



Discrete

5 port pilot operated small pneumatic control valve

Body porting, sub-plate porting

4SA0/4SB0 Series

● Applicable cylinder bore size: $\phi 6$ to $\phi 25$



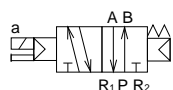
Refer to Intro 17 for details.



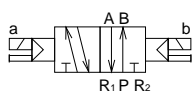
MN3E0
MN4E0
4GA/B
M4GA/B
MN4GA/B
4GA/B (Master)
W4GA/B2
W4GB4
MN3S0
MN4S0
4TB
4L2-4/LMFO
4SA/B0
4SA/B1
4KA/B
4F
PV5G/CMF
PV5/CMF
3MA/B0
3PA/B
P/M/B
NP/NAP/NVP
4F*0E
HMV
HSV
2QV
3QV
SKH
PCD/FS/FD
Ending

JIS symbol

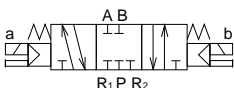
- 5 port valve
- 2-position single solenoid



- 2-position double solenoid



- 3-position
- All ports closed



- 3-position A/B/R connection



- 3-position P/A/B connection



Common specifications

Descriptions	
Valve and operation type	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	0.7
Min. working pressure MPa	0.2
Withstanding pressure MPa	1.05
Ambient temperature °C	5 to 50
Fluid temperature °C	5 to 50
Lubrication	Not required
Protective structure	Dust proof
Vibration/impact m/s ²	50 or less / 300 or less
Working environment	Containing corrosive gas is impermissible.

Electric specifications

Descriptions		
Rated voltage V	24 DC	12 DC
Rated voltage fluctuation range	±10%	
Rated current A	0.025 (0.029)	0.050 (0.058)
Note 1		
Power consumption W Note 2	0.6 (0.7)	0.6 (0.7)
Heat proof class	B	
Temperature rise °C	50	

Note 1: Value in () are for types with light and surge suppressor.
Note 2: Power consumption of 6/5 VDC is 0.9 (1.0) W.

Individual specifications

Descriptions		4SA0		4SB0
Port size	P/A/B port	M3	$\phi 4$ barbed joint	M5
	R1/R2 port	M3		M5
Response time Note 3 ms	2-position	20 or less		
	3-position	30 or less		
Weight g	2-position	Single solenoid	23	43
		Double solenoid	35	55
	3-position	39	59	

Note 3: Response time is the value when ON for supply pressure 0.5 MPa, pre-lubricated. The value varies depending on pressure and quality of lubricant.

Flow characteristics

Model no.	Solenoid position	Port size	P → A/B		A/B → R		S (mm ²)	
			C (dm ³ /s·bar)	b	C (dm ³ /s·bar)	b		
4SA0	2-position	P/A/B port: M3, $\phi 4$ barbed joint R1/R2 port: M3	-	-	-	-	0.9	
	3-position		All ports closed	-	-	-		-
			A/B/R connection	-	-	-		-
			P/A/B connection	-	-	-		-
4SB0	2-position	M5	0.32	0.20	0.30	0.21	-	
	3-position		All ports closed	0.32	0.19	0.29	0.11	-
			A/B/R connection	0.31	0.18	0.29	0.22	-
			P/A/B connection	0.33	0.20	0.29	0.21	-

Note 4: Effective sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

Ozone specifications (Ending 5)

** - Voltage - P11

How to order discrete valve



A Model no.

Constant

B Solenoid position

C Port size

D Manual override

E Electric connection

Note 3

Note: Refer to page 706 for circuit diagram of surge suppressor and light.

F Other options

G Voltage

⚠ Note on model no. selection

Note 1: The following CKD joints are M3 compatible.
FTS4-M3, GWS3-M3-S

Note 2: With T4, the barbed joint FTS4-M3 is screwed into the A and B ports.

Note 3: AWG26 size lead wire is used. (7/0.16, outer diameter ϕ 1.35, 0.13 mm²)

<Example of model number>

4SA010-M3-M1P-3

- A** Model : 4SA0
- B** Solenoid position : 2-position single solenoid
- C** Port size : M3
- D** Manual override : Lock type manual override
- E** Electric connection : Grommet lead wire (standard)
- F** Other options : Mounting plate
- G** Voltage : 24 VDC

		A Model no.	
		Body porting	Sub-plate porting
		4SA0	4SB0
Symbol	Descriptions		
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			
Port	P/A/B	R₁/R₂	
M3	M3		● Note 1
M5	M5		●
T4	ϕ 4 barbed joint	M3	● Note 2
D Manual override			
Blank	Non-locking manual override	●	●
M1	Locking manual override	●	●
E Electric connection			
Grommet lead wire			
Blank	Grommet lead wire (300 mm)	●	●
C-connector (lateral lead wire)			
C	Lead wire (300 mm)	●	●
C00	Lead wire (500 mm)	●	●
C01	Lead wire (1000 mm)	●	●
C02	Lead wire (2000 mm)	●	●
C1	No lead wire (with socket)	●	●
C2	Lead wire (300 mm) With surge suppressor and light	●	●
C20	Lead wire (500 mm) With surge suppressor and light	●	●
C21	Lead wire (1000 mm) With surge suppressor and light	●	●
C22	Lead wire (2000 mm) With surge suppressor and light	●	●
C2N	No lead wire (without socket) With surge suppressor and light	●	●
C3	No lead wire (with socket) With surge suppressor and light	●	●
D-connector (upward lead wire)			
D	Lead wire (300 mm)	●	●
D00	Lead wire (500 mm)	●	●
D01	Lead wire (1000 mm)	●	●
D02	Lead wire (2000 mm)	●	●
D1	No lead wire (with socket)	●	●
D2	Lead wire (300 mm) With surge suppressor and light	●	●
D20	Lead wire (500 mm) With surge suppressor and light	●	●
D21	Lead wire (1000 mm) With surge suppressor and light	●	●
D22	Lead wire (2000 mm) With surge suppressor and light	●	●
D2N	No lead wire (without socket) With surge suppressor and light	●	●
D3	No lead wire (with socket) With surge suppressor and light	●	●
F Other options			
Blank	Without mounting plate	●	●
P	Mounting plate (only 2-position single)	●	●
G Voltage			
3	Standard 24 VDC	●	●
4	Standard 12 VDC	●	●
DC6V	Option 6 VDC	●	●
DC5V	Option 5 VDC	●	●

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*OE

HMV
HSV

2QV
3QV

SKH

PCD/
FS/FD

Ending

Discrete
5 port pilot operated valve

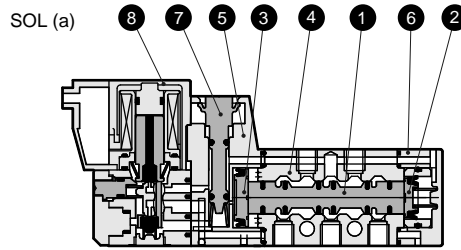
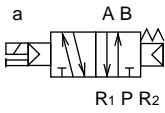
4SA0 Series

Discrete valve: Body porting

Internal structure and parts list

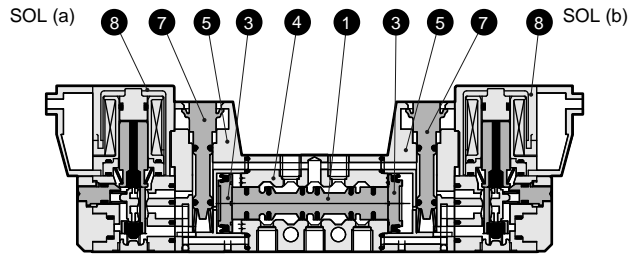
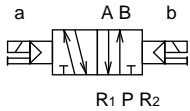
4SA010

● 2-position single solenoid



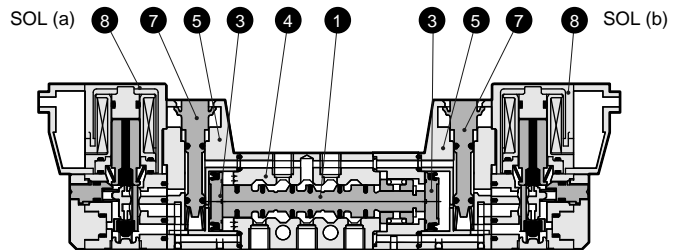
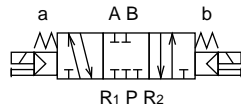
4SA020

● 2-position double solenoid



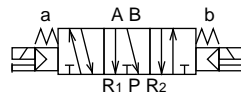
4SA030

● 3-position
all ports closed



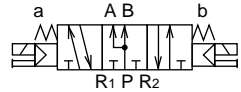
4SA040

A/B/R connection



4SA050

P/A/B connection



Main parts list

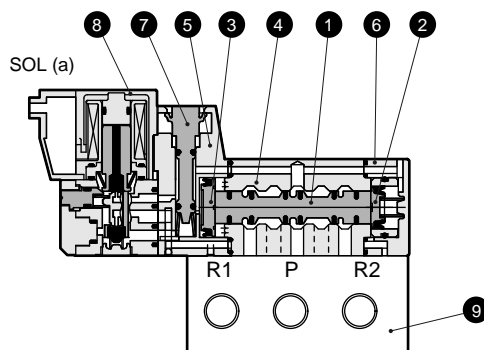
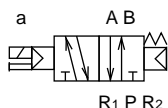
Repair parts list

No.	Parts name	Material	No.	Parts name	Model no.
1	Spool assembly	-	8	Coil assembly	4S0- <input type="text"/> -COIL- <input type="text"/>
2	Piston S assembly	-			Blank for grommet lead wire.
3	Piston D assembly	-			
4	Body	Aluminum			
5	Piston room	Resin			
6	Cap	Resin			
7	Manual override	Resin			
8	Coil assembly	-			

Internal structure and parts list

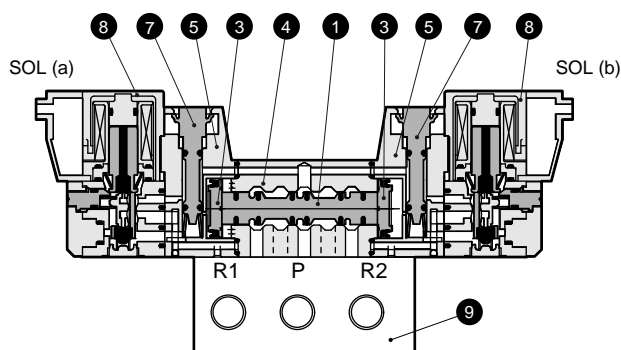
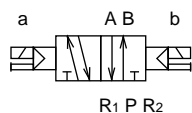
4SB010

● 2-position single solenoid



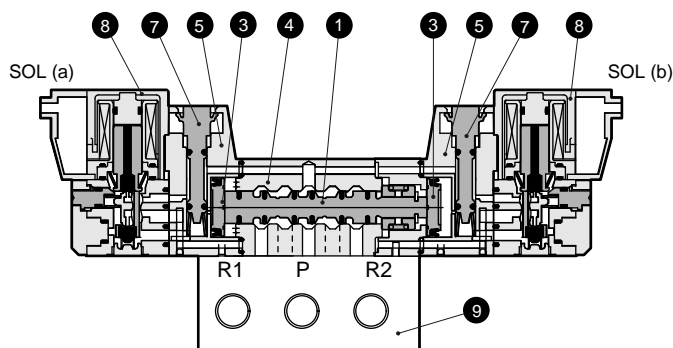
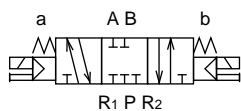
4SB020

● 2-position double solenoid



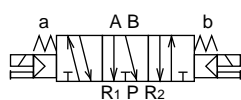
4SB030

● 3-position all ports closed



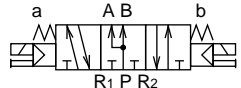
4SB040

A/B/R connection



4SB050

P/A/B connection



Main parts list

No.	Parts name	Material
1	Spool assembly	-
2	Piston S assembly	-
3	Piston D assembly	-
4	Body	Aluminum
5	Piston room	Resin
6	Cap	Resin
7	Manual override	Resin
8	Coil assembly	-
9	Sub-plate	Aluminum

Repair parts list

No.	Parts name	Model no.
8	Coil assembly	4S0- <input type="text"/> -Electric connection- <input type="text"/> -COIL- <input type="text"/> -Voltage Blank for grommet lead wire.

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

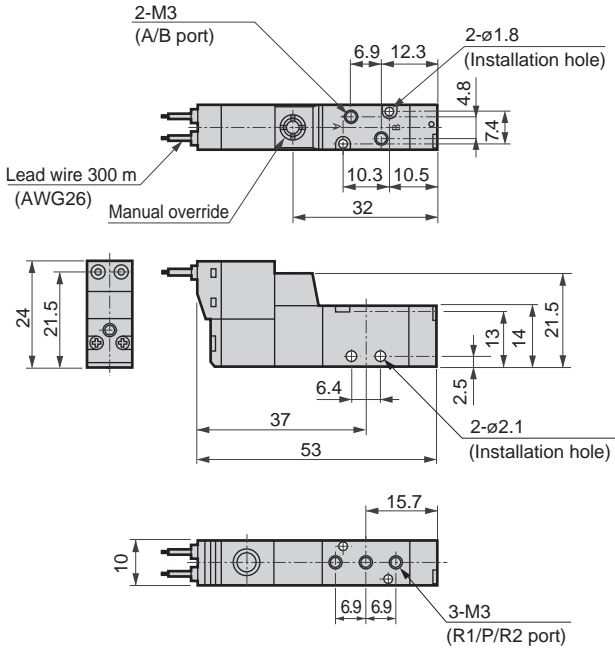
4SA0 Series

Discrete valve: Body porting

Dimensions

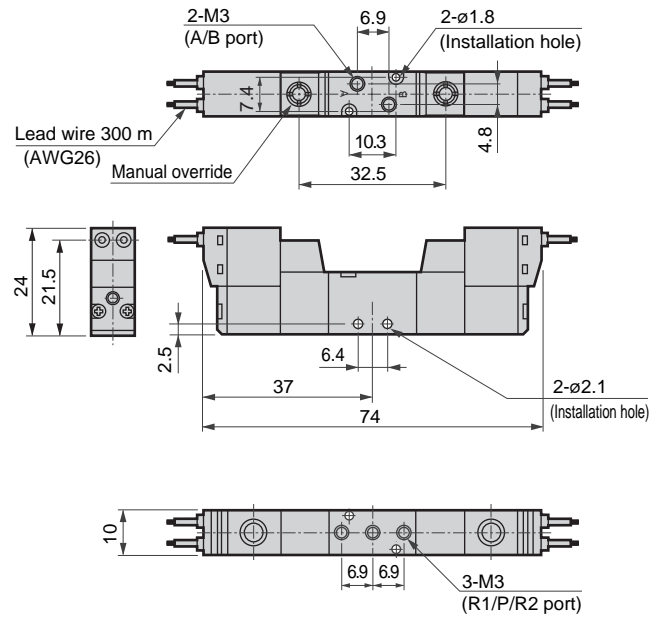
4SA010-M3

● 2-position single solenoid: Grommet lead wire



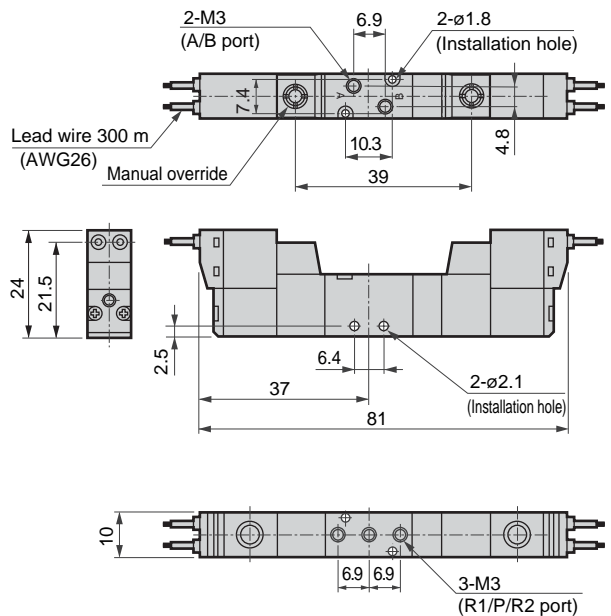
4SA020-M3

● 2-position double solenoid: Grommet lead wire

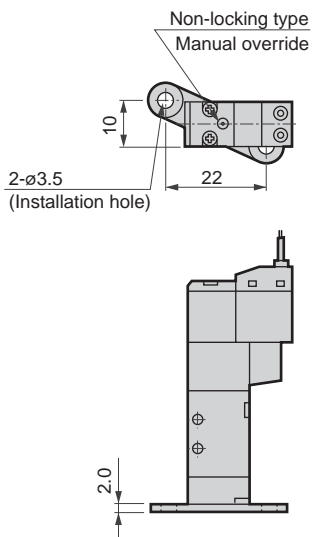


4SA040-M3

● 3-position: Grommet lead wire



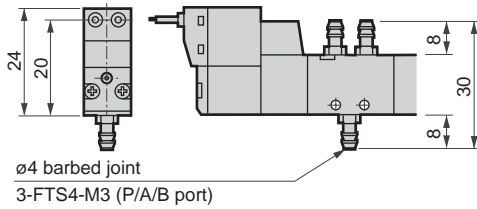
● Mounting plate: P (only 2-position single solenoid)



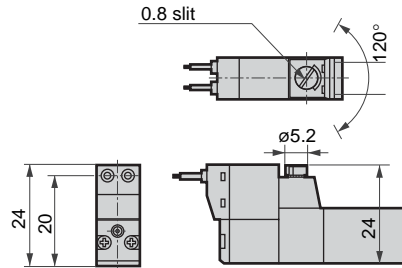
- MN3E0
- MN4E0
- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (Master)
- W4GA/B2
- W4GB4
- MN3S0
- MN4S0
- 4TB
- 4L2-4/LMFO
- 4SA/B0
- 4SA/B1
- 4KA/B
- 4F
- PV5G/CMF
- PV5/CMF
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP/NVP
- 4F*0E
- HMV
- HSV
- 2QV
- 3QV
- SKH
- PCD/FS/FD
- Ending

Dimensions

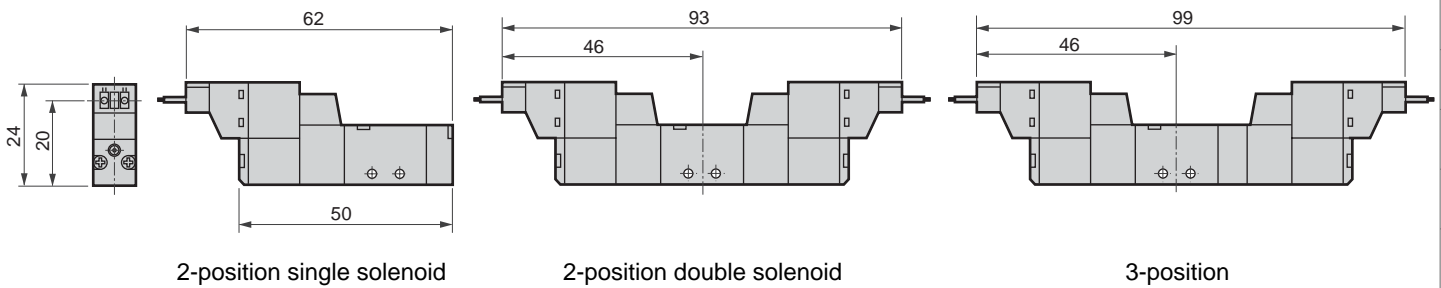
● $\varnothing 4$ barbed joint: (T4)



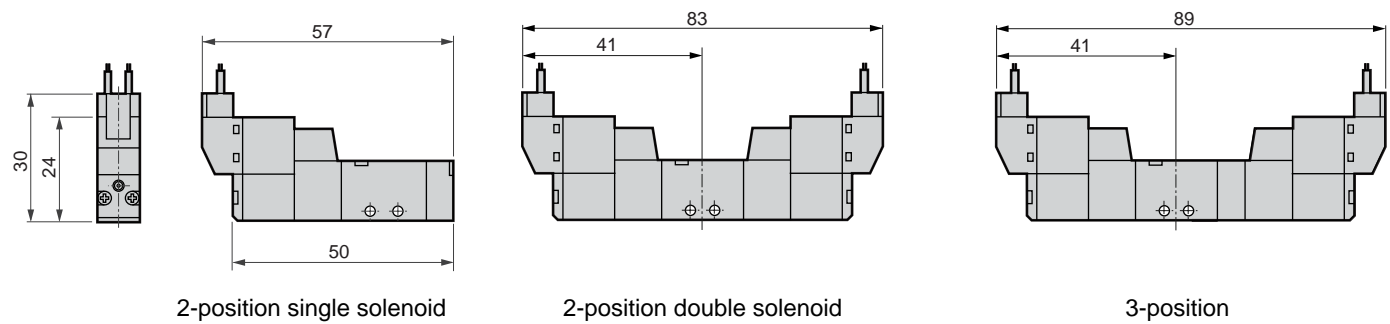
● Locking manual override: (M1)



● C-connector: (C/C0*/C1/C2/C2*/C3)



● D-connector: (D/D0*/D1/D2/D2*/D3)



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*OE
HMV
HSV
2QV
3QV
SKH
PCD/FS/FD
Ending

Discrete 5 port pilot operated valve

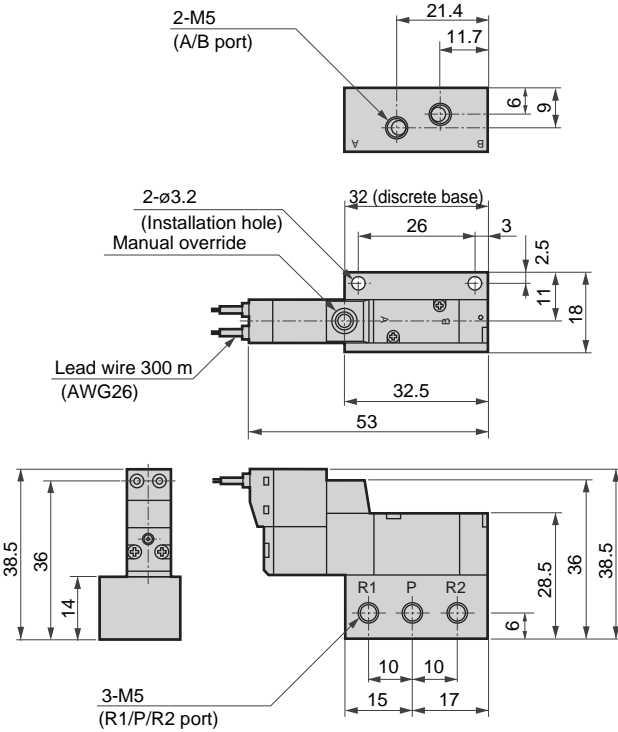
4SB0 Series

Discrete valve: Sub-plate porting

Dimensions 

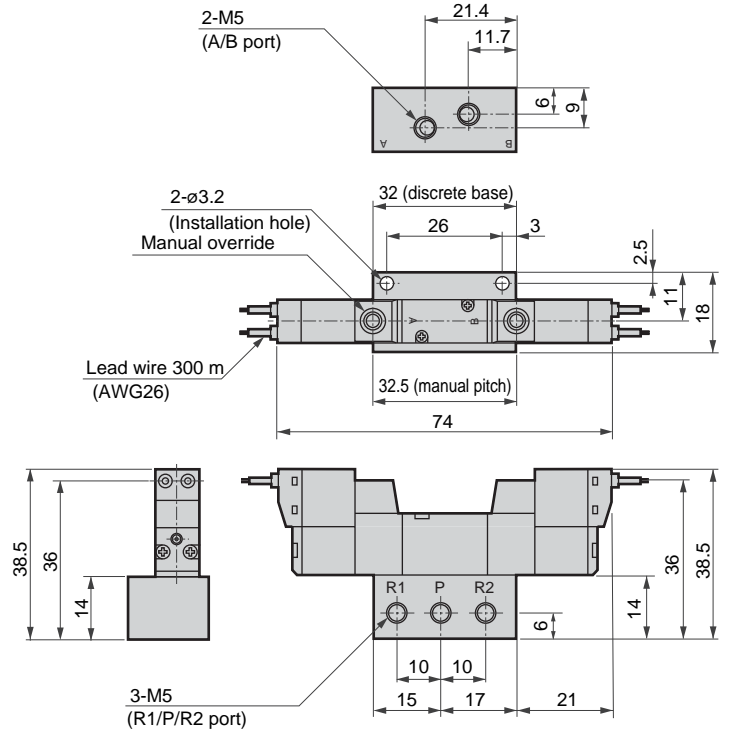
4SB010-M5

● 2-position single solenoid: Grommet lead wire



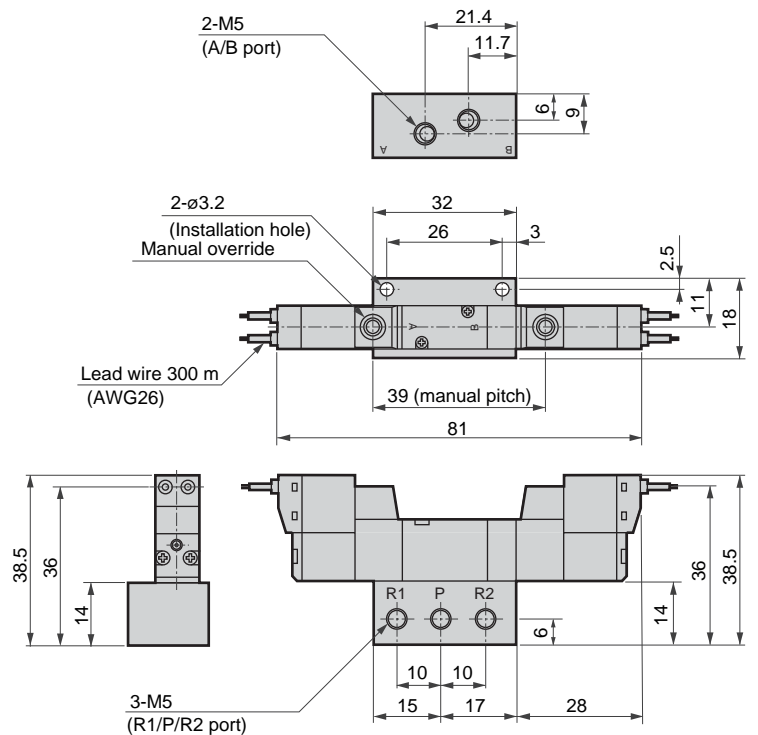
4SB020-M5

● 2-position double solenoid: Grommet lead wire



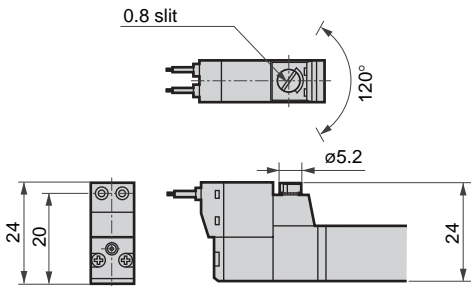
4SB0³/₅0-M5

● 3-position: Grommet lead wire

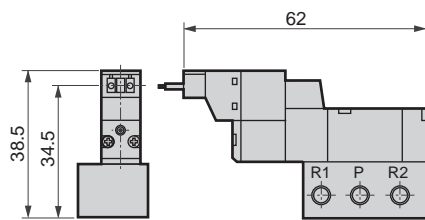


Dimensions

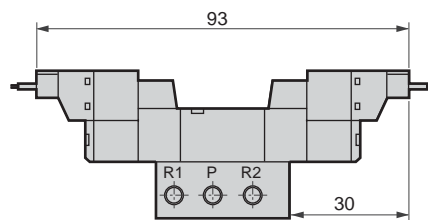
● Locking manual override: (M1)



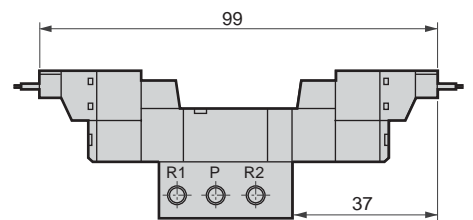
● C-connector: (C/C0*/C1/C2/C2*/C3)



2-position single solenoid

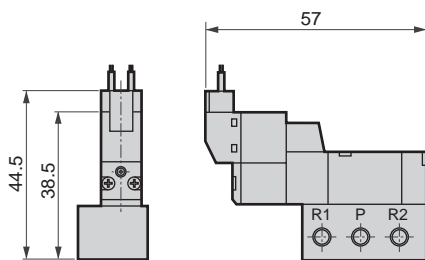


2-position double solenoid

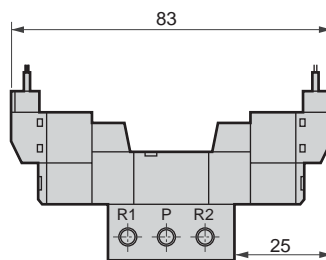


3-position

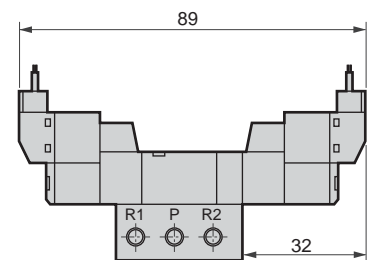
● D-connector: (D/D0*/D1/D2/D2*/D3)



2-position single solenoid



2-position double solenoid



3-position

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