

Discrete valve Body piping/sub-plate piping
Direct acting 3-port pneumatic valve

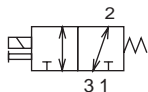
3PA/3PB Series

● Cylinder bore size: ø16 to ø40



JIS symbol

● 2-position universal

Port number 1, 2, 3 is
Port 1: P, NC
Port 2: A, COM
Port 3: R, NO

Common specifications

Item	Description
Valve and operation	Direct acting poppet valve
Working fluid	Compressed air, low vacuum
Max. working pressure MPa	0.70
Min. working pressure kPa	-100
Proof pressure MPa	1.05 (low vacuum: -101 kPa)
Max. working pressure differential MPa	0.70
Ambient temperature °C	-5 to 50 (no freezing)
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	3PA1 3PB1	3PA2 3PB2
Rated voltage V	DC	24
Voltage fluctuation range	±10%	
Holding current A	DC 24V	0.075 0.075
Power consumption W (With indicator lamp)	DC 24V	1.8 (2.0) 1.8 (2.0)
Thermal class	B (molded coil)	
Temperature rise °C	30	

Individual specifications

Item	3PA1	3PA2	3PB1	3PB2
Port size	M5	Rc 1/8	Rc 1/8	Rc 1/8, 1/4

Performance/characteristics by model

Item	3PA1	3PA2	3PB1	3PB2
Response time *1 ms	20 or less	20 or less	20 or less	20 or less

*1: 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	3PA1	3PA2	3PB1	3PB2
Weight g	54	127	84	175

Flow characteristics

Model No.	Port 1→2		Port 2→1		Port 2→3		Port 3→2	
	C[dm ³ /(s·bar)]	b	C[dm ³ /(s·bar)]	b	C[dm ³ /(s·bar)]	b	C[dm ³ /(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

*1: Effective cross-sectional area S and sonic conductance C are converted as S ≈ 5.0 x C.

How to order single valve

It is equivalent to the P4 specifications, so "-P4" is not required at the end of the model No.

● Body piping

3PA1 1 0 - **M5** - **M1** **LS** - **3**

● Sub-plate piping

3PB2 1 0 - **08** - **M1** **LS** - **3**

● Solenoid valve for manifold (sub-plate piping)

3PB1 1 9 - **00** - **M1** **B** - **3** * Gasket, mounting screw attached

A Model No.

Solenoid position
2-position single

B Port size

C Manual
override

D Electrical connections

* Refer to "Pneumatic Valves No.CB-023SA" for the circuit diagram with surge suppressor/lamp.
*1

[Table1] Compact terminal box L/LS compatibility table

Code	Description	3PA1	3PA2	3PB1	3PB2	Surge suppressor
L	Without lead wire	DC	●	●	●	
	With indicator lamp	DC	●	●	●	Built in
LS	Without lead wire	DC	●	●	●	
	With surge suppressor and indicator lamp	DC	●	●	●	Built in

⚠ Precautions for model No. selection

*1: The lead wire used is AWG20 to 24 size.

*2: The surge suppressor for attachment is a suppression connector when the grommet lead wire is 24 VDC or less.

*3: The surge suppressor is a grommet lead wire or compact terminal box for electrical connections. Selectable only when "B" is selected.

[Example of model No.]

3PA210-06-M1BP-3

A Model : 3PA2 (body piping)

Solenoid position : 2-position single

B Port size : Rc1/8

C Manual override : Locking manual override

D Electrical connections : Terminal box

E Other options : With mounting plate

F Voltage : 24 VDC

E Other options

F Voltage

		A Model No.			
		Body piping		Sub-plate piping	
		3PA1	3PA2	3PB1	3PB2
Code		Description			
B Port size	M5	M5	●		
	06	Rc 1/8		●	●
	08	Rc 1/4			●
C	Blank	Non-locking manual override	●	●	●
	M1	Locking manual override	●	●	●
D Electrical connections	Grommet lead wire				
	Blank	Grommet lead wire (300 mm)	●	●	●
	Compact terminal box				
	B	Without lead wire	●	●	●
	L	Without lead wire	Refer to [Table 1] at left for details....		
	LS	Without lead wire, with surge suppressor/lamp			
	C type 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)	●	●	●
	C03	Lead wire (3000 mm)	●	●	●
	C1	Without lead wire	●	●	●
	C2	Lead wire (300 mm) Surge suppressor/With indicator lamp	●	●	●
	C20	Lead wire (500 mm) Surge suppressor/With indicator lamp	●	●	●
	C21	Lead wire (1000 mm) Surge suppressor/With indicator lamp	●	●	●
	C22	Lead wire (2000 mm) Surge suppressor/With indicator lamp	●	●	●
	C23	Lead wire (3000 mm) Surge suppressor/With indicator lamp	●	●	●
	C3	Lead wire Without lead wire Surge suppressor/With indicator lamp	●	●	●
	D type 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)	●	●	●
	D03	Lead wire (3000 mm)	●	●	●
	D1	Without lead wire	●		●
	D2	Lead wire (300 mm) Surge suppressor/With indicator lamp	●	●	●
	D20	Lead wire (500 mm) Surge suppressor/With indicator lamp	●	●	●
	D21	Lead wire (1000 mm) Surge suppressor/With indicator lamp	●	●	●
	D22	Lead wire (2000 mm) Surge suppressor/With indicator lamp	●	●	●
	D23	Lead wire (3000 mm) Surge suppressor/With indicator lamp	●	●	●
	D3	Without lead wire Surge suppressor/With indicator lamp	●	●	●
	E	Blank	Without mounting plate	●	●
P		With mounting plate	●	●	
S		Surge suppressor included	*2,3	●	●
F Voltage	3	24 VDC	●	●	●
	4	12 VDC	●	●	●

P4
Series

Pneumatic actuator
Cylinders
Hand/Chuck
Related products
Cylinder
Switch

Vacuum components

Pneumatic valves
Clean air
components

Pneumatic auxiliary components
Speed
controller
Fitting
Auxiliary
valve
Silencer
Tube

Gas generator

Fluid control components

Electric actuator
Motor
specification
Motorless
specifications

Individual wiring manifold body piping / sub-plate piping
Direct acting 3-port pneumatic valve

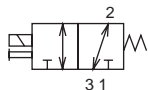
M3PA/M3PB Series

● Cylinder bore size: ø16 to ø40



JIS symbol

● 2-position universal

Port numbers 1, 2, and 3 are
Port 1: P, NC
Port 2: A, COM
Port 3: R, NO.

Common specifications

Item	Item
Manifold method	Sub-plate integrated
Station No.	2 to 20 stations
Valve and operation	Direct acting poppet valve
Working fluid	Compressed air, low vacuum
Max. working pressure MPa	0.70
Min. working pressure kPa	-100
Proof pressure MPa	1.05 (low vacuum: -101 kPa)
Max. working pressure differential MPa	0.70
Ambient temperature °C	-5 to 50 (no freezing)
Fluid temperature °C	5 to 50
Lubrication	Not required
Degree of protection	Dust-proof
Shock 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	3PA1 3PB1	3PA2 3PB2
Rated voltage V	DC	24
Voltage fluctuation range	±10%	
Holding current A	DC 24V	0.075 0.075
Power consumption W (With indicator lamp)	DC 24V	1.8 (2.0) 1.8 (2.0)
Thermal class	B (molded coil)	
Temperature rise °C	30	

Individual specifications

Item	M3PA1	M3PA2	M3PB1	M3PB2
Manifold	Port 2: Individual Port 1/3: Common	Port 2: Individual Port 1/3: Common	Port 2: Individual	Port 2: Individual
			Port 1, 3 : Common	Port 1, 3 : Common
			Port 2, 3 : Individual	Port 2, 3 : Individual
			Port 1: Common	Port 1: Common
			Port 1, 2: Individual Port 3: Common	Port 1, 2: Individual Port 3: Common
Port size	Port 1	Rc 1/4	Rc 1/4	Common: Rc1/4 Individual: Rc1/8
	Port 2	M5	Rc 1/8	Rc 1/8
	Port 3	Rc 1/4	Rc 1/4	Common: Rc1/4 Individual: Rc1/8

Performance/characteristics by model

Item	M3PA1	M3PA2	M3PB1	M3PB2
Response time *1 ms	20 or less	20 or less	20 or less	20 or less

*1: 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	M3PA1	M3PA2	M3PB1	M3PB2
Weight (n: station No.) g	104×n+48	184×n+46	102×n+48	182×n+45

Flow characteristics

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

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

P4
Series

Pneumatic actuator
Pneumatic cylinders
Hand/Chuck
Related products
Cylinder Switch

Vacuum components

Pneumatic valves

Pneumatic auxiliary components
Clean air components
Speed controller
Fitting
Auxiliary valve
Silencer
Tube

Gas generator

Fluid control components

Electric actuator
Motor specification
Motorless specifications

M3PA/M3PB Series

Individual wiring manifold

P4
Series

How to order individual wiring manifold

It is equivalent to the P4 specifications, so "-P4" is not required at the end of the model No.

- Solenoid valve for manifold (body piping)

3PA1 1 9 - M5 - M1 B 3 * Gasket/mounting screw attached

- Solenoid valve for manifold (sub-plate piping)

3PB1 1 9 - 00 - M1 B 3 * Gasket/mounting screw attached

- Manifold

M 3PB1 1 0 - 06 - M1 B - 7 - 3 - 5 2

A Model No.

B Solenoid position

C Port size

* : The values of port size port 1/3 are,
(1) 1/3 = Rc1/4 common
1 = Rc1/4 common, 3=Rc1/8 individual
1 = Rc1/8 individual, 3=Rc1/4 common

D Manual override

- For how to order masking plates, refer to the next page.

E Electrical connections

* Refer to "Pneumatic Valves No.CB-023SA" for the circuit diagram with surge suppressor/lamp.
*1

[Table 1] Compact terminal box L/LS compatibility table

Code	Description	3PA1	3PA2	3PB1	3PB2	Surge suppressor
L	Without lead wire	DC	●	●	●	
	With indicator lamp	DC	●	●	●	
LS	Without lead wire	DC	●	●	●	Built in
	With indicator lamp	DC	●	●	●	Built in

⚠ Precautions for model No. selection

*1: The lead wire size used is AWG20 to 24.

*2: The surge suppressor for attachment is a suppression connector for 24 VDC or less.

*3: The surge suppressor can only be selected when the grommet lead wire or compact terminal box "B" has been selected for the electrical connections.

[Model No. example]

M3PA210-06-S-7-3

- A Model : M3PA2 (body piping)
- B Solenoid position : 2-position single
- C Port size : Port 2, Rc1/8
- D Manual override : Manual override of non-locking
- E Electrical connections : Grommet lead wire
- F Other options : surge suppressor included
- G Station No. : 7 stations
- H Voltage : 24 VDC

F Other options

G Station No.

H Voltage

Code		Description				
B	1	2-position single	●	●	●	●
	8	Mix manifold (when there are multiple solenoid positions)	●	●	●	●
C	Port 2 individual		Port 1/3			
	M5	M5	①			
	06	Rc 1/8		①	①	①
	06Y	Rc 1/8 (rear piping)			①	①
	06A	Rc 1/8			②	②
06B	Rc 1/8			③	③	
D	Blank	Non-locking manual override	●	●	●	●
	M1	Locking manual override	●	●	●	●
E	Grommet lead wire					
	Blank	Grommet lead wire (300 mm)	●	●	●	●
	Compact terminal box					
	B	Without lead wire	●	●	●	●
	L	Without lead wire	Refer to [Table 1] at left for details.			
	LS	Without lead wire, with surge suppressor/lamp				
	C type 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)	●	●	●	●
	C03	Lead wire (3000 mm)	●	●	●	●
	C1	Without lead wire	●	●	●	●
	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	●	●	●	●
	C23	Lead wire (3000 mm) With surge suppressor and indicator lamp	●	●	●	●
	C3	Without lead wire With surge suppressor and indicator lamp	●	●	●	●
	D type 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)	●	●	●	●	
D03	Lead wire (3000 mm)	●	●	●	●	
D1	Without lead wire	●	●	●	●	
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	●	●	●	●	
D23	Lead wire (3000 mm) With surge suppressor and indicator lamp	●	●	●	●	
D3	Without lead wire With surge suppressor and indicator lamp	●	●	●	●	
F	Blank	No option	●	●	●	●
	S	Surge suppressor included*23	●	●	●	●
G	2	2 stations	●	●	●	●
	to					
	20	20 stations				
H	3	24 VDC	●	●	●	●
	4	12 VDC	●	●	●	●

How to order masking plate kit

3PA1 -MP-KIT * Gasket/mounting screw attached

A Model No.

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

How to order mix manifold

M **3PB1** **8** 0 - **06** - **M1** **B** - **7** - **3** -

S1	MP
5	2

Mix manifold "8" S1 = 1 to 5, MP = 6 to 7

How to fill in form for ordering a mix manifold

- ① List the quantity for each function (solenoid position) at the end of How to order. The functions and codes are as shown below.

Example: 2-position single → S1

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

-

S1	MP
5	2

List the quantity

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

Solenoid position code = ○, ○ Station (where the left side is the 1st station when the piping port is facing forward.)

Example: S1 = 1 to 5 (1 to 5th stations are 2-position single)

[Example of model No.]

For 7 station

1	2	3	4	5	6	7	Layout position
2-position single	2-position single	2-position single	2-position single	2-position single	Masking plate	Masking plate	
S1	S1	S1	S1	S1	MP	MP	Code

2-position single (S1): 5 units (1st to 5th station)
Masking plate (MP): 2 units (6th, 7th station)

↓
M3PB180-06-M1-B-7-3 -

S1	MP
5	2

S1=1 to 5 MP=6 to 7

P4
Series

Pneumatic actuator
Pneumatic cylinders
Hand/Chuck
Related products
Cylinder Switch

Vacuum components

Pneumatic valves

Pneumatic auxiliary components
Clean air components
Speed controller
Fitting
Auxiliary valve
Silencer
Tube

Gas generator

Fluid control components

Electric actuator
Motor specification
Motorless specifications