

4SA0/4SB0

5 port pilot operated valve

Small pneumatic valve

Overview

The 4SA0 and 4SB0 Series miniature 5 port valve contributes to space-saving and weight reduction. This series is compatible for driving cylinders up to $\varnothing 25$.

Features

Space saving

The compact design has 10 mm valve width.

Device weight reducing

Aluminum and resin are adopted for main components.

Energy saving

Low wattage design (25 mA at 24 VDC).

Wide variation of electric connection

The lead wire type, C/D-type connector are available in this series. Lights and surge suppressors can also be combined.

Couple with electronic control

5 VDC, 6 VDC, 12 VDC and 24 VDC voltages are available with a low-wattage design. (25 mA at 24 VDC)

Resource saving

Special soft packing seal is adopted, enabling use in an oil-free environment.

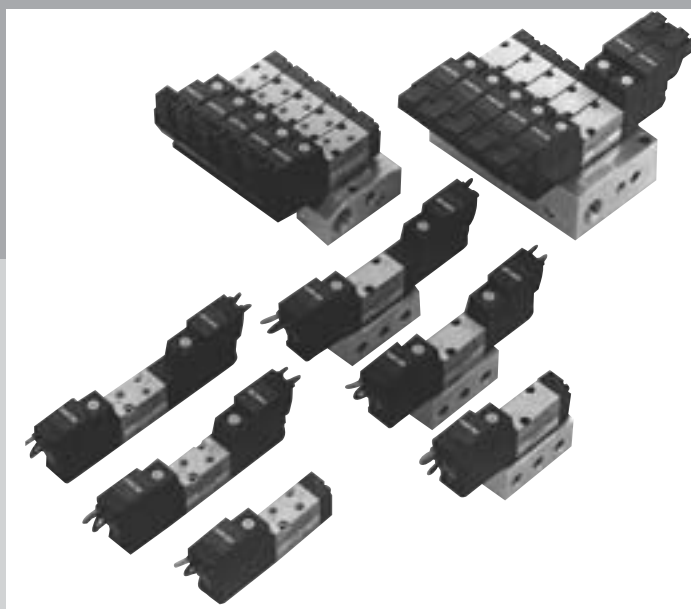
Compatible with lines susceptible to copper

Through ideal material selection and special surface treatment, the generation of copper ion is prevented.

Reduced wiring for PLC control

The flat cable connection and D sub-connector connections (radial, axial) are available as connection types. Reduced wiring can be applied to PLC control.

⚠ Refer to the safety precautions on Introduction before starting use.



C O N T E N T S

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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


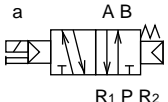

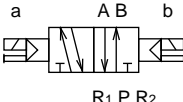

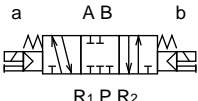
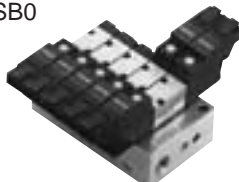
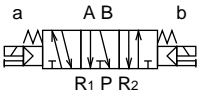
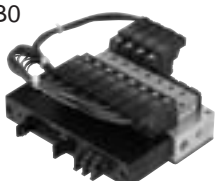
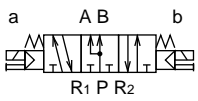
SKH

PCD/
FS/FD

Ending

5 port pilot operated valve

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

Series and piping method		No. of port	Position No. of solenoid JIS symbol	Valve performance			Voltage (V)
				Effective sectional area S (mm ²)	Flow characteristics C (dm ³ / (s·bar)) Note 1	Applicable cylinder Diameter	
Discrete	Body porting	5 port	4SA0  2-position single solenoid 	0.9	-	ø6 to ø25	24 DC 12 DC
	Sub-plate porting		4SB0  2-position double solenoid 	-	0.29 to 0.33		Option 6 DC 5 DC
Individual wiring manifold	Body porting		M4SA0  3-position all ports closed 	0.9	-		24 DC 12 DC
	Sub-plate porting		M4SB0  3-position A/B/R connection 	-	0.29 to 0.32		Option 6 DC 5 DC
Reduced wiring manifold	Sub-plate porting	M4SB0  3-position P/A/B connection 	-	0.29 to 0.32	24 DC 12 DC Option 6 DC 5 DC		

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

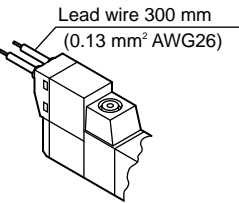
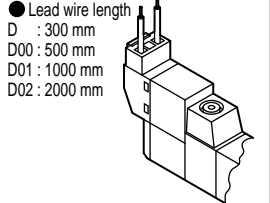

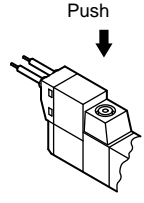
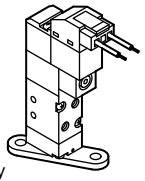
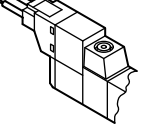
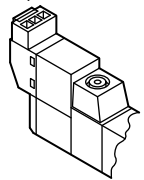

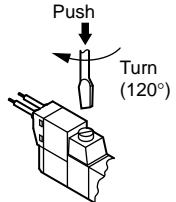
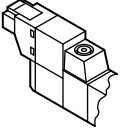
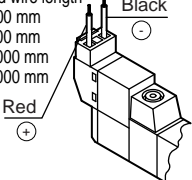

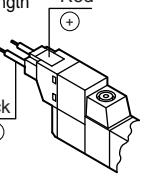
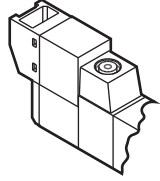
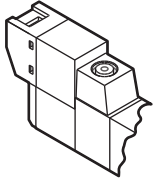
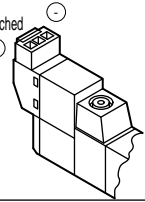
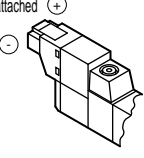
	Solenoid position						A/B port port size					Electric connection					Page
	2-position single solenoid	2-position double solenoid	3-position all ports closed	3-position A/B/R connection	3-position P/A/B connection	Mix manifold	Barbed joint		Female thread		ø4 push-in joint	Grommet lead wire	C-connector	D-connector	D sub-connector	Flat cable connector	
							ø4 barbed joint	ø6 barbed joint	M3	M5							
																	708
																	708
																	716
																	716
																	720

Note: Refer to the following page for details on electric connection and other options.

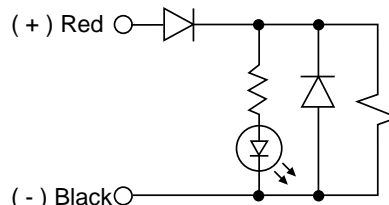
MN3E0
MN4E0
4GA/B
M4GA/B
MN4GA/B
4GA/B (Master)
W4GA/B2
W4GB4
MN3S0
MN4S0
4TB
4L2-4/LMF0
4SA/B0
4SA/B1
4KA/B
4F
PV5G/CMF
PV5/CMF
3MA/B0
3PA/B
P/M/B
NP/NAP/NVP
4F*0E
HMV
HSV
2QV
3QV
SKH
PCD/FS/FD
Ending

5 port pilot operated valve

4SA0/4SB0 Series

MN3E0 MN4E0	Electric connection		Manual override	Other options						
4GA/B	Discrete valve and individual wiring manifold		Blank	Non-locking type						
M4GA/B	Reduced wiring manifold				P					
MN4GA/B	Blank	Grommet lead wire	D	D-connector with lead wire		C4 T31	D sub-connector axial with surge suppressor, indicator light	Blank	Non-locking type	P
4GA/B (Master)	 <p>Lead wire 300 mm (0.13 mm² AWG26)</p>		 <p>● Lead wire length D : 300 mm D00 : 500 mm D01 : 1000 mm D02 : 2000 mm</p>				 <p>Push</p>		 <p>Available only for 4SA010</p>	
W4GA/B2										
W4GB4										
MN3S0 MN4S0	C	C-connector with lead wire	D1	D-connector with socket	D4 T30	D sub-connector radial with surge suppressor, indicator light	M1	Locking		
4TB	 <p>● Lead wire length C : 300 mm C00 : 500 mm C01 : 1000 mm C02 : 2000 mm</p>		 <p>Socket, crimp terminal attached</p>				 <p>Push Turn (120°)</p>			
4L2-4/LMFO										
4SA/B0										
4SA/B1										
4KA/B	C1	C-connector with socket	D2	D-connector with lead wire, surge suppressor, indicator light	C4 T50	Flat cable connector with surge suppressor, indicator light				
4F	 <p>Socket, crimp terminal attached</p>		 <p>● Lead wire length D2 : 300 mm D20 : 500 mm D21 : 1000 mm D22 : 2000 mm</p> <p>Black (-) Red (+)</p>							
PV5/CMF										
PV5/CMF										
3MA/B0										
3PA/B	C2	C-connector with lead wire, with surge suppressor, indicator light	D2N	D-connector with surge suppressor, indicator light						
P/MB	 <p>● Lead wire length C2 : 300 mm C20 : 500 mm C21 : 1000 mm C22 : 2000 mm</p> <p>Red (+) Black (-)</p>									
NP/NAP/NVP										
4F*0E										
HMV HSV	C2N	C-connector with surge suppressor, indicator light	D3	D-connector with socket with surge suppressor, indicator light						
2QV 3QV			 <p>Socket - Crimp terminal attached</p> <p>Black (-) Red (+)</p>							
SKH										
PCD/ FS/FD										
Ending	C3	C-connector with socket, with surge suppressor, indicator light								
	 <p>Socket - Crimp terminal attached</p> <p>Black (-) Red (+)</p>									

Surge suppressor / indicator light internal circuit diagram



* Note that surge suppressor / indicator light has polarity.
* Diode is used for surge suppressor.



Discrete 5 port pilot operated small pneumatic control valve Body porting, sub-plate porting **4SA0/4SB0 Series**

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



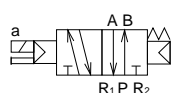
Refer to Intro 17 for details.



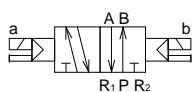
MN3E0
MN4E0
4GA/B
M4GA/B
MN4GA/B
4GA/B (Master)
W4GA/B2
W4GB4
MN3S0
MN4S0
4TB
4L2-4/LMFO
4SA/B0
4SA/B1
4KA/B
4F
PV5G/CMF
PV5/CMF
3MA/B0
3PA/B
P/M/B
NP/NAP/NVP
4F*0E
HMV
HSV
2QV
3QV
SKH
PCD/FS/FD
Ending

JIS symbol

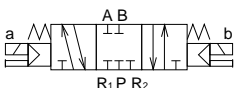
- 5 port valve
- 2-position single solenoid



- 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

Symbol		Descriptions		A Model no.	
				Body porting	Sub-plate porting
		4SA0	4SB0		
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	R ₁ /R ₂			
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		12 VDC	●	●	
DC6V	Option	6 VDC	●	●	
DC5V		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

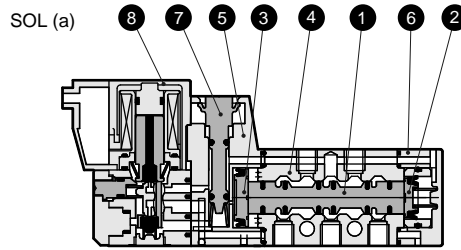
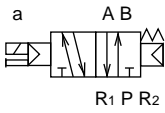
4SA0 Series

Discrete valve: Body porting

Internal structure and parts list

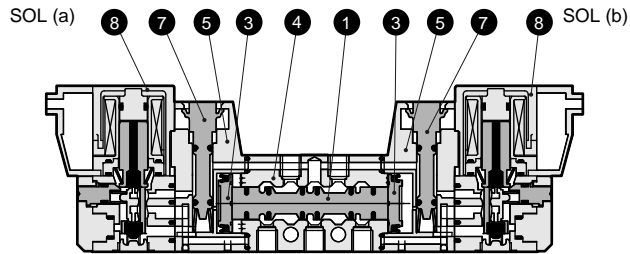
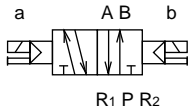
4SA010

● 2-position single solenoid



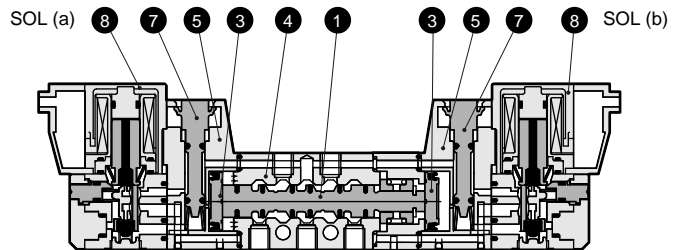
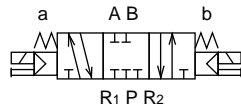
4SA020

● 2-position double solenoid



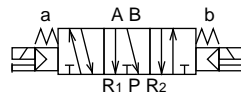
4SA030

● 3-position
all ports closed



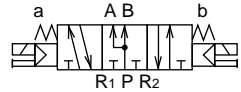
4SA040

A/B/R connection



4SA050

P/A/B connection



Main parts list

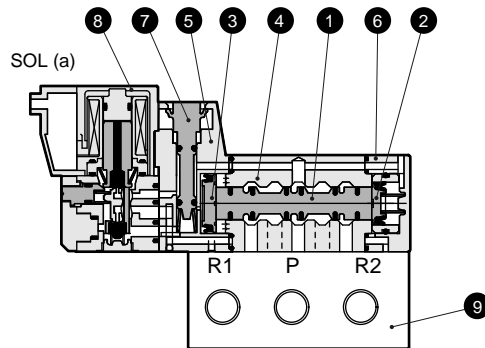
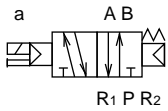
Repair parts list

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

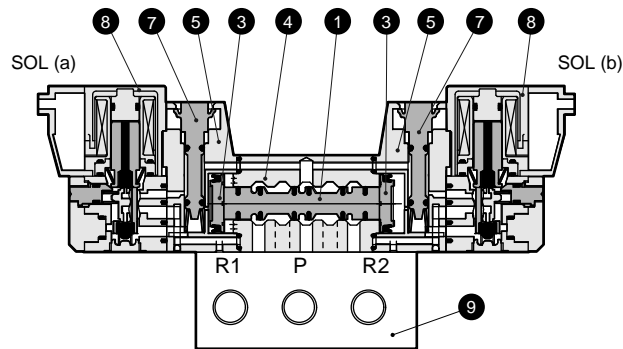
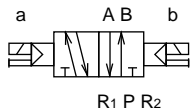
4SB010

● 2-position single solenoid



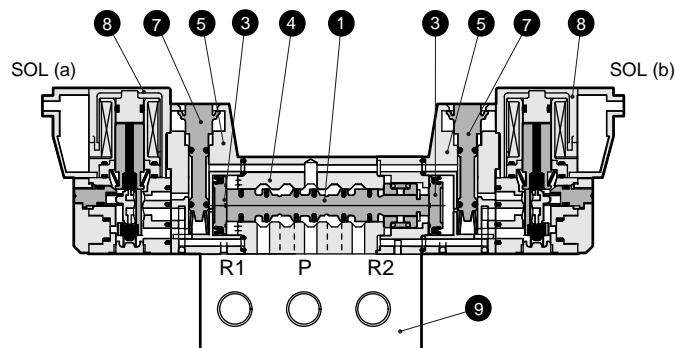
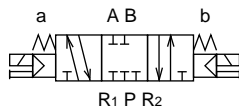
4SB020

● 2-position double solenoid



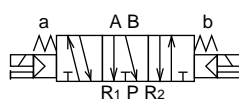
4SB030

● 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 -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

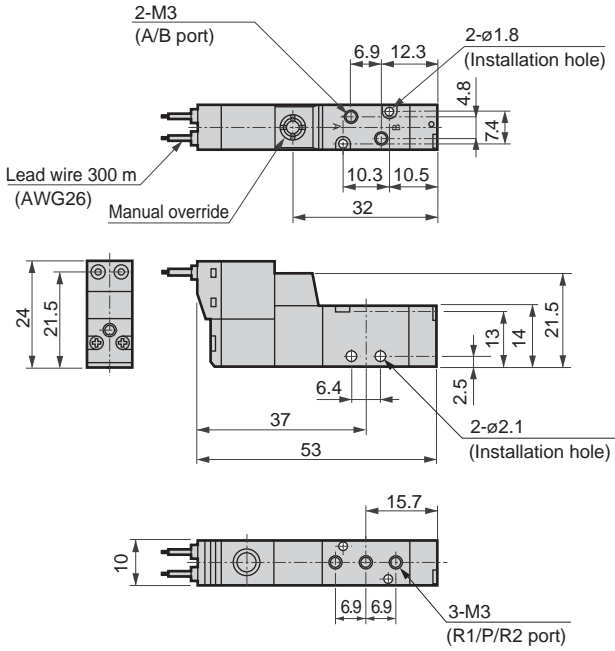
4SA0 Series

Discrete valve: Body porting

Dimensions

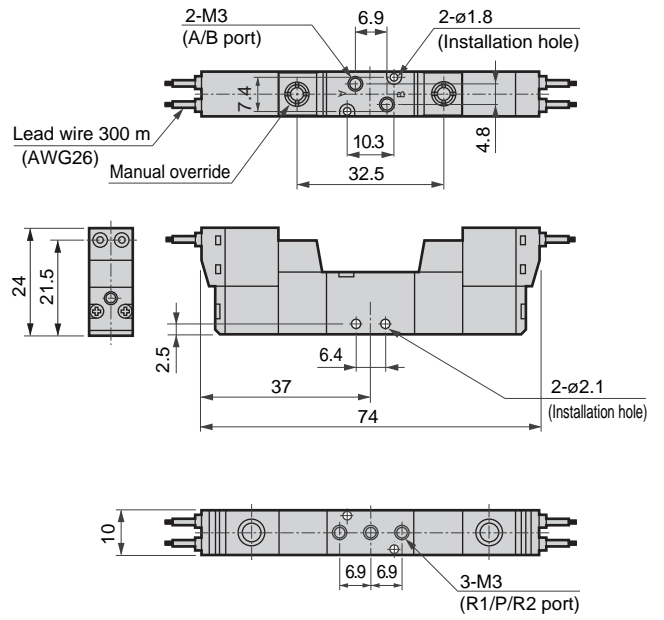
4SA010-M3

● 2-position single solenoid: Grommet lead wire



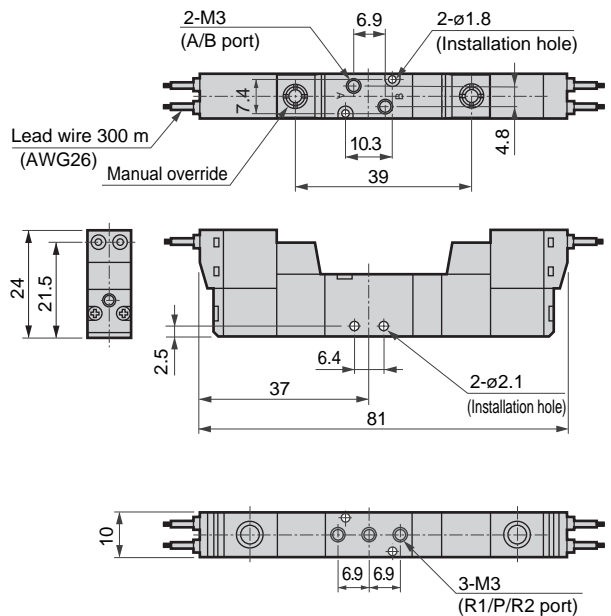
4SA020-M3

● 2-position double solenoid: Grommet lead wire

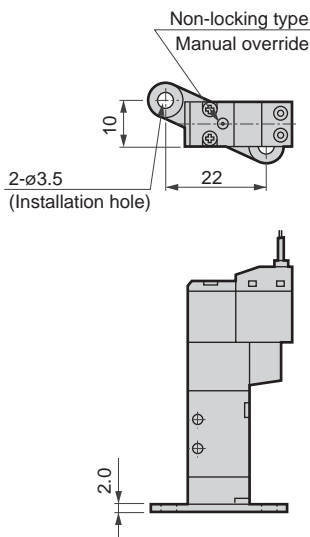


4SA040-M3

● 3-position: Grommet lead wire



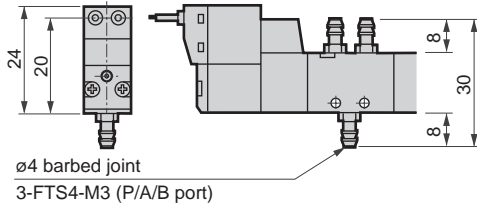
● Mounting plate: P (only 2-position single solenoid)



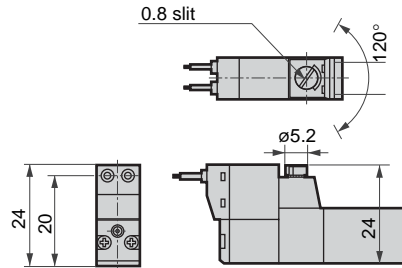
- MN3E0
- MN4E0
- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (Master)
- W4GA/B2
- W4GB4
- MN3S0
- MN4S0
- 4TB
- 4L2-4/LMFO
- 4SA/B0
- 4SA/B1
- 4KA/B
- 4F
- PV5G/CMF
- PV5/CMF
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP/NVP
- 4F*0E
- HMV
- HSV
- 2QV
- 3QV
- SKH
- PCD/FS/FD
- Ending

Dimensions

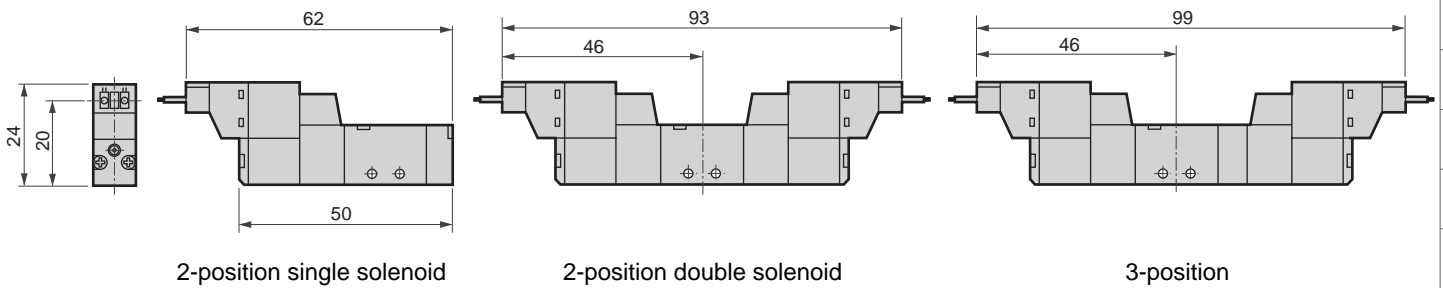
● $\varnothing 4$ barbed joint: (T4)



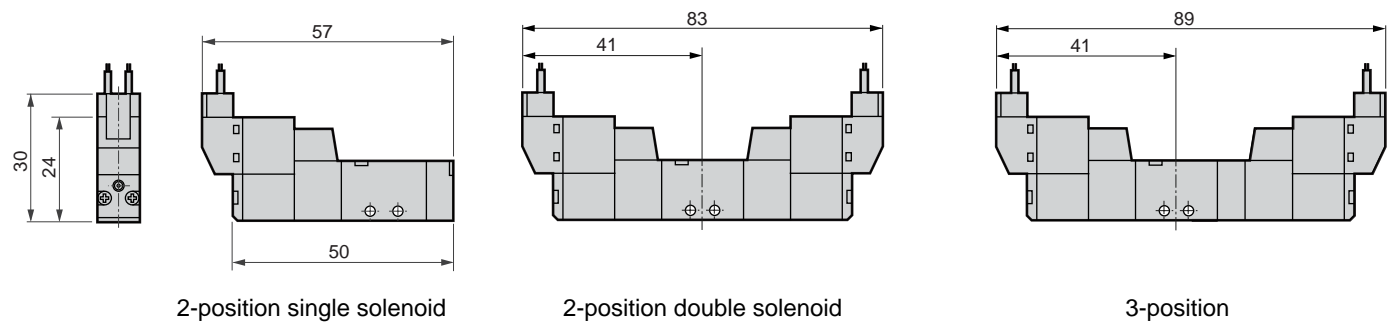
● Locking manual override: (M1)



● 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

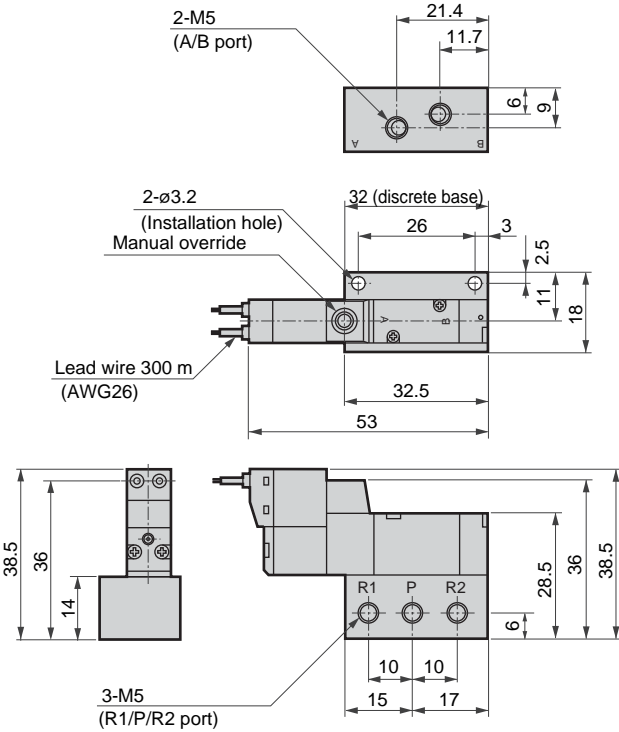
Discrete valve: Sub-plate porting

Dimensions



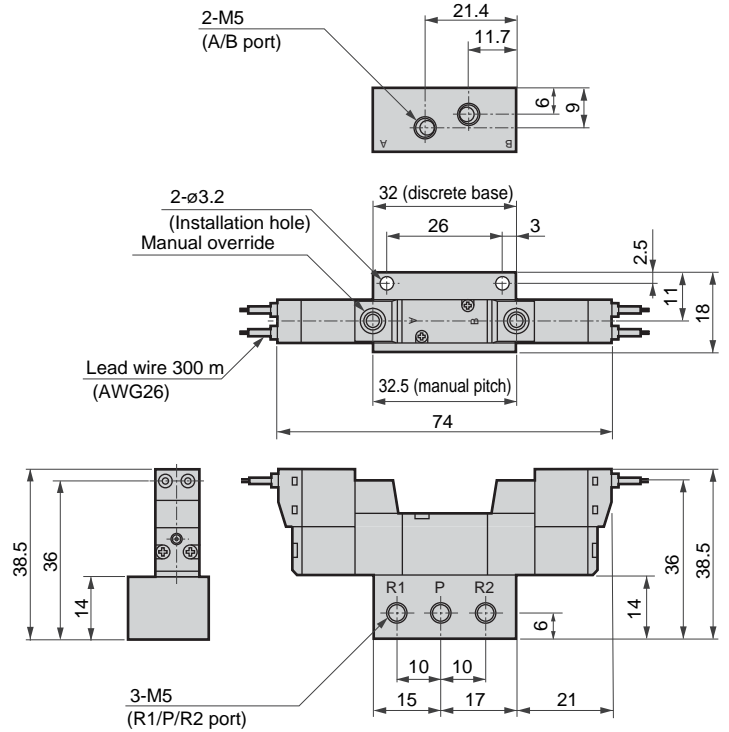
4SB010-M5

● 2-position single solenoid: Grommet lead wire



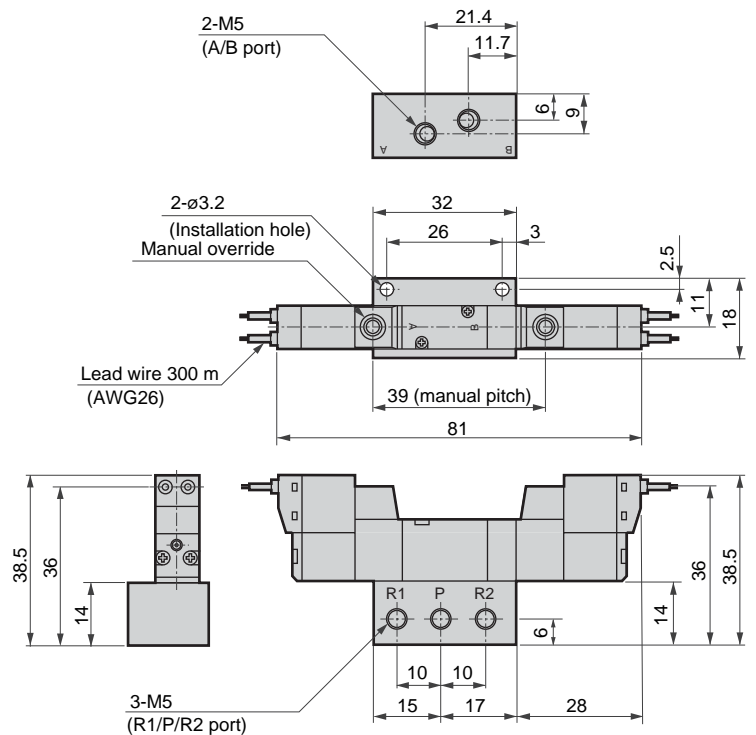
4SB020-M5

● 2-position double solenoid: Grommet lead wire



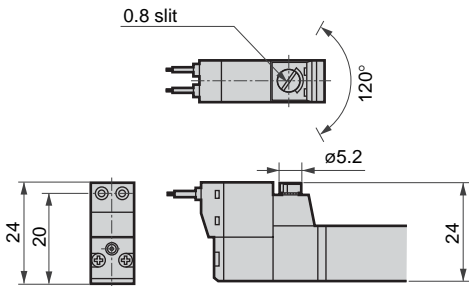
4SB0³/₅0-M5

● 3-position: Grommet lead wire

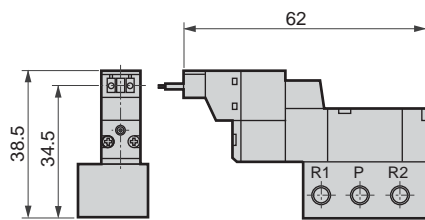


Dimensions

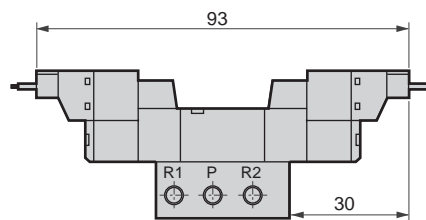
● Locking manual override: (M1)



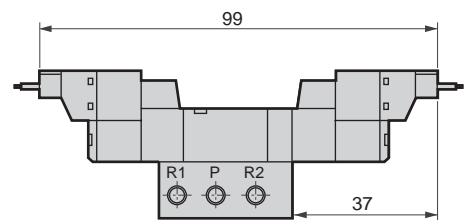
● C-connector: (C/C0*/C1/C2/C2*/C3)



2-position single solenoid

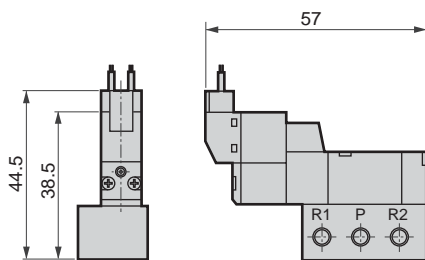


2-position double solenoid

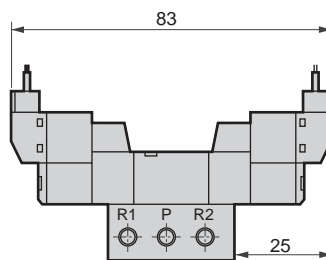


3-position

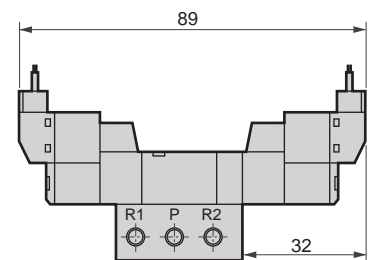
● D-connector: (D/D0*/D1/D2/D2*/D3)



2-position single solenoid



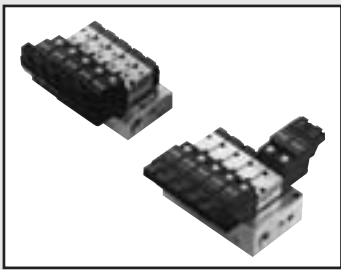
2-position double solenoid



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



Individual wiring manifold

5 port pilot operated small pneumatic control valve

Body porting, sub-plate porting

M4SA0/M4SB0 Series

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



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

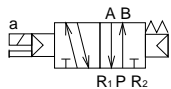
SKH

PCD/
FS/FD

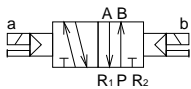
Ending

JIS symbol

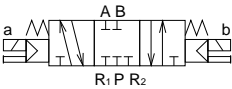
- 5 port valve
- 2-position single solenoid



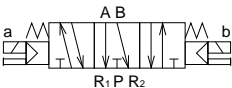
- 2-position double solenoid



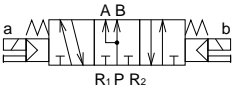
- 3-position
- All ports closed



- 3-position A/B/R connection



- 3-position P/A/B connection



Common specifications

Descriptions	
Manifold method	Manifold integrated
Manifold type	Common supply, common exhaust
Station number	2 to 20 stations
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	M4SA0	M4SB0
Port size	P port A/B port	M5, Rc1/8 M5
Note 3	R port	Rc 1/8
Response time	2-position	20 or less
Note 4 ms	3-position	30 or less

Note 3: In addition to the above sizes, optional sizes are available for P and A/B port sizes. Refer to item "C" in the How to order section on the next page. 4SA0 is a pilot atmospheric release type. Contact CKD for the exhaust common type. With 4SB0, the pilot exhaust is gathered at the R port.

Note 4: 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	
			C (dm ³ /s-bar)	b	C (dm ³ /s-bar)	b
M4SA0	2-position	P port: M5, A/B port: M3				
	3-position	R port: Rc1/8				
M4SB0	2-position	P port: M5, Rc1/8	0.30	0.15	0.30	0.21
	3-position	A/B port: M5, R port: Rc1/8	0.29	0.14	0.30	0.20

Note 5: When selecting the T4 specifications (using $\varnothing 4$ barbed joint), the flow rate will be restricted by the joint's effective sectional area.

Note 6: Effective sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

(Mix manifold)

- How to Indicate Combinations
When selecting a combination manifold (8 selected for "B"), indicate the required functions with symbols (refer to right table) and layout number (start with 1 at the left and assign numbers to the designated number of stations) in the Remarks field at the bottom of the normal model indication. Refer to the example for details.

Symbol	Function
S1	2-position single solenoid
S2	2-position double solenoid
S3	3-position all ports closed
S4	3-position A/B/R connection
S5	3-position P/A/B connection
MP	Masking plate

1	2	3	4	5	6	7
2-position Single solenoid (S1)	2-position Double solenoid (S2)	3-position All ports closed (S3)	3-position All ports closed (S3)	2-position Double solenoid (S2)	2-position Single solenoid (S1)	3-position A/B/R connection (S4)

Example

The model number for a combination manifold with 7 stations, M5 A/B/P ports, and 24VDC with the layout shown in the left is as follows:
M4SB080-M5-C02-7-3-222100
S1=1, 6 S2=2, 5 S3=3, 4 S4=7
Symbol Position

- When using 10 or more actuators of the same model in a mixed manifold, designate with the following symbols.

Actuator quantity	10	11	12	13	14	15	16	17	18	19
Symbol	A	B	C	D	E	F	G	H	I	J

S1 S2 S3 S4 S5 MP

2	2	2	1	0	0
---	---	---	---	---	---

Ozone specifications (Ending 5)

** -Voltage - P11

How to order individual wiring manifold

- Discrete solenoid valve for manifold (body porting)

4SA0 1 9 - M3 - M1 C2 — 3

- Discrete solenoid valve for manifold (sub-base porting)

4SB0 1 9 - 00 - M1 C2 — 3

- Individual wiring manifold

M 4SB0 8 0 - M5 - M1 C2 - 5 - 3 - 2 2 0 0 0 1

A Model no.

B Solenoid position

C Port size

D Manual override

E Electric connection

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

F Station number

G Voltage

Indicate the quantity and display position of each valve function for the mixed manifold. Refer to page 716.

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	●	●
8	Mix manifold	●	●

C Port size					
Port	A/B	P	R		
M3	M 3	M 5	Rc 1/8	● Note 1	
M5	M 5			● Note 3	
GS4	ø4 push-in joint			● Note 2 ● Note 4	
T4	ø4 barbed joint			● Note 4	
T6	ø6 barbed joint	Rc 1/8	Rc 1/8	● Note 3	
PM5	M 5			● Note 4	
PGS4	ø4 push-in joint			● Note 3	
PT4	ø4 barbed joint			● Note 4	
PT6	ø6 barbed joint			● Note 4	

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 Station number			
2 to 20	2 to 20 stations	●	●

G Voltage			
3	Standard	24 VDC	● ●
4	Standard	12 VDC	● ●
DC6V	Option	6 VDC	● ●
DC5V	Option	5 VDC	● ●

● Refer to page 727 for How to order manifold base and How to order masking plate.

⚠ Note on model no. selection

For M4SA0

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.

For M4SB0

Note 3: With GS4, the push-in joint GWS4-M5-S is screwed into the A and B ports.

Note 4: With T4/T6, FTS4-M5 and FTS6-M5 are screwed into the A and B ports.

<Example of model number>

- Individual wiring manifold
- M4SB010-M5-C2-2-3**

A Model no. : M4SB0

B Solenoid position: 2-position single solenoid

C Port size : A/B/P port = M5,
R port = Rc1/8

D Manual override : Non-locking manual override

E Electric connection: C-connector with lead wire (300 mm), with light and surge suppressor

F Station number : 2 stations

G Voltage : 24 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

Individual wiring manifold
5 port pilot operated valve

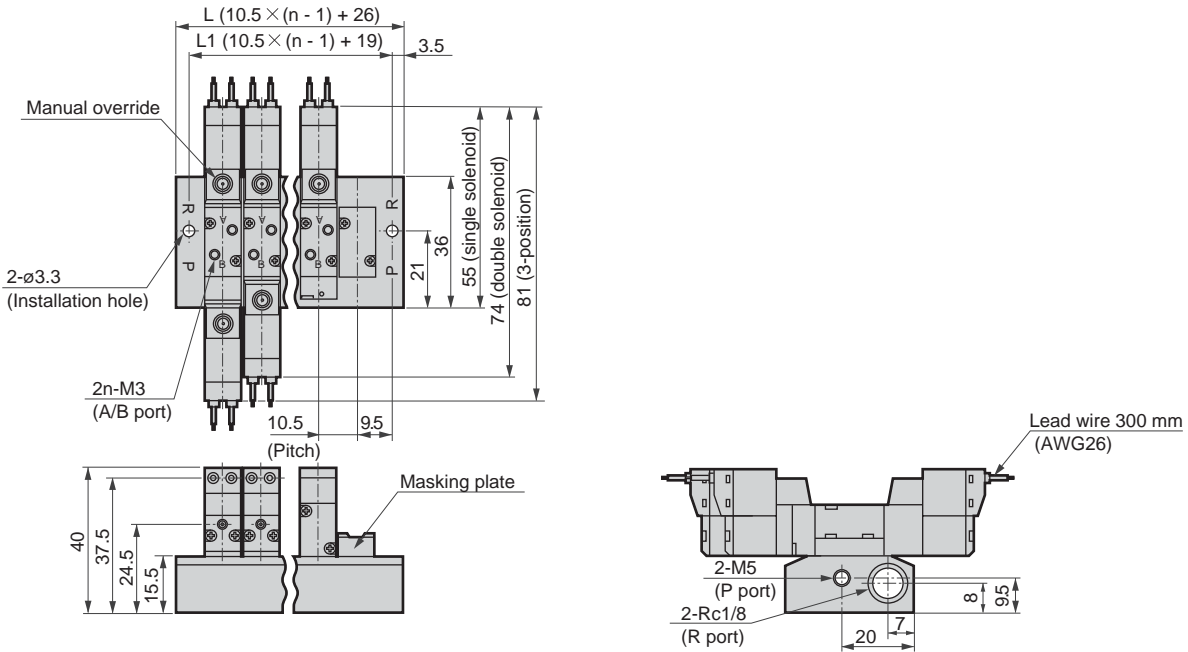
M4SA0/M4SB0 Series

Individual wiring manifold: Body porting and sub-plate porting

Dimensions 

M4SA0*0-M3

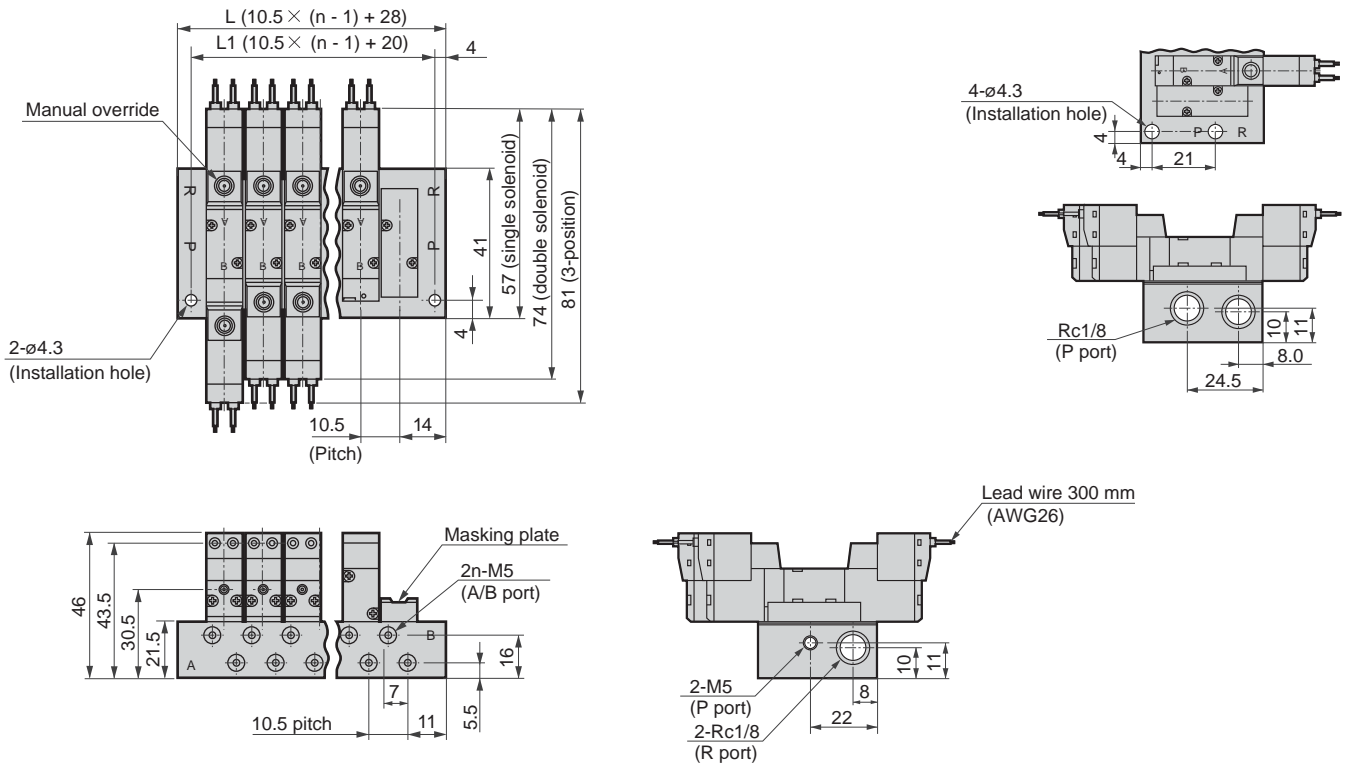
● Body porting A type: Grommet lead wire



Station number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	29.5	40	50.5	61	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5	187	197.5	208	218.5
L	36.5	47	57.5	68	78.5	89	99.5	110	120.5	131	141.5	152	162.5	173	183.5	194	204.5	215	225.5

M4SB0*0-M5

● Sub-plate porting B type (P port M5): Grommet lead wire



Station number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5
L	38.5	49	59.5	70	80.5	91	101.5	112	122.5	133	143.5	154	164.5	175	185.5	196	206.5	217	227.5

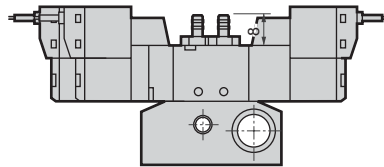
M4SA0/M4SB0 Series

Individual wiring manifold: Body porting and sub-plate porting

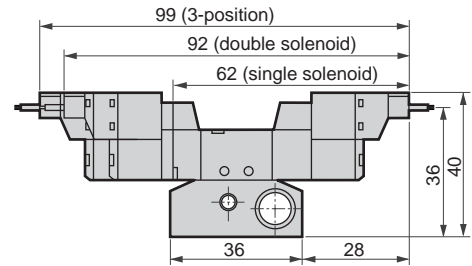
Dimensions

Body porting A type →

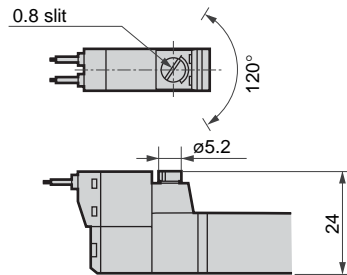
● $\varnothing 4$ barbed joint: (T4)



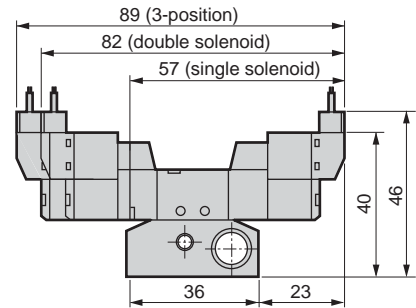
● C-connector: (C/C0*/C1/C2/C2*/C3)



● Locking manual override: (M1)

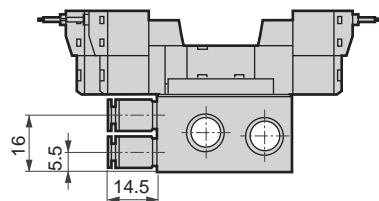


● D-connector: (D/D0*/D1/D2/D2*/D3)

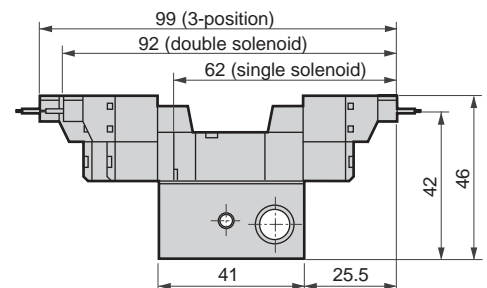


Sub-plate porting B type →

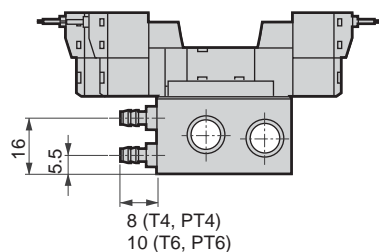
● $\varnothing 4$ push-in joint: (GS4/PGS4)



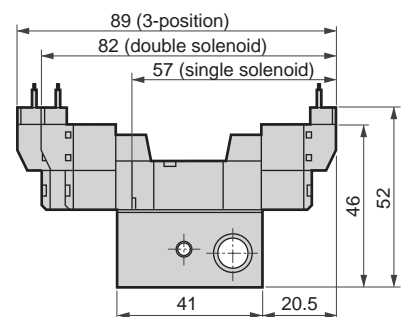
● C-connector: (C/C0*/C1/C2/C2*/C3)



● $\varnothing 4, \varnothing 6$ barbed joint: (T4/T6/PT4/PT6)

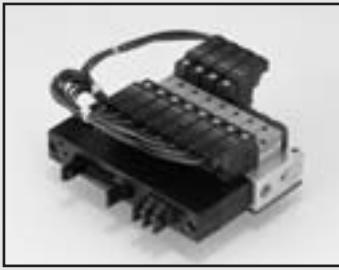


● D-connector: (D/D0*/D1/D2/D2*/D3)



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*0E
HMV
HSV
2QV
3QV
SKH
PCD/FS/FD
Ending

Individual wiring manifold
5 port pilot operated valve



Reduced wiring manifold 5 port pilot operated small pneumatic control valve Sub-plate porting

M4SB0 Series

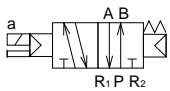
● Applicable cylinder bore size: $\varnothing 6$ to $\varnothing 25$



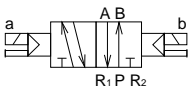
- MN3E0
- MN4E0
- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (Master)
- W4GA/B2
- W4GB4
- MN3S0
- MN4S0
- 4TB
- 4L2-4/LMFO
- 4SA/B0
- 4SA/B1
- 4KA/B
- 4F
- PV5G/CMF
- PV5/CMF
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP/NVP
- 4F*0E
- HMV
- HSV
- 2QV
- 3QV
- SKH
- PCD/FS/FD
- Ending

JIS symbol

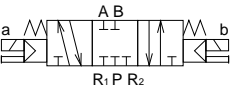
- 5 port valve
- 2-position single solenoid



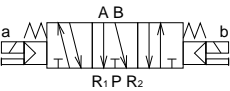
- 2-position double solenoid



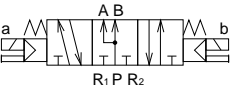
- 3-position
- All ports closed



- 3-position A/B/R connection



- 3-position P/A/B connection



Common specifications

Descriptions	
Manifold method	Manifold integrated
Manifold type	Common supply, common exhaust
Station number	2 to 20 stations
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	0.029	0.058
Power consumption W Note 1	0.7	0.7
Heat proof class	B	
Temperature rise °C	50	

Note 1: Power consumption of 6/5 VDC is 1.0 W.

Individual specifications

Descriptions	M4SB0	
Port size	M5, Rc1/8	
Note 2	A/B port	M5
	R port	Rc1/8
Response time	20 or less	
Note 3 ms	30 or less	

Note 2: In addition to the above sizes, optional sizes are available for the P and A/B port. Refer to item "B" in the How to order section on the next page. With 4SB0, the pilot exhaust is gathered at the R port.

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	C (dm ³ / (s·bar))	b
M4SB0	2-position	P port: M5, Rc1/8	0.30	0.15
	3-position	A/B port: M5, R port: Rc1/8	0.29	0.14

Note 4: When selecting the T4 specifications (using $\varnothing 4$ barbed joint), the flow rate will be restricted by the joint's effective sectional area.

Note 5: Effective sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

(Mix manifold)

- How to Indicate Combinations

When selecting a combination manifold (8 selected for "A"), indicate the required functions with symbols (refer to right table) and layout number (start with 1 at the left and assign numbers to the designated number of stations) in the Remarks field at the bottom of the normal model indication. Refer to the example for details.

Symbol	Function
S1	2-position single solenoid
S2	2-position double solenoid
S3	3-position all ports closed
S4	3-position A/B/R connection
S5	3-position P/A/B connection
MP	Masking plate

1	2	3	4	5	6	7
iS1	iS2	iS3	iS3	iS2	iS1	iS4

Example

The model number for a combination manifold with 7 stations, M5 A/B/P ports, and 24VDC with the layout shown in the left is as follows:

M4SB080-M5-C4T50-7-3-222100

S1=1, 6 S2=2, 5 S3=3, 4 S4=7
Symbol Position

- When using 10 or more actuators of the same model in a mixed manifold, designate with the following symbols.

Actuator quantity	10	11	12	13	14	15	16	17	18	19
Symbol	A	B	C	D	E	F	G	H	I	J

S1 S2 S3 S4 S5 MP

2	2	2	1	0	0
---	---	---	---	---	---

Ozone specifications (Ending 5)

** - Voltage - P11

How to order reduced wiring manifold

Discrete solenoid valve for manifold (sub-plate porting)

4SB0 1 9 - 00 - M1 C2 — 3

Reduced wiring manifold

M 4SB0 8 0 - M5 - M1 C4T31 - 5 - 3 - 2 2 0 0 0 1

Indicate the quantity and display position of each valve function for the mixed manifold. Refer to page 720.

Model no.

Constant

A Solenoid position

B Port size

C Manual override

D Electric connection

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

E Station number

F Voltage

Refer to page 727 for How to order manifold base and How to order masking plate.

Refer to page 725 for D-sub-cable with connector model no.

Refer to page 727 for cable model no. for a flat cable connector.

Symbol	Descriptions		
A 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		
B Port size			
Port	A/B	P	R
M5	M5	M 5	Rc 1/8
GS4	ø4 push-in joint Note 1		
T4	ø4 barbed joint Note 2		
T6	ø6 barbed joint Note 2		
PM5	M5	Rc 1/8	Rc 1/8
PGS4	ø4 push-in joint Note 1		
PT4	ø4 barbed joint Note 2		
PT6	ø6 barbed joint Note 2		
C Manual override			
Blank	Non-locking manual override		
M1	Locking manual override		
D Electric connection			
C4	C-connector (T31/T50) Note 3	With surge suppressor and light	
D4	D-connector (T30) Note 3	With surge suppressor and light	
C4T31	D sub-connector lateral	With surge suppressor and light	
D4T30	D sub-connector upward	With surge suppressor and light	
C4T50	Flat cable connector type	With surge suppressor and light	
E Station number			
4 to 20	4 to 20 stations Note 4		
F Voltage			
3	Standard	24 VDC	
4		12 VDC	
DC6V	Option	6 VDC	
DC5V		5 VDC	

⚠ Note on model no. selection

Note 1: With GS4, the push-in joint GWS4-M5-S is screwed into the A and B ports.

Note 2: With T4/T6, FTS4-M5 and FTS6-M5 are screwed into the A and B ports.

Note 3: With C4 and D4, only the discrete solenoid valve for 4SB0 manifold is available.

The reduced-wiring socket assembly (lead wire length 270 mm) is enclosed.

Note 4: With T30/T31, up to 20 single solenoid stations can be used. With T50, up to 16 single solenoid stations can be used.

<Example of model number>

● Reduced wiring manifold
M4SB010-M5-C4T50-7-3

Model : M4SB0

A Solenoid position : 2-position single solenoid

B Port size : A/B/P port = M5,
R port = Rc1/8

C Manual override : Non-locking manual override

D Electric connection : Flat cable connector type

E Station number : 7 stations

F Voltage : 24VDC

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

Reduced wiring manifold
5 port pilot operated valve

M4SB0 Series

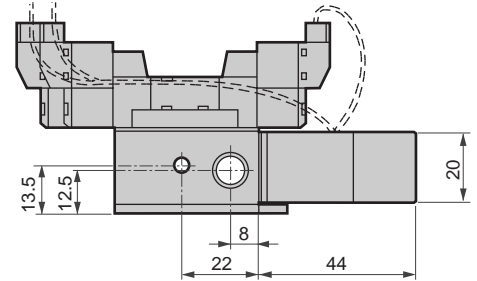
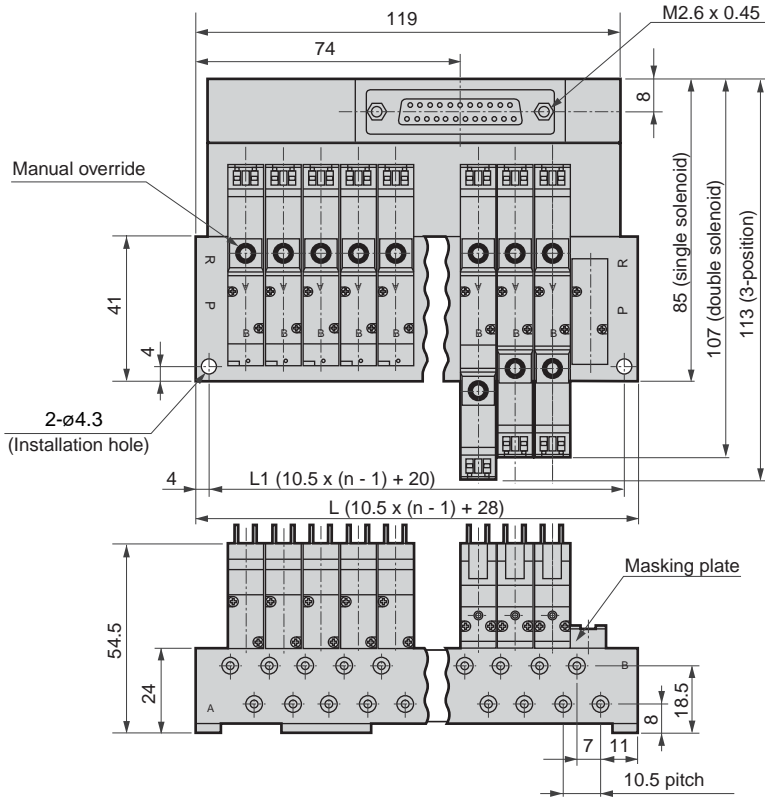
Reduced wiring manifold: Sub-plate porting

Dimensions

M4SB0*0-M5-D4T30

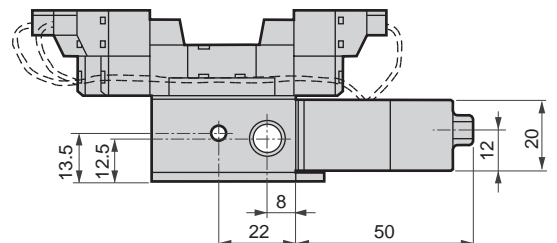
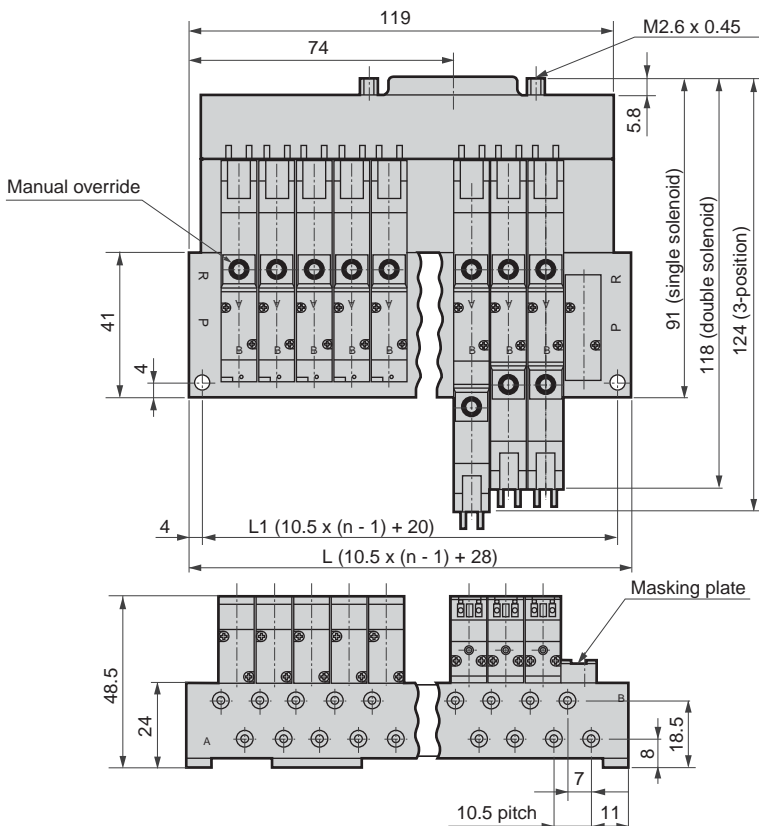


● D sub-connector upward: (P port M5)



M4SB0*0-M5-C4T31

● D sub-connector lateral: (P port M5)



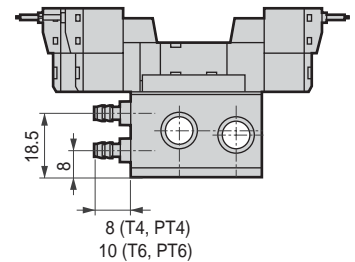
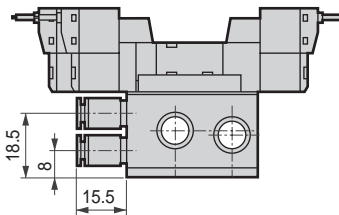
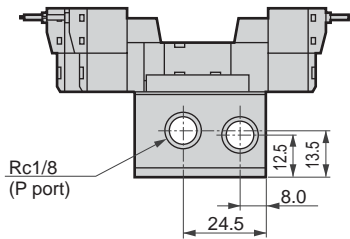
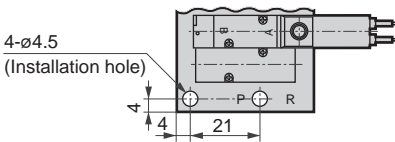
Station number	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5
L	59.5	70	80.5	91	101.5	112	122.5	133	143.5	154	164.5	175	185.5	196	206.5	217	227.5

Dimensions

● A/B port M5, P port 1/8:
(PM5)

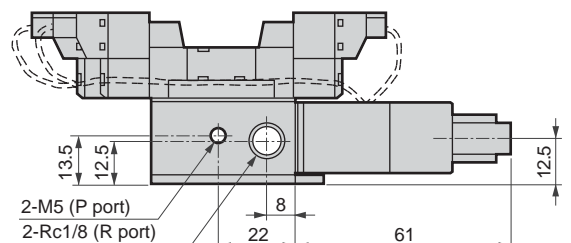
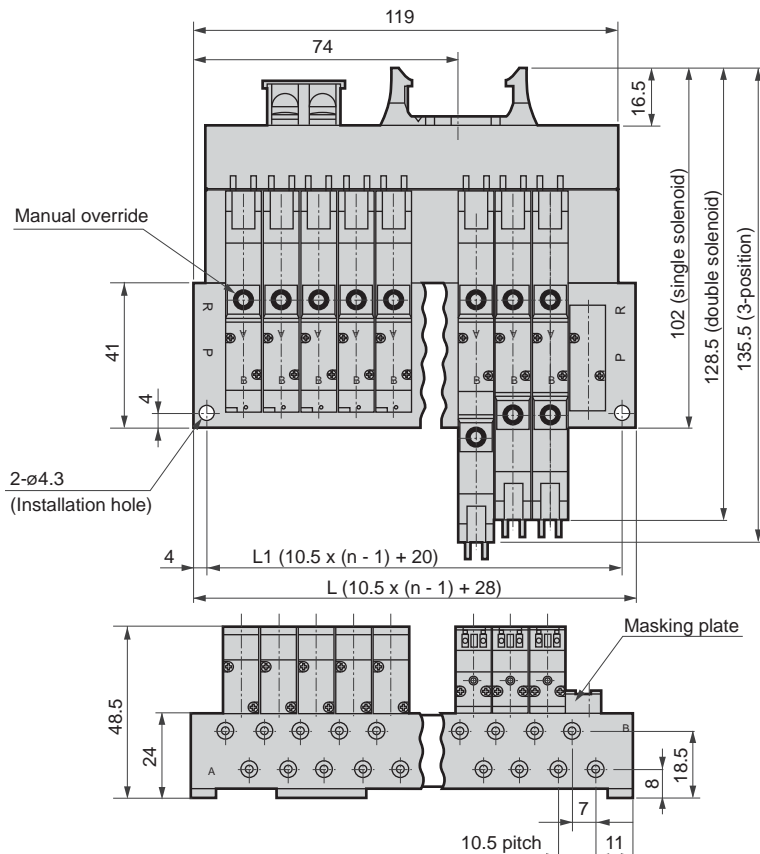
● $\varnothing 4$ push-in joint: (GS4/PGS4)

● $\varnothing 4, \varnothing 6$ barbed joint:
(T4/T6/PT4/PT6)



M4SB0*0-M5-C4T50

● Flat cable connector type: (P port M5)



Station number	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5
L	59.5	70	80.5	91	101.5	112	122.5	133	143.5	154	164.5	175	185.5

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

Reduced wiring manifold
5 port pilot operated valve

4SA0/4SB0 Series

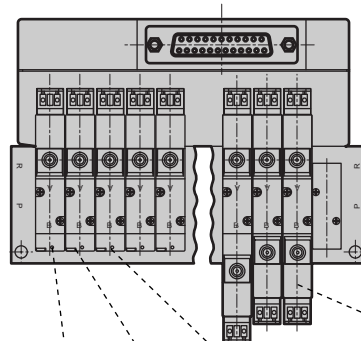
Technical data ① Notes when wiring: D sub-connector type

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/MB
NP/NAP/NVP
4F*0E
HMV/HSV
2QV/3QV
SKH
PCD/FS/FD
Ending

D sub-connector type: Wiring method T30/T31

T30, T31 connector

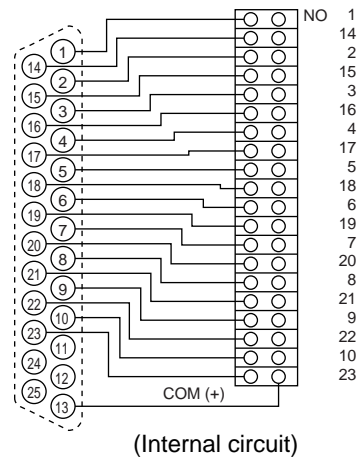
Connectors used for T30/T31 wiring method are generally called D-sub connectors. These are commonly used for FA and OA devices. The 25P type is the connector designated in RS-232-C Standards that apply to personal computer communication functions. The manifold stations are set in order from the left with the b side solenoid (cap side for single) facing forward.



Station no. 1nth station 2nth station 3nth station ... n-th station

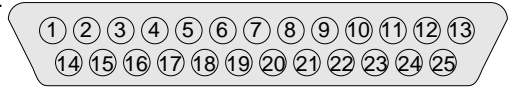
Cautions for connector type T30/T31

- ① The PC output unit's signal array and valve signal array must match.
- ② The working power is 12/24 VDC dedicated.
- ③ The voltage could drop because of simultaneous energizing or the cable length. Confirm that the voltage drop for the solenoid is within 10% of the rated voltage.
- ④ This is +COM specifications.



T30/T31 connector pin array (example)

Note: The numbers in the valve No. 1a, 1b, 2a, 2b and so forth indicate the first station and 2nd station. The alphabetic characters a and b indicate the a side solenoid and the b side solenoid.



● For single solenoid valve (Available up to 20 stations)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	3a	5a	7a	9a	11a	13a	15a	17a	19a			COM (+)
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	2a	4a	6a	8a	10a	12a	14a	16a	18a	20a			

● For double solenoid valve (Available up to 10 stations)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	9a	10a			COM (+)
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	1b	2b	3b	4b	5b	6b	7b	8b	9b	10b			

● For mix (single and double mixture) (Available up to 20 solenoids)

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13
Valve No.	1a	3a	4a	5a	7a	8a	10a	11b	12b	14a			COM (+)
Pin No.	14	15	16	17	18	19	20	21	22	23	24	25	
Valve No.	2a	3b	4b	6a	7b	9a	11a	12a	13a	15a			

How to order cable with D-sub connector

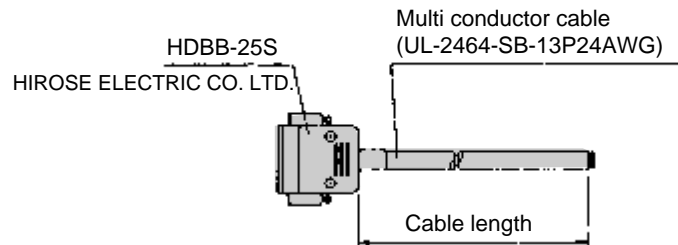


* Pneumatic valves
Compatible with D-sub connector T30/T31

		Model
		N4T
A User interface		
0		Cut only
1		With round terminal for M3.5 screw
B Cable length		
1		1 m
3		3 m
5		5 m

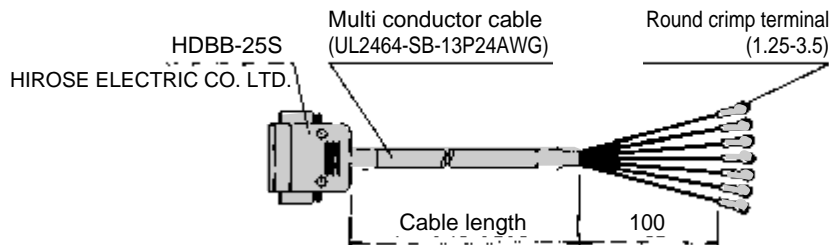
Correspondence of D-sub connector terminal No. and conductor

● N4T-CABLE-D00-②



D sub-connector terminal No.		1	2	3	4	5	6	7	8	9	10	11	12	13
Conductor I.D.	Isolator color	Orange	Orange	Yellow	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow
	Mark type	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	2 points	2 points	2 points
	Mark color	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black
D sub-connector terminal No.		14	15	16	17	18	19	20	21	22	23	24	25	
Conductor I.D.	Isolator color	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green	
	Mark type	2 points	2 points	2 points	2 points	2 points	2 points	2 points	3 points	3 points	3 points	3 points	3 points	
	Mark color	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	

● N4T-CABLE-D01-②



D sub-connector terminal No.		1	2	3	4	5	6	7	8	9	10	11	12	13
Conductor I.D.	Isolator color	Orange	Orange	Yellow	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow
	Mark type	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	1 point	2 points	2 points	2 points
	Mark color	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black
Mark tube No.		1	2	3	4	5	6	7	8	9	10	11	12	13
D sub-connector terminal No.		14	15	16	17	18	19	20	21	22	23	24	25	
Conductor I.D.	Isolator color	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green	
	Mark type	2 points	2 points	2 points	2 points	2 points	2 points	2 points	3 points	3 points	3 points	3 points	3 points	
	Mark color	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	Red	Black	
Mark tube No.		14	15	16	17	18	19	20	21	22	23	24	25	

* Up to 24 points can be used. Cut off any excessive points before using.

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

4SA0/4SB0 Series

Technical data ① Notes when wiring: Flat cable connector type

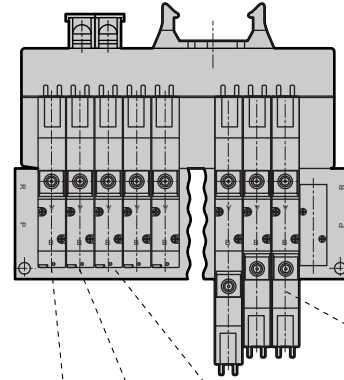
Flat cable connector type: Wiring method T50

T50 connector

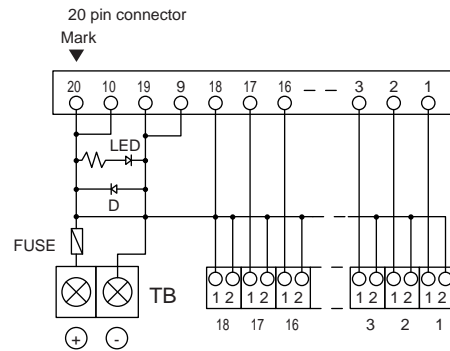
The connector used for T50 wiring method complies with MIL Standards (MIL-C-83503). The flat cable pressure welding makes wiring work easy. Pin no. is assigned differently based on the PLC manufacturer, but the function assignment is the same. Layout using connectors and the triangular mark (▼) shown below as a reference. The ▼ mark is the reference for both the plug and socket. The manifold stations are set in order from the left with the b side solenoid (cap side for single) facing forward.

Precautions for connector type T50

- (1) The PLC output unit's signal array and valve signal array must match. Direct connections with the PLC are limited. Use the dedicated cable for each PLC manufacturer.
- (2) The working power is 12/24 VDC dedicated.
- (3) When connecting the T50 type to a general output unit, use the + terminal (20, 10) of the 20P connector as the + side common, and use the NPN transistor output open collector type for the drive circuit.
- (4) Do not connect this manifold to the input unit as major faults could occur in this device and in peripherals. Connect this manifold to the output unit.
- (5) The voltage could drop because of simultaneous energizing or the cable length. Confirm that the voltage drop for the solenoid is within 10% of the rated voltage.



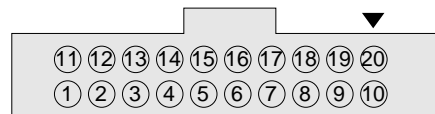
Station no. 1st station 2nd station 3rd station ... n-th station



(Internal circuit)

T50 connector pin array (example)

Note: The numbers in the valve No. 1a, 1b, 2a, 2b and so forth indicate the first station and 2nd station. Letters a and b refer to solenoid a or solenoid b.



● For single solenoid valve
(Available up to 16 stations)

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	9a	10a	11a	12a	13a	14a	15a	16a	- power supply	+ power supply
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	2a	3a	4a	5a	6a	7a	8a	- power supply	+ power supply


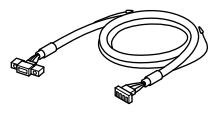
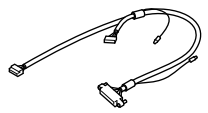
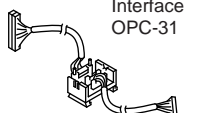
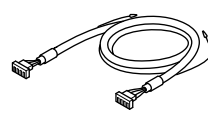
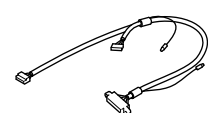

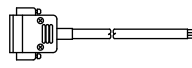
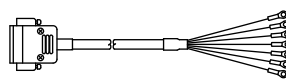
● For double solenoid valve
(Available up to 8 stations)

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	5a	5b	6a	6b	7a	7b	8a	8b	- power supply	+ power supply
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	1b	2a	2b	3a	3b	4a	4b	- power supply	+ power supply

● For mix (single and double mixture)
(Available up to 16 solenoids)

Pin No.	11	12	13	14	15	16	17	18	19	20
Valve No.	7a	7b	8a	9a	10a	10b	11a	11b	- power supply	+ power supply
Pin No.	1	2	3	4	5	6	7	8	9	10
Valve No.	1a	2a	3a	3b	4a	4b	5a	6a	- power supply	+ power supply

Examples of wiring (recommended combinations) ● Use the following combinations.

Wiring methods	Cable application	PC and PC related products		
		Maker	PC	Connection cable
Flat cable connector (T50) 		OMRON	C200H-OD215 C500-OD415CN	G79-*C
			C500-OD213	79-0*DC-*
	Interface OPC-31 	MITSUBISHI	AY42 Voltage of power supply should be within 0 to +10% of rated voltage.	Connected with 40P flat cable connector, interface OPC-31 (CKD) and 20P flat cable connector.
		MATSUSHITA ELECTRIC WORKS LTD.	AFP33484	AY15133 to 7
			AFP53487	AY15223 to 7
D sub-connector upward (T30) D sub-connector lateral (T31) 				Cable with D sub-connector (Refer to page 725 for cable model no. and details.)
				

*: Take the PLC and flat cable voltage drop into consideration when setting the valve drive power voltage.

How to order manifold base, masking plate

● Manifold base



Note: Precautions for mounting manifold base and valve

The mounting screw enclosed with valve is M1.7 or equivalent tapping screw. Thus, threads for mounting valve are not drilled onto the manifold base. When mounting the valve for the first time, tap the threads and complete the mounting. Small amount of oil (CRC/Turbine oil, etc.) is applied onto the end of the screw to make mounting smooth.

Symbol	Descriptions
2 to 20	2 to 20 stations

● Masking plate (gasket, set screw attached)



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

5 port pilot operated valve

4SA0/4SB0 Series

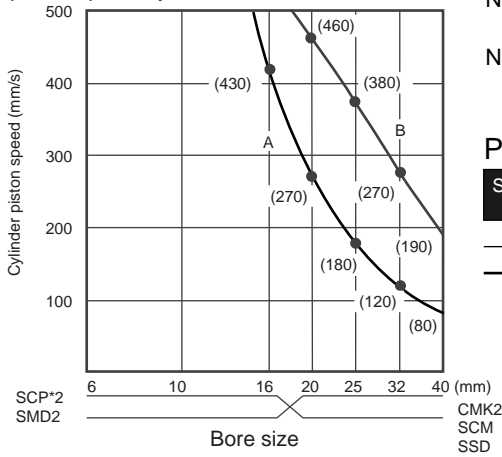
Technical data ② Pneumatics system selection guide and connector wiring method

Pneumatic components selection guide

Pneumatic system selection guide

The cylinder's average speed is calculated by the combination of 4SA0/4SB0 Series and piping system.

To calculate, the cylinder's piston rod is mounted facing upward, and the time that the piston rod starts to move the stroke is divided by the time that it moved. At 50% load factor, multiply the approx. cylinder piston speed by 0.5.



Clean air system components

Parts name	Model no.	Port size (Note 1)	Max. flow rate (ℓ/min. (ANR)) (Note 2)
F.R.L. kit	K60570-1C-GB	Rc1/8 (6A)	200
	C1000-6	Rc1/8 (6A)	450
F.R. unit	W1000-6	Rc1/8 (6A)	830
Air filter (F)	F1000-6	Rc1/8 (6A)	460
Regulator (R)	B2019-1C	Rc1/8 (6A)	500
	R1000-6	Rc1/8 (6A)	770
Lubricator (L)	A3019-1C	Rc1/8 (6A)	100
	L1000-6	Rc1/8 (6A)	550

Note 1 Rc is the same as PT.

Note 2 F.R.L. kit, F.R. unit, regulator

Primary pressure 0.7 MPa, setting pressure 0.5 MPa, pressure drop 0.1 MPa

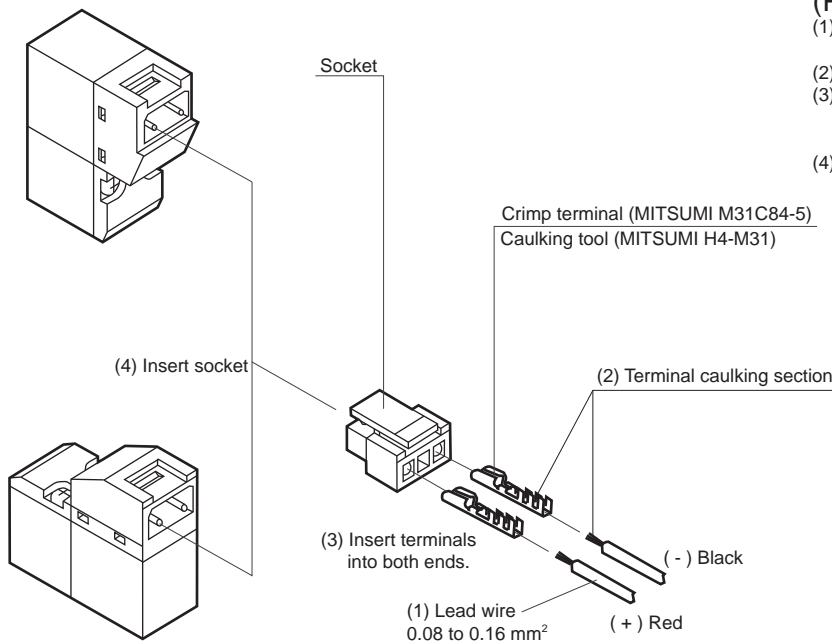
Note 3 Air filter, lubricator

Primary pressure 0.7 MPa, pressure drop 0.02 MPa

Piping system

System No.	Flow control valve	Silencer	Values in () indicate length of pipe between valve/cylinder	Composite effective sectional area of system	Max. flow rate (ℓ/min. (ANR)) P = 0.5 MPa
A	SC-M5	-	ø4 x ø2.5 nylon tube (1 m)	0.5 mm ²	34
B	SC1-6	SL-M5	ø6 x ø4 nylon tube (1 m)	1.3 mm ²	84

C/D connector wiring methods (refer to the following drawing, and wire (1) to (4).)



(Procedures)

- (1) Peel the sheath at the end of the lead wire by 2 to 3 mm.
- (2) Crimp the lead wire with a dedicated tool.
- (3) Insert the terminal into the holes on both sides of the socket.
(Note) Insertion direction is designated.
- (4) Insert the socket into the solenoid valve's connector section.