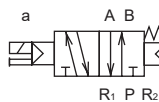






Series variation

Discontinue

4SA0/4SB0 Series

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GB With sensor
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E MN4E
- W4GA/B2
- W4GB4
- MN3S0 MN4S0
- 4SA/B0**
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G GMF
- PV5 GMF
- PV5S-0
- 3Q
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP NVP
- 4G*0EJ
- 4F*0EX
- 4F*0E
- HMV HSV
- 2QV 3QV
- SKH
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending

Series name/piping method		No. of ports	Position Number of solenoids JIS symbol	Valve performance			Voltage (V)
				Effective cross-sectional area S [mm ²]	Flow characteristics C [dm ³ /(s·bar)] *1	Applicable cylinder bore size	
Single unit	Direct	5-port	<ul style="list-style-type: none"> ● 2-position single 	0.9	-	ø6 to ø25	24 DC 12 DC
	Sub-plate		<ul style="list-style-type: none"> ● 2-position double 	-	0.29 to 0.33		Option 6 DC 5 DC
Individual wiring manifold	Direct		<ul style="list-style-type: none"> ● 3-position all ports closed 	0.9	-		24 DC 12 DC
	Sub-plate		<ul style="list-style-type: none"> ● 3-position ABR connection 	-	0.29 to 0.32		Option 6 DC 5 DC
	Sub-plate	<ul style="list-style-type: none"> ● 3-position PAB connection 	-	0.29 to 0.32	24 DC 12 DC Option 6 DC 5 DC		

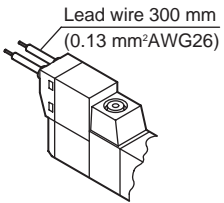
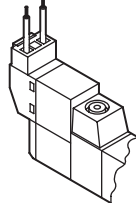
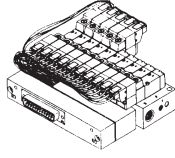
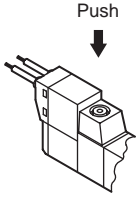
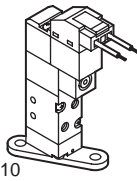
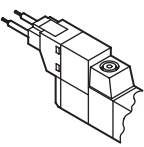
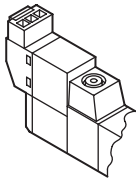
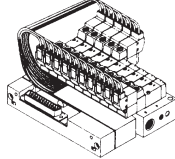
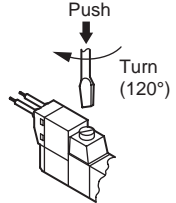
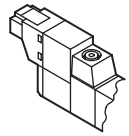
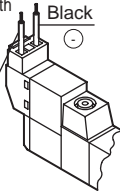
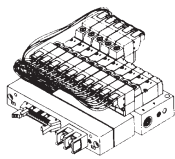
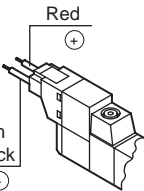
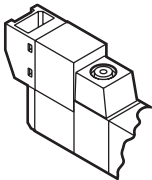
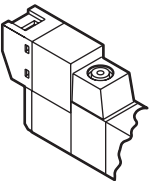
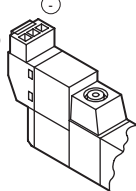
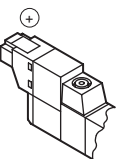
*1: Effective cross-sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

	Switching position					Port size of A/B port					Electrical connections					Page	
	2-position single	2-position double	3-position all ports closed	3-position A/B/R connection	3-position P/A/B connection	Mix manifold	Barbed fitting		Female thread		ø4 push-in fitting	Grommet lead wire	C-connector	D-connector	D sub-connector		Flat cable connector
							ø4 barbed fitting	ø6 barbed fitting	M3	M5							
	●	●	●	●	●		●		●			●	●	●			1236
	●	●	●	●	●					●		●	●	●			1236
	●	●	●	●	●	●	●		●			●	●	●			1244
	●	●	●	●	●	●	●	●		●	●	●	●	●			1244
	●	●	●	●	●	●	●	●		●	●			●	●		1248

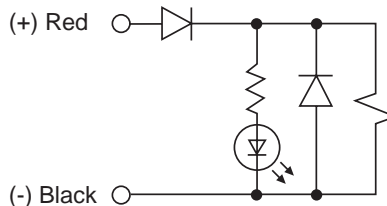
Note: Refer to the following page for details on electrical connections/other options.

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP NVP
4G*0EJ
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

4SA0/4SB0 Series

	Electrical connections		Manual override	Other options	
	Discrete valve/individual wiring manifold		Reduced wiring manifold		
4GA/B M4GA/B MN4GA/B 4GA/B (master) 4GB With sensor 4GD/E M4GD/E MN4GD/E 4GA4/B4 MN3E MN4E W4GA/B2 W4GB4 MN3S0 MN4S0 4SA/B0 4KA/B 4KA/B (master) 4F 4F (master) PV5G GMF PV5 GMF PV5S-0 3Q MV3QR 3MA/B0 3PA/B P/M/B NP/NAP NVP 4G*0EJ 4F*0EX 4F*0E HMF HSV 2QV 3QV SKH Silencer TotAirSys (Total Air) TotAirSys (Gamma) Ending	Blank Grommet lead wire	D D-connector lead wire	C4 T31 D sub-connector lateral with surge suppressor and indicator lamp	Blank Non-locking	P Mounting plate
		<ul style="list-style-type: none"> ● Lead wire length D : 300 mm D00 : 500 mm D01 : 1000 mm D02 : 2000 mm 			
	C C-connector lead wire	D1 D-connector with socket	D4 T30 D sub-connector upward with surge suppressor/lamp	M1 Locking	Only the 4SA010 can be attached
	<ul style="list-style-type: none"> ● Lead wire length C : 300 mm C00 : 500 mm C01 : 1000 mm C02 : 2000 mm 	Socket/crimping terminal attached 			
	C1 C-connector with socket	D2 D-connector/with lead wire with surge suppressor/lamp	C4 T50 Flat cable connector with surge suppressor/lamp		
	Socket/crimping terminal attached 	<ul style="list-style-type: none"> ● Lead wire length D2 : 300 mm D20 : 500 mm D21 : 1000 mm D22 : 2000 mm 			
	C2 C-connector with lead wire with surge suppressor/lamp	D2N D-connector with surge suppressor/lamp			
	<ul style="list-style-type: none"> ● Lead wire length C2 : 300 mm C20 : 500 mm C21 : 1000 mm C22 : 2000 mm 				
	C2N C-connector with surge suppressor/lamp	D3 D-connector with socket with surge suppressor/lamp			
		Socket · Crimping terminal attached 			
	C3 C-connector, with socket, with surge suppressor/lamp				
	Socket · Crimping terminal attached 				

Internal circuit diagram with surge suppressor/lamp



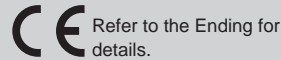
* Note that models with surge suppressor and lamp have polarity.
* Diode is used as a surge suppressor.

Discontinue

Single unit
Pilot operated 5-port valve/small pneumatic valve
Body piping/sub-plate piping

4SA0/4SB0 Series

● Cylinder bore size: $\varnothing 6$ to $\varnothing 25$



Refer to the Ending for details.



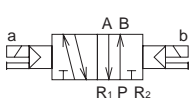
- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GB With sensor
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E MN4E
- W4GA/B2
- W4GB4
- MN3S0 MN4S0
- 4SA/B0**
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G GMF
- PV5 GMF
- PV5S-0
- 3Q
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP NVP
- 4G*0EJ
- 4F*0EX
- 4F*0E
- HMV HSV
- 2QV 3QV
- SKH
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending

JIS symbol

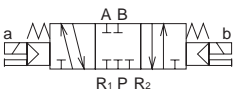
● 5-port valve
2 position single



2-position double



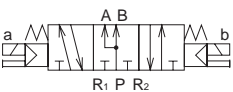
3-position
All ports closed



3-position A/B/R connection



3-position P/A/B connection



Common specifications

Item	Description
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	0.7
Min. working pressure MPa	0.2
Proof pressure MPa	1.05
Ambient temperature °C	5 to 50
Fluid temperature °C	5 to 50
Lubrication	Not required
Degree of protection	Dust-proof
Vibration resistance m/s^2	50 or less
Shock resistance m/s^2	300 or less
Atmosphere	Cannot be used in corrosive gas environment.

*1: 4SA0 is a pilot atmosphere release type. The pilot exhaust for 4SB0 is centralized with port R.

Electrical specifications

Item	Description	
Rated voltage V	24 DC	12 DC
Voltage fluctuation range	$\pm 10\%$	
Holding current A	0.025 (*2) (0.029)	0.050 (0.058)
Power consumption W (*3)	0.6 (0.7)	0.6 (0.7)
Thermal class	B	
Temperature rise °C	50	

*2: () The values in are with a surge suppressor and indicator lamp.

*3: The power consumption for the 6/5 VDC will be 0.9 (1.0) W. The power consumption for ozone-proof specifications (P11) will be 0.9 (1.0) W.

Individual specifications

Item	Port P/A/B	4SA0		4SB0
		Port size	M3	$\varnothing 4$ barbed fitting
	R ₁ /R ₂ Port	M3		M5

Performance/characteristics by model

Item	4SA0		4SB0	
Response time	2-position		20 or less	
(*4) ms	3-position		30 or less	

*4: The response times are values with supply pressure of 0.5 MPa, without lubrication, and with the power ON. They depend on the pressure and the lubricant quality.

Weight

Item	4SA0		4SB0	
Weight g	2-position	Single	23	43
		Double	35	55
	3-position		39	59

Flow characteristics

Model No.	Solenoid position	Port size	P → A/B		A/B → R		S (mm ²)
			C (dm ³ /(sbar))	b	C (dm ³ /(sbar))	b	
4SA0	2-position		-	-	-	-	0.9
	3-position	All ports closed	-	-	-	-	
		A/B/R connection	-	-	-	-	
		P/A/B connection	-	-	-	-	
4SB0	2-position		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	-

*5: Effective cross-sectional area S and sonic conductance C are converted as $S = 5.0 \times C$.

Ozone-proof specifications (Ending Page 5)

CE marking specifications

** - Voltage - **P11**

** - Voltage - **ST**

• Standard voltage of 24 VDC or less is CE marking-compatible even if the model No. is not indicated with "ST".

How to order discrete valve

4SA0 1 0 - M3 - M1 C2 - 3

● Single solenoid valve for manifold (body piping)

4SA0 1 9 - M3 - M1 C2 - 3

● Single solenoid valve for manifold (sub-plate piping)

4SB0 1 9 - 00 - M1 C2 - 3

A Model No. Fixed code

B Solenoid position

C Port size

D Manual override

E Electrical connections (*3)

Note: Refer to page 1234 for the circuit diagram with a surge suppressor/lamp.

F Other options

G Voltage

⚠ Precautions for model No. selection

- *1: The CKD compatible fittings of M3 are as listed below.
FTS4-M3, GWS3-M3-S
- *2: For T4, barbed fitting FTS4-M3 screws into the A/B-port.
- *3: The lead wire used is AWG26 size. (7/0.16, outer diameter ϕ 1.35, 0.13 mm²)
- *4: C4 and D4 are only single solenoid valves for 4SB0 manifolds. A reduced wiring socket assembly (length of 270 mm) will be attached.

[Example of model No.]

4SA010-M3-M1P-3

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

A Model No.	
Body piping	Sub-plate piping
4SA0	4SB0

Code	Description	4SA0	4SB0
B 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	●	●

C Port size				
Port	P/A/B	R ₁ /R ₂	4SA0	4SB0
M3	M3		● (*1)	
M5	M5			●
T4	ϕ 4 Barbed fitting	M3	● (*2)	

D Manual override			
Blank	Non-locking manual override	●	●
M1	Locking manual override	●	●

E Electrical connections			
Grommet lead wire			
Blank	Grommet lead wire (300 mm)	●	●
C-connector (lead wire lateral direction)			
C	Lead wire (300 mm)	●	●
C00	Lead wire (500 mm)	●	●
C01	Lead wire (1000 mm)	●	●
C02	Lead wire (2000 mm)	●	●
C1	Without lead wire (with socket)	●	●
C2	Lead wire (300 mm), surge suppressor/indicator lamp	●	●
C20	Lead wire (500 mm), surge suppressor/indicator lamp	●	●
C21	Lead wire (1000 mm), surge suppressor/indicator lamp	●	●
C22	Lead wire (2000 mm), surge suppressor/indicator lamp	●	●
C2N	No lead wire (without socket), surge suppressor/indicator lamp	●	●
C3	No lead wire (with socket), surge suppressor/indicator lamp	●	●
C4	With surge suppressor/lamp (for T31/T50) (*4)	●	●
D-connector (lead wire upward direction)			
D	Lead wire (300 mm)	●	●
D00	Lead wire (500 mm)	●	●
D01	Lead wire (1000 mm)	●	●
D02	Lead wire (2000 mm)	●	●
D1	Without lead wire (with socket)	●	●
D2	Lead wire (300 mm), surge suppressor/indicator lamp	●	●
D20	Lead wire (500 mm), surge suppressor/indicator lamp	●	●
D21	Lead wire (1000 mm), surge suppressor/indicator lamp	●	●
D22	Lead wire (2000 mm), surge suppressor/indicator lamp	●	●
D2N	No lead wire (without socket), surge suppressor/indicator lamp	●	●
D3	No lead wire (with socket), surge suppressor/indicator lamp	●	●
D4	With surge suppressor/lamp (T30) (*4)	●	●

F Other options			
Blank	Without mounting plate	●	●
P	Mounting plate (compatible only with 2-position single)	●	

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

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GB With sensor
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E
- MN4E
- W4GA/B2
- W4GB4
- MN3S0
- MN4S0
- 4SA/B0**
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G
- GMF
- PV5
- GMF
- PV5S-0
- 3Q
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP
- NVP
- 4G*0EJ
- 4F*0EX
- 4F*0E
- HMV
- HSV
- 2QV
- 3QV
- SKH
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending

4SA0 Series

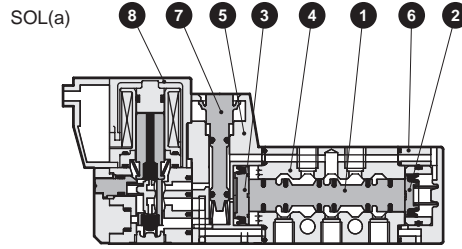
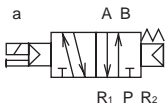
Discrete valve; body piping

Internal structure and parts list

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GB With sensor
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E
- MN4E
- W4GA/B2
- W4GB4
- MN3S0
- MN4S0
- 4SA/B0**
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G
- GMF
- PV5
- GMF
- PV5S-0
- 3Q
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP
- NVP
- 4G*0EJ
- 4F*0EX
- 4F*0E
- HMV
- HSV
- 2QV
- 3QV
- SKH
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending

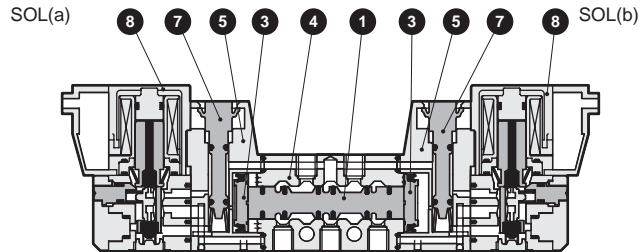
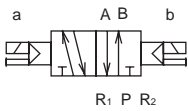
4SA010

● 2-position single



4SA020

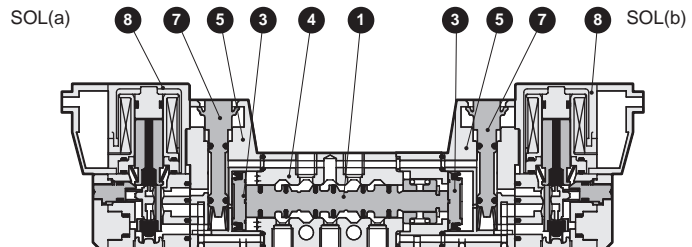
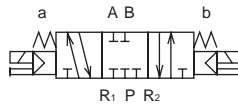
● 2-position double



4SA030

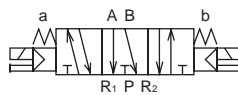
● 3-position

All ports closed



4SA040

A/B/R connection



4SA050

P/A/B connection



Main parts list

No.	Part name	Material
1	Spool assembly	-
2	Piston S assembly	-
3	Piston D assembly	-
4	Body	Aluminum
5	Piston chamber	Resin
6	Cap	Resin
7	Manual override	Resin
8	Coil assembly	-

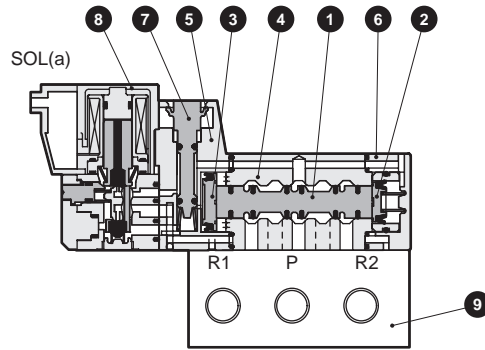
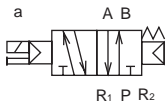
Parts list

No.	Part name	Model No.
8	Coil assembly	4S0 - <u>electrical connections</u> - COIL - <u>voltage</u> ↑ Blank for grommet lead wire

Internal structure and parts list

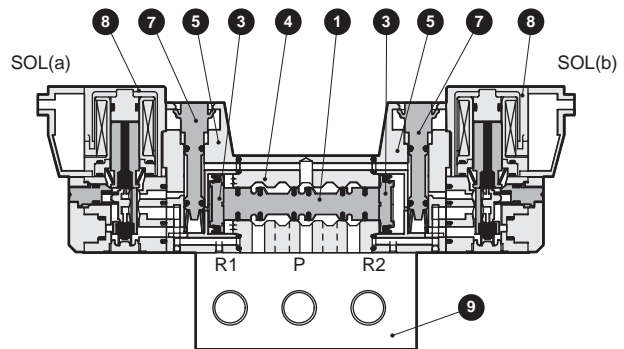
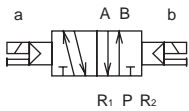
4SB010

● 2-position single



4SB020

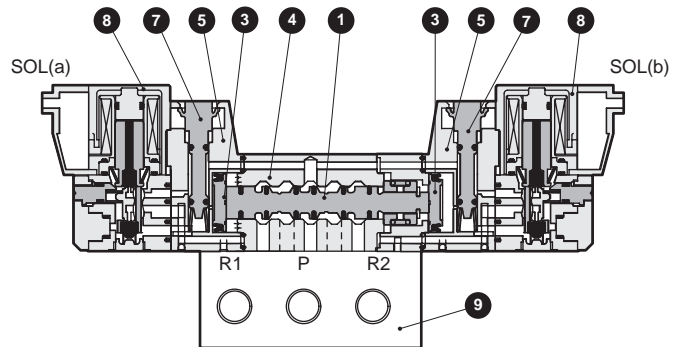
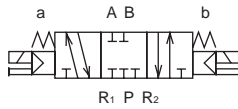
● 2-position double



4SB030

● 3-position

All ports closed



4SB040

A/B/R connection



4SB050

P/A/B connection



Main parts list

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

Parts list

No.	Part name	Model No.
8	Coil assembly	4S0 - [electrical connections] - COIL - [voltage] ↑ Blank for grommet lead wire

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP
NVP
4G*0EJ
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

4SA0 Series

Discrete valve; body piping

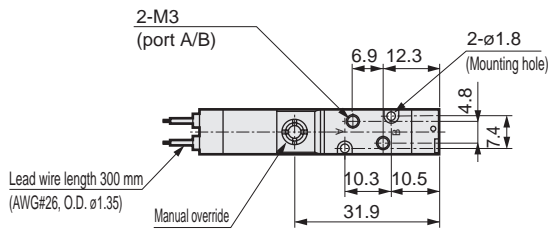
Dimensions

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP
NVP
4G*0EJ
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

4SA010-M3



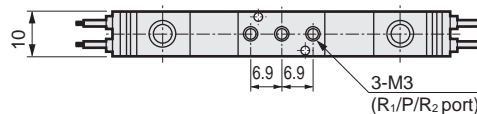
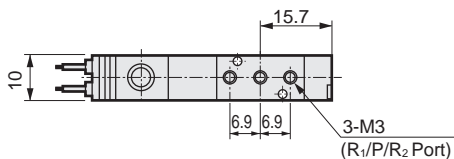
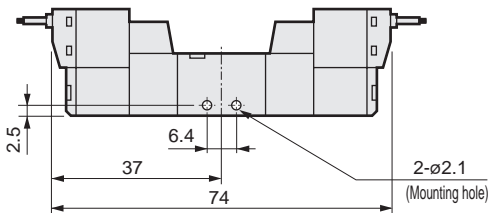
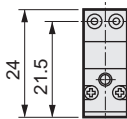
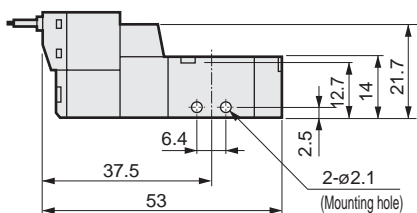
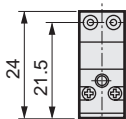
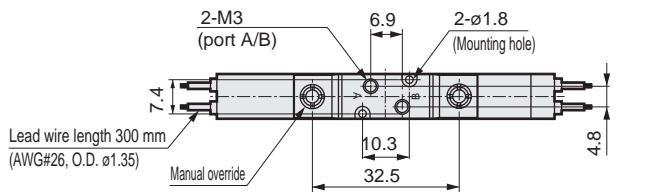
● 2-position single: grommet lead wire



4SA020-M3



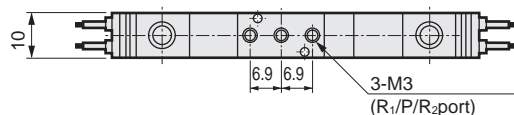
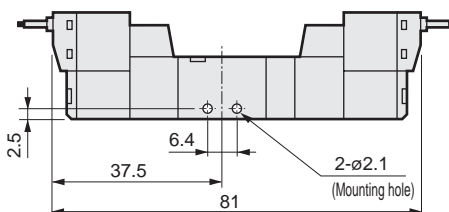
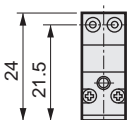
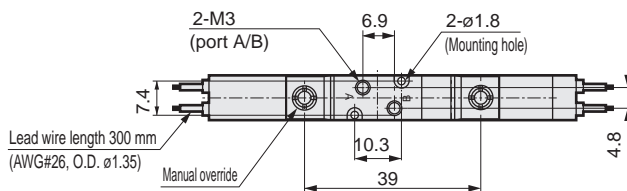
● 2-position double: grommet lead wire



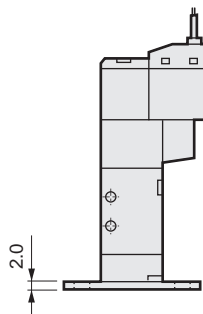
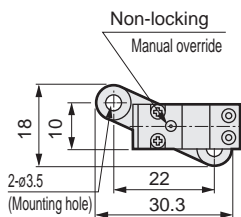
4SA030-M3



● 3-position: grommet lead wire

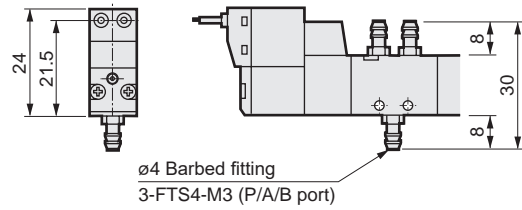


● Mounting plate: P (2-position single only)

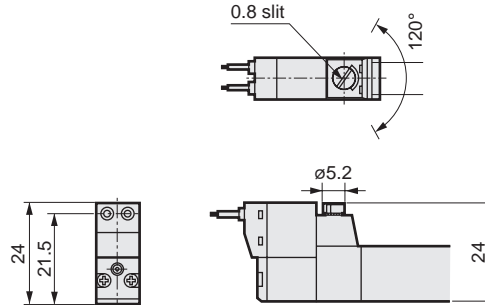


Dimensions

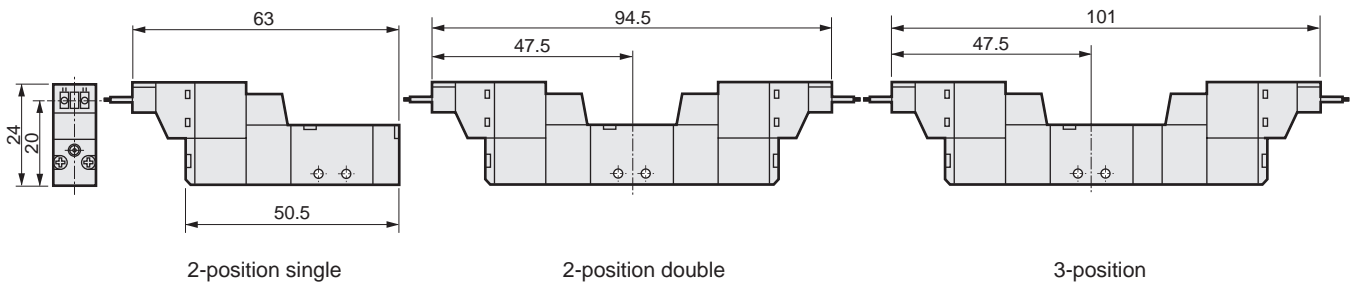
● $\varnothing 4$ barbed fitting: (T4)



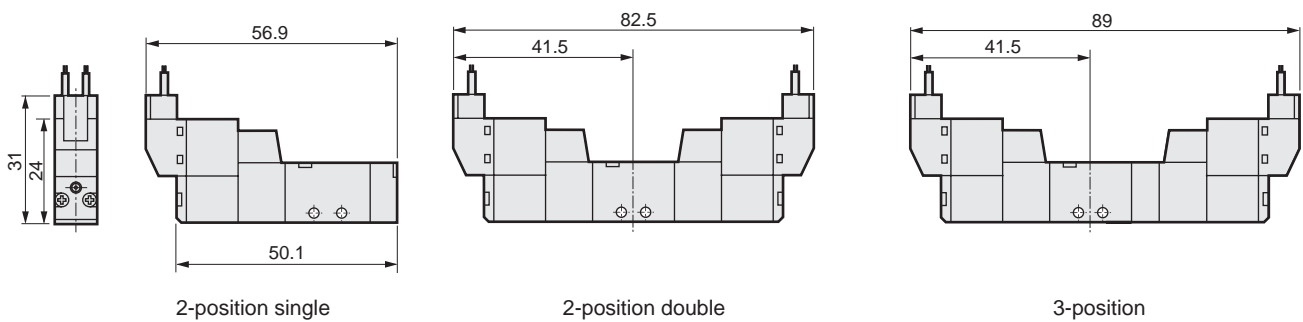
● Locking manual override: (M1)



● C-connector: (C/C0*/C1/C2/C2*/C3)



● D-connector: (D/D0*/D1/D2/D2*/D3)



4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP
NVP
4G*0EJ
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

4SB0 Series

Discrete valve; sub-plate piping

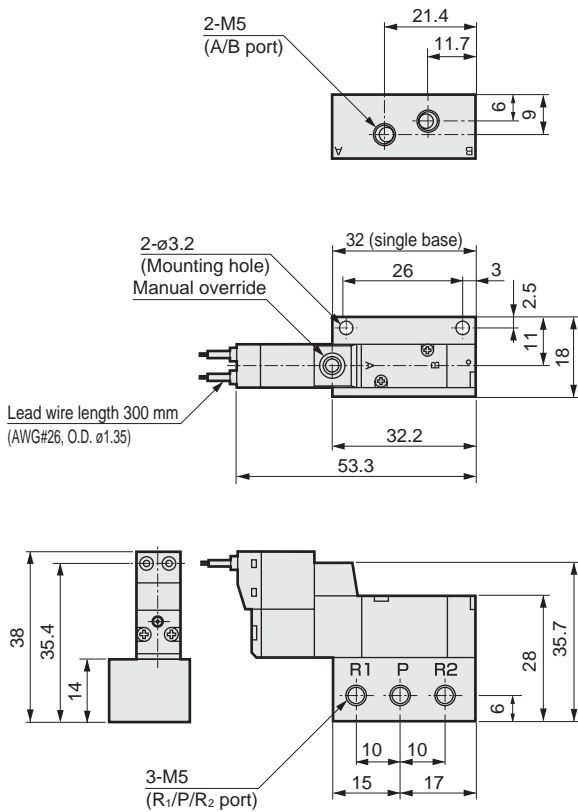
Dimensions



- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GB With sensor
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E
- MN4E
- W4GA/B2
- W4GB4
- MN3S0
- MN4S0
- 4SA/B0**
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G
- GMF
- PV5
- GMF
- PV5S-0
- 3Q
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP
- NVP
- 4G*0EJ
- 4F*0EX
- 4F*0E
- HMV
- HSV
- 2QV
- 3QV
- SKH
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending

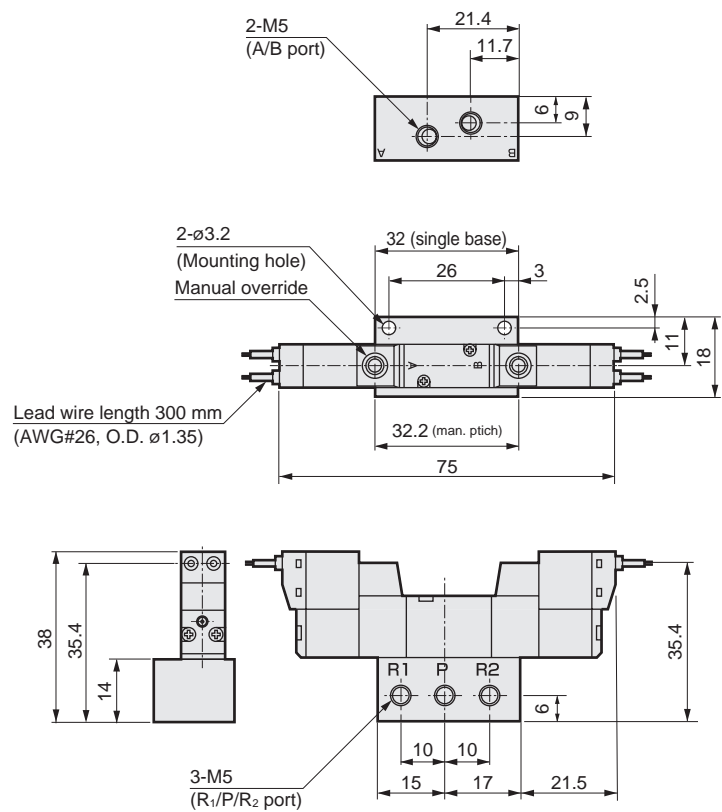
4SB010-M5

● 2-position single: grommet lead wire



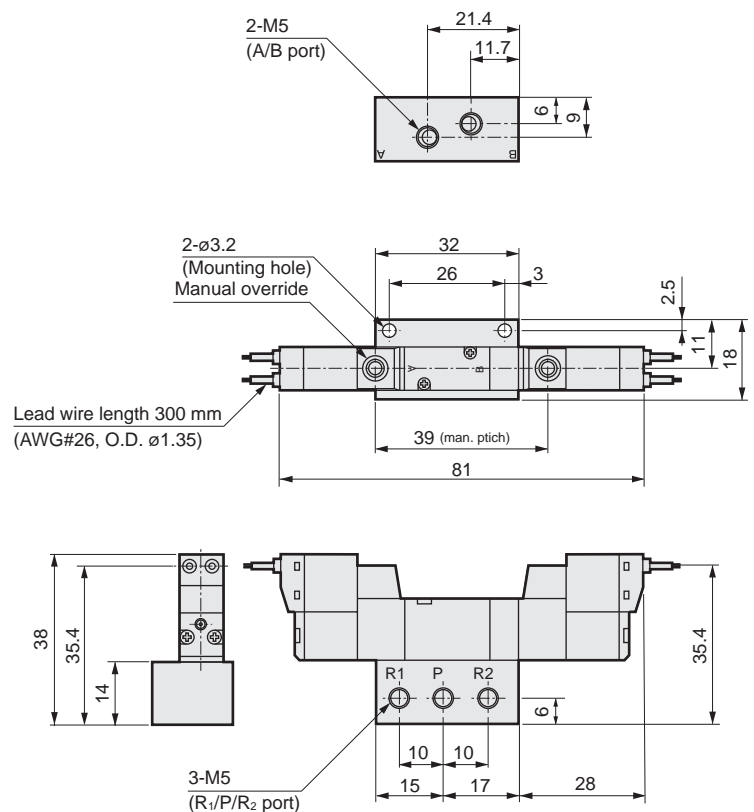
4SB020-M5

● 2-position double: grommet lead wire



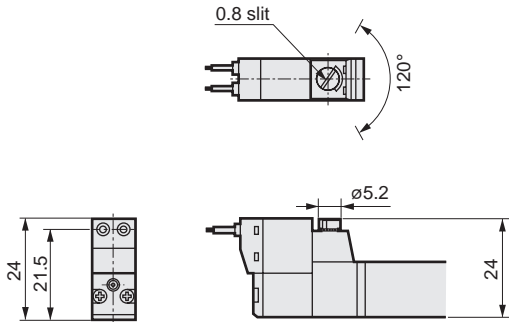
4SB0³/₄/₅0-M5

● 3-position: grommet lead wire

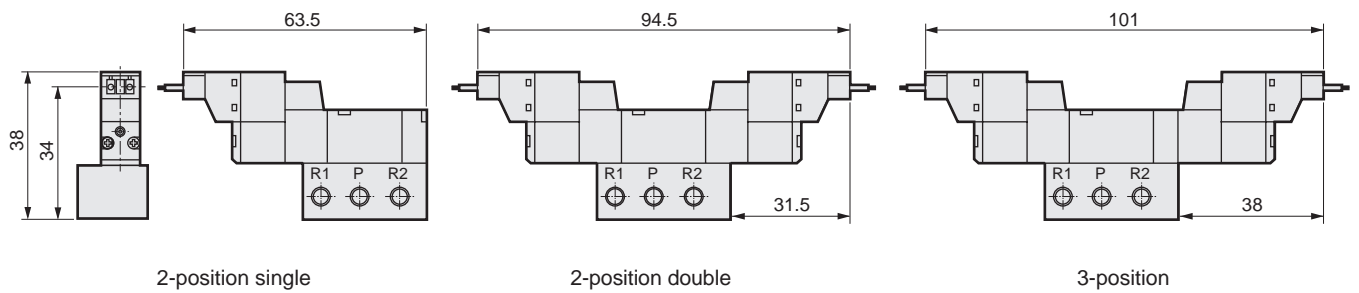


Dimensions

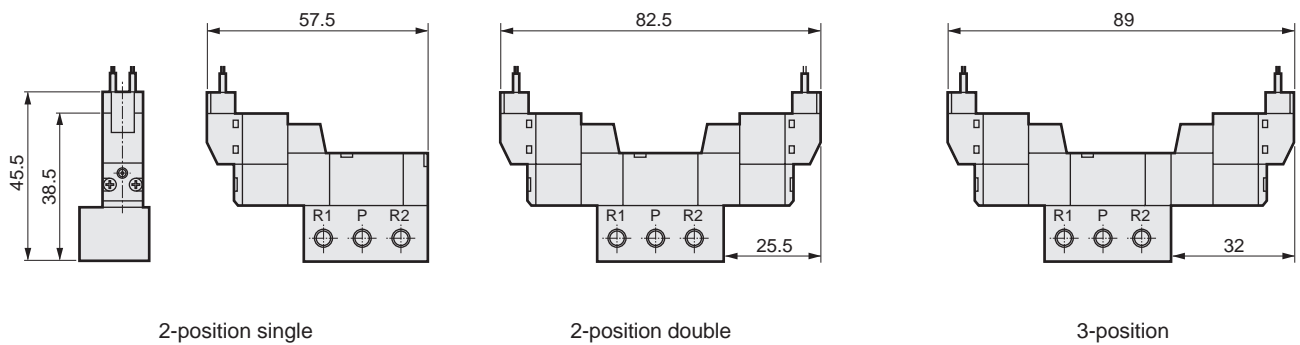
- Locking manual override: (M1)



- C-connector: (C/C0*/C1/C2/C2*/C3)



- D-connector: (D/D0*/D1/D2/D2*/D3)



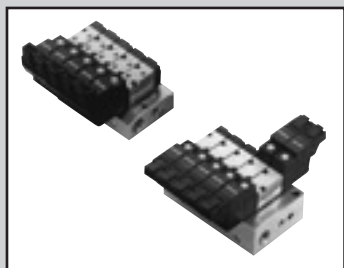
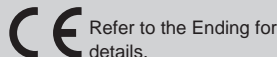
4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP
NVP
4G*0EJ
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

Discontinue

Individual wiring manifold,
Pilot operated 5-port valve/small pneumatic valve
Body piping/sub-plate piping

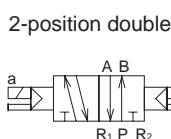
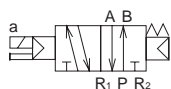
M4SA0/M4SB0 Series

● Cylinder bore size: $\varnothing 6$ to $\varnothing 25$

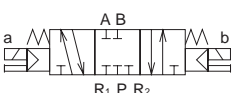


JIS symbol

- 5-port valve
2-position single



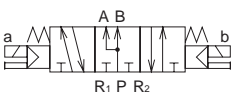
- 3-position all ports closed



- 3-position A/B/R connection



- 3-position P/A/B connection



Common specifications

Item	Description
Manifold method	Manifold integrated
Manifold	Common supply, common exhaust (*1)
Station No.	2 to 20 stations
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressure MPa	0.7 (≈ 100 psi, 7 bar)
Min. working pressure MPa	0.2 (≈ 29 psi, 2 bar)
Proof pressure MPa	1.05 (≈ 150 psi, 10.5 bar)
Ambient temperature $^{\circ}\text{C}$	5 (41 $^{\circ}\text{F}$) to 50 (122 $^{\circ}\text{F}$)
Fluid temperature $^{\circ}\text{C}$	5 (41 $^{\circ}\text{F}$) to 50 (122 $^{\circ}\text{F}$)
Lubrication	Not required
Degree of protection	Dust-proof
Vibration resistance m/s^2	50 or less
Shock resistance m/s^2	300 or less
Atmosphere	Cannot be used in corrosive gas environment.

Electrical specifications

Item	Description	
Rated voltage V	24 DC	12 DC
Voltage fluctuation range	$\pm 10\%$	
Holding current A	0.025 (*2) (0.029)	0.050 (0.058)
Power consumption W (*3)	0.6(0.7)	0.6(0.7)
Thermal class	B	
Temperature rise $^{\circ}\text{C}$	50	

- *1: 4SA0 is a pilot atmosphere release.
The pilot exhaust for 4SB0 is centralized with the R-port.
- *2: The values in () are with a surge suppressor and indicator lamp.
- *3: The power consumption for 6/5 VDC will be 0.9 (1.0) W.
The power consumption for ozone-proof specifications (P11) will be 0.9 (1.0) W.

Individual specifications

Item		M4SA0	M4SB0
Port size (*4)	P-port	M5	M5/Rc1/8
	A/B-port	M3	M5
	R-port	Rc1/8	
Manifold base weight calculation formula (n: station No.)	P-port: M5	13n+18	20n+36
	g P-port: Rc1/8		21n+26

- *4: For the port size of P and A/B-ports, there are options other than those listed above.
Refer to item ① in How to order on the next page.

Performance/characteristics by model

Item	M4SA0	M4SB0
Response time	2-position	20 or less
(*5) ms	3-position	30 or less

- *5: The response time is the value at 0.5 MPa supply pressure, with no lubrication, and with the power ON. It depends on the pressure and the lubricant quality.

Flow characteristics

Model No.	Solenoid position	Port size	P \rightarrow A/B		A/B \rightarrow R	
			C[dm 3 /(s \cdot bar)]	b	C[dm 3 /(s \cdot 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

- *6: Be careful when using the T4 specifications ($\varnothing 4$ barbed fitting use) as the flow rate will be constricted depending on the effective cross-sectional area of the fitting.

- *7: Effective cross-sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

Example

[Mix manifold]

- How to list combination descriptions
When selecting a combination manifold (write 8 from ①), list the code (refer to table at right) for required functions and the arrangement No. (numbering up to specified station No. with left side as 1) in the field for remarks below the normal model No. display as shown in the example.

Code	Function
S1	2-position single
S2	2-position double
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 (S1)	2-position Double (S2)	3-position All ports closed (S3)	3-position All ports closed (S3)	2-position Double (S2)	2-position Single (S1)	3-position A/B/R connection (S4)

The model No. when using a combination manifold of 7 stations with an array such as that in the figure at left with the A/B/P-ports of M5 and 24 VDC is
M4SB080-M5-C02-7-3-222100
S1=1.6 S2=2.5 S3=3.4 S4=7
Code Position

- With a mix manifold, when using 10 or more actuators of the same model No., specify using the codes in the table below.

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

S1	S2	S3	S4	S5	MP
2	2	2	1	0	0

How to order individual wiring manifold

- Single solenoid valve for manifold (body piping)



- Single solenoid valve for manifold (sub-plate piping)



- Individual wiring manifolds



A Model No.

B Solenoid position

C Port size

D Manual override

E Electrical connections

Note: Refer to page 1234 for the circuit diagram with a surge suppressor/lamp.

F Station No.

G Voltage

Indicate the valve function based quantity display position when using a mix manifold. Refer to page 1244.

A Model No.	
Body piping	Sub-plate piping
4SA0	4SB0

Code	Description	4SA0	4SB0
B 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	●	●
8	Mix manifold (when there are multiple solenoid positions)	●	●

C Port size					
Port	A/B	P	R	4SA0	4SB0
M3	M 3			●(*1)	
M5	M 5				●
GS4	ø4 push-in fitting	M 5	Rc 1/8		●(*3)
T4	ø4 barbed fitting			●(*2)	●(*4)
T6	ø6 barbed fitting				●(*4)
PM5	M 5				●
PGS4	ø4 push-in fitting	Rc 1/8	Rc 1/8		●(*3)
PT4	ø4 barbed fitting				●(*4)
PT6	ø6 barbed fitting				●(*4)

D Manual override			
Code	Description	4SA0	4SB0
Blank	Manual override of non-locking	●	●
M1	Locking manual override	●	●

E Electrical connections			
Grommet lead wire			
Code	Description	4SA0	4SB0
Blank	Grommet lead wire (300 mm)	●	●
C-connector (lead wire lateral direction)			
C	Lead wire (300 mm)	●	●
C00	Lead wire (500 mm)	●	●
C01	Lead wire (1000 mm)	●	●
C02	Lead wire (2000 mm)	●	●
C1	Without lead wire (with socket)	●	●
C2	Lead wire (300 mm) with surge suppressor and indicator lamp	●	●
C20	Lead wire (500 mm) with surge suppressor and indicator lamp	●	●
C21	Lead wire (1000 mm) with surge suppressor and indicator lamp	●	●
C22	Lead wire (2000 mm) with surge suppressor and indicator lamp	●	●
C2N	Lead wireand(Without socket) with surge suppressor and indicator lamp	●	●
C3	Lead wireand(With socket) with surge suppressor and indicator lamp	●	●
D-connector (lead wire upward direction)			
D	Lead wire (300 mm)	●	●
D00	Lead wire (500 mm)	●	●
D01	Lead wire (1000 mm)	●	●
D02	Lead wire (2000 mm)	●	●
D1	Without lead wire (with socket)	●	●
D2	Lead wire (300 mm) with surge suppressor and indicator lamp	●	●
D20	Lead wire (500 mm) with surge suppressor and indicator lamp	●	●
D21	Lead wire (1000 mm) with surge suppressor and indicator lamp	●	●
D22	Lead wire (2000 mm) with surge suppressor and indicator lamp	●	●
D2N	Lead wireand(Without socket) with surge suppressor and indicator lamp	●	●
D3	Lead wireand(With socket) with surge suppressor and indicator lamp	●	●

F Station No.			
Code	Description	4SA0	4SB0
2 to 20	2 to 20 stations	●	●

G Voltage			
Code	Description	4SA0	4SB0
3	24 VDC	●	●
4	12 VDC	●	●
DC6V	6 VDC	●	●
DC5V	5 VDC	●	●

- Refer to page 1255 for how to order manifold bases and masking plates.

⚠ Precautions for model No. selection

For M4SA0

*1: The CKD compatible fittings of M3 are as listed below.

FTS4-M3, GWS3-M3-S

*2: For T4, barbed fitting FTS4-M3 screws into the A/B-port.

For M4SB0

*3: For GS4, push-in fitting GWS4-M5-S screws into the A/B-port.

*4: For T4 and T6, FTS4-M5 and FTS6-M5 screw into the A/B-port.

[Example of model No.]

● Individual wiring manifolds M4SB010-M5-C2-2-3

- A** Model No. : M4SB0
- B** Solenoid position : 2-position single
- C** Port size : A/B/P-port = M5, R-port = Rc1/8
- D** Manual override : Non-locking manual override
- E** Electrical connections: With C-connector lead wire (300 mm)/with surge suppressor and indicator lamp
- F** Station No. : 2 stations
- G** Voltage : 24 VDC

Ozone-proof specifications (Ending Page 5)

** - Voltage - P11

CE marking specifications

** - Voltage - ST

- Standard voltage of 24 VDC or less is CE marking-compatible even if the model No. is not indicated with "ST".

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GB With sensor
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E
- MN4E
- W4GA/B2
- W4GB4
- MN3S0
- MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G
- GMF
- PV5
- GMF
- PV5S-0
- 3Q
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP
- NVP
- 4C*0EJ
- 4F*0EX
- 4F*0E
- HMV
- HSV
- 2QV
- 3QV
- SKH
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending

M4SA0/M4SB0 Series

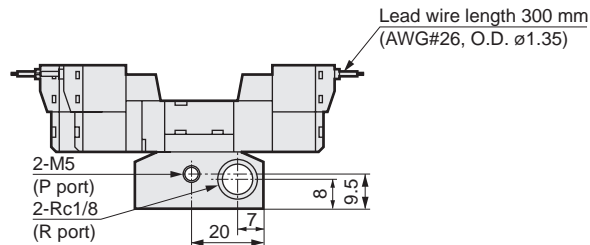
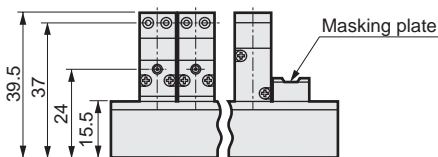
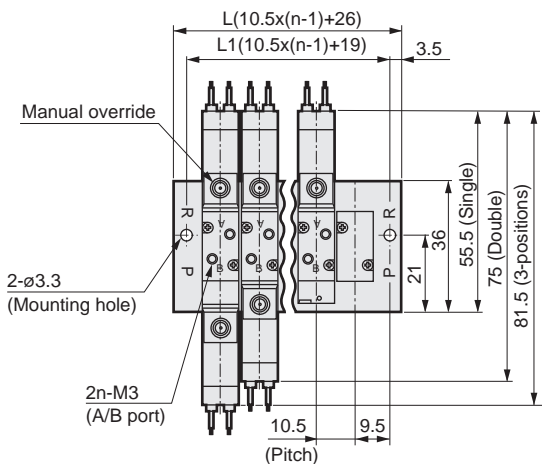
Individual wiring manifold; body piping/sub-plate piping

Dimensions

- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GB With sensor
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E MN4E
- W4GA/B2
- W4GB4
- MN3S0 MN4S0
- 4SA/B0**
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G GMF
- PV5 GMF
- PV5S-0
- 3Q
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP NVP
- 4G*0EJ
- 4F*0EX
- 4F*0E
- HMV HSV
- 2QV 3QV
- SKH
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending

M4SA0*0-M3

● Body piping A type: grommet lead wire

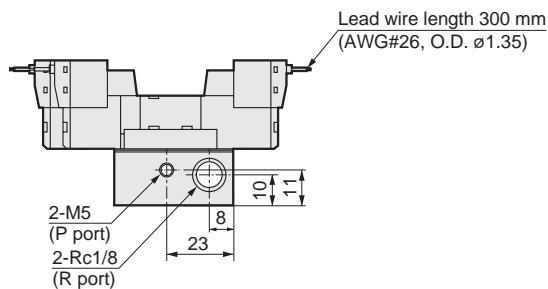
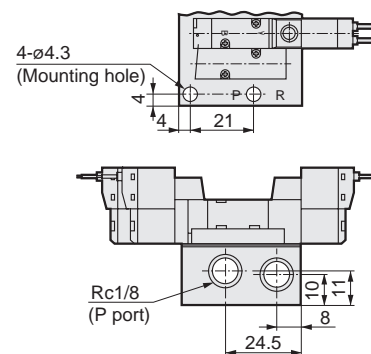
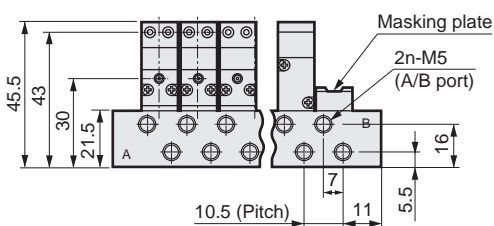
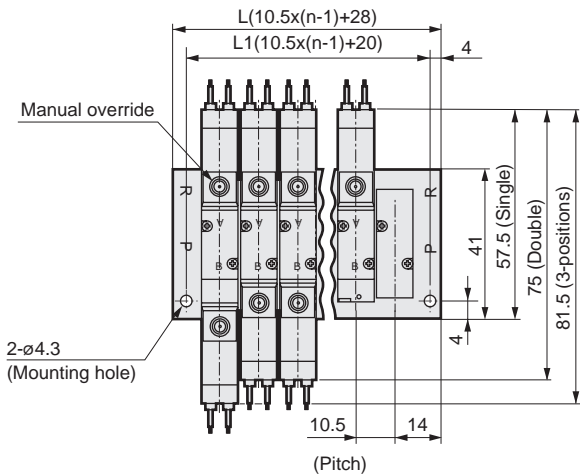


Station No.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	29.5	40	50.5	61	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5	187	197.5	208	218.5
L	36.5	47	57.5	68	78.5	89	99.5	110	120.5	131	141.5	152	162.5	173	183.5	194	204.5	215	225.5

M4SB0*0-M5

● Sub-plate piping B type (P port M5): grommet lead wire

● P port Rc1/8

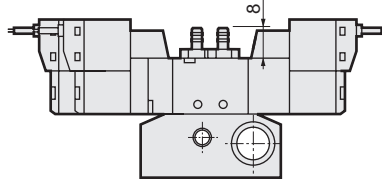


Station No.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5
L	38.5	49	59.5	70	80.5	91	101.5	112	122.5	133	143.5	154	164.5	175	185.5	196	206.5	217	227.5

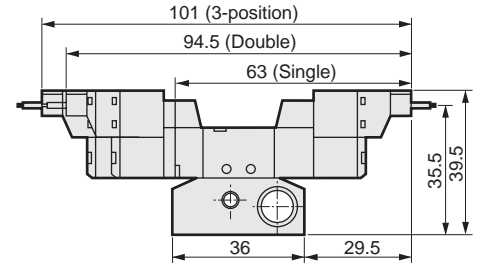
Dimensions

Body piping A type →

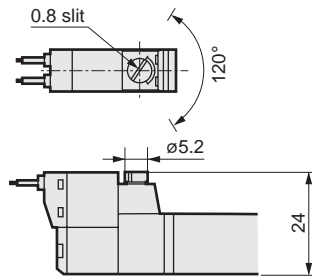
- $\phi 4$ barbed fitting: (T4)



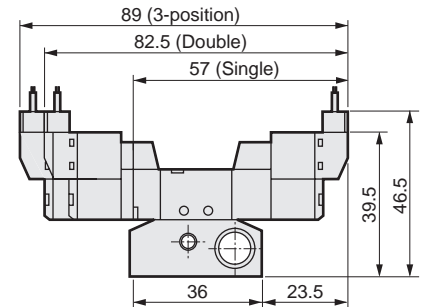
- C-connector: (C/C0*/C1/C2/C2*/C3)



- Locking manual override: (M1)

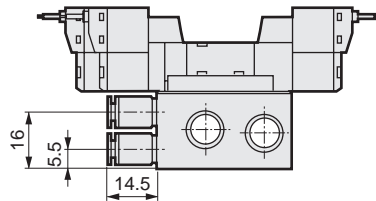


- D-connector: (D/D0*/D1/D2/D2*/D3)

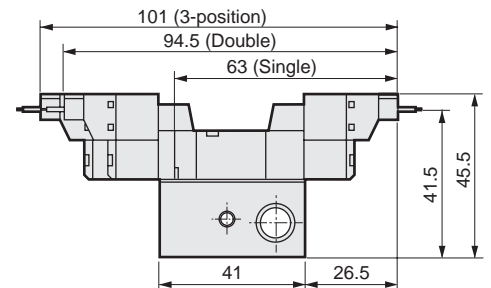


Sub-plate piping B type →

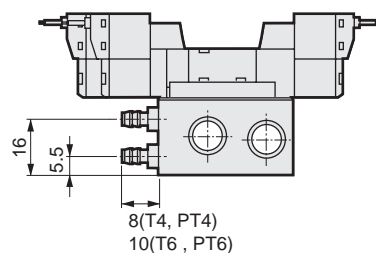
- $\phi 4$ push-in fitting: (GS4/PGS4)



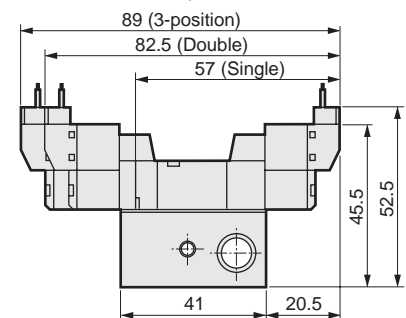
- C-connector: (C/C0*/C1/C2/C2*/C3)



- $\phi 4/\phi 6$ barbed fitting: (T4/T6/PT4/PT6)



- D-connector: (D/D0*/D1/D2/D2*/D3)



4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP
NVP
4G*0EJ
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

Discontinue

Reduced wiring manifold
Pilot operated 5-port valve
Sub-plate piping

M4SB0 Series

● Cylinder bore size: $\varnothing 6$ to $\varnothing 25$



4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP
NVP
4G*0EJ
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

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

Common specifications

Item	Description
Manifold method	Manifold integrated
Manifold	Common supply, common exhaust*1
Station No.	2 to 20 stations
Valve and operation	Pilot operated soft spool valve
Working fluid	Compressed air
Max. working pressureMPa	0.7
Min. working pressureMPa	0.2
Proof pressure MPa	1.05
Ambient temperature°C	5 to 50
Fluid temperature °C	5 to 50
Lubrication	Not required
Degree of protection	Dust-proof
Vibration resistance m/s^2	50 or less
Shock resistance m/s^2	300 or less
Atmosphere	Cannot be used in corrosive gas environment.

Electrical specifications

Item	Description	
Rated voltage V	24 DC	12 DC
Voltage fluctuation range	$\pm 10\%$	
Holding current A	0.029	0.058
Power consumption W (*2)	0.7	0.7
Thermal class	B	
Temperature rise°C	50	

*1: The pilot exhaust for 4SB0 is centralized with port R.
*2: The power consumption for the 6/5 VDC will be 1.0W.
The power consumption for ozone-proof specifications (P11) will be 1.0 W.

Individual specifications

Item	M4SB0	
Port size (*3)	Port P	M5/Rc1/8
	Port A/B	M5
	Port R	Rc1/8
Manifold base	Port P: M5	20n+146
Weight calculation formula (n:Station No.)g	Port P: Rc1/8	21n+136

*3: For the port size of P and A/B-ports, there are options other than those listed above.
Refer to item ⑤ of How to order on the next page.

*4: The manifold weight is the value when equipped with wiring section.

Performance/characteristics

Item	M4SB0	
Response time	2-position	20 or less
(*5) ms	3-position	30 or less

*5: The response times are values with supply pressure of 0.5 MPa, without lubrication, and with the power ON. They depend on the pressure and the lubricant quality.

Flow characteristics

Model No.	Solenoid position	Port size	P → A/B		A/B → R	
			C($dm^3/sbar$)	b	C($dm^3/sbar$)	b
M4SB0	2-position	Port P: M5/Rc1/8	0.30	0.15	0.30	0.21
	3-position	Port A/B: M5, port R: Rc1/8	0.29	0.14	0.30	0.20

*6: Be careful when using the T4 specifications ($\varnothing 4$ barbed fitting use) as the flow rate will be constricted depending on the effective cross-sectional area of the fitting.

*7: Effective cross-sectional area S and sonic conductance C are converted as $S \approx 5.0 \times C$.

[Mix manifold]

● How to list combination descriptions
When selecting a combination manifold (write 8 from ③), list the code (refer to table on right) for required functions and the arrangement No. (numbering up to specified station No. with left side as 1) in the field for remarks below the normal model No. display as shown in the example.

Code	Function
S1	2 position single
S2	2-position double
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 (S1)	2-position Double (S2)	3-position All ports closed (S3)	3-position All ports closed (S3)	2-position Double (S2)	2-position Single (S1)	3-position A/B/R connection (S4)

Example

The model No. when using a combination manifold of 7 stations with an array such as that in the figure at left with the A/B/port Ps of M5 and 24 VDC is **M4SB080-M5-C4T50-7-3-222100**
S1=1,6 S2=2,5 S3=3,4 S4=7
Code Position

● With a mix manifold, when using 10 or more actuators of the same model No., specify using the codes in the table below.

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

S1	S2	S3	S4	S5	MP
2	2	2	1	0	0

How to order reduced wiring manifold

- Single solenoid valve for manifold (sub-plate piping)

4SB0 1 9 - 00 - M1 C4 ——— 3

- Reduced wiring manifold

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

Indicate the valve function based quantity display position when using a mix manifold. Refer to page 1248.

Model No.

Fixed code

A Solenoid position

B Port size

C Manual override

D Electrical connections
Note: Refer to page 1234 for the circuit diagram with a surge suppressor/lamp.

E Station No.

F Voltage

- Refer to page 1255 for how to order manifold bases and masking plates.
- Refer to page 1253 for the model No. of cables with D sub-connector.
- Refer to page 1255 for the model No. of cables for a flat cable connector.

⚠ Precautions for model No. selection

- *1: For GS4, push-in fitting GWS4-M5-S screws into the A/B-port.
- *2: For T4 and T6, FTS4-M5 and FTS6-M5 screw into the A/B-port.
- *3: C4 and D4 are only single solenoid valves for 4SB0 manifolds.
A reduced wiring socket assembly (length of 270 mm) will be attached.
- *4: T30/T31 has a max. number of single solenoids of 20 stations while T50 has a max. number of single solenoids of 16 stations.

[Example of model No.]

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

Model: M4SB0

- A** Solenoid position : 2-position single
- B** Port size : A/B/P-port = M5,
R-port = Rc1/8
- C** Manual override : Non-locking manual override
- D** Electrical connections: Flat cable connector
- E** Station No. : 7 stations
- F** Voltage : 24 VDC

Code	Description		
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		
8	Mix manifold (when there are multiple solenoid positions)		
B Port size			
Port	A/B	P	R
M5	M5	M5	Rc 1/8
GS4	ø4 push-in fitting (*1)		
T4	ø4 barbed fitting (*2)		
T6	ø6 barbed fitting (*2)		
PM5	M5	Rc 1/8	Rc 1/8
PGS4	ø4 push-in fitting (*1)		
PT4	ø4 barbed fitting (*2)		
PT6	ø6 barbed fitting (*2)		
C Manual override			
Blank	Manual override of non-locking		
M1	Locking manual override		
D Electrical connections			
C4	C-connector (for T31/T50) (*3) with surge suppressor and indicator lamp		
D4	D-connector (T30) (*3) with surge suppressor and indicator lamp		
C4T31	D-sub-connector lateral facing type with surge suppressor and indicator lamp		
D4T30	D-sub-connector upward facing type with surge suppressor and indicator lamp		
C4T50	Flat cable connector with surge suppressor and indicator lamp		
E Station No.			
4 to 20	4 to 20 stations (*4)		
F Voltage			
3	Standard	24 VDC	
4		12 VDC	
DC6V	Option	6 VDC	
DC5V		5 VDC	

Ozone-proof specifications (Ending Page 5)

** - Voltage - P11

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP NVP
4G*0EJ
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

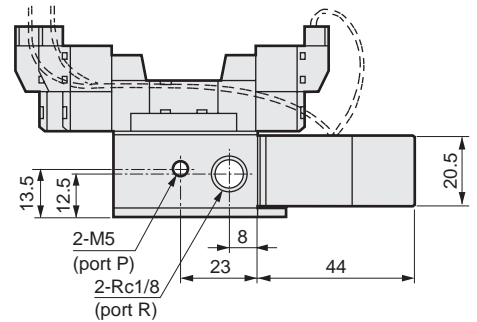
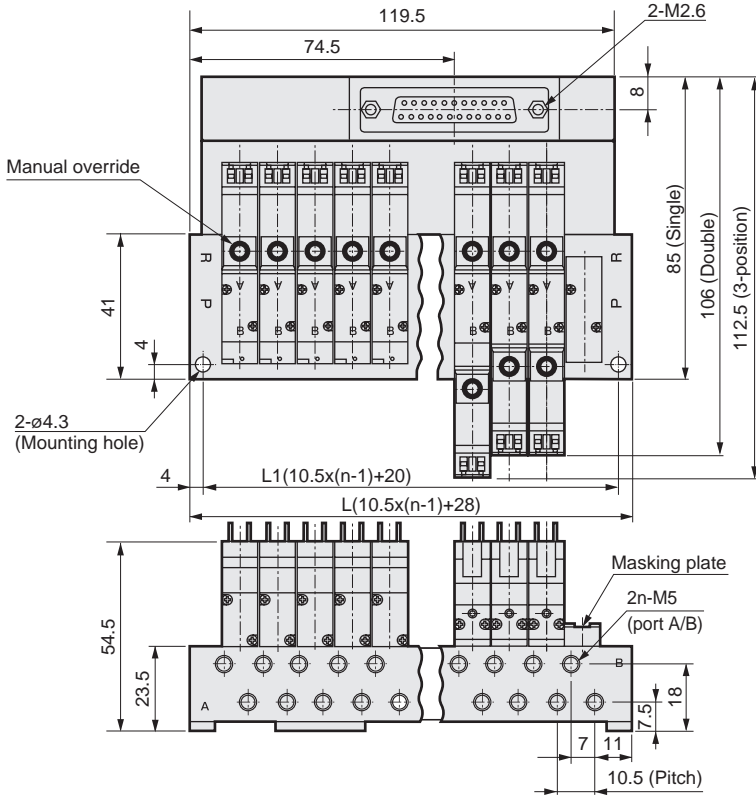
M4SB0 Series

Reduced wiring manifold; sub-plate piping

Dimensions

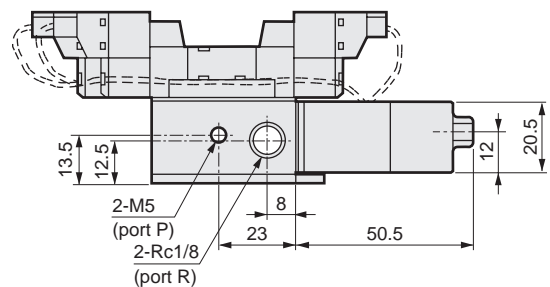
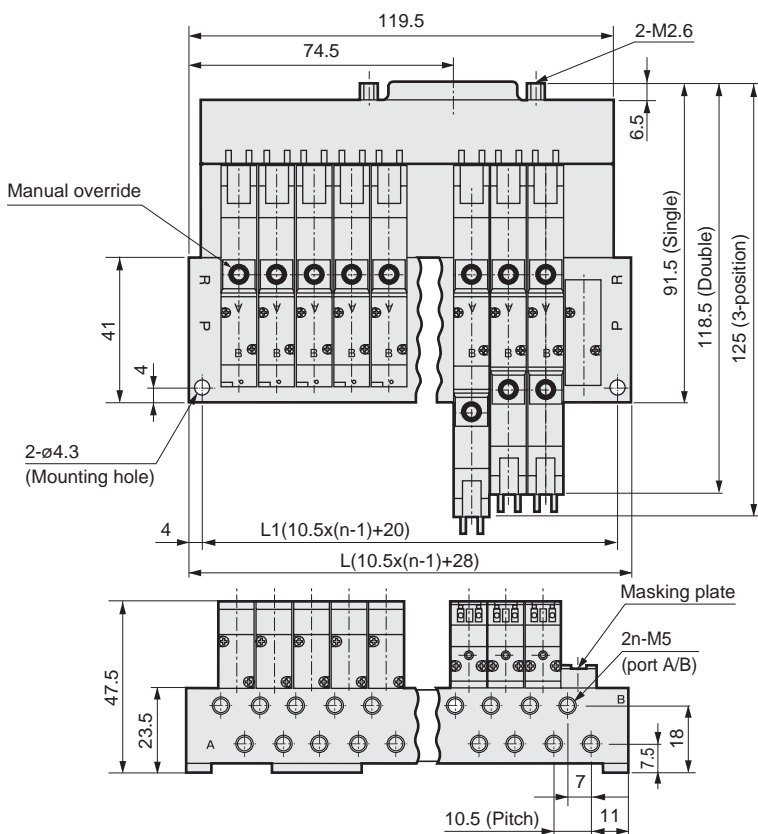
M4SB0*0-M5-D4T30

● D sub-connector upward facing: (Port P M5)



M4SB0*0-M5-C4T31

● D sub-connector lateral facing: (Port P M5)



Station No.	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

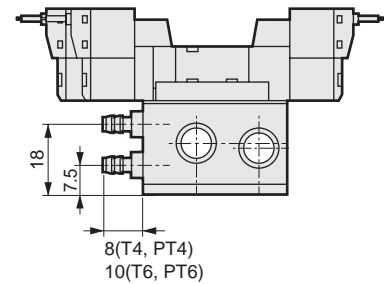
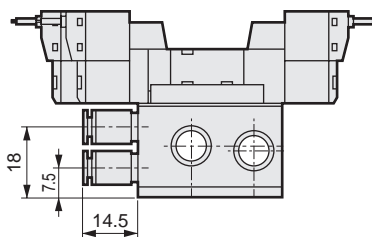
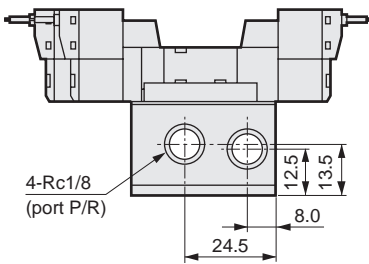
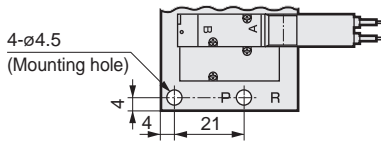
- 4GA/B
- M4GA/B
- MN4GA/B
- 4GA/B (master)
- 4GB With sensor
- 4GD/E
- M4GD/E
- MN4GD/E
- 4GA4/B4
- MN3E
- MN4E
- W4GA/B2
- W4GB4
- MN3S0
- MN4S0
- 4SA/B0
- 4KA/B
- 4KA/B (master)
- 4F
- 4F (master)
- PV5G
- GMF
- PV5
- GMF
- PV5S-0
- 3Q
- MV3QR
- 3MA/B0
- 3PA/B
- P/M/B
- NP/NAP
- NVP
- 4G*0EJ
- 4F*0EX
- 4F*0E
- HMV
- HSV
- 2QV
- 3QV
- SKH
- Silencer
- TotAirSys (Total Air)
- TotAirSys (Gamma)
- Ending

Dimensions

● Port A/B M5, port P 1/8:
(PM5)

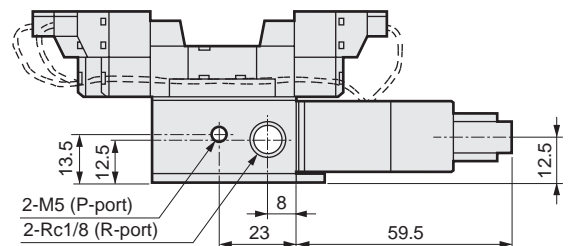
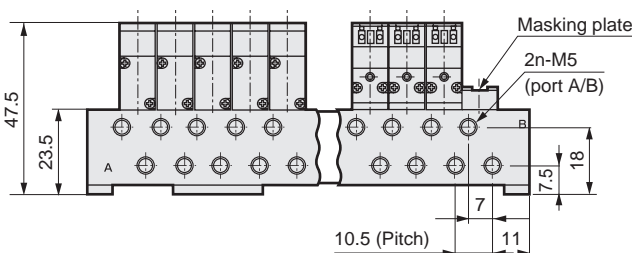
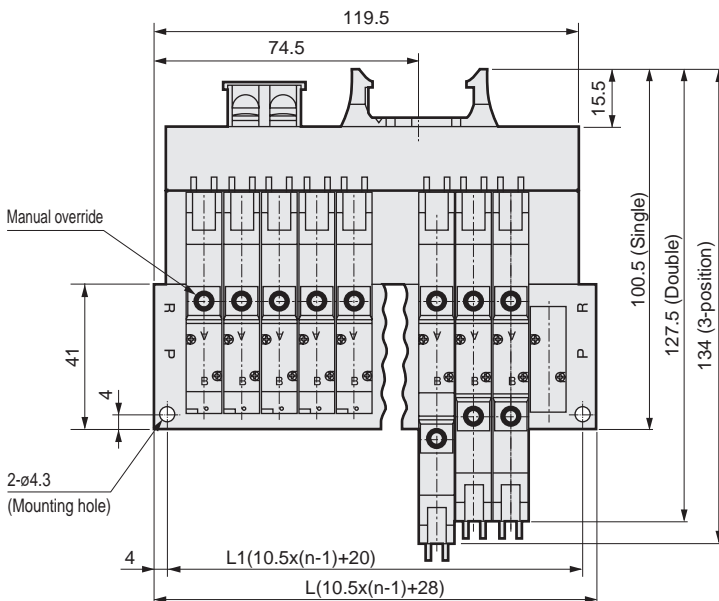
● $\varnothing 4$ push-in fitting: (GS4/PGS4)

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



M4SB0*0-M5-C4T50

● Flat cable connector: (Port P M5)



Station No.	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

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E MN4E
W4GA/B2
W4GB4
MN3S0 MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G GMF
PV5 GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP NVP
4G*0EJ
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

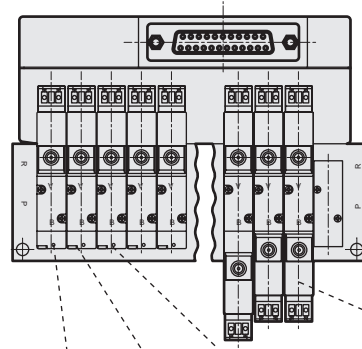
4SA0/4SB0 Series

Technical data ① Notes on wiring: D sub-connector

D sub-connector: Wiring method T30/T31

T30/T31 Connectors

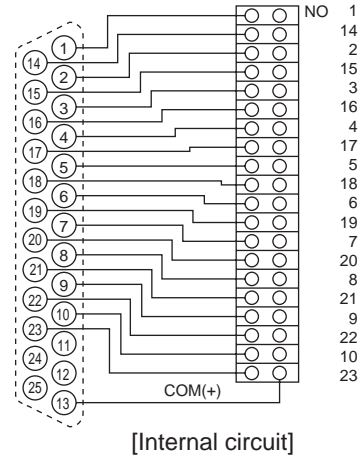
The connector used for T30/T31 wiring, called a D sub-connector, is used widely for FA and OA devices. The 25P in particular is also an RS-232-C Standards designated connector, used for personal computer communication. The manifold station numbers are set in order from left with b side solenoid side (cap side for single) facing forward.



Manifold station No. 1st station 2nd station 3rd station ... n-th station

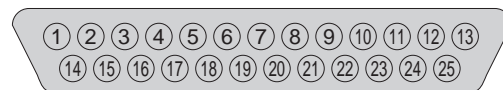
Precautions for connector T30/T31

- (1) Signal arrays of the PC output unit must match signal arrays of the valve side.
- (2) The working power is 12/24 VDC dedicated.
- (3) A voltage drop may occur due to simultaneous energizing or cable length. Confirm that the voltage drop for the solenoid is within 10% of the rated voltage.
- (4) These are +COM specifications.



Connector pin array (example) of wiring method T30/T31

Note: The numerals of valve numbers 1a, 1b, 2a, 2b ... indicate the order of stations first station, second station... and the letters "a" and "b" indicate the "a side" solenoid and "b side" solenoid, respectively.



● For single solenoid valve (supports max. manifold No. up to 20 points)

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 (supports max. manifold No. up to 10 points)

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 mixed use (single/double mixture) (supports max. solenoid No. up to 20 points)

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	5a	7b	9a	11a	12a	13a	15a			

How to order cable with D sub-connector

N4T - **CABLE** - **D001**

* Each pneumatic valve model can be used for D sub-connector T30/T31.

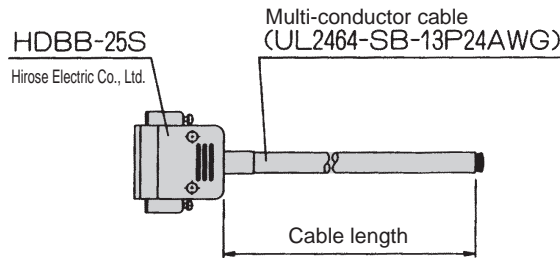
A User interface

B Cable length

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

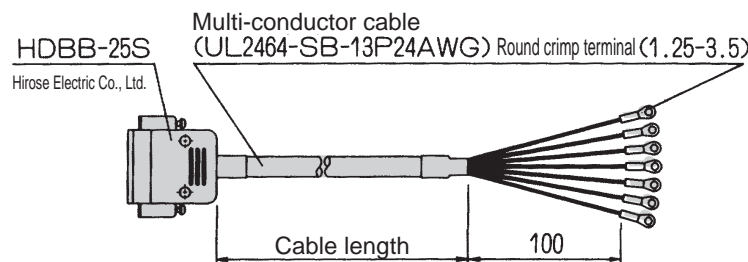
D sub-connector terminal No. and conductor

● N4T-CABLE-D00-②



D sub-connector terminal No.		1	2	3	4	5	6	7	8	9	10	11	12	13
Core identification	Insulator color	Orange	Orange	Yellow	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow
	Mark	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	
Core identification	Insulator color	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green	
	Mark	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
Core identification	Insulator color	Orange	Orange	Yellow	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow
	Mark	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	
Core identification	Insulator color	Yellow	Green	Green	Gray	Gray	White	White	Orange	Orange	Yellow	Yellow	Green	
	Mark	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 the wires for surplus points before use.

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP
NVP
4G*0EJ
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

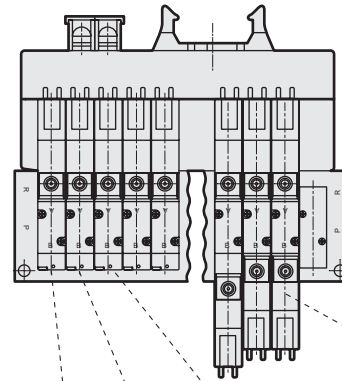
4SA0/4SB0 Series

Technical data ① Notes on wiring: Flat cable connector

Flat cable connector: wiring method T50

T50 Connectors

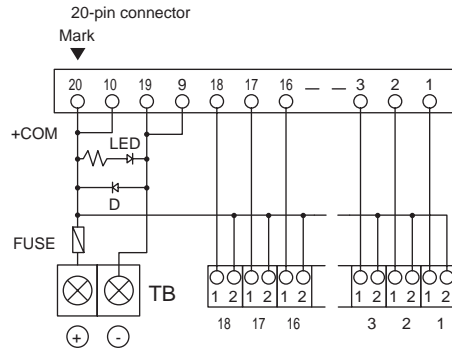
The connector used for T50 wiring method complies with MIL Standards (MIL-C-83503). Wiring work is simplified with the pressure welded flat cable. Pin numbers are assigned differently based on the PLC manufacturer, but the function assignment is the same. Layout using connectors and the triangular mark (▼) shown below as a reference. The ▼ mark is the reference for both plug and socket. The manifold station numbers are set in order from left with b side solenoid side (cap side for single) facing forward.



Manifold station No. 1st station 2nd station 3rd station ... n-th station

Precautions for connector T50

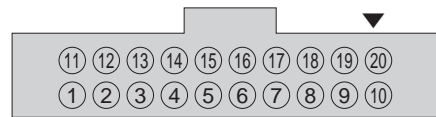
- (1) Signal arrays of the PLC output unit must match signal arrays on the valve side. Direct connections with the PLC are limited. Use the dedicated cable for each PLC manufacturer.
- (2) The working power is 12/24 VDC dedicated.
- (3) When connecting the T50 to a general output unit, use the + terminal (20, 10) of the 20P connector as the plus side common, and use the NPN transistor output open collector for the drive circuit.
- (4) Never connect this manifold to the input unit, as major failures could occur in this device and in the peripherals. Be sure to connect the manifold to the output unit.
- (5) A voltage drop may occur due to simultaneous energizing or cable length. Confirm that the voltage drop for the solenoid is within 10% of the rated voltage.



[Internal circuit]

Connector pin array (example) of wiring method T50

Note: The numerals of valve numbers 1a, 1b, 2a, 2b ... indicate the order of stations first station, second station... and the letters "a" and "b" indicate the "a side" solenoid and "b side" solenoid, respectively.



● For single solenoid valve (Supports up to manifold max. station number of 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

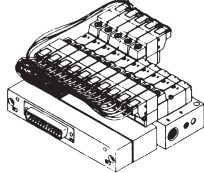
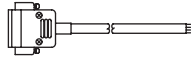
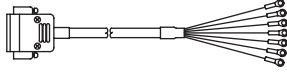
● For double solenoid valve (Supports up to manifold max. station number of 8 stations)

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 mixed use (single/double mixture) (Supports max. No. of solenoid valves up to 16 points)

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

Example of wiring connection (recommended combination) ● Use with the combination below.

Wiring method	Example of connection cable	PC and PC-related products		
		Manufacturer	PC	Connection cable
D sub-connector upward facing (T30) D sub-connector lateral facing (T31) 				Cable with D sub-connector (Refer to page 1253 for cable model No. and details.)
				

*: Set the power supply voltage for valve activation with attention to voltage drop of the PLC and the flat cable.

How to order manifold base/masking plate

● Manifold base

B4SA0 - M3 - Station No.

(Body piping)

B4SB0 - M5 - Station No.

(Sub-base piping)

Note: Precautions when mounting valve on manifold base
 The mounting screws attached to the valve are tapping screws equivalent to M1.7. Accordingly, the manifold base has not been threaded for attachment of the valve. During the initial installation, mounting will be completed while tapping the base. Furthermore, smoother mounting is possible by applying a small amount of oil (CRC/turbine oil, etc.) to the tip of the screws.

Code	Description
2 to 20	2 stations to 20 stations

● Masking plate (gasket, mounting screws attached)

4SA0 - MP

(Body piping)

4SB0 - MP

(Sub-base piping)

4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP
NVP
4G*0EJ
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

4SA0/4SB0 Series

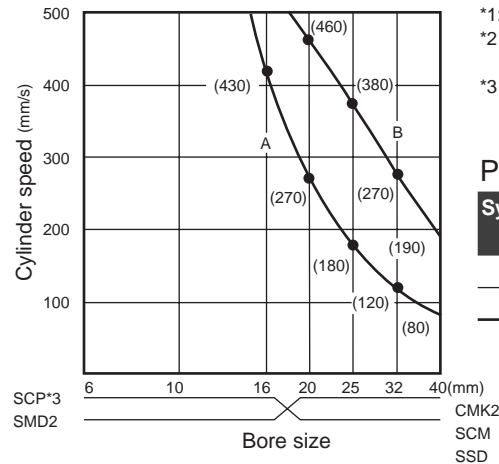
Technical data ② Pneumatic system selection guide/connector wiring method

Pneumatic system equipment selection guide

Pneumatic system selection guide

The cylinder average speed is obtained from the combination of 4SA0/4SB0 series and piping system.

It is expressed by the average speed obtained by dividing the stroke by the time the piston rod moved after starting, when the cylinder piston rod is installed facing upward. When the load factor is 50%, the average speed should be the approximate cylinder speed multiplied by 0.5.



Clean air system components

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

*1: Rc is the same as PT.

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

0.7 MPa primary pressure, 0.5 MPa set pressure, 0.1 MPa pressure drop

*3 Air filter, lubricator

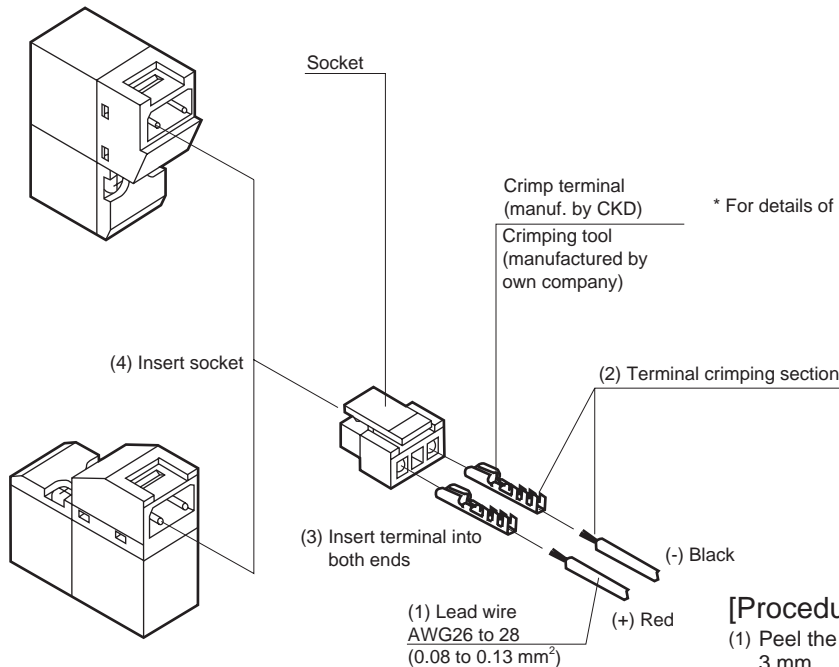
Primary pressure 0.7 MPa, pressure drop 0.02 MPa

Piping system

System No.	Speed controller	Silencer	Piping length between valve and cylinder within ()	Composite effective sectional area by system	Max. flow rate when (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 type / D-connector wiring method

(Referring to the figure below, wire the connectors with (1) to (4))



* For details of crimp terminals and crimping tools, contact CKD.

[Procedure]

- (1) Peel the sheath at the end of the lead wire by 2 to 3 mm.
- (2) Crimp the lead wire with a special tool.
- (3) Insert the terminal into the holes at both ends of the socket.
(Note) Check the orientation for insertion.
- (4) Insert the socket into the solenoid valve connector section.