



Discrete valve; body piping/sub-plate piping
Direct acting 3-port small pneumatic valve

3MA0/3MB0 Series

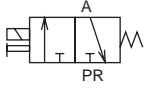
● Cylinder bore size: $\varnothing 6$ to $\varnothing 16$

CE Refer to the Ending for details.



JIS symbol

● 3-port valve NC



Common specifications

Item	Description
Valve and operation	Direct acting poppet valve
Working fluid	Compressed air
Max. working pressure MPa	0.70 (≈ 100 psi, 7 bar)
Min. working pressure MPa	0.00 (≈ 0 psi, 0 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	$\pm 10\%$	
Rated current A *1	0.025 (0.029)	0.050 (0.058)
Power consumption W *2	0.6 (0.7)	0.6 (0.7)
Thermal class	B	
Temperature rise $^{\circ}\text{C}$	50 (122 $^{\circ}\text{F}$)	

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

*2 : The power consumption for 6/5 VDC will be 0.9 (1.0) W.

Individual specifications

Item		3MA0	3MB0
Port size	P/R port	M3 *1	M3 *1
	A port	$\varnothing 4$ Barbed fitting	

*1 : Use barbed fitting FTS4-M3 with port size M3.

Performance/characteristics by model

Item	3MA0	3MB0
Effective cross-sectional area *1 mm^2	P \rightarrow A:0.1, A \rightarrow R:0.15	
Response time *2 ms	10 or less	

*1 : The effective cross-sectional area is the value for the single unit solenoid valve unit.

*2 : 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.

Weight

Item	3MA0	3MB0
Weight g	18	

Ozone-proof specifications

** - Voltage - **P11** *4

*4 : The power consumption will be 0.9 (1.0) W.

CE marking specifications

** - Voltage - **ST**

• Standard 24 VDC below voltage is CE marking-compliant even if "ST" is not indicated in the model No.

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

3MA0/3MB0 Series

Discrete valve; body piping/sub-plate piping

How to order discrete valve

- Body piping

3MA0 1 0 - **T4** - **C2** - **3**

- Sub-plate piping

3MB0 1 0 - **M3** - **C2** - **3**

- Single unit solenoid valve unit (without sub-plate)

3MB0 1 9 - **00** - **C2** - **3**

A Model No.

Solenoid position:
2-position single solenoid,
normally closed

Solenoid valve
operation classification

B Port size

C Electrical connections

*2

* Refer to page 1593 for the circuit diagram with surge suppressor/lamp.

D Voltage

⚠ Precautions for model No. selection

*1 : Use the tubes of the following model No. for the A port piping of 3MA0.
FH-3224, F-1504, U-9532, U-9504

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

[Example of model No.]

3MA010-T4-C-3

A Model: 3MA0 (body piping)

Solenoid position : 2-position single solenoid,
normally closed

B Port size : ϕ 4 barbed fitting (A port),
M3 (P/R port)

C Electrical connections : With C-connector/lead wire
(300 mm)

D Voltage : 24 VDC

A Model No.

Body piping Sub-plate piping

3MA0 3MB0

Code	Description	3MA0	3MB0	
B Port size				
Port name	A port P/R port			
T4	ϕ 4 Barbed fitting M 3x0.5	● *1		
M3	M 3x0.5		●	
C Electrical connections				
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	●	●	
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	●	●	
C3	No lead wire, with surge suppressor/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	●	●	
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	●	●	
D3	No lead wire, with surge suppressor/indicator lamp	●	●	
D Voltage				
3	Standard	24 VDC	●	●
4		12 VDC	●	●
DC6V	Option	6 VDC	●	●
DC5V		5 VDC	●	●

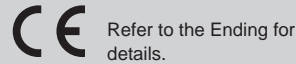
4GA/B
M4GA/B
MN4GA/B
4GA/B (master)
4GB With sensor
4GD/E
M4GD/E
MN4GD/E
4GA4/B4
MN3E
MN4E
W4GA/B2
W4GB4
MN3S0
MN4S0
4SA/B0
4KA/B
4KA/B (master)
4F
4F (master)
PV5G
GMF
PV5
GMF
PV5S-0
3Q
MV3QR
3MA/B0
3PA/B
P/M/B
NP/NAP
NVP
4G*0EJ
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys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



Individual wiring manifold; body piping/sub-plate piping
3-port direct acting small pneumatic valve

M3MA0/M3MB0 Series

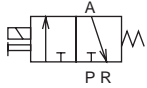
● Cylinder bore size: $\varnothing 6$ to $\varnothing 16$



- 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

● 3-port valve NC



Common specifications

Item	Description
Manifold method	Manifold integrated
Manifold	Common supply/common exhaust
Station No.	2 to 20 stations
Valve and operation	Direct acting poppet valve
Working fluid	Compressed air
Max. working pressure MPa	0.70 (≈ 100 psi, 7 bar)
Min. working pressure MPa	0.00 (≈ 0 psi, 0 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
Rated voltage fluctuation range	$\pm 10\%$	
Rated current A *1	0.025 (0.029)	0.050 (0.058)
Power consumption W *2	0.6 (0.7)	0.6 (0.7)
Thermal class	B	
Temperature rise $^{\circ}\text{C}$	50 (122 $^{\circ}\text{F}$)	

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

*2: The power consumption for 6/5 VDC will be 0.9 (1.0) W.

Individual specifications

Item		3MA0	3MB0
Port size	P port	M5	
	A port	$\varnothing 4$ Barbed fitting	M3, M5, $\varnothing 4$ Push-in fitting $\varnothing 4$, $\varnothing 6$ Barbed fitting
	R port	M5	

Performance/characteristics by model

Item	3MA0	3MB0
Effective cross-sectional area *1 mm^2	P \rightarrow A:0.1, A \rightarrow R:0.15	
Response time *2 ms	10 or less	

*1: The effective cross-sectional area is the value for the single unit solenoid valve unit.

*2: 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.

Weight

Item	3MA0	3MB0
Weight (single only) g	10+26 x station No.	

[Mix manifold]

● How to list combination descriptions
When selecting a combination manifold (write 8 from (B)), 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
MP	Masking plate

1	2	3	4	5	6	7
2-position single (S1)	2-position single (S1)	2-position single (S1)	2-position single (S1)	2-position single (S1)	Masking plate (MP)	Masking plate (MP)

Example

The model No. when using a combination manifold of 7 stations with an array such as that in the arrangement shown at left with port A of M3MB0 and 24 VDC is

M3MB080-M3-7-3- [5] [2]
S1 MP

(S1 = 1 to 5, MP = 6/7)
Enter the quantity to be used and display 0 even when none are going to be used.

● 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

M3MA0/M3MB0 Series

Individual wiring manifold; body piping/sub-plate piping

How to order individual wiring manifold

- Single solenoid valve for manifold(Body piping)

3MA0 **1** **9** - **T4** - **C2** - **3**

- Individual wiring manifold (body piping)

M **3MA0** **1** **0** - **T4** - **C2** - **2** - **3** - **1 1**

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

3MB0 **1** **9** - **00** - **C2** - **3**

- Individual wiring manifold (sub-plate piping)

M **3MB0** **1** **0** - **M3** - **C2** - **2** - **3** - **1 1**

Indicate the valve function based quantity display position for when using a mix manifold. Refer to page 1596.

A Model No.

Solenoid valve operation classification

B Solenoid position

C Port size

D Electrical connections

*4
* Refer to page 1593 for the circuit diagram with surge suppressor/lamp.

- For how to order masking plates, refer to page 1604.

⚠ Precautions for model No. selection

- *1 : Use the tubes of the following model No. for the A port piping of 3MA0.
FH-3224, F-1504, U-9532, U-9504
- *2 : For T4 and T6, screw in barbed fitting FTS4-M5 and FTS6-M5.
- *3 : For GS4, screw push-in fitting GWS4-M5-S into the A port.
- *4 : The lead wire used is AWG26 size. (7/0.16, ϕ 1.35, 0.13 mm²)

[Example of model No.]

M3MA010-T4-C-7-3

- A** Model: M3MA0 (body piping)
- B** Solenoid position : 2-position single Normally closed
- C** Port size : ϕ 4 Barbed fitting (A port), M5 (P/R port)
- D** Electrical connections : With C-connector/lead wire (300 mm)
- E** Station No. : 7 stations
- F** Voltage : 24 VDC

A Model No.

Body piping Sub-plate piping

Code	Description	3MA0	3MB0
B Solenoid position			
1	2-position single normally closed	●	●
8	Mix manifold (for multiple solenoid positions)	●	●
C Port size			
Port name	Port A	Port P/R	
T4	ϕ 4 barbed fitting	M5	● *1 ● *2
T6	ϕ 6 barbed fitting		● *2
M3	M3	M5	●
M5	M5		●
GS4	ϕ 4 push-in fitting		● *3
D Electrical connections			
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	●	●
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	●	●
C3	No lead wire, with surge suppressor/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	●	●
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	●	●
D3	No lead wire, with surge suppressor/indicator lamp	●	●
E Station No.			
2	2 stations		
to	to	●	●
20	20 stations		
F Voltage			
3	Standard	24 VDC	●
4		12 VDC	●
DC6V	Option	6 VDC	●
DC5V		5 VDC	●

Ozone-proof specifications

** - Voltage - **P11** Note

Note: The power consumption will be 0.9 (1.0) W.

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
4G*0EJ
4F*0EX
4F*0E
HMV
HSV
2QV
3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

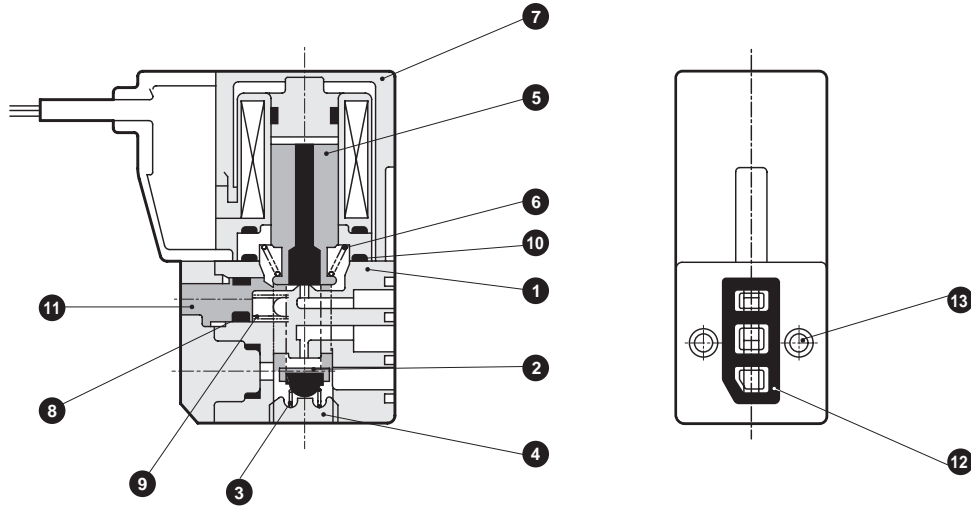
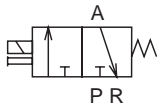
3MA0/3MB0 Series

Discrete valve; body piping/sub-plate piping

Internal structure and parts list

3MA0/3MB0

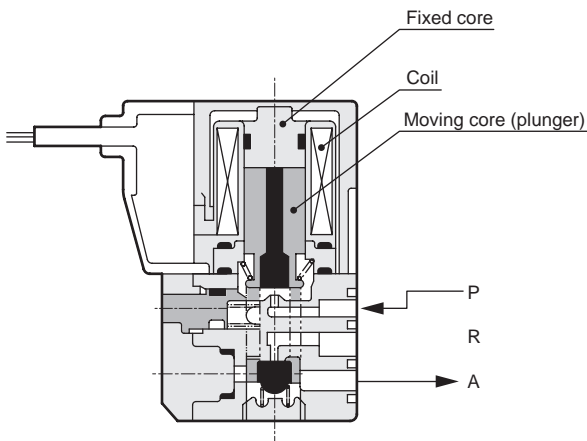
● 3-port NC



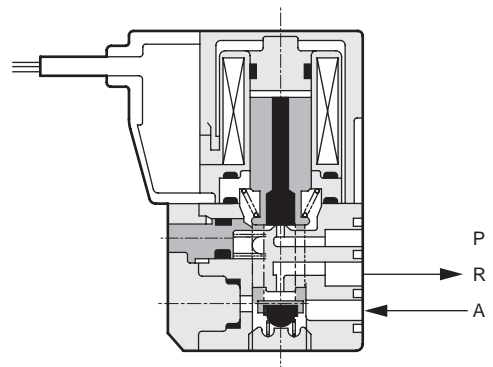
Main parts list

No.	Part name	Material	No.	Part name	Material
1	Body	Resin	8	O-ring	Fluoro rubber
2	Valve seat	Nitrile rubber	9	Manual spring	Stainless steel
3	Valve spring	Stainless steel	10	O-ring	Fluoro rubber
4	Bottom	Resin	11	Manual shaft	Resin
5	Plunger	Stainless steel, nitrile rubber	12	Body gasket	Fluoro rubber
6	Plunger spring	Stainless steel	13	Set screw	Steel
7	Coil assembly	-			

Operational principle



● When energized
When energizing the coil, the plunger is adsorbed onto the fixed core and the compressed air will flow from P to A.

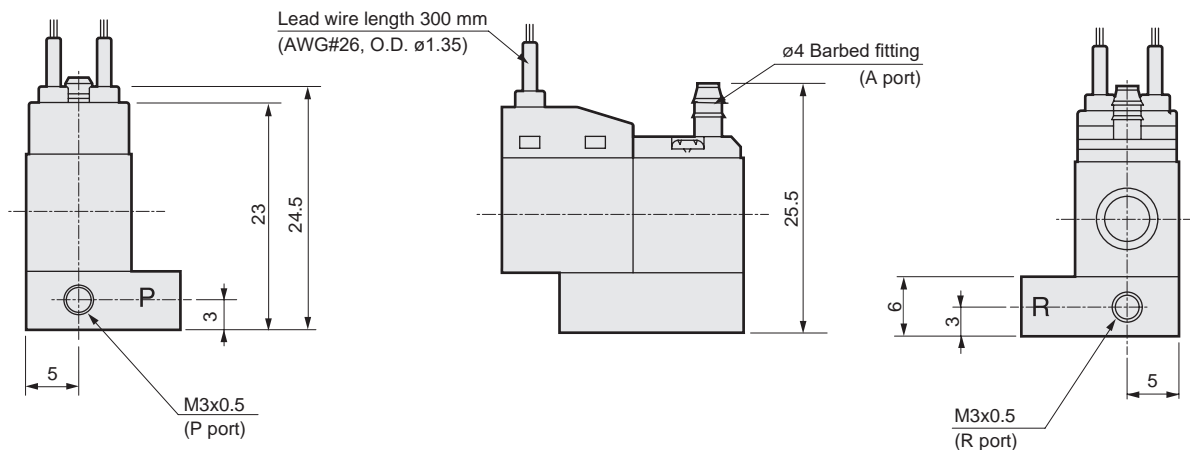
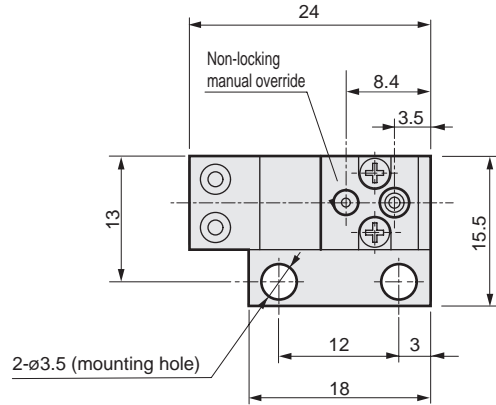


● When not energized
When the coil is placed in a non-energized state, the plunger will move away from the fixed core and the compressed air will flow from A to R.

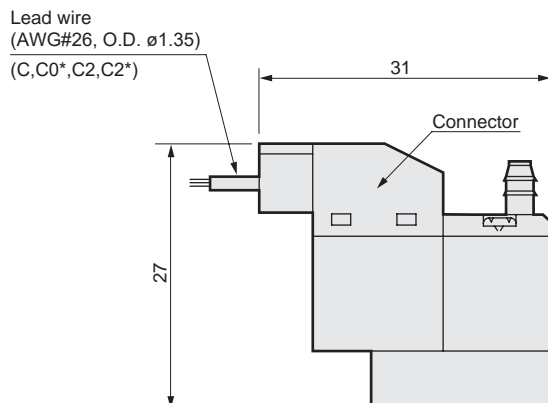
Dimensions

3MA010-T4

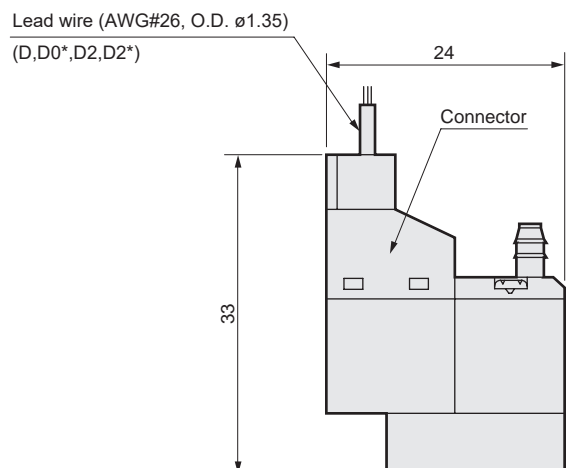
- 3-port NC: grommet lead wire



- 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
4C*0EJ
4F*0EX
4F*0E
HMV HSV
2QV 3QV
SKH
Silencer
TotAirSys (Total Air)
TotAirSys (Gamma)
Ending

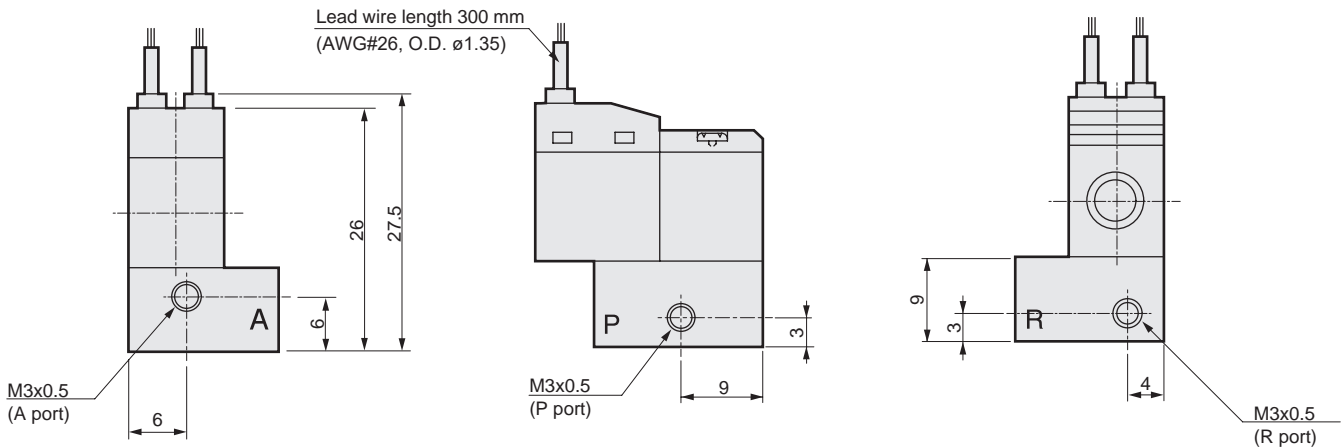
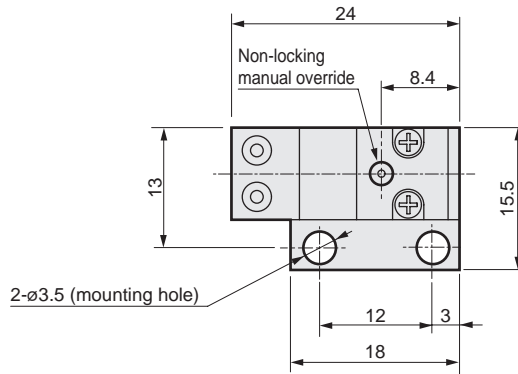
3MB0 Series

Discrete valve; sub-plate piping

Dimensions

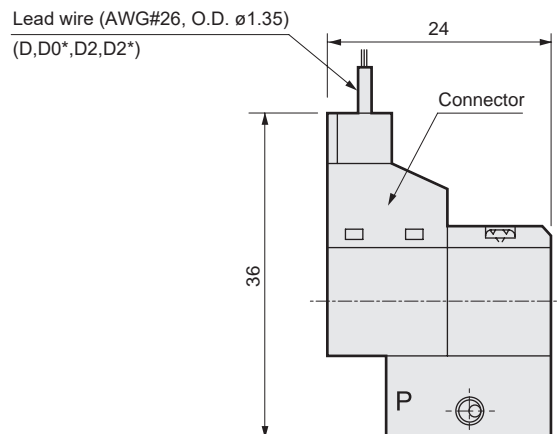
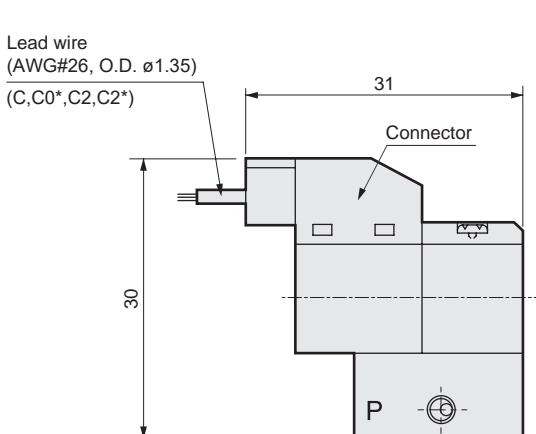
3MB010-M3

● 3-port NC: grommet lead wire



● C-connector: (C/C0*/C1/C2/C2*/C3)

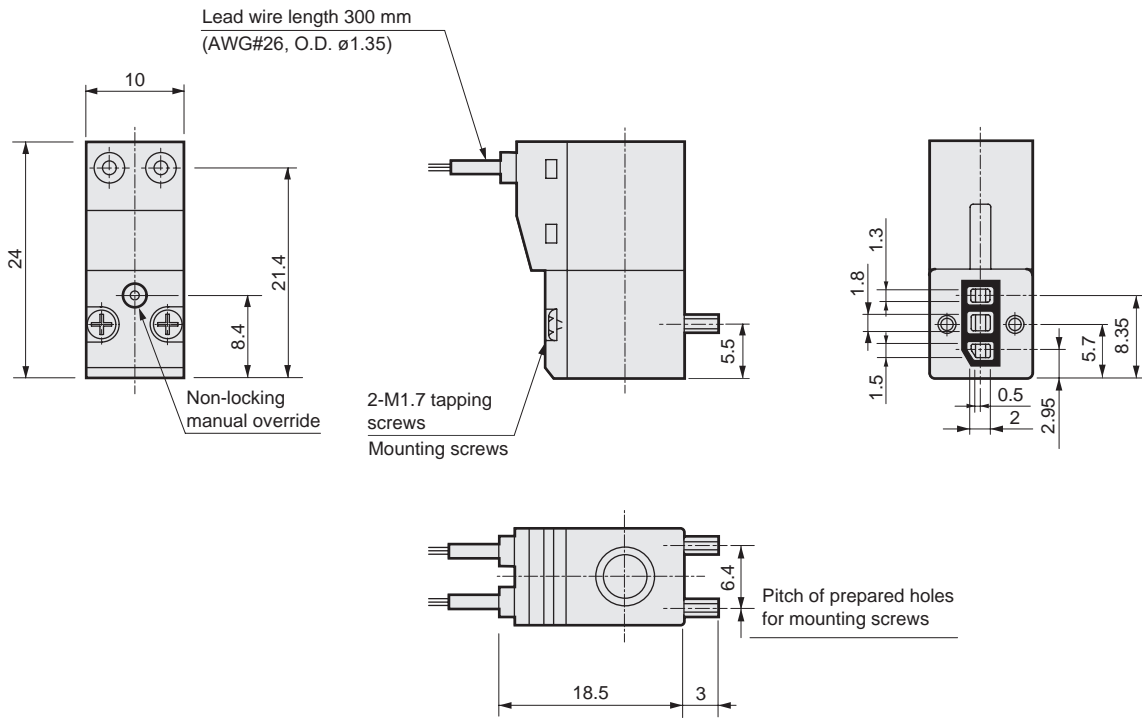
● D-connector: (D/D0*/D1/D2/D2*/D3)



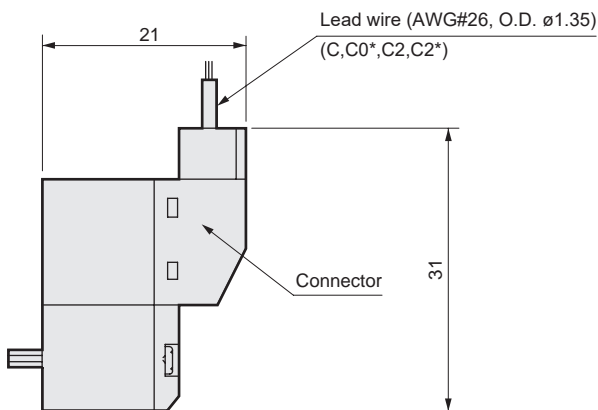
Dimensions

3MB019-00

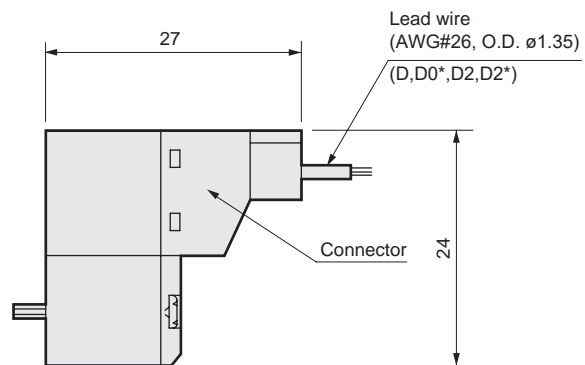
- Single solenoid valve for manifold: grommet lead wire



- 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

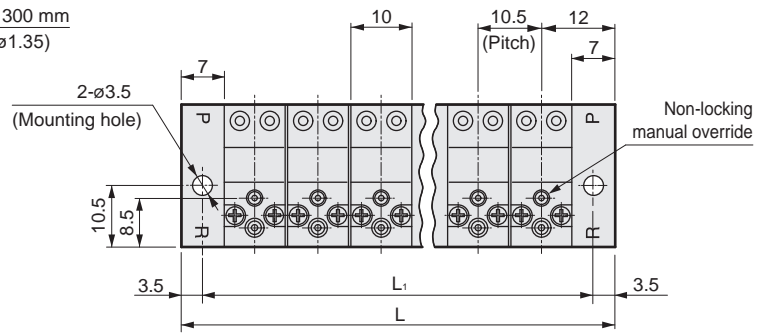
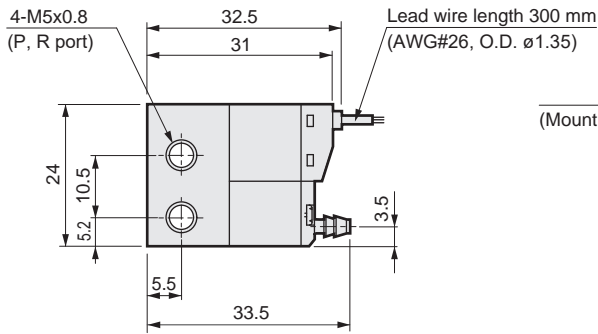
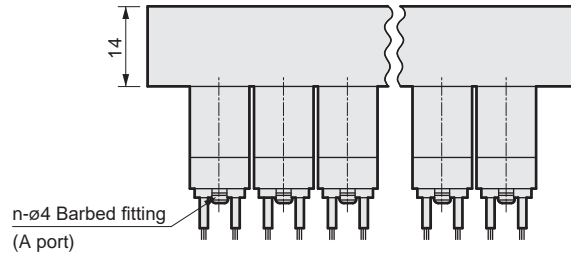
M3MA0 Series

Individual wiring manifold; body piping

Dimensions 

M3MA010-T4

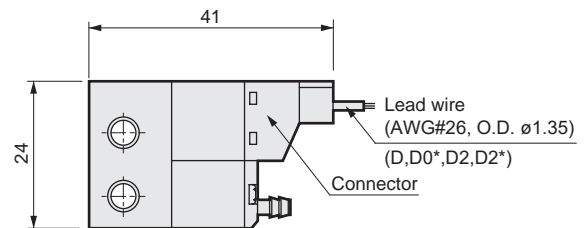
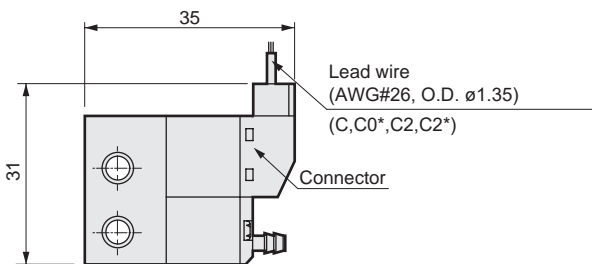
● Body piping A type: grommet lead wire



Stn No.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	27.5	38	48.5	59	69.5	80	90.5	101	111.5	122	132.5	143	153.5	164	174.5	185	195.5	206	216.5
L	34.5	45	55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192	202.5	213	223.5

● C-connector: (C/C0*/C1/C2/C2*/C3)

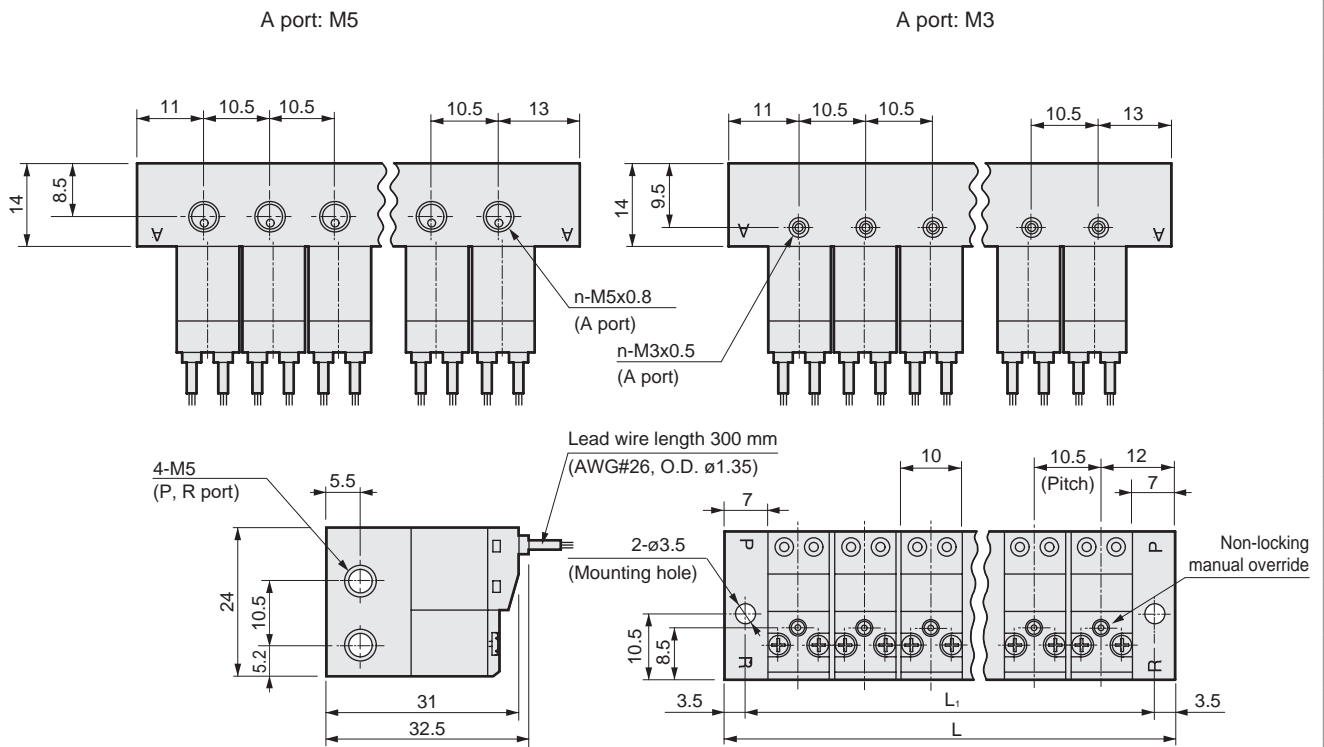
● D-connector: (D/D0*/D1/D2/D2*/D3)



Dimensions

M3MB010-M3/M5

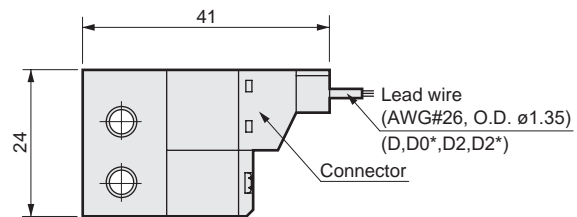
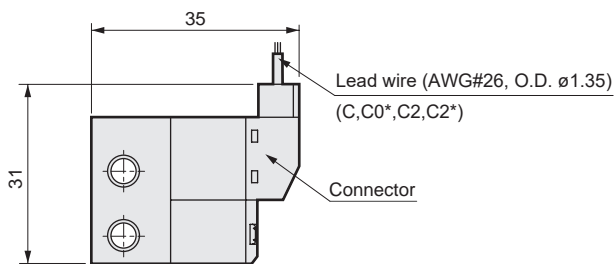
● Sub-plate piping B type: grommet lead wire



Stn No.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L ₁	27.5	38	48.5	59	69.5	80	90.5	101	111.5	122	132.5	143	153.5	164	174.5	185	195.5	206	216.5
L	34.5	45	55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192	202.5	213	223.5

● 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

3MA0/3MB0 Series

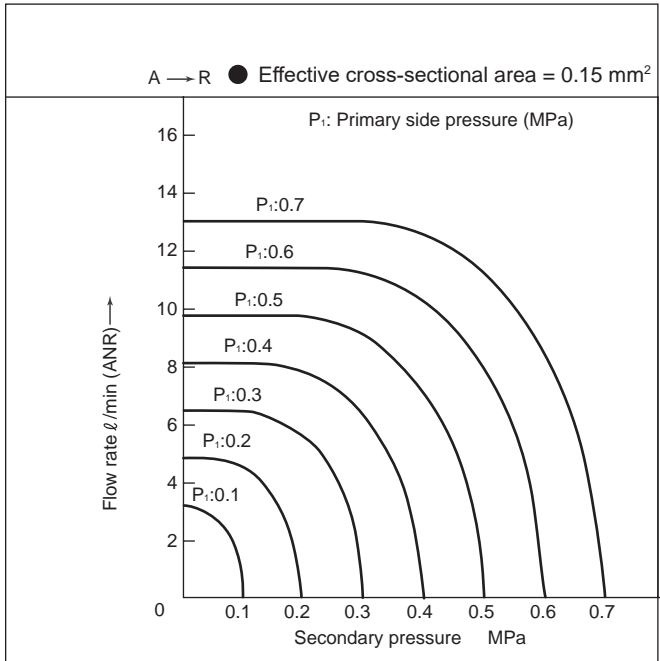
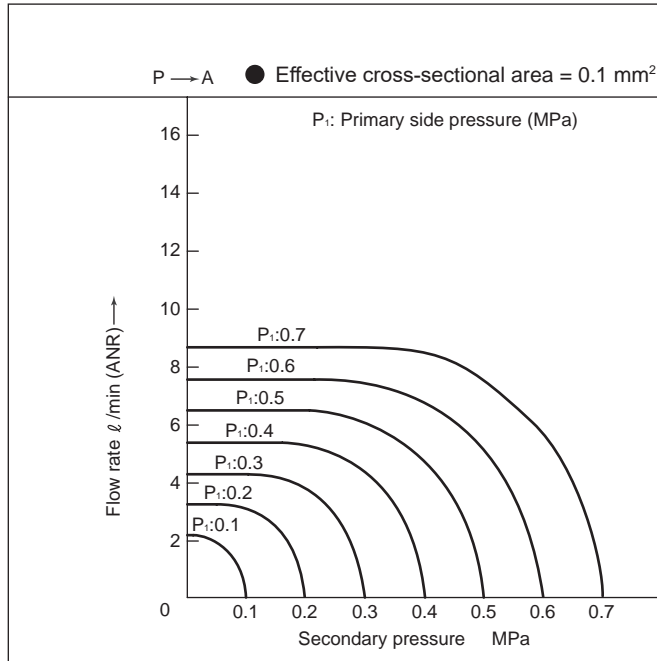
Technical data ① Flow characteristics/connector wiring method

- 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

Flow characteristics

3MA0/3MB0

Note) The flow rate will vary depending on the sub-plate, fitting, and tube. Use the values as a reference only.

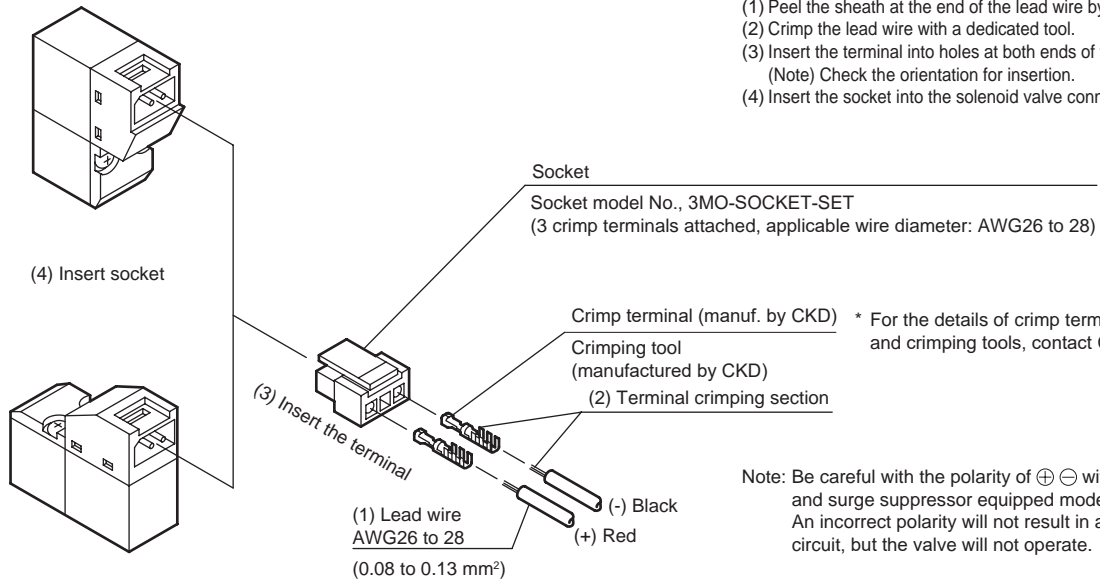


C type / D-connector wiring method

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

[Procedure]

- (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 holes at both ends of the socket.
(Note) Check the orientation for insertion.
- (4) Insert the socket into the solenoid valve connector section.



Note: Be careful with the polarity of ⊕ ⊖ with the lamp and surge suppressor equipped models. An incorrect polarity will not result in a short-circuit, but the valve will not operate.

How to order masking plate (gasket/mounting screws attached)

● Body piping

M3MA010 - MP - KIT

● Sub-plate piping

M3MB010 - MP - KIT