

# 3PA/3PB

## 3 port direct acting valve

## Pneumatic valve

### Overview

The 3P<sup>®</sup> Series is a direct-acting universal pressurizing 3 port valve, which can be used from a 0.7 MPa working pressure to a low vacuum. This valve is useful for configuring low-pressure, vacuum application systems. This valve is ideal for driving  $\varnothing 16$  to  $\varnothing 40$  cylinders.

### Features

#### Space saving

Valves are compactly designed with widths of 15 to 22 mm, enabling the assembled device, etc., to be downsized.

#### Large flow rate

A compact, large flow is attained with the pressure balance type poppet valve structure.

#### Device weight reduction

Aluminum and resin are implemented for main components, thus reducing the weight of the assembled device.

#### Easy maintenance

Piping, wiring, and manual operation in the same direction simplifies maintenance.

#### Energy saving

1.8 W energy-saving design enables direct connection to electronics control and PLC direct drive.

#### Wide variation of electric connection


The lead type, terminal box type, C-type connector, and D-type connectors are available in this series. Combinations with lights and surge suppressors are available.

#### Resource saving

Enabling use in an oil-free environment.




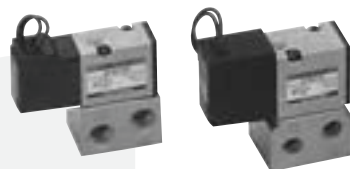
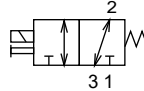
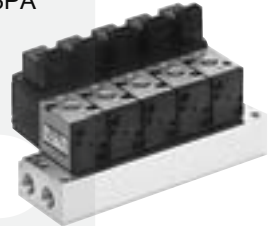
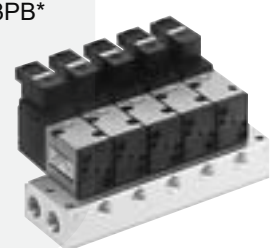
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MN3E0 MN4E0
4GA/B
M4GA/B
MN4GA/B
4GA/B (Master)
W4GA/B2
W4GB4
MN3S0 MN4S0
4TB
4L2-4/ LMF0
4SA/B0
4SA/B1
4KA/B
4F
PV5G/ CMF
PV5/ CMF
3MA/B0
<b>3PA/B</b>
P/M/B
NP/NAP/ NVP
4F*0E
HMV HSV
2QV 3QV
SKH
PCD/ FS/FD
Ending

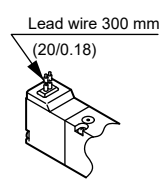
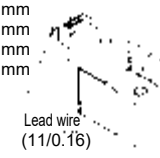
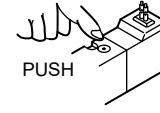
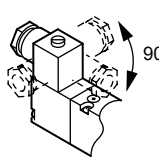
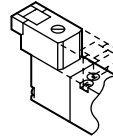
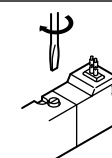
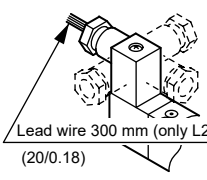
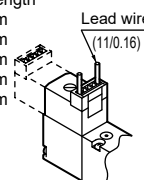
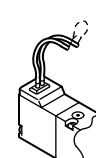
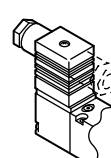
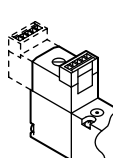
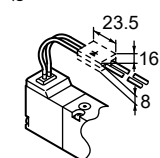
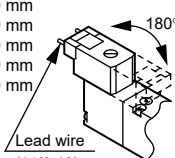
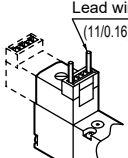
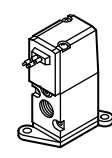
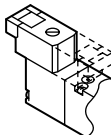
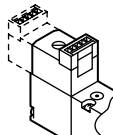


MN3E0
MN4E0
4GA/B
M4GA/B
MN4GA/B
4GA/B (Master)
W4GA/B2
W4GB4
MN3S0
MN4S0
4TB
4L2-4/LMFO
4SA/B0
4SA/B1
4KA/B
4F
PV5G/CMF
PV5/CMF
3MA/B0
<b>3PA/B</b>
P/M/B
NP/NAP/NVP
4F*0E
HMV
HSV
2QV
3QV
SKH
PCD/FS/FD
Ending

Piping method / appearance	Model no.	Position No. of solenoid JIS symbol	Valve performance		Voltage (V)	Solenoid position	
			Flow characteristics C (dm <sup>3</sup> / (s·bar)) Note 1	Applicable cylinder Diameter		2-position single solenoid	Mix manifold
<b>Discrete</b> Body porting  Sub-plate porting 	3 port	3PA1	0.34 to 0.38	ø16 to ø40	100 AC 200 AC 24 DC	●	
		3PA2	0.98 to 1.1			●	
		3PB1	0.33 to 0.42			●	
		3PB2	0.90 to 1.0			●	
			● Universal type 				
<b>Individual wiring manifold</b> Body porting  Sub-plate porting 	3 port	M3PA1	0.37 to 0.47	ø16 to ø40	100 AC 200 AC 24 DC	●	●
		M3PA2	0.93 to 1.1			●	●
		M3PB1	0.31 to 0.36			●	●
		M3PB2	0.86 to 0.94			●	●
			*Port No. 1, 2, 3 indicates; Port 1: P, N.C. Port 2: A, COM Port 3: R, N.O.				

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

	A port size					Electric connection				Page
	Female thread			Push-in joint		Grommet lead wire	Small terminal box	C-connector	D-connector	
	M5	Rc1/8	Rc1/4	ø4	ø6					
	●			●	●	●	●	●	●	1068
		●		●	●	●	●	●	●	1068
	●			●	●	●	●	●	●	1076
		●		●	●	●	●	●	●	1076

Electric connection		Manual override
<b>Blank</b> Grommet lead wire	<b>C2</b> C-connector, with lead wire with surge suppressor, light	<b>Blank</b> Non-locking
 <p>Lead wire 300 mm (20/0.18)</p>	<ul style="list-style-type: none"> <li>● Lead wire length</li> <li>C2 : 300 mm</li> <li>C20 : 500 mm</li> <li>C21 : 1000 mm</li> <li>C22 : 2000 mm</li> <li>C23 : 3000 mm</li> </ul>  <p>Lead wire (11/0.16)</p>	 <p>PUSH</p> <p>Operates when pressed</p>
<b>B</b> Small terminal box	<b>C3</b> C-connector, without lead wire with surge suppressor, light	<b>M1</b> Locking
 <p>90°</p>		 <p>Operates when turned 90° in the ON direction. Normally, this should be returned off.</p>
<b>L</b> Small terminal box with light, lead wire	<b>D</b> D-connector, with lead wire	<b>Other options</b>
 <p>Lead wire 300 mm (only L2) (20/0.18)</p>	<ul style="list-style-type: none"> <li>● Lead wire length</li> <li>D : 300 mm</li> <li>D00 : 500 mm</li> <li>D01 : 1000 mm</li> <li>D02 : 2000 mm</li> <li>D03 : 3000 mm</li> </ul>  <p>Lead wire (11/0.16)</p>	<b>S</b> Surge suppressor attached
<b>LS</b> Small terminal box with surge suppressor, light	<b>D1</b> D-connector, without lead wire	
		<p>DC (grommet lead wire)</p>  <p>23.5 16 8</p>
<b>C</b> C-connector, with lead wire	<b>D2</b> D-connector, with lead wire with surge suppressor and light	Suppression connector type
<ul style="list-style-type: none"> <li>● Lead wire length</li> <li>C : 300 mm</li> <li>C00 : 500 mm</li> <li>C01 : 1000 mm</li> <li>C02 : 2000 mm</li> <li>C03 : 3000 mm</li> </ul>  <p>Lead wire (11/0.16)</p> <p>180°</p>	<ul style="list-style-type: none"> <li>● Lead wire length</li> <li>D2 : 300 mm</li> <li>D20 : 500 mm</li> <li>D21 : 1000 mm</li> <li>D22 : 2000 mm</li> <li>D23 : 3000 mm</li> </ul>  <p>Lead wire (11/0.16)</p>	<b>P</b> Mounting plate
<b>C1</b> C-connector without lead wire	<b>D3</b> D-connector, without lead wire with surge suppressor, light	
		

MN3E0  
MN4E0

4GA/B

M4GA/B

MN4GA/B

4GA/B (Master)

W4GA/B2

W4GB4

MN3S0  
MN4S0

4TB

4L2-4/  
LMF0

4SA/B0

4SA/B1

4KA/B

4F

PV5G/  
CMF

PV5/  
CMF

3MA/B0

**3PA/B**

P/M/B

NP/NAP/  
NVP

4F\*0E

HMV  
HSV

2QV  
3QV

SKH

PCD/  
FS/FD

Ending

3 port direct acting valve

\* Refer to the next page for electric connection circuit diagram

# 3PA/3PB Series

## Electric connection circuit diagram

	Voltage type	Option	Electric wire circuit diagram	Wiring method
MN3E0 MN4E0	AC	-		Grommet lead wire Terminal box (B) C-connector (C, C0*, C1) D-connector (D, D0*, D1)
4GA/B M4GA/B MN4GA/B		With indicator light		Terminal box (L, L2)
4GA/B (Master) W4GA/B2 W4GB4		With surge suppressor, indicator light		Terminal box (LS) C-connector (C2, C2*, C3) D-connector (D2, D2*, D3)
MN3S0 MN4S0		Surge suppressor attached (Option)		Surge suppressor attached (S)
4TB 4L2-4/LMFO 4SA/B0 4SA/B1 4KA/B 4F				
PV5G/ CMF	DC	-		Grommet lead wire Terminal box (B) C-connector (C, C0*, C1) D-connector (D, D0*, D1)
PV5/ CMF		With indicator light		Terminal box (L, L2) Note that surge suppressor and indicator light are attached to 3PA1, 3PB1.
3MA/B0		With surge suppressor, indicator light		Terminal box (LS) C-connector (C2, C2*, C3) D-connector (D2, D2*, D3)
<b>3PA/B</b>		Surge suppressor attached (Option)		Grommet lead wire (Option symbol "S" is indicated for a surge suppressor.)
P/M/B NP/NAP/ NVP				
4F*0E				
HMV HSV				
2QV 3QV				
SKH				
PCD/ FS/FD				
Ending				
				Surge suppressor attached (S)
			Variable resistor * The variable resistor has no polarity.	



## Pneumatic components

# Safety precautions

Always read this section before starting use.  
Refer to Intro 63 for valve general precautions.

### 3 port direct acting valve pneumatic valve 3PA/3PB Series

## Design & Selection

### 1. Common

#### ⚠ CAUTION

- The application differs from the solenoid valve for maintaining the vacuum. When using a pad, set a filter between the pad and valve so that foreign matter does not enter.
- Do not use this as a solenoid valve for emergency shut down.  
If left pressurized for a long time, the starting response could be delayed.
- When using with a vacuum, select direct current (DC) specifications.  
Install a vacuum filter on the suction port.

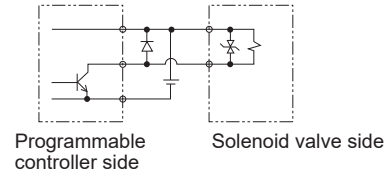
### 2. Surge suppressor

- The surge suppressor enclosed with the solenoid valve is to protect the output contact for that solenoid valve's drive. There is no significant protection for the other peripheral devices, and devices could be damaged or malfunction by the surge. Surge generated by other devices could be absorbed and cause damage such as burning. Care must be taken for points below.
  - (1) The surge suppressor functions to limit a solenoid valve surge voltage, which can reach several hundred V, to a low voltage level that the output contact can withstand. Depending on the output circuit used, this may be insufficient and could result in damage or malfunction. Check whether the surge suppressor can be used by the surge voltage limit of the solenoid valve in use, the output device's withstand pressure and circuit structure, and by the degree of return delay time.  
If necessary, provide other surge measures. The inverse voltage surge generated when OFF can be suppressed to the following levels.

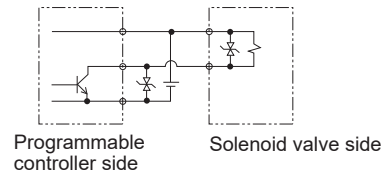
Rated voltage	Reverse voltage value when power turned OFF
12 VDC	27 V
24 VDC	47 V

- (2) When using the NPN type output unit, the voltage given in the left table and a surge voltage equivalent to the power voltage could be applied on the output transistor. Increase the contact protection circuits in this case.

(Example of output transistor protective circuit installation 1)



(Example of output transistor protective circuit installation 2)



- (3) If another device or solenoid valve is connected in parallel to the solenoid valve, the inverse voltage surge generated when the valve is OFF would apply to those devices. Even when using the solenoid valve with surge suppressor for 24 VDC, the surge voltage may reach minus several ten V depending on the model. This inverse polarity voltage could damage or cause the other devices connected in parallel to malfunction. Avoid parallel connection of devices susceptible to reversing polarity voltages, e.g., LED indicators.  
When driving several solenoid valves in parallel, the surge from other solenoid valves could enter the surge suppressor of one solenoid valve with a surge suppressor. Depending on the current value, that surge suppressor could burn.  
When driving several solenoid valves with surge suppressors in parallel, surge current could concentrate at the surge suppressor with the lowest limit voltage and cause similar burning. Even if the solenoid valve type is the same, the surge suppressor's limit voltage can be inconsistent, and in the worst case, could result in burning. Avoid driving several solenoid valves in parallel.
- (4) The surge suppressor incorporated in the solenoid valve often short-circuits if damaged by overvoltage or overcurrent from a source other than the solenoid valve. If the surge suppressor fails, if a large current flows when output is on, the output circuit or solenoid valve could be damaged or ignite. Do not keep power on in a faulty state. Provide an overcurrent protection circuit on the power or drive circuit or use a power supply with overcurrent protection so that a large current does not flow continuously.

## During Use & Maintenance

#### ⚠ CAUTION

- Energizing for a long time could impair solenoid valve performance.  
Similar caution is required in the following use.

- During intermittent energizing, it takes longer than non-energizing.
- During intermittent energizing, one energizing session exceeds 30 min.  
Consider heat dissipating measures when installing.  
Consult with CKD when using this device in a continuous energizing state.

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

3 port direct acting valve



# Discrete valve Body porting, sub-plate porting 3 port direct acting valve pneumatic valve 3PA/3PB Series

● Applicable cylinder bore size:  $\varnothing 16$  to  $\varnothing 40$

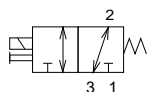


Refer to Intro 17 for details.



## JIS symbol

● 2-position universal type



Port No. 1, 2, 3 indicates;  
Port 1: P, NC  
Port 2: A, COM  
Port 3: R, NO

## Common specifications

Descriptions	
Valve and operation type	Direct acting poppet valve
Working fluid	Compressed air, low vacuum
Max. working pressure MPa	0.70 (low vacuum: -100 KPa)
Min. working pressure MPa	0.00
Withstanding pressure MPa	1.05 (low vacuum: -101 KPa)
Ambient temperature °C	-5 to 50 (no freezing)
Fluid temperature °C	5 to 50
Lubrication	Not required
Protective structure	Dust proof
Vibration/impact m/s <sup>2</sup>	50 or less / 300 or less
Working environment	Containing corrosive gas is impermissible.

## Electric specifications

Descriptions		3PA1 3PB1	3PA2 3PB2
Rated voltage	AC	100, 200 (50/60 Hz)	
	DC	24	
Rated voltage fluctuation range		±10%	
Starting current A	AC 100 V	0.032 / 0.027	0.068 / 0.054
	AC 200 V	0.016 / 0.014	0.034 / 0.027
	DC 24 V	-	-
Holding current A	AC 100 V	0.028 / 0.022	0.041 / 0.032
	AC 200 V	0.014 / 0.011	0.021 / 0.016
	DC 24 V	0.075	0.075
Power consumption W (With light)	AC 100 V	1.8 / 1.4 (2.0 / 1.6)	2.2 / 1.8 (2.4 / 2.0)
	AC 200 V	1.8 / 1.4 (2.0 / 1.6)	2.2 / 1.8 (2.4 / 2.0)
	DC 24 V	1.8 (2.0)	1.8 (2.0)
Heat proof class		B (molded coil)	
Temperature rise °C		30	

Reference: The rated voltage 100 VAC 50/60 Hz can be used at 110 VAC 60 Hz, and 200 VAC 50/60 Hz can be used at 220 VAC 60 Hz.

## Individual specifications

Descriptions	3PA1	3PA2	3PB1	3PB2
Port size Note 1	M5 ( $\varnothing 4$ , $\varnothing 6$ push-in joint)	Rc 1/8 ( $\varnothing 4$ , $\varnothing 8$ push-in joint)	Rc 1/8	Rc 1/8, 1/4
Response time Note 2 ms	20 or less	20 or less	20 or less	20 or less
Weight g	54	127	84	175

Note 1: The joint in ( ) is for option. G threads and NPT threads are available for the piping port threads. Contact CKD for information.  
Note 2: Response time is the value when ON for supply pressure 0.5 MPa, pre-lubricated. The value varies depending on pressure and quality of lubricant.

## Flow characteristics

Model no.	Port 1 → 2		Port 2 → 1		Port 2 → 3		Port 3 → 2	
	C (dm <sup>3</sup> /s·bar)	b	C (dm <sup>3</sup> /s·bar)	b	C (dm <sup>3</sup> /s·bar)	b	C (dm <sup>3</sup> /s·bar)	b
3PA1	0.34	0.29	0.35	0.42	0.38	0.43	0.35	0.32
3PA2	0.98	0.17	1.0	0.34	1.1	0.28	1.0	0.20
3PB1	0.37	0.05	0.33	0.21	0.41	0.28	0.42	0.08
3PB2	0.90	0.19	0.97	0.39	1.0	0.26	0.94	0.27

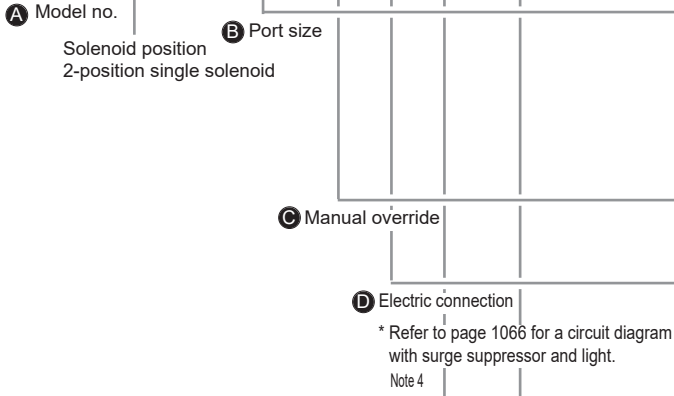
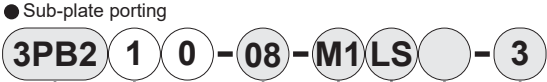
Note 1: Effective sectional area S and sonic conductance C are converted as  $S \approx 5.0 \times C$ .

## Ozone specifications (Ending 5)

\*\* - Voltage - P11



### How to order discrete valve



(Table 1) Small terminal box L/L2/LS table

Symbol	Descriptions	3PA1	3PA2	3PB1	3PB2	Surge suppressor
L	No lead wire	With light	●	●	●	●
		DC		●	●	
	With surge suppressor, light	AC				
		DC	●		●	Integrated
L2	With lead wire (300 mm)	With light	●	●		
		DC				
	With surge suppressor, light	AC				
		DC	●		●	Integrated
LS	No lead wire	With surge suppressor, light	●	●	●	Integrated
		DC		●	●	Integrated

### ⚠ Note on model no. selection

- Note 1: With GS4, the push-in joint GWS4-M5-S is screwed into port 1, 2, and 3.
- Note 2: With GS6, the push-in joint GWS6-M5-S(3PA1) and GWJS6-6(3PA2) are screwed into the port 1, 2, and 3.
- Note 3: With GS8, the push-in joint GWS8-6 is screwed into the port 1, 2, and 3.
- Note 4: AWG20 to 24 size lead is used.
- Note 5: With the 24 VDC or less grommet lead, the enclosed surge suppressor is a suppression connector type. Refer to page1065.

### <Example of model number>

- 3PA210-06-M1BP-3**
- A Model: 3PA2 (body porting)  
Solenoid position : 2-position single solenoid
  - B Port size : Rc1/8
  - C Manual override : Locking manual override
  - D Electric connection : Terminal box
  - E Other options : Mounting plate
  - F Voltage : 24 VDC

Symbol		Descriptions	A Model no.				
			Body porting		Sub-plate porting		
B Port size	M5	M 5	●				
	06	Rc 1/8		●	●	●	
	08	Rc 1/4				●	
	GS4	ø4 push-in joint Note 1	●				
	GS6	ø6 push-in joint Note 2	●	●			
	GS8	ø8 push-in joint Note 3		●			
	C Manual override			●	●	●	●
Blank		Non-locking manual override	●	●	●	●	
M1		Locking manual override	●	●	●	●	
D Electric connection	Grommet lead wire						
	Blank		Grommet lead wire (300 mm)	●	●	●	●
	Small terminal box						
	B		No lead wire	●	●	●	●
	L		No lead wire				
	L2		Lead wire (300 mm)				
	LS		No lead wire with surge suppressor, light				
	C-connector (lead wire lateral)						
	C		Lead wire (300 mm)	●	●	●	●
	C00		Lead wire (500 mm)	●	●	●	●
	C01		Lead wire (1000 mm)	●	●	●	●
	C02		Lead wire (2000 mm)	●	●	●	●
	C03		Lead wire (3000 mm)	●	●	●	●
	C1		No lead wire	●	●	●	●
	C2		Lead wire (300 mm) with surge suppressor, light	●	●	●	●
C20		Lead wire (500 mm) with surge suppressor, light	●	●	●	●	
C21		Lead wire (1000 mm) with surge suppressor, light	●	●	●	●	
C22		Lead wire (2000 mm) with surge suppressor, light	●	●	●	●	
C23		Lead wire (3000 mm) with surge suppressor, light	●	●	●	●	
C3		No lead wire with surge suppressor, light	●	●	●	●	
D-connector (lead wire upward)							
D		Lead wire (300 mm)	●	●	●	●	
D00		Lead wire (500 mm)	●	●	●	●	
D01		Lead wire (1000 mm)	●	●	●	●	
D02		Lead wire (2000 mm)	●	●	●	●	
D03		Lead wire (3000 mm)	●	●	●	●	
D1		No lead wire	●	●	●	●	
D2		Lead wire (300 mm) with surge suppressor, light	●	●	●	●	
D20		Lead wire (500 mm) with surge suppressor, light	●	●	●	●	
D21		Lead wire (1000 mm) with surge suppressor, light	●	●	●	●	
D22		Lead wire (2000 mm) with surge suppressor, light	●	●	●	●	
D23		Lead wire (3000 mm) with surge suppressor, light	●	●	●	●	
D3		No lead wire with surge suppressor, light	●	●	●	●	
E Other options	Blank		Without mounting plate	●	●		
	P		With mounting plate	●	●		
	S		Surge suppressor attached Note 5	●	●	●	
F Voltage	Standard	1	100 VAC 50/60 Hz	●	●	●	
		2	200 VAC 50/60 Hz	●	●	●	
		3	24 VDC	●	●	●	
	Option	AC110V	110 VAC 50/60 Hz	●	●	●	
		AC220V	220 VAC 50/60 Hz	●	●	●	
		4	12 VDC	●	●	●	

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

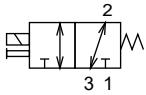
# 3PA Series

## Discrete valve: Body porting

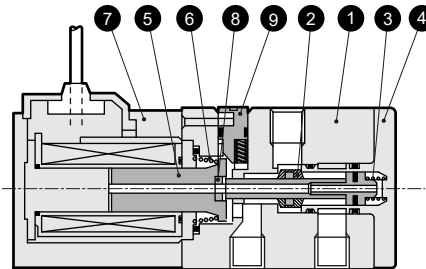
### Internal structure and parts list

#### 3PA110

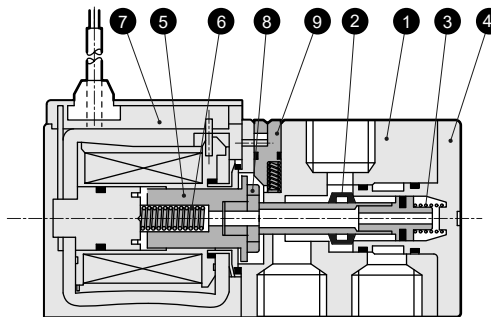
● 2-position single solenoid



\*Port No. 1, 2, 3 indicates;  
Port 1: P, NC  
Port 2: A, COM  
Port 3: R, NO



#### 3PA210



#### Main parts list

No.	Parts name	Material
1	Body	Aluminum alloy die-casting
2	Valving element (stem assembly)	-
3	Valve spring	Stainless steel
4	Cap	Resin
5	Plunger	Stainless steel
6	Plunger spring	Stainless steel
7	Coil assembly	-
8	Nock	Resin
9	Manual button	Resin

#### Repair parts list

Product No. / parts name Model no.	5 6 7 8
	Coil assembly *
<b>3PA110</b>	3P1-[Electric connection]-COIL-[Voltage] ↑ Blank when grommet lead wire is selected.
<b>3PA210</b>	3P2-[Electric connection]-COIL-[Voltage] ↑ Blank when grommet lead wire is selected.

\*1: The plunger assembly is enclosed with the coil assembly. The coil and plunger combination is limited, so do not interchange parts.  
\*2: Options satisfying the How to order are assembled or enclosed with the coil assembly compact terminal box and connector type.  
\*3: Precautions apply when assembling the coil assembly into the valve. Contact CKD for information.

#### Operational principle

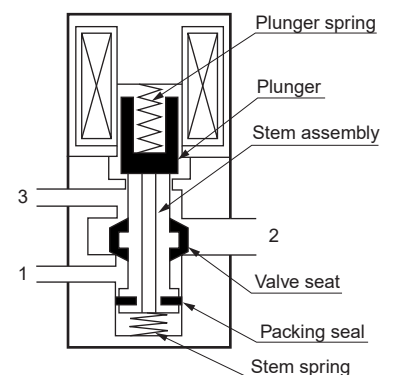
3P Series is a pressure balance poppet valve which is not effected by working pressure. This valve maintains large flow rate but low wattage consumption.

Port can be pressurized from either 1, 2 or 3 port.

The diameters of valve seat and packing seal of stem assembly are same. Since pressure differentials of each port are stabilized by through hole of stem assembly, pressure is well balanced during ON and OFF.

#### ● When de-energized

The stem assembly is pushed toward port 1 side by the plunger spring force transmitted by the plunger. Valve seat and packing seal of stem assembly close port 1, while open port 2 and 3.

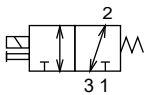




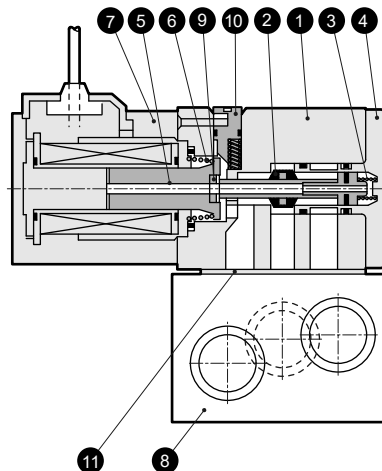
### Internal structure and parts list

#### 3PB110

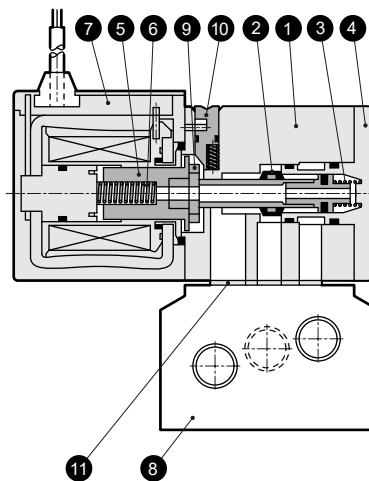
● 2-position single solenoid



\*Port No. 1, 2, 3 indicates;  
Port 1: P, NC  
Port 2: A, COM  
Port 3: R, NO



#### 3PB210



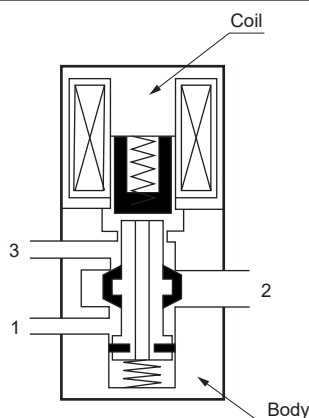
#### Main parts list

No.	Parts name	Material
1	Body	Aluminum alloy die-casting
2	Valving element (stem assembly)	-
3	Valve spring	Stainless steel
4	Cap	Resin
5	Plunger	Stainless steel
6	Plunger spring	Stainless steel
7	Coil assembly	-
8	Sub-plate	Aluminum alloy die-casting
9	Nock	Resin
10	Manual button	Resin
11	Gasket	Nitrile rubber

#### Repair parts list

Product No. / parts name Model no.	5 6 7 9
	Coil assembly *
<b>3PB110</b>	3P1-[Electric connection]-COIL-[Voltage] ↑ Blank when grommet lead wire is selected.
<b>3PB210</b>	3P2-[Electric connection]-COIL-[Voltage] ↑ Blank when grommet lead wire is selected.

\*1: The plunger assembly is enclosed with the coil assembly. The coil and plunger combination is limited, so do not interchange parts.  
\*2: Options satisfying the How to order are assembled or enclosed with the coil assembly compact terminal box and connector type.  
\*3: Precautions apply when assembling the coil assembly into the valve. Contact CKD for information.



#### ● When energized

When energizing the coil, the plunger is absorbed toward the coil side, while the stem assembly is moved by the stem spring force. This opens port 1 and 2, but closes port 3.

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

Discrete  
3 port direct acting valve

# 3PA1/3PA2 Series

Discrete valve: Body porting

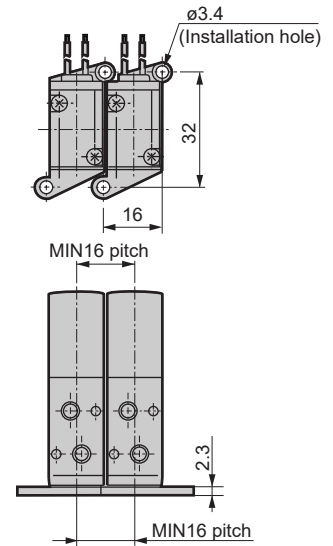
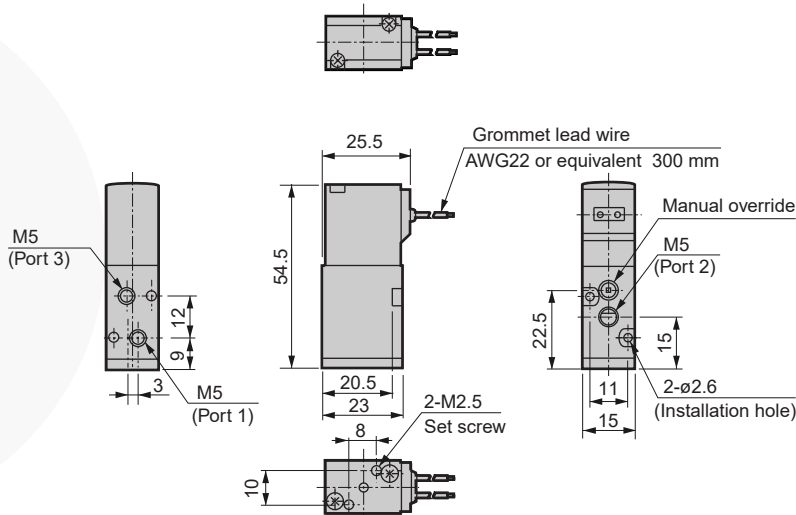
Dimensions 

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

## 3PA110-M5

● 2-position single solenoid: Grommet lead wire

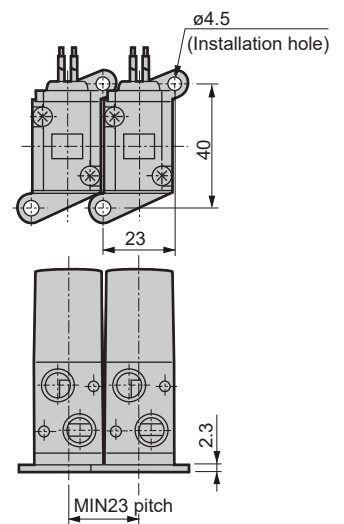
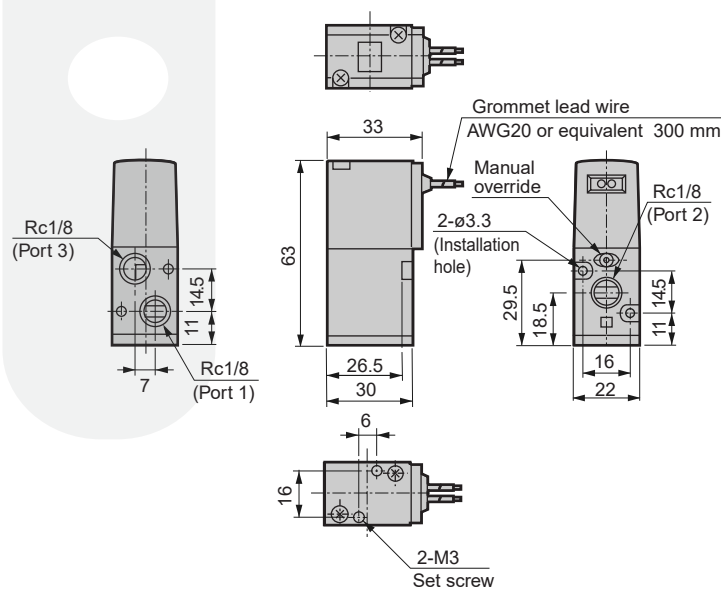
● Mounting plate: (P)



## 3PA210-06

● 2-position single solenoid: Grommet lead wire

● Mounting plate: (P)



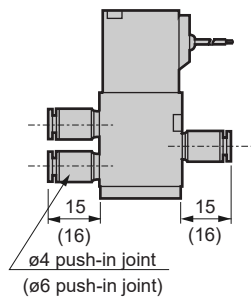
# 3PA1/3PA2 Series

Discrete valve: Body porting

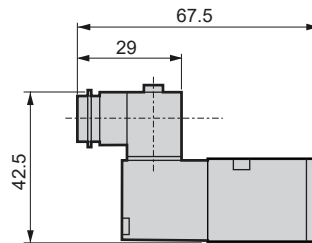
## Dimensions

### 3PA1

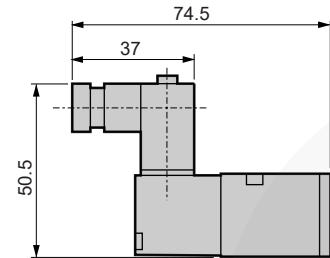
●  $\varnothing 4$ ,  $\varnothing 6$  push-in joint: (GS4, GS6)



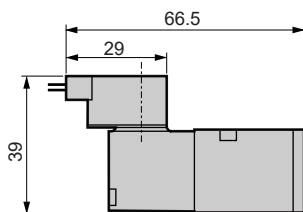
● Terminal box: (B)



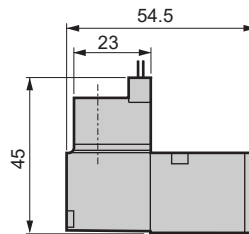
● Terminal box with indicator light: (L, L2, LS)



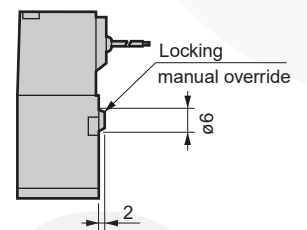
● C-connector: (C, C1, C2, C3)



● D-connector: (D, D1, D2, D3)

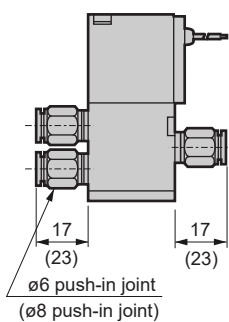


● Locking manual override: (M1)

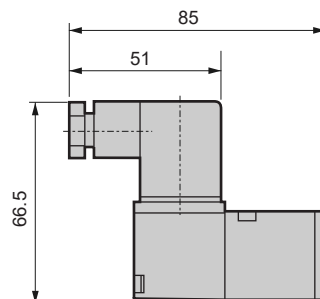


### 3PA2

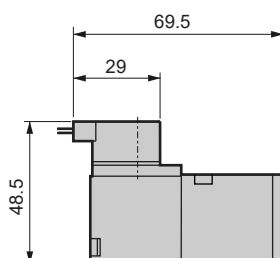
●  $\varnothing 4$ ,  $\varnothing 6$  push-in joint: (GS6, GS8)



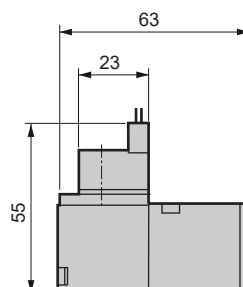
● Terminal box: (B, L, LS)



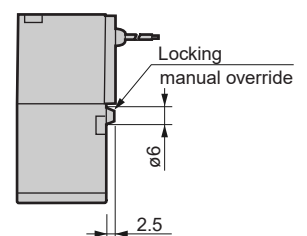
● C-connector: (C, C1, C2, C3)



● D-connector: (D, D1, D2, D3)



● Locking manual override: (M1)



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

Discrete 3 port direct acting valve

# 3PB1/3PB2 Series

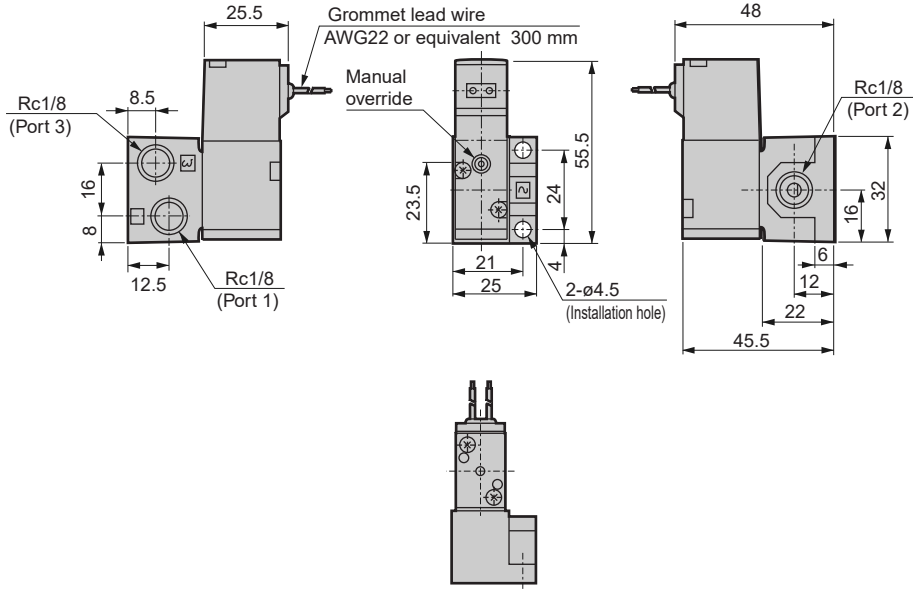
Discrete valve: Sub-plate porting

Dimensions



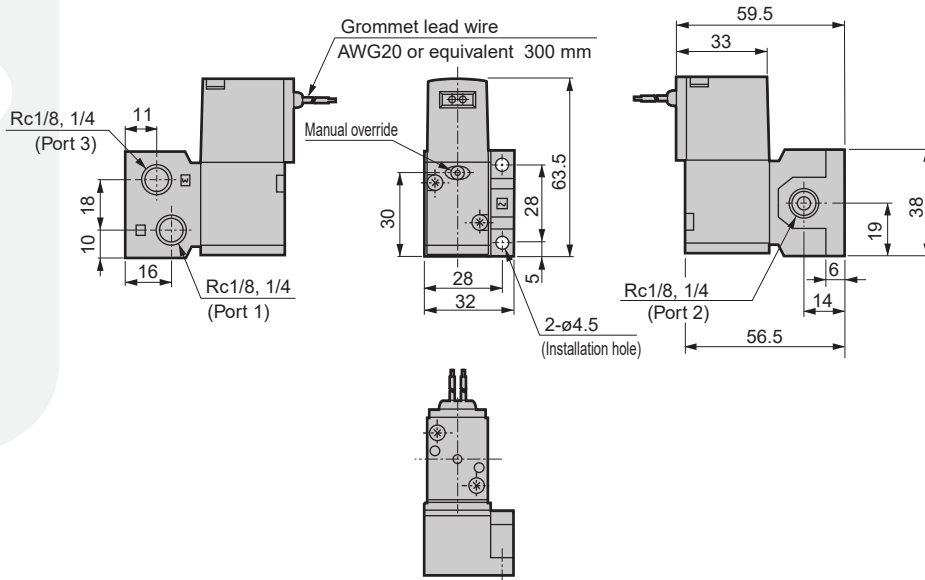
## 3PB110-06

● 2-position single solenoid: Grommet lead wire



## 3PB210-06 08

● 2-position single solenoid: Grommet lead wire



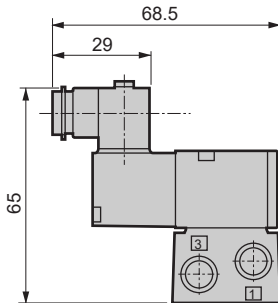
# 3PB1/3PB2 Series

Discrete valve: Sub-plate porting

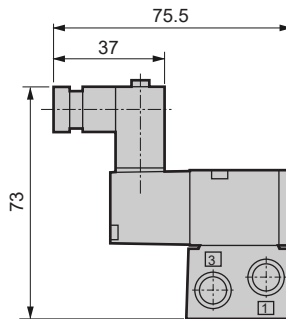
## Dimensions

### 3PB1

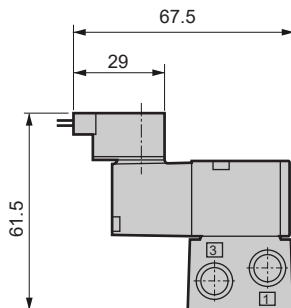
● Terminal box: (B)



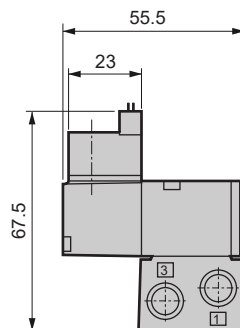
● Terminal box with indicator light: (L, L2, LS)



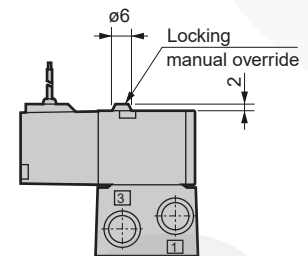
● C-connector: (C, C1, C2, C3)



● D-connector: (D, D1, D2, D3)

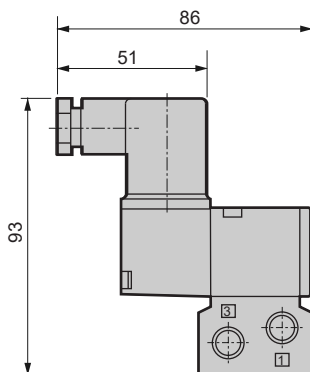


● Locking manual override: (M1)

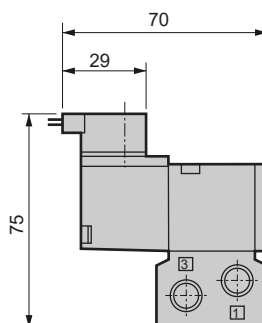


### 3PB2

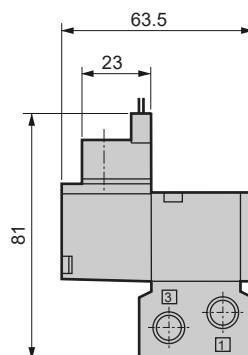
● Terminal box: (B, L, LS)



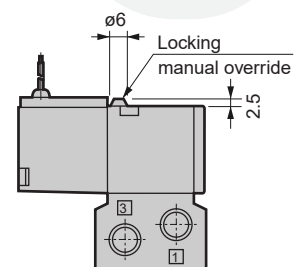
● C-connector: (C, C1, C2, C3)



● D-connector: (D, D1, D2, D3)



● Locking manual override: (M1)



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

Discrete 3 port direct acting valve



Individual wiring manifold Body porting, sub-plate porting  
3 port direct acting valve pneumatic valve

# M3PA/M3PB Series

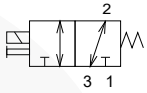
● Applicable cylinder bore size:  $\varnothing 16$  to  $\varnothing 40$

CE Refer to Intro 17 for details.



## JIS symbol

● 2-position universal type



Port No. 1, 2, 3 indicates;  
Port 1: P, NC  
Port 2: A, COM  
Port 3: R, NO

## Common specifications

Descriptions	
Manifold method	Sub-plate integrated type
Station number	2 to 20 stations
Valve and operation type	Direct acting poppet valve
Working fluid	Compressed air, low vacuum
Max. working pressure MPa	0.70 (low vacuum: -100 KPa)
Min. working pressure MPa	0.00
Withstanding pressure MPa	1.05 (low vacuum: -101 KPa)
Ambient temperature °C	-5 to 50 (no freezing)
Fluid temperature °C	5 to 50
Lubrication	Not required
Protective structure	Dust proof
Vibration/impact m/s <sup>2</sup>	50 or less / 300 or less
Working environment	Containing corrosive gas is impermissible.

## Electric specifications

Descriptions		3PA1 3PB1	3PA2 3PB2
Rated voltage	AC	100, 200 (50/60 Hz)	
	V DC	24	
Rated voltage fluctuation range		±10%	
Starting current	AC 100 V	0.032 / 0.027	0.068 / 0.054
	AC 200 V	0.016 / 0.014	0.034 / 0.027
	DC 24 V	-	-
Holding current	AC 100 V	0.028 / 0.022	0.041 / 0.032
	AC 200 V	0.014 / 0.011	0.021 / 0.016
	DC 24 V	0.075	0.075
Power consumption	AC 100 V	1.8 / 1.4 (2.0 / 1.6)	2.2 / 1.8 (2.4 / 2.0)
	W AC 200 V	1.8 / 1.4 (2.0 / 1.6)	2.2 / 1.8 (2.4 / 2.0)
	(With light) DC 24 V	1.8 (2.0)	1.8 (2.0)
Heat proof class		B (molded coil)	
Temperature rise °C		30	

Reference: The rated voltage 100 VAC 50/60 Hz can be used at 110 VAC 60 Hz, and 200 VAC 50/60 Hz can be used at 220 VAC 60 Hz.

## Individual specifications

Descriptions		M3PA1	M3PA2	M3PB1	M3PB2
Manifold type		Port 2: Individual Port 1, 3: Common	Port 2: Individual Port 1, 3: Common	Port 2: Individual Port 1, 3: Common Port 2, 3: Individual Port 1: Common Port 1, 2: Individual Port 3: Common	Port 2: Individual Port 1, 3: Common Port 2, 3: Individual Port 1: Common Port 1, 2: Individual Port 3: Common
Port size Note 1	Port 1	Rc 1/4	Rc 1/4	Common: Rc1/4 Individual: Rc1/8	Common: Rc1/4 Individual: Rc1/8
	Port 2	M 5 ( $\varnothing 6$ , $\varnothing 8$ push-in joint)	Rc 1/8 ( $\varnothing 6$ , $\varnothing 8$ push-in joint)	Rc 1/8 ( $\varnothing 4$ , $\varnothing 6$ push-in joint)	Rc 1/8 ( $\varnothing 6$ , $\varnothing 8$ push-in joint)
	Port 3	Rc 1/4	Rc 1/4	Common: Rc1/4 Individual: Rc1/8	Common: Rc1/4 Individual: Rc1/8
Response time Note 2	ms	20 or less	20 or less	20 or less	20 or less

Note 1: G threads and NPT threads are available for the piping port threads. Contact CKD for information.

Note 2: Response time is the value when ON for supply pressure 0.5 MPa, pre-lubricated. The value varies depending on pressure and quality of lubricant.

## Ozone specifications (Ending 5)

\*\* - Voltage - P11



### Flow characteristics

Model no.	Port 1 → 2		Port 2 → 1		Port 2 → 3		Port 3 → 2	
	C (dm <sup>3</sup> / (s·bar))	b	C (dm <sup>3</sup> / (s·bar))	b	C (dm <sup>3</sup> / (s·bar))	b	C (dm <sup>3</sup> / (s·bar))	b
<b>M3PA1</b>	0.38	0.17	0.37	0.46	0.47	0.45	0.40	0.18
<b>M3PA2</b>	0.93	0.25	1.0	0.35	1.1	0.32	0.97	0.31
<b>M3PB1</b>	0.36	0.22	0.32	0.43	0.33	0.48	0.31	0.24
<b>M3PB2</b>	0.86	0.25	0.93	0.38	0.94	0.22	0.88	0.27

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

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

Individual wiring manifold  
3 port direct acting valve

# M3PA/M3PB Series

## Individual wiring manifold

### How to order individual wiring manifold

● Solenoid valve for manifold (body porting)



● Solenoid valve for manifold (sub-plate porting)



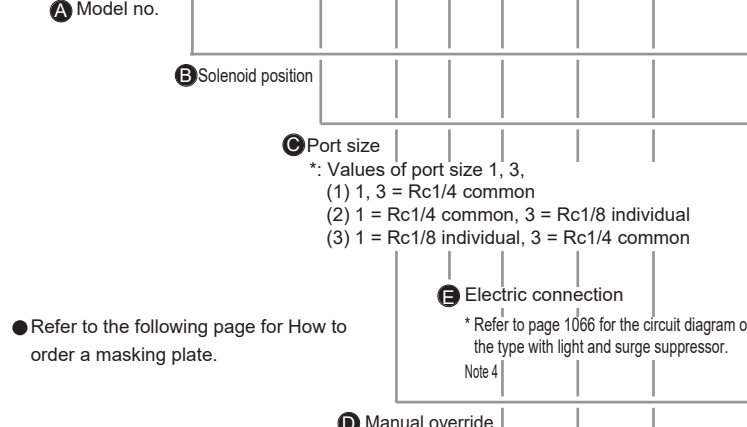
● Manifold



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

A Model no.	A Model no.			
	Body porting	Sub-plate porting		
3PA1	●	●	●	●
3PA2	●	●	●	●
3PB1	●	●	●	●
3PB2	●	●	●	●

Symbol	Descriptions						
B	1	2-position single solenoid	●	●	●	●	
	8	Mix manifold	●	●	●	●	
C	Port 2 individual		Port 1, 3				
	M5	M 5	(1)				
	06	Rc1/8		(1)	(1)	(1)	
	GS4	ø4 push-in joint Note 1	(1)		(1)		
	GS6	ø6 push-in joint Note 2	(1)	(1)	(1)	(1)	
	GS8	ø8 push-in joint Note 3		(1)		(1)	
	06Y	Rc1/8 (back porting)			(1)	(1)	
	06A	Rc1/8			(2)	(2)	
06B	Rc1/8			(3)	(3)		
D	Blank	Non-locking manual override	●	●	●	●	
	M1	Locking manual override	●	●	●	●	
E	Grommet lead wire						
	Blank	Grommet lead wire (300 mm)	●	●	●	●	
	Small terminal box						
	B	No lead wire	●	●	●	●	
	L	No lead wire	Refer to (Table 1) on the left.				
	L2	Lead wire (300 mm)					
	LS	No lead wire with surge suppressor, light					
	C-connector (lead wire lateral)						
	C	Lead wire (300 mm)	●	●	●	●	
	C00	Lead wire (500 mm)	●	●	●	●	
	C01	Lead wire (1000 mm)	●	●	●	●	
	C02	Lead wire (2000 mm)	●	●	●	●	
	C03	Lead wire (3000 mm)	●	●	●	●	
	C1	No lead wire	●	●	●	●	
	C2	Lead wire (300 mm) with surge suppressor, light	●	●	●	●	
C20	Lead wire (500 mm) with surge suppressor, light	●	●	●	●		
C21	Lead wire (1000 mm) with surge suppressor, light	●	●	●	●		
C22	Lead wire (2000 mm) with surge suppressor, light	●	●	●	●		
C23	Lead wire (3000 mm) with surge suppressor, light	●	●	●	●		
C3	No lead wire with surge suppressor, light	●	●	●	●		
D-connector (lead wire upward)							
D	Lead wire (300 mm)	●	●	●	●		
D00	Lead wire (500 mm)	●	●	●	●		
D01	Lead wire (1000 mm)	●	●	●	●		
D02	Lead wire (2000 mm)	●	●	●	●		
D03	Lead wire (3000 mm)	●	●	●	●		
D1	No lead wire	●	●	●	●		
D2	Lead wire (300 mm) with surge suppressor, light	●	●	●	●		
D20	Lead wire (500 mm) with surge suppressor, light	●	●	●	●		
D21	Lead wire (1000 mm) with surge suppressor, light	●	●	●	●		
D22	Lead wire (2000 mm) with surge suppressor, light	●	●	●	●		
D23	Lead wire (3000 mm) with surge suppressor, light	●	●	●	●		
D3	No lead wire with surge suppressor, light	●	●	●	●		
F	Blank	No option	●	●	●	●	
	S	Surge suppressor attached Note 5	●	●	●	●	
G	2	2 stations					
	to	to	●	●	●	●	
	20	20 stations					
H	1	Standard	100 VAC (50/60 Hz)	●	●	●	●
	2		200 VAC (50/60 Hz)	●	●	●	●
	3		24 VDC	●	●	●	●
	AC110V	Option	110 VAC 50/60 Hz	●	●	●	●
	AC220V		220 VAC 50/60 Hz	●	●	●	●
4		12 VDC	●	●	●	●	



(Table 1) Small terminal box L/L2/LS table

Symbol	Descriptions	3PA1	3PA2	3PB1	3PB2	Surge suppressor
L	No lead wire	With light	AC ●	●	●	●
		DC		●		●
	With surge suppressor, light	AC				
		DC	●		●	
L2	With lead wire (300 mm)	With light	AC ●		●	
		DC				
	With surge suppressor, light	AC				
		DC	●		●	
LS	No lead wire	With surge suppressor, light	AC ●	●	●	●
		DC		●		●

- Note on model no. selection**
- Note 1: With GS4, the push-in joint GWS4-M5-S(3PA1)/GWJS4-6(3PB1) are screwed into the port 2.
  - Note 2: With GS6, the push-in joint GWS6-M5-S(3PA1), GWJS6-6(3PA2) and GWJS6-6(3PB1) are screwed into the port 2.
  - Note 3: With GS8, the push-in joint GWS8-6(3PA2, 3PB2) are screwed into the port 2.
  - Note 4: AWG20 to 24 size lead is used.
  - Note 5: With the 24 VDC or less, the enclosed surge suppressor is a suppression connector type. (Refer to page 1065.)

### <Example of model number>

- M3PA210-06-S-7-1**
- A Model: M3PA2 (body porting)
  - B Solenoid position : 2-position single solenoid
  - C Port size : Port 2 Rc1/8
  - D Manual override : Non-locking manual override
  - E Electric connection : Grommet lead wire
  - F Other options : Surge suppressor attached
  - G Station number : 7 stations
  - H Voltage : 100 VAC

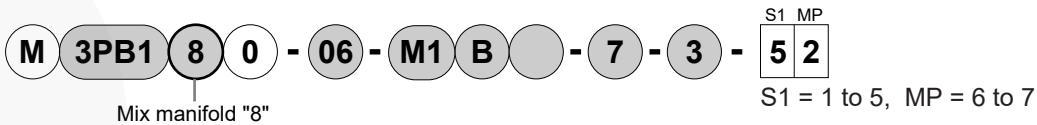
## How to order masking plate kit

**3PA1 - MP-KIT** \* Gasket and set screw attached

A Model no.

A Model no.
3PA1
3PB1
3PA2
3PB2

## How to order mix manifold

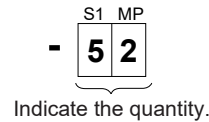


### How to order mixed manifold models

- (1) Indicate the quantity for each function (solenoid position) at the end of the model. Functions and symbols are indicated below.

Example: 2-position single solenoid → S1

Symbol	Function (solenoid position)
S1	2-position single solenoid
MP	Masking plate



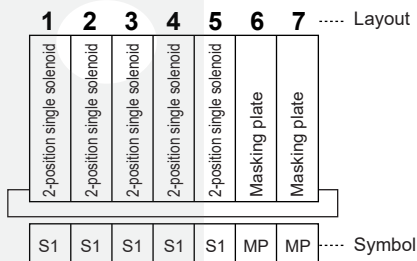
- (2) Indicate the function (solenoid position) and layout position in the remarks field.

Solenoid position symbol = ○, ○th station (facing the piping port, the left side is the 1st station.)

Example: S1 = 1 to 5 (1 to 5th station is 2-position single solenoid.)

### <Example of model number>

For 7 station



2-position single solenoid (S1) : 5 piece (1 to 5th station)  
Masking plate : 2 piece (6, 7th station)

M3PB180-06-M1-B-7-3 -  $\begin{matrix} S1 & MP \\ 5 & 2 \end{matrix}$   
S1 = 1 to 5 MP = 6 to 7

MN3E0  
MN4E0

4GA/B

M4GA/B

MN4GA/B

4GA/B  
(Master)

W4GA/B2

W4GB4

MN3S0  
MN4S0

4TB

4L2-4/  
LMF0

4SA/B0

4SA/B1

4KA/B

4F

PV5G/  
CMF

PV5/  
CMF

3MA/B0

**3PA/B**

P/M/B

NP/NAP/  
NVP

4F\*0E

HMV  
HSV

2QV  
3QV

SKH

PCD/  
FS/FD

Ending

Individual wiring manifold  
3 port direct acting valve

# M3PA1/M3PA2 Series

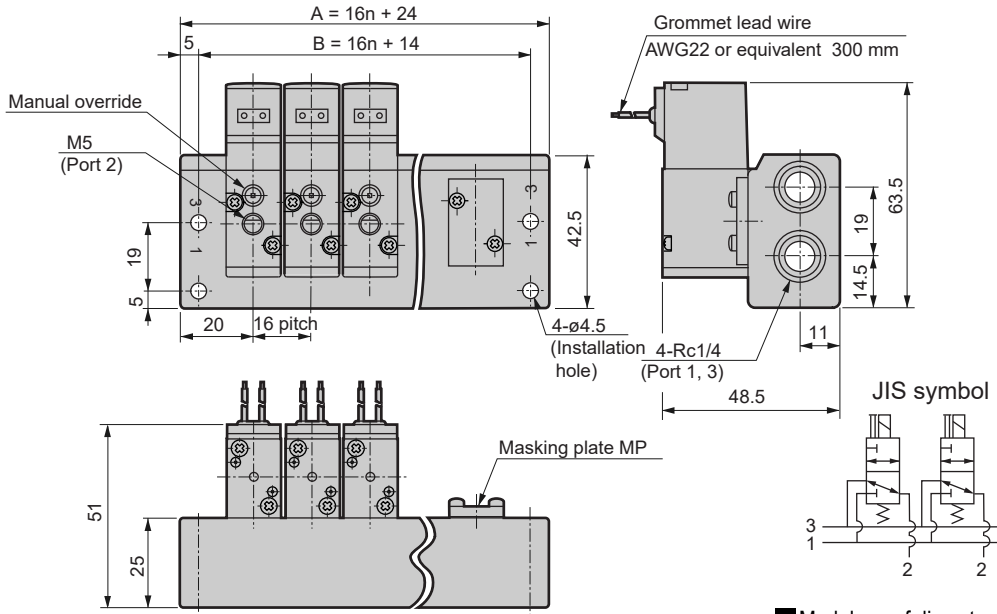
Individual wiring manifold: Body porting

Dimensions



## M3PA180-M5

● Port 2 - Individual piping Port 1, 3 - Common porting: Grommet lead wire

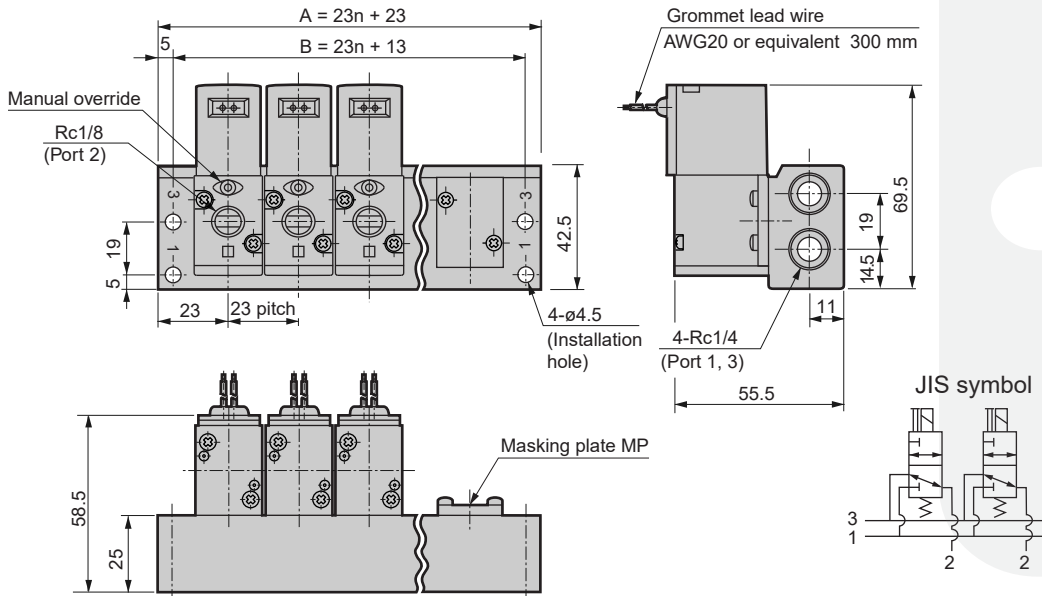


■ Model no. of discrete solenoid valve for manifold  
**3PA119-M5-[Option]-[Voltage]**

Station number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328	344
B	46	62	78	94	110	126	142	158	174	190	206	222	238	254	270	286	302	318	334

## M3PA280-06

● Port 2 - Individual piping Port 1, 3 - Common porting: Grommet lead wire



■ Model no. of discrete solenoid valve for manifold  
**3PA219-06-[Option]-[Voltage]**

Station number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A	69	92	115	138	161	184	207	230	253	276	299	322	345	368	391	414	437	460	483
B	59	82	105	128	151	174	197	220	243	266	289	312	335	358	381	404	427	450	473

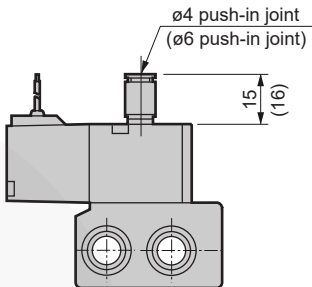
# M3PA1/M3PA2 Series

Individual wiring manifold: Body porting

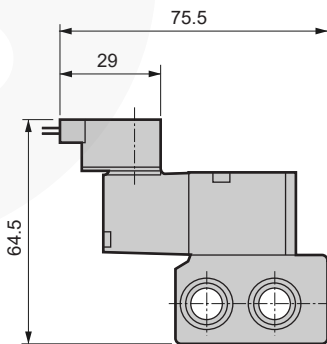
## Dimensions

### M3PA1

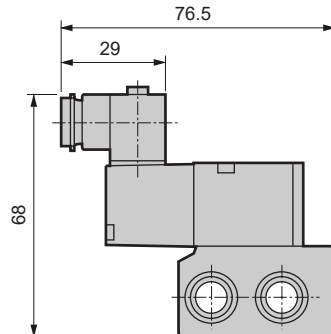
●  $\varnothing 4$ ,  $\varnothing 6$  push-in joint: (GS4, GS6)



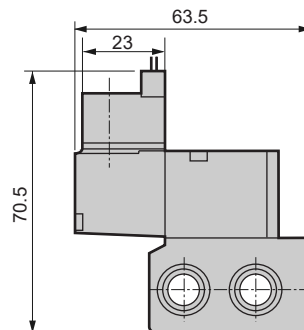
● C-connector: (C, C1, C2, C3)



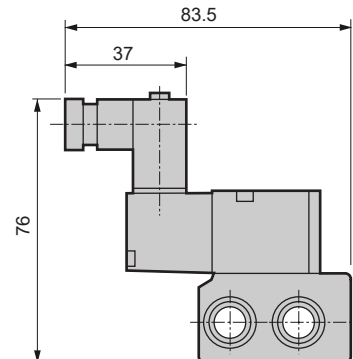
● Terminal box: (B)



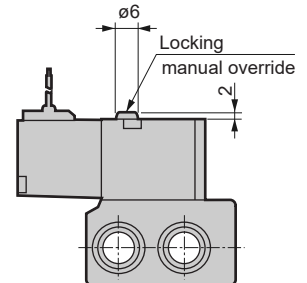
● D-connector: (D, D1, D2, D3)



● Terminal box with indicator light: (L, L2, LS)

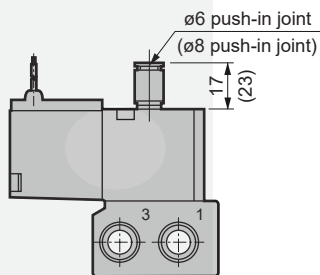


● Locking manual override: (M1)

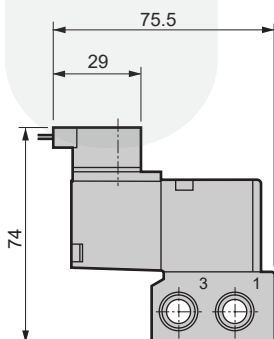


### M3PA2

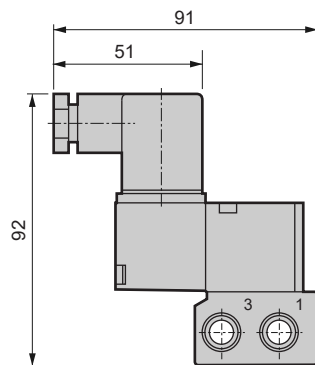
●  $\varnothing 6$ ,  $\varnothing 8$  push-in joint: (GS6, GS8)



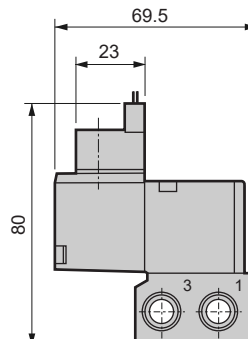
● C-connector: (C, C1, C2, C3)



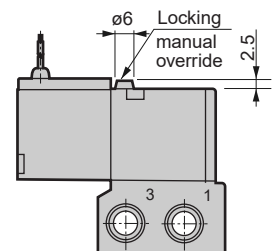
● Terminal box: (B, L, LS)



● D-connector: (D, D1, D2, D3)



● Locking manual override: (M1)



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

Individual wiring manifold  
3 port direct acting valve

# M3PB1 Series

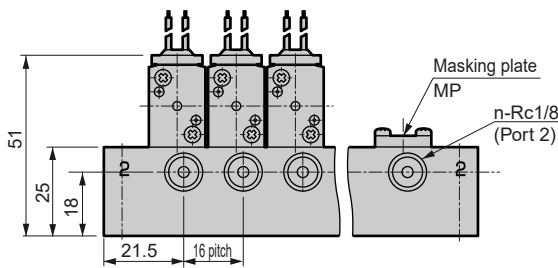
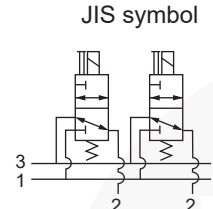
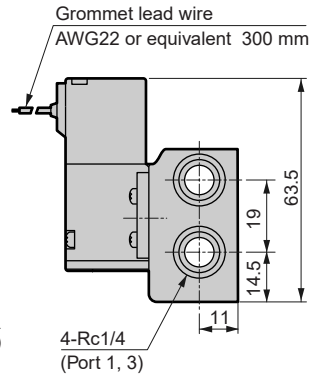
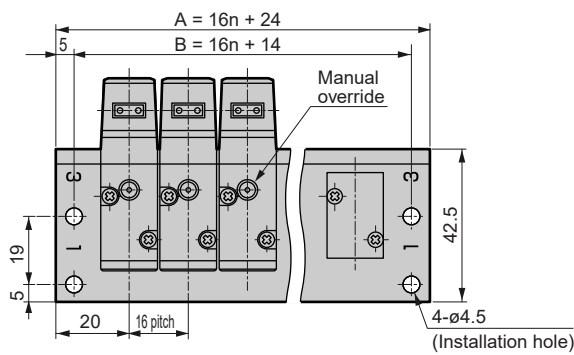
Individual wiring manifold: Sub-plate porting

Dimensions



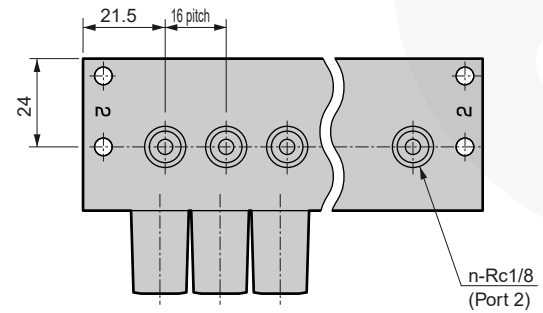
## M3PB180-06

● Port 2 - Individual piping Port 1, 3 - Common porting: Grommet lead wire



## M3PB180-06Y

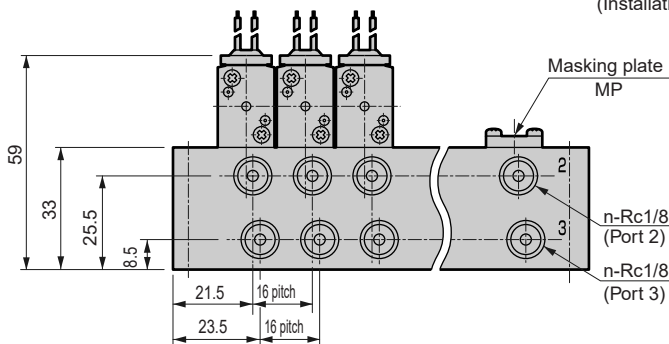
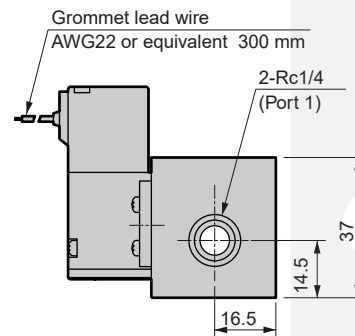
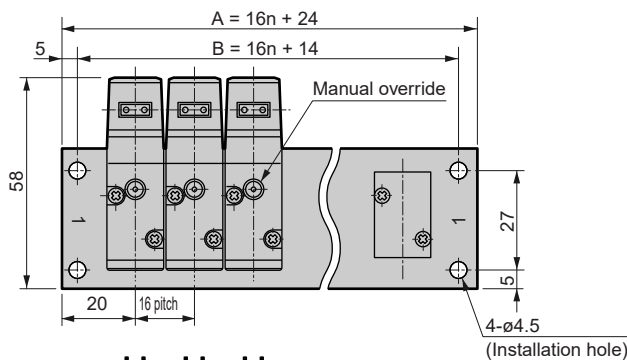
● Port 2 - Back porting Port 1, 3 - Common porting



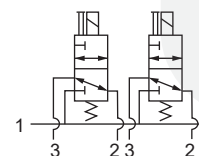
■ Model no. of discrete solenoid valve for manifold  
**3PB119-00-[Option]-[Voltage]**

## M3PB180-06A

● Port 2, 3 - Individual piping Port 1 - Common porting: Grommet lead wire



JIS symbol



■ Model no. of discrete solenoid valve for manifold  
**3PB119-00-[Option]-[Voltage]**

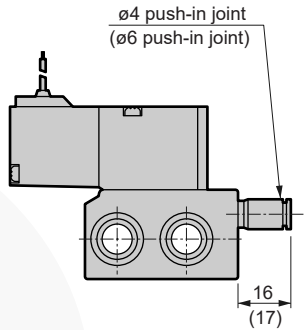
Station number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328	344
B	46	62	78	94	110	126	142	158	174	190	206	222	238	254	270	286	302	318	334



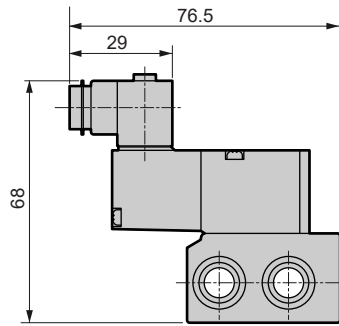
### Dimensions

#### M3PB1

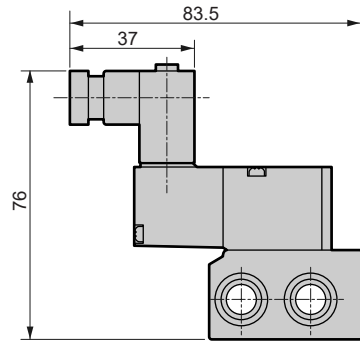
●  $\varnothing 4$ ,  $\varnothing 6$  push-in joint: (GS4, GS6)



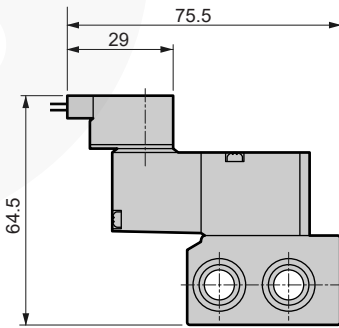
● Terminal box: (B)



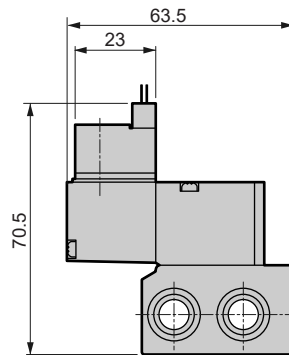
● Terminal box with indicator light: (L, L2, LS)



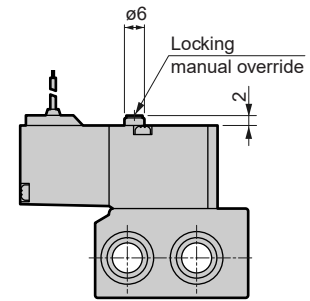
● C-connector: (C, C1, C2, C3)



● D-connector: (D, D1, D2, D3)



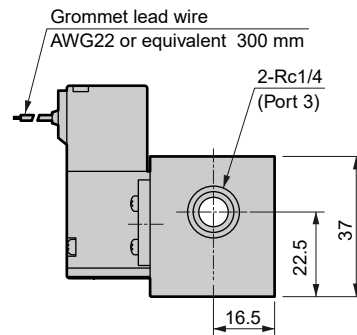
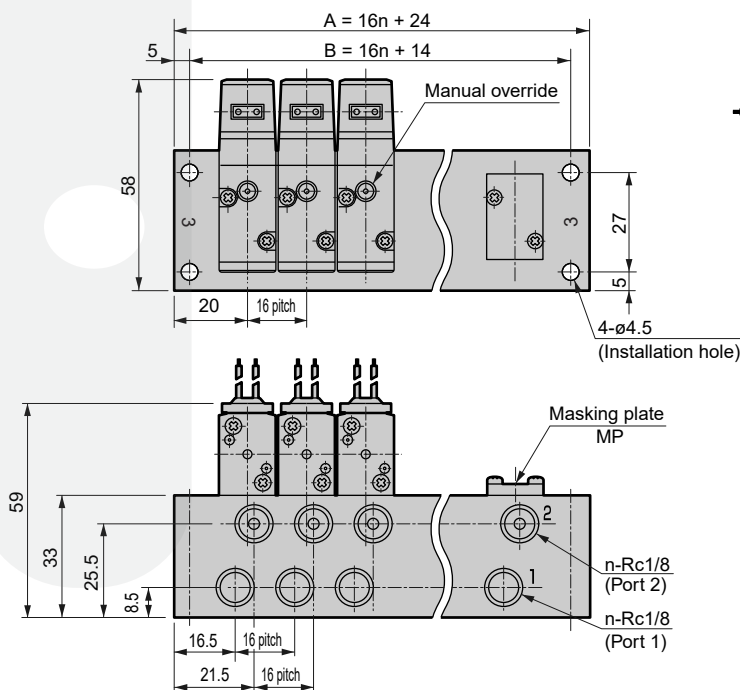
● Locking manual override: (M1)



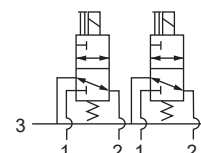
#### M3PB180-06B



● Port 1, 2 - Individual piping Port 3 - Common porting: Grommet lead wire



JIS symbol



■ Model no. of discrete solenoid valve for manifold  
**3PB119-00-[Option]-[Voltage]**

Station number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A	56	72	88	104	120	136	152	168	184	200	216	232	248	264	280	296	312	328	344
B	46	62	78	94	110	126	142	158	174	190	206	222	238	254	270	286	302	318	334

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

Individual wiring manifold  
3 port direct acting valve

# M3PB2 Series

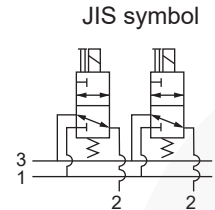
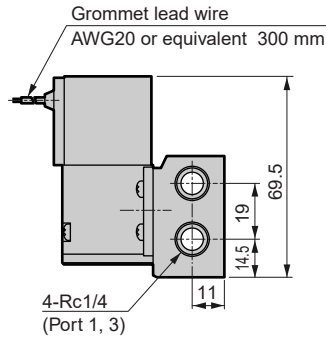
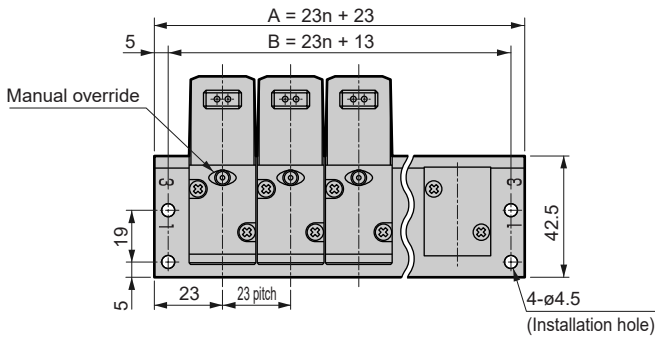
Individual wiring manifold: Sub-plate porting

Dimensions



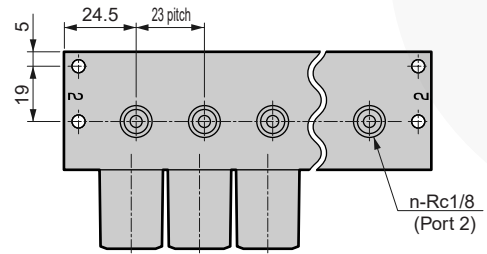
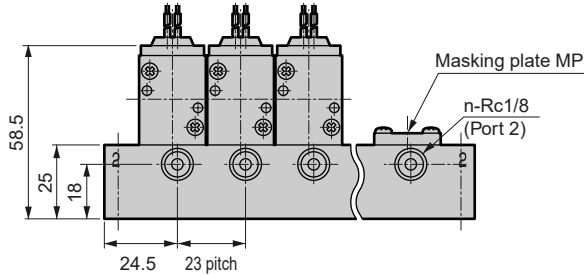
## M3PB280-06

● Port 2 - Individual piping Port 1, 3 - Common porting: Grommet lead wire



## M3PB280-06Y

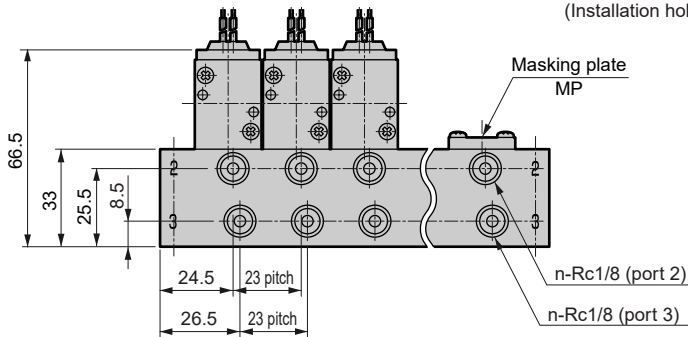
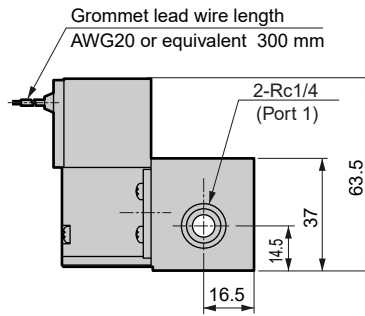
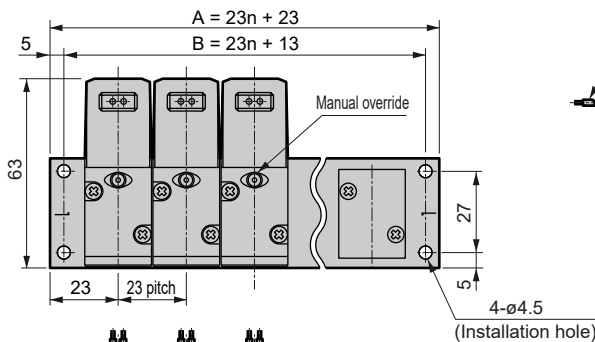
● Port 2 - Back porting Port 1, 3 - Common porting



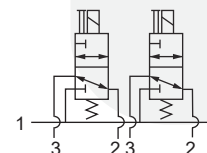
■ Model no. of discrete solenoid valve for manifold  
**3PB219-00-[Option]-[Voltage]**

## M3PB280-06A

● Port 2, 3 - Individual piping Port 1 - Common porting: Grommet lead wire



JIS symbol



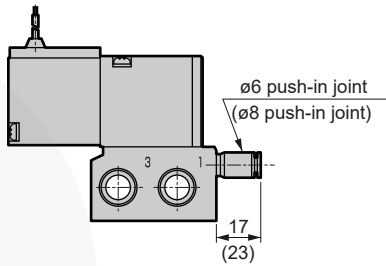
■ Model no. of discrete solenoid valve for manifold  
**3PB219-00-[Option]-[Voltage]**

Station number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A	69	92	115	138	161	184	207	230	253	276	299	322	345	368	391	414	437	460	483
B	59	82	105	128	151	174	197	220	243	266	289	312	335	358	381	404	427	450	473

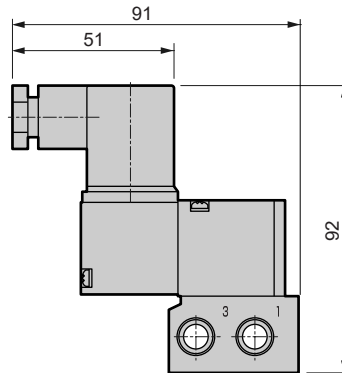
### Dimensions

#### M3PB2

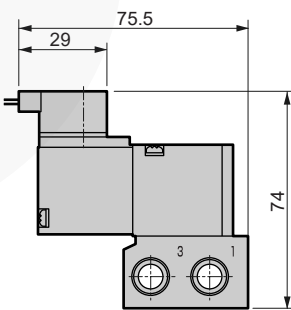
●  $\phi 6$ ,  $\phi 8$  push-in joint: (GS6, GS8)



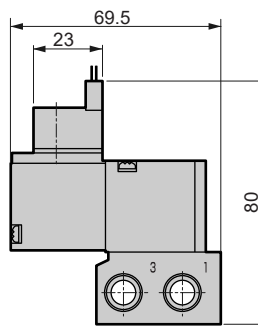
● Terminal box: (B, L, LS)



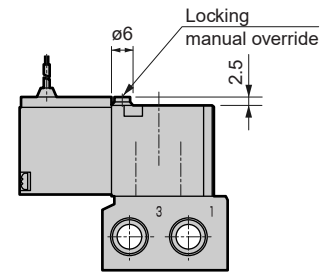
● C-connector: (C, C1, C2, C3)



● D-connector: (D, D1, D2, D3)



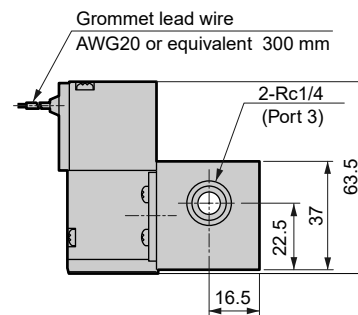
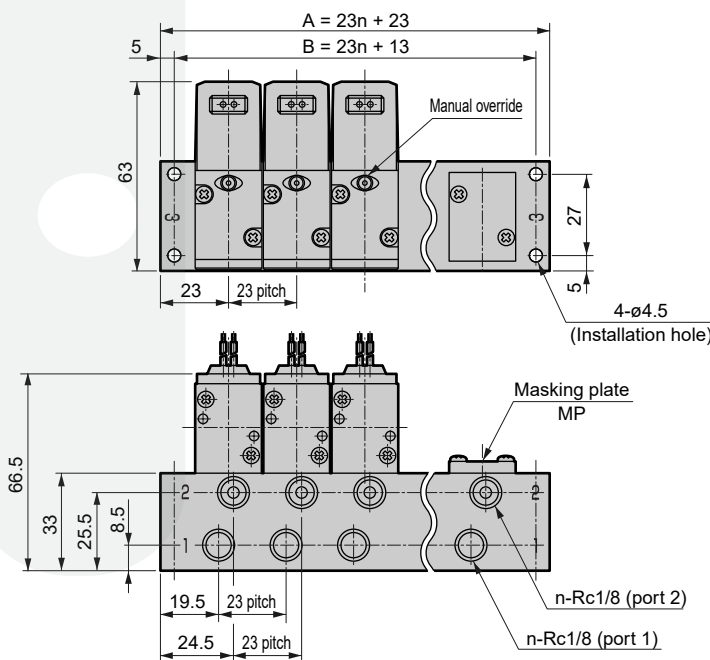
● Locking manual override: (M1)



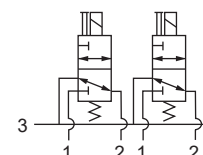
#### M3PB280-06B



● Port 1, 2 - Individual piping Port 3 - Common porting: Grommet lead wire



JIS symbol



■ Model no. of discrete solenoid valve for manifold  
**3PB219-00-[Option]-[Voltage]**

Station number	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
A	69	92	115	138	161	184	207	230	253	276	299	322	345	368	391	414	437	460	483
B	59	82	105	128	151	174	197	220	243	266	289	312	335	358	381	404	427	450	473

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

Individual wiring manifold  
3 port direct acting valve

# 3PA/3PB Series

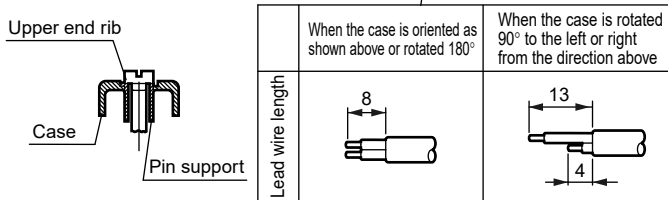
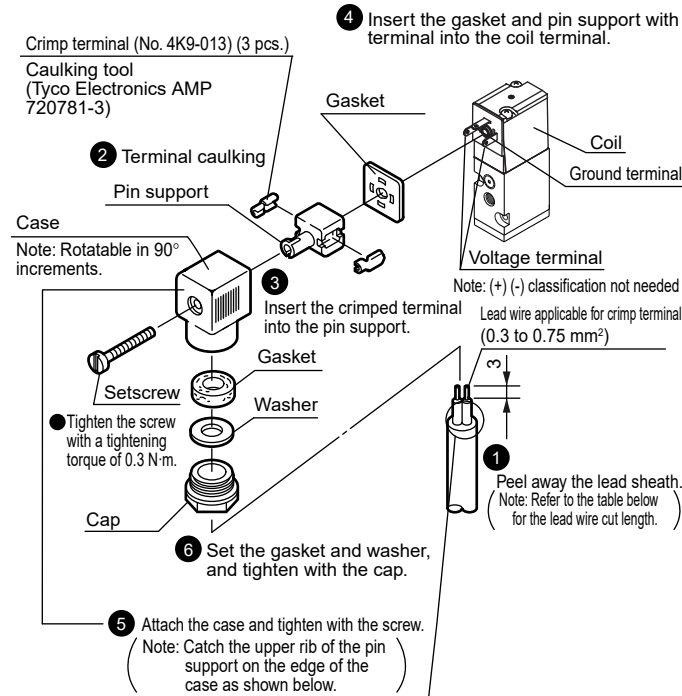
## Technical data (1) How to wire terminal box wiring and connector

### How to wire terminal box wiring and connector

Refer to the following drawings for terminal block wiring and for C and D wire connector connection.

#### Small terminal box wiring methods (3P\*1B type)

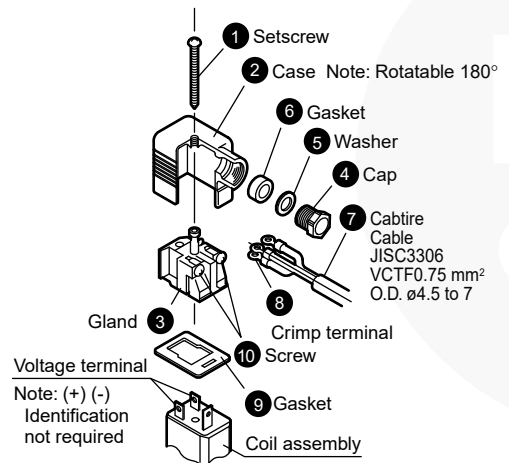
Wire the terminal box following steps (1) to (6) below.



#### Terminal box wiring methods (3P\*2B, L, LS type)

Refer to the following drawing, and wire the terminal box following steps 1) to 3) below.

- 1) Pass the cap (4), washer (5), and gasket (6) in order through the cable (7), and insert in case (2).
- 2) When using a crimp terminal, treat the cable (7) at an appropriate length as shown in the figure, and crimp the crimp terminal (8) onto the end.
- 3) Remove screw (10) from terminal gland (3), and pass through crimp terminal (8). (When using the Y type terminal, loosen and sandwich the terminal.) Then, tighten screw (10) again. Note: Tighten at torque of 0.5 N·m ±15%.



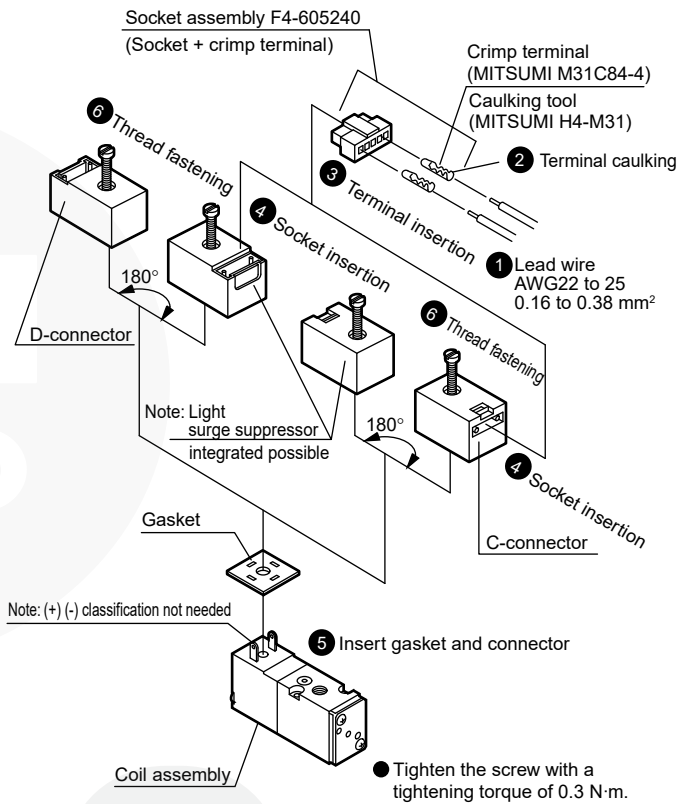
- Remarks:
- Bare wires can be wired. In this case, loosen screw (10), and insert leads into the fitting, then tighten again.
  - The cord's direction can be changed by pulling the gland out of the case, rotating it 180°, then pressing it into the case again.
  - The following crimp terminals (8) can be used.

NICHIFU TERMINAL		FUJI TERMINAL		JST Mfg.	
O terminal	Y terminal	O terminal	Y terminal	O terminal	Y terminal
0.3-3	0.3-3	1.25-3	1.25-YAS3	0.5-3	0.25-B3A
1.25-3	1.25Y-3		1.25-YAS3.5	1.25-3	1.25-C3A
1.25-3S	1.25Y-3.5				

Use equivalent products when using other brands.

### How to wire C/D-connector (3P\*1, 3P\*2)

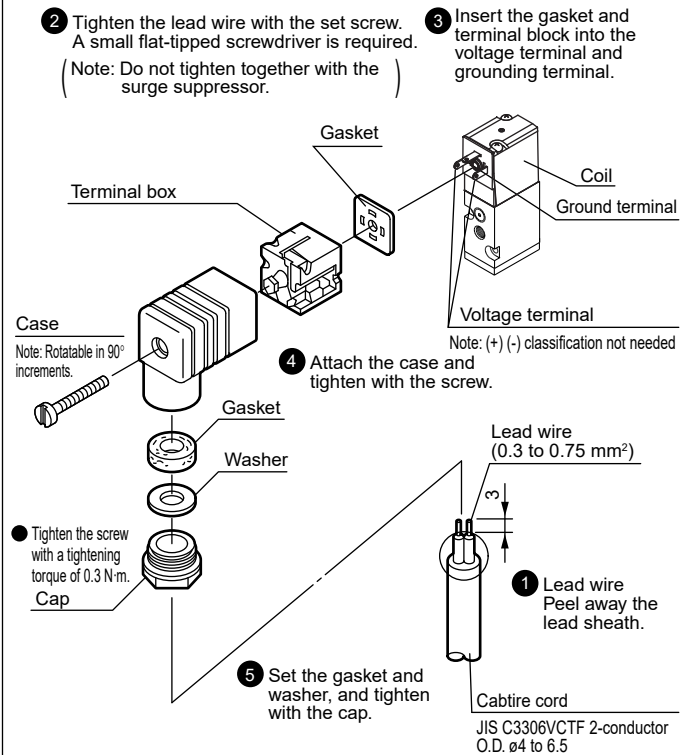
Wire the terminal box following steps (1) to (6) below.



Power consumption 1.8 W becomes 2.0 W when the 24 VDC light is enclosed.

### How to wire small terminal box with light (3P\*1L, LS type)

Wire the terminal box following steps (1) to (5) below.



MN3E0  
MN4E0

4GA/B

M4GA/B

MN4GA/B

4GA/B (Master)

W4GA/B2

W4GB4

MN3S0  
MN4S0

4TB

4L2-4/  
LMF0

4SA/B0

4SA/B1

4KA/B

4F

PV5G/  
CMF

PV5/  
CMF

3MA/B0

**3PA/B**

P/M/B

NP/NAP/  
NVP

4F\*0E

HMV  
HSV

2QV  
3QV

SKH

PCD/  
FS/FD

Ending

3 port direct acting valve