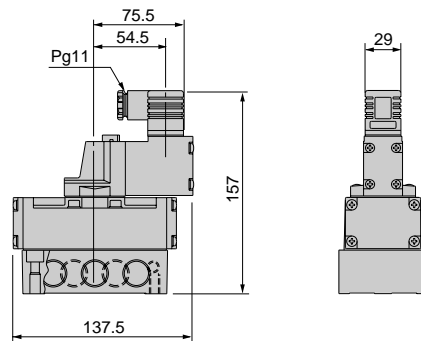
- Mounting bracket: (P)



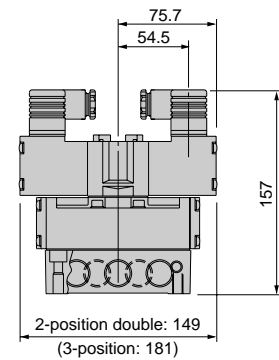
Dimensions

- DIN terminal box indicator light: (L)

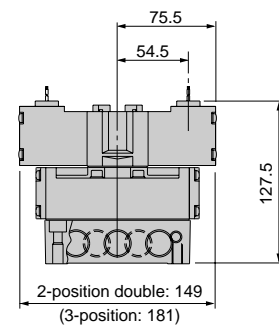
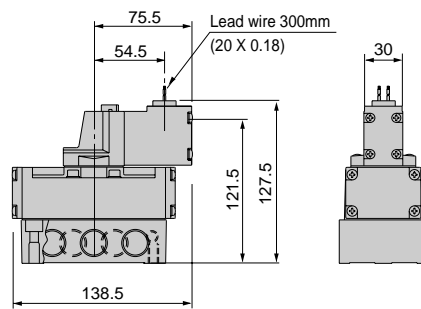
⬇ 2-position single



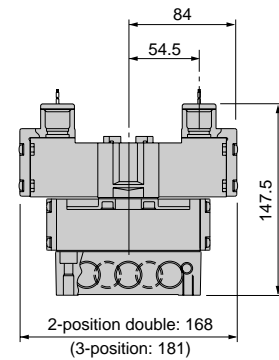
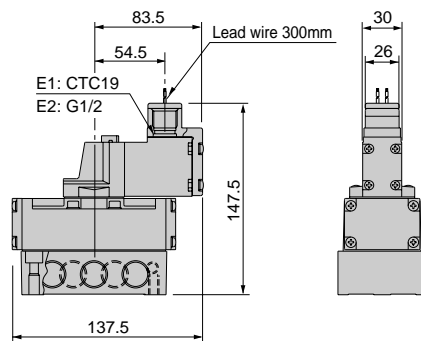
⬇ 2-position double/3-position
• Figure shows 2-position double.



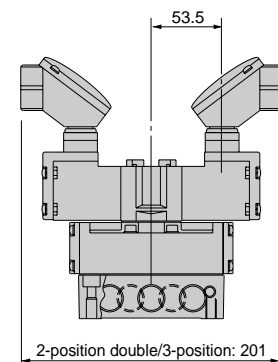
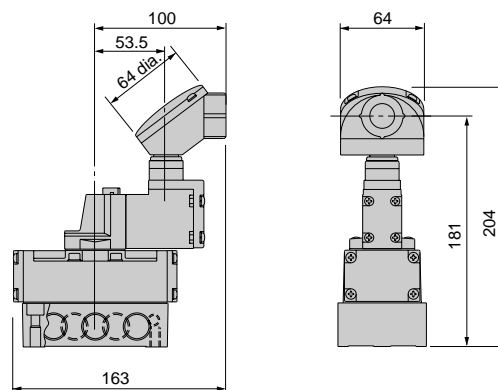
- Grommet lead wire: (E)



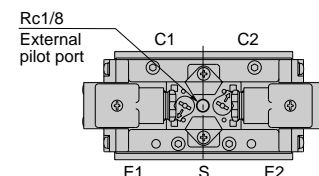
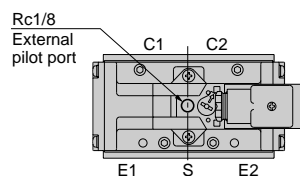
- Conduit with lead wire: (E1/E2)



- Round terminal box: (B1/B/BL)



- External pilot port: (K)



4SA/B0

4SA/B1

4GA/B

MN4GA/B

4GA/B
(master)

MN3S0/
MN4S0

4TB

4L2-4/
LMFO

4KA/B

4F

PV5/
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/
NVP

4F**0E

HMV/
HSV

Uniwire
system

SKH


PCD/
FS/FD

5 port pilot operated valve
Discrete


4F6 Series

Discrete valve: Sub base porting

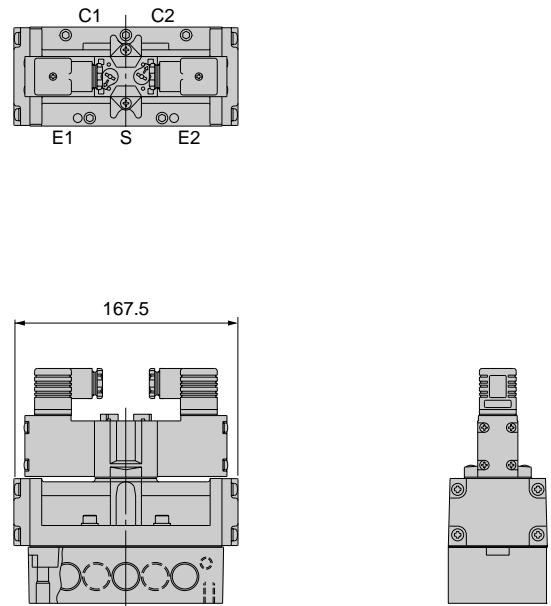
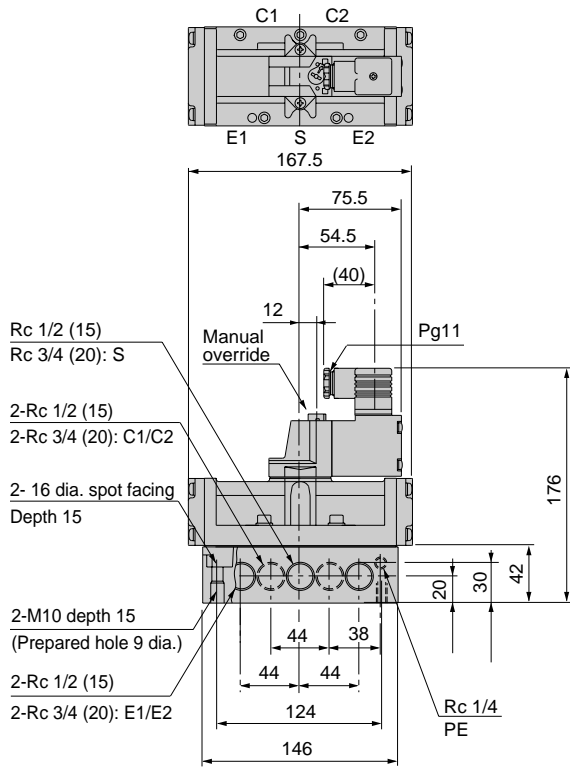
Dimensions


4F610  (File name: Page 638 or Ending 23)

- 2-position single: DIN terminal box

4F620  (File name: Page 638 or Ending 23)

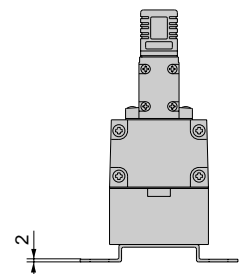
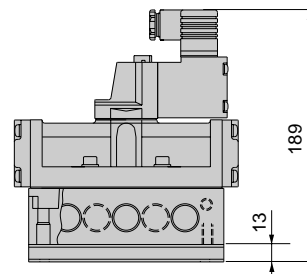
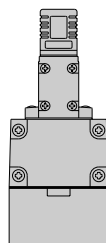
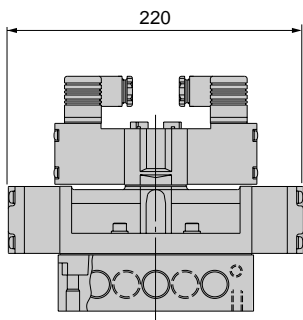
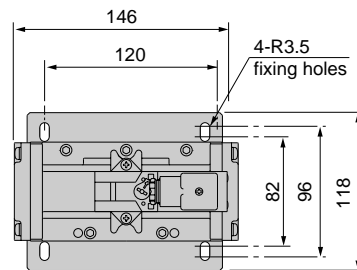
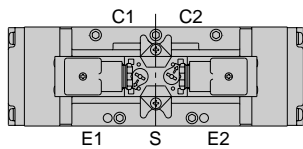
- 2-position double: DIN terminal box



4F6³/₄0  (File name: Page 638 or Ending 23)

- 3-position: DIN terminal box

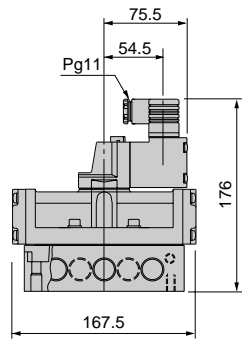
- Mounting bracket: (P)



Dimensions

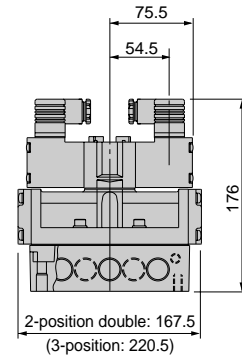
- DIN terminal box indicator light: (L)

Ⓣ 2-position single

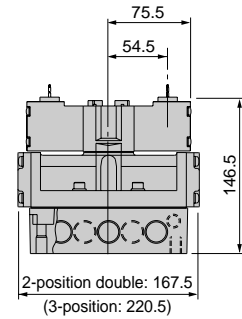
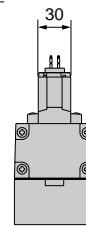
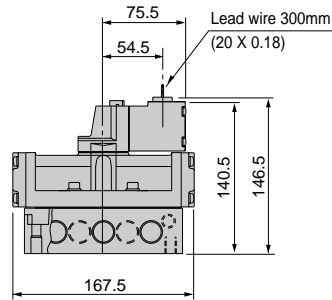


Ⓣ 2-position double/3-position

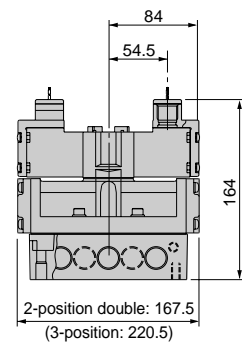
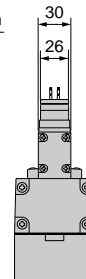
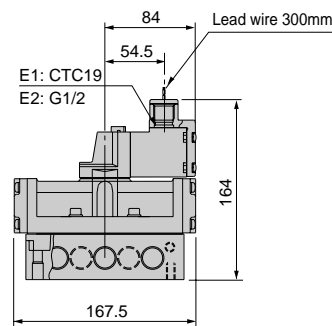
- Figure shows 2-position double.



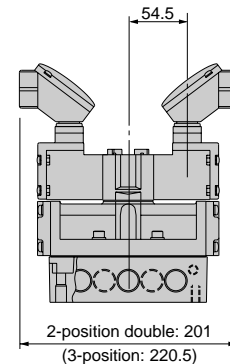
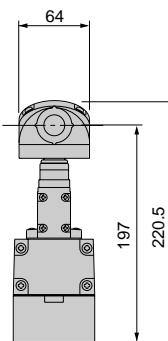
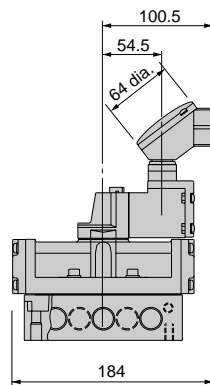
- Grommet lead wire: (E)



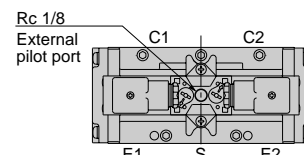
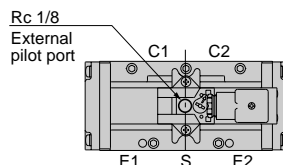
- Conduit with lead wire: (E1/E2)



- Round terminal box: (B1/B/BL)



- External pilot port: (K)



4SA/B0

4SA/B1

4GA/B

MN4GA/B

4GA/B (master)

MN3S0/
MN4S0

4TB

4L2-4/
LMFO

4KA/B

4F

PV5/
CMF

3MA/B0

3PA/B

P/M/B

NP/NAP/
NVP

4F**0E

HMV/
HSV

Uniwire
system

SKH

PCD/
FS/FD

Discrete
5 port pilot operated valve