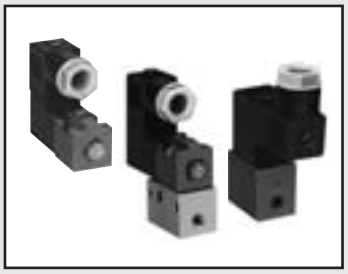


Discrete

2, 3, 5 port pilot operated valve miniature pneumatic valve

P/M/B Series

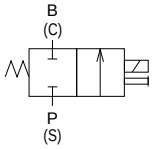
● Applicable cylinder bore size: ø6 to ø16

CE Refer to Intro 17 for details.

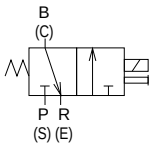
RoHS CAD

JIS symbol

● 2 port valve

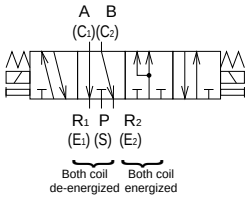


● 3 port valve

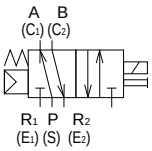


● 5 port valve

4-position double solenoid



2-position single solenoid



Common specifications

Descriptions	
Valve and operation type	Pilot operated poppet valve
Working fluid	Compressed air (low vacuum)
Max. working pressure MPa	Refer to the following individual specifications.
Min. working pressure MPa	Refer to the following individual specifications.
Withstanding pressure MPa	Refer to the following individual specifications.
Ambient temperature °C	-10 to 50 (no freezing)
Fluid temperature °C	5 to 50
Lubrication	Not required
Protective structure	Dust proof
Vibration/impact m/s²	50 or less / 300 or less
Working environment	Containing corrosive gas is impermissible.

Electric specifications

Descriptions			
Rated voltage V	AC		100, 200 (50/60 Hz)
	DC		12, 24
Rated voltage fluctuation range			±10%
Starting current A	AC	100 V	0.056 / 0.044
		200 V	0.034 / 0.026
	DC	12 V	0.150
		24 V	0.075
Holding current A	AC	100 V	0.028 / 0.022
		200 V	0.017 / 0.013
	DC	12 V	0.150
		24 V	0.075
Power consumption W	AC	100 V	1.8 / 1.4
		200 V	2.1 / 1.6
	DC	12 V	1.8
		24 V	1.8
Heat proof class			B (molded coil)
Temperature rise °C			45

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 (2 port valve)

Descriptions	2 port valve					
	P5122	M5122	B5122	P5126	M5126	B5126
Max. working pressure MPa	1.0			0.6 Note 2		
Min. working pressure MPa	0.1			0.1 Note 2		
Withstanding pressure MPa	1.5			1.5		
Port size	-	M5		-	M5	
Response time Note 1 ms	30 or less			30 or less		
Weight g	47		93	47		93

Individual specifications (3, 5 port valve)

Descriptions	3 port valve						5 port valve			
	P5132	M5132	B5132	P5136	M5136	B5136	W2P5132	W2P5136	P5142	B5142
Max. working pressure MPa	1.0			0.6			1.0	0.6	0.70	
Min. working pressure MPa	0.1			0.1 Note 2			0.1		0.15	
Withstanding pressure MPa	1.5			1.5			1.5		1.05	
Port size	-	M5		-	M5		M5		-	M5
Response time Note 1 ms	30 or less						60 or less			
Weight g	47		93	47		93	186		68	118

Note 1: Response time is the value when supply pressure 0.5 MPa, not lubricated and ON. The value varies depending on pressure and quality of lubricant.
Note 2: When the pressure class V (for low-pressure, low vacuum pressure) is designated, use is possible at a low pressure (0 to 0.29 MPa) and low vacuum (3.3 to 101.00 kPa (abs) {25 to 760 Torr}).

Copper and PTFE free

● Free of copper-based and PTFE based materials in flow path

**-Voltage- P6

Flow characteristics

Model no.	Solenoid position	Port size	C (dm³/ (s·bar))	b
P5122	2 port	-	0.10	0.13
M5122		M5		
B5122				
P5126		-	0.15	0.14
M5126		M5		
B5126				

Model no.	Solenoid position	Port size	P ⟶ B		B ⟶ R	
			C (dm³/ (s·bar))	b	C (dm³/ (s·bar))	b
P5132	3 port	-	0.10	0.13	0.15	0.17
M5132		M5				
B5132						
P5136		-	0.15	0.14	0.15	0.20
M5136		M5				
B5136						

Model no.	Solenoid position	Port size	P ⟶ A/B		A/B ⟶ R1/R2	
			C (dm³/ (s·bar))	b	C (dm³/ (s·bar))	b
W2P5132	5 port	M5	0.12	0.13	0.15	0.20
W2P5136			0.15	0.07	0.15	0.24
P5142		-	0.09	0.21	0.11	0.24
B5142		M5				

Note 1: Effective sectional area S and sonic conductance C are converted as S ≒ 5.0×C.

How to order

● 2, 3 port valve

B 513 2 – M6 B R – M5 U – DC24V

● Double type 5 port valve

W2P513 2 – M6 B – M5 – DC24V

● 5 port valve

B 514 2 – M6 B – M5 U – DC24V

Ⓐ Model no.

Ⓑ Orifice

Ⓒ Manual override

Ⓓ Electric connection

Note: Refer to page 1093 for the circuit diagram with light and surge suppressor.

Ⓔ Pressure class

Ⓕ Coil direction

Ⓖ Port size

Ⓗ Other options

Ⓘ Bracket

Ⓙ Voltage

Symbol	Descriptions	Ⓐ Model no.								
		Pilot type			Direct mounting		Note 1 Sub-base type			Double type 5 port valve
		No. of port 2	3	5	2	3	2	3	5	5
		P512	P513	P514	M512	M513	B512	B513	B514	W2P513
Ⓑ Orifice										
2	ø1.2	●	●	●	●	●	●	●	●	●
6	ø1.6	●	●		●	●	●	●		●
Ⓒ Manual override										
M0	Lateral non-locking type (standard) Note 2	●	●				●	●		●
M1	Lateral locking type (option) Note 2	●	●				●	●		●
M4	Non-locking with dust cover (standard)	●	●				●	●		●
M6	Upward direction non-locking type (standard)	●	●	●	●	●	●	●	●	●
N	No manual override (option)	●	●	●	●	●	●	●	●	●
Ⓓ Electric connection										
	Refer to the next page for wire connections.									
Ⓔ Pressure class										
Blank	Standard	●	●	●	●	●	●	●	●	●
V	Low pressure, low vacuum Note 4	●	●		●	●	●	●		
Ⓕ Coil direction										
Blank	Standard direction	●	●		●	●	●	●		
R	180° rotational direction	●	●	●	●	●				
Ⓖ Port size										
Blank	Without piping	●	●	●						
M5	M5 (standard)				●	●	●	●	●	●
06	Rc1/8 (option)						●	●	●	
Ⓗ Other options										
Blank	None	●	●	●	●	●	●	●	●	●
S	Surge suppressor attached Note 5	●	●	●	●	●	●	●	●	●
X	Continuous energizing (custom order) Note 6			●					●	
Ⓘ Bracket										
U	U bracket attached						●	●	●	
L	L bracket attached				●	●				
Ⓙ Voltage										
AC100V	Standard 100 VAC 50/60 Hz	●	●	●	●	●	●	●	●	●
AC200V	Standard 200 VAC 50/60 Hz	●	●	●	●	●	●	●	●	●
DC24V	Standard 24 VDC	●	●	●	●	●	●	●	●	●
DC12V	Standard 12 VDC	●	●	●	●	●	●	●	●	●
AC110V	Option 110 VAC 50/60 Hz	●	●	●	●	●	●	●	●	●
AC220V	Option 220 VAC 50/60 Hz	●	●	●	●	●	●	●	●	●

Note on model no. selection

Note 1 : The discrete sub-base (B) type is a pilot (P) type.

Note 2 : M (direct type) and low vacuum pressure (V) are not available for M0 or M1.

Note 4 : When the pressure class V (for low pressure, low vacuum pressure) is designated, the orifice is "6". Draw the vacuum from the P(S) or R(E) port.

Note 5 : The suppression connector type is provided for 24 VDC or less.

Note 6 : The other option symbol X applies to the 514* type.

<Example of model number>

B5142-M6B-M5-U-AC100V

Ⓐ Model no. : Sub-base type 5 port valve B514
Ⓑ Orifice : ø1.2
Ⓒ Manual override : Uppward non-locking type
Ⓓ Electric connection : Small terminal box
Ⓔ Pressure : Standard
Ⓕ Coil direction : Standard direction
Ⓖ Port size : M5
Ⓗ Other options : None
Ⓘ Bracket : U bracket attached
Ⓙ Voltage : 100 VAC

(Electric connection list)

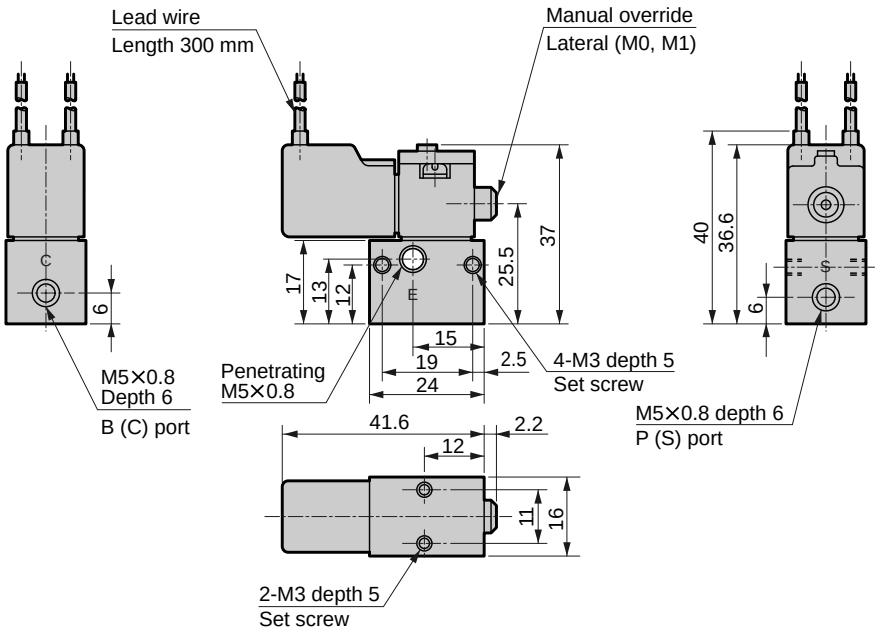
Symbol		Descriptions		Ⓐ Model no. Pilot type 2 P512	Pilot type 3 P513	Pilot type 5 P514	Direct mounting 2 M512	Direct mounting 3 M513	Note 1 Sub-base type 2 B512	Sub-base type 3 B513	Sub-base type 5 B514	Double type 5 port valve 5 W2P513
Ⓓ Electric connection												
E	Standard	Grommet lead wire (300 mm)		●	●	●	●	●	●	●	●	●
B	Standard	Small terminal box		●	●	●	●	●	●	●	●	●
Q	Option	Grommet lead wire (300 mm)	With surge suppressor	●	●	●	●	●	●	●	●	●
C-connector (lead wire lateral)												
C	Standard	Lead wire length (300 mm)		●	●	●	●	●	●	●	●	●
C00	Option	Lead wire length (500 mm)		●	●	●	●	●	●	●	●	●
C01	Option	Lead wire length (1000 mm)		●	●	●	●	●	●	●	●	●
C02	Option	Lead wire length (2000 mm)		●	●	●	●	●	●	●	●	●
C03	Option	Lead wire length (3000 mm)		●	●	●	●	●	●	●	●	●
C1	Option	No lead wire		●	●	●	●	●	●	●	●	●
C2	Option	Lead wire length (300 mm)	with surge suppressor, light	●	●	●	●	●	●	●	●	●
C20	Option	Lead wire length (500 mm)	with surge suppressor, light	●	●	●	●	●	●	●	●	●
C21	Option	Lead wire length (1000 mm)	with surge suppressor, light	●	●	●	●	●	●	●	●	●
C22	Option	Lead wire length (2000 mm)	with surge suppressor, light	●	●	●	●	●	●	●	●	●
C23	Option	Lead wire length (3000 mm)	with surge suppressor, light	●	●	●	●	●	●	●	●	●
C3	Option	No lead wire	with surge suppressor, light	●	●	●	●	●	●	●	●	●
D-connector (lead wire upward)												
D	Option	Lead wire length (300 mm)		●	●	●	●	●	●	●	●	●
D00	Option	Lead wire length (500 mm)		●	●	●	●	●	●	●	●	●
D01	Option	Lead wire length (1000 mm)		●	●	●	●	●	●	●	●	●
D02	Option	Lead wire length (2000 mm)		●	●	●	●	●	●	●	●	●
D03	Option	Lead wire length (3000 mm)		●	●	●	●	●	●	●	●	●
D1	Option	No lead wire		●	●	●	●	●	●	●	●	●
D2	Option	Lead wire length (300 mm)	with surge suppressor, light	●	●	●	●	●	●	●	●	●
D20	Option	Lead wire length (500 mm)	with surge suppressor, light	●	●	●	●	●	●	●	●	●
D21	Option	Lead wire length (1000 mm)	with surge suppressor, light	●	●	●	●	●	●	●	●	●
D22	Option	Lead wire length (2000 mm)	with surge suppressor, light	●	●	●	●	●	●	●	●	●
D23	Option	Lead wire length (3000 mm)	with surge suppressor, light	●	●	●	●	●	●	●	●	●
D3	Option	No lead wire	with surge suppressor, light	●	●	●	●	●	●	●	●	●
Small terminal box												
L	Option	No lead wire	With light	●	●	●	●	●	●	●	●	●
L2	Option	Lead wire length (300 mm)	With light	●	●	●	●	●	●	●	●	●
LS	Option	No lead wire	with surge suppressor, light	●	●	●	●	●	●	●	●	●
P	Option	No lead wire	With surge suppressor	●	●	●	●	●	●	●	●	●

Note 3: If DC voltage is selected for L and L2, the surge suppressor is built in.

Dimensions

B512 $\frac{2}{6}$

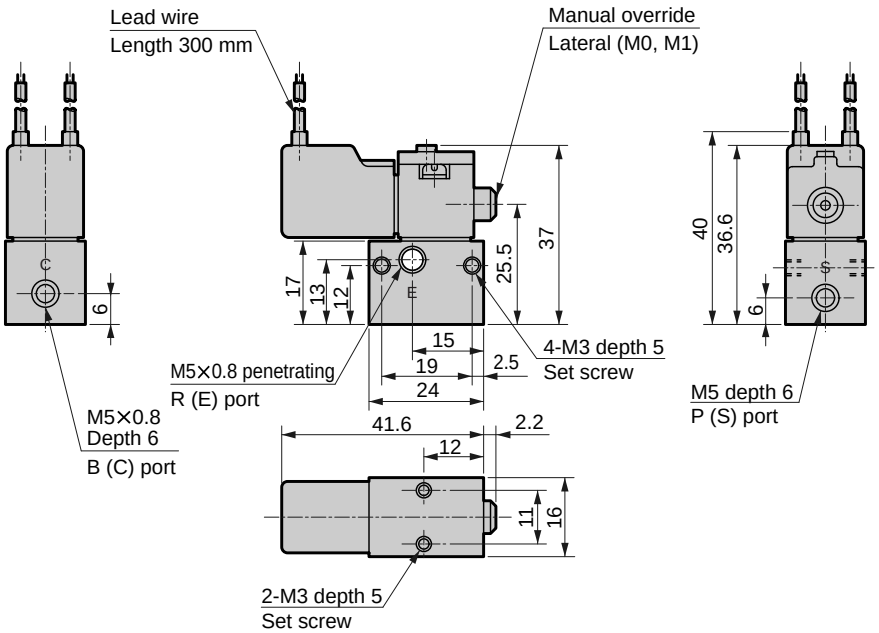
● 2 port valve: Grommet lead wire



* For the 2 port valve, "E" is only M5 thread, and is not an exhaust port.

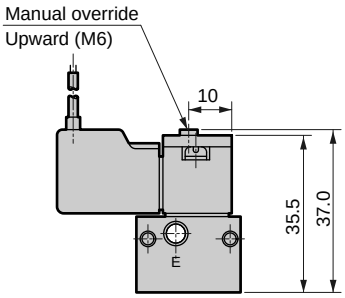
B513 $\frac{2}{6}$

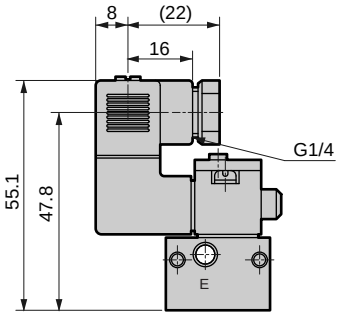
● 3 port valve: Grommet lead wire

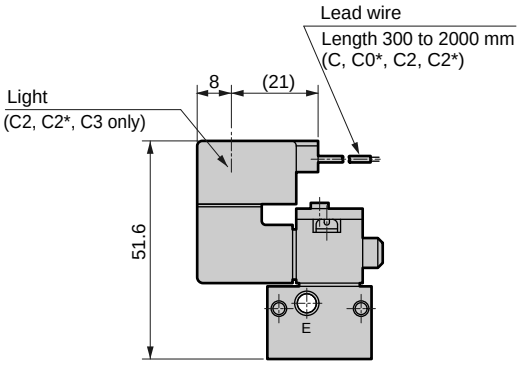


Dimensions CAD

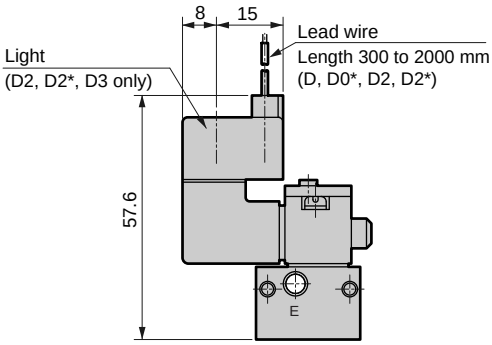
● Non-locking manual override upward: (M6) ● Small terminal box: (B) ● C-connector: (C, C0*, C1, C2, C2*, C3)

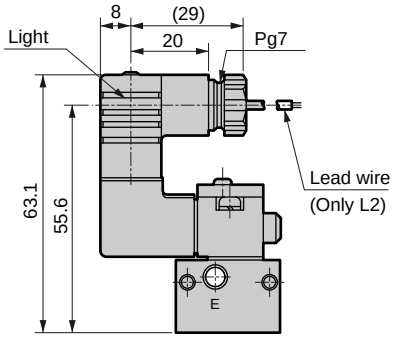


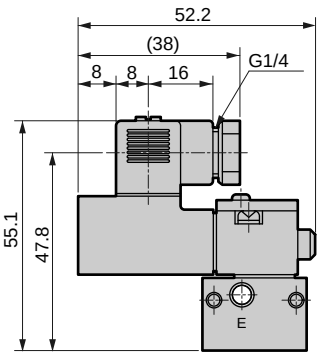




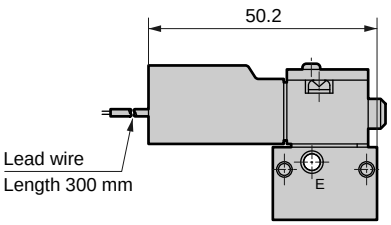
● D-connector: (D, D0*, D1, D2, D2*, D3) ● Small terminal box with light: (L, L2) with light and surge suppressor: (LS) ● Small terminal box with surge suppressor: (P)

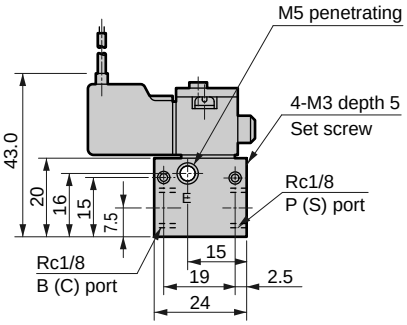


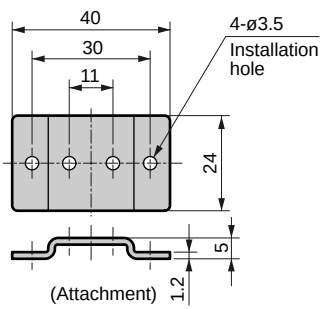




● Grommet lead wire with surge suppressor: (Q) ● Port size Rc1/8: (06) ● U shaped bracket: (U)



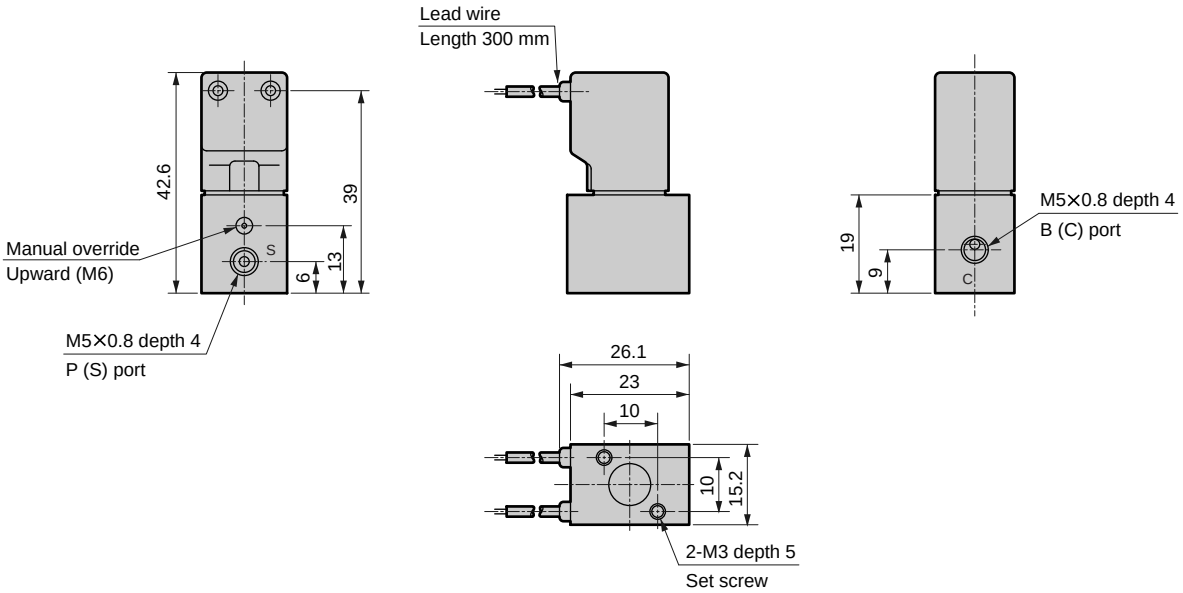




Dimensions CAD

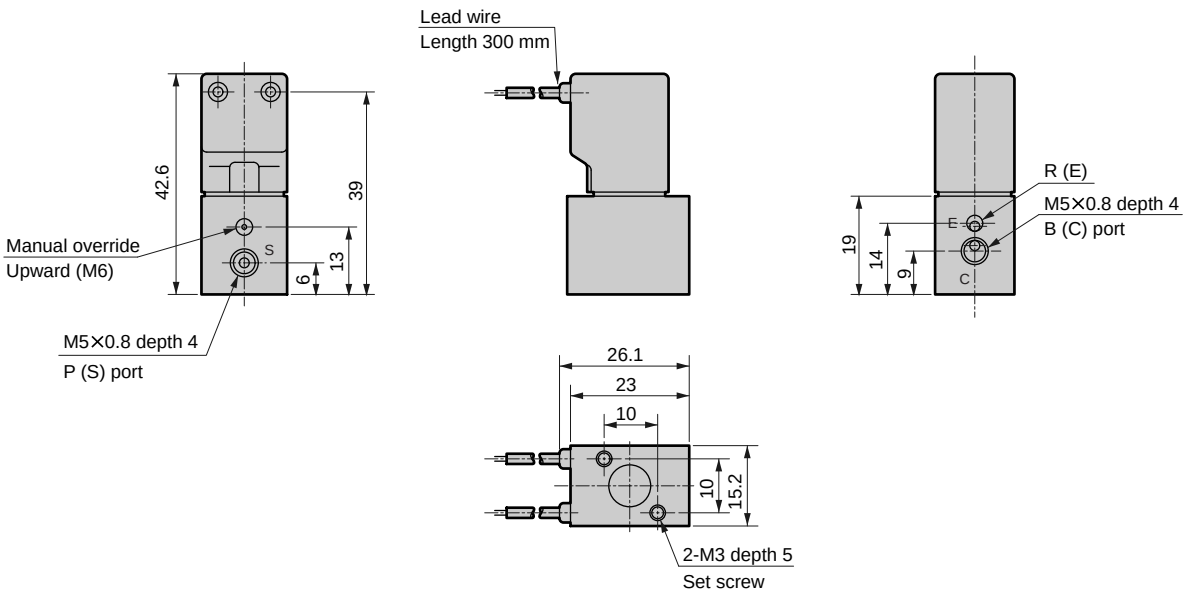
M512 2/6

● 2 port valve: Grommet lead wire



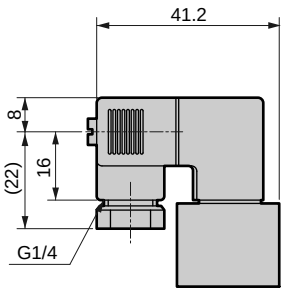
M513 2/6

● 3 port valve: Grommet lead wire

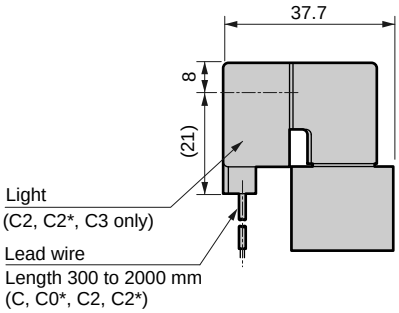


Dimensions

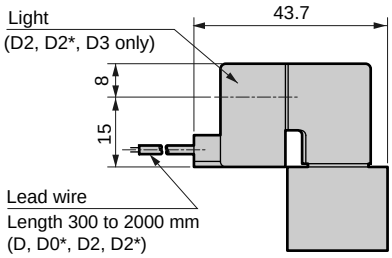
● Small terminal box: (B)



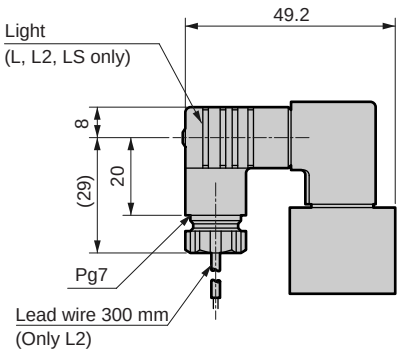
● C-connector: (C, C0*, C1, C2, C2*, C3)



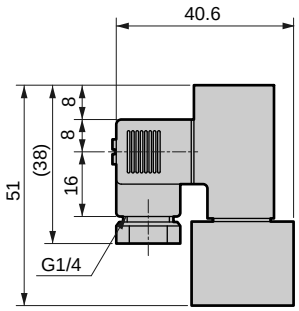
● D-connector: (D, D0*, D1, D2, D2*, D3)



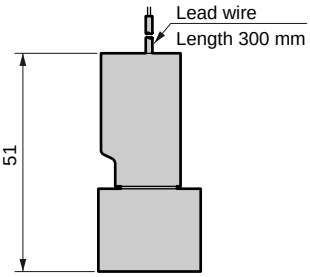
● Small terminal box with light: (L, L2)
with light and surge suppressor: (LS)



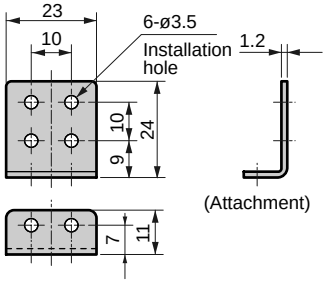
● Small terminal box
with surge suppressor: (P)



● Grommet lead wire
with surge suppressor: (Q)



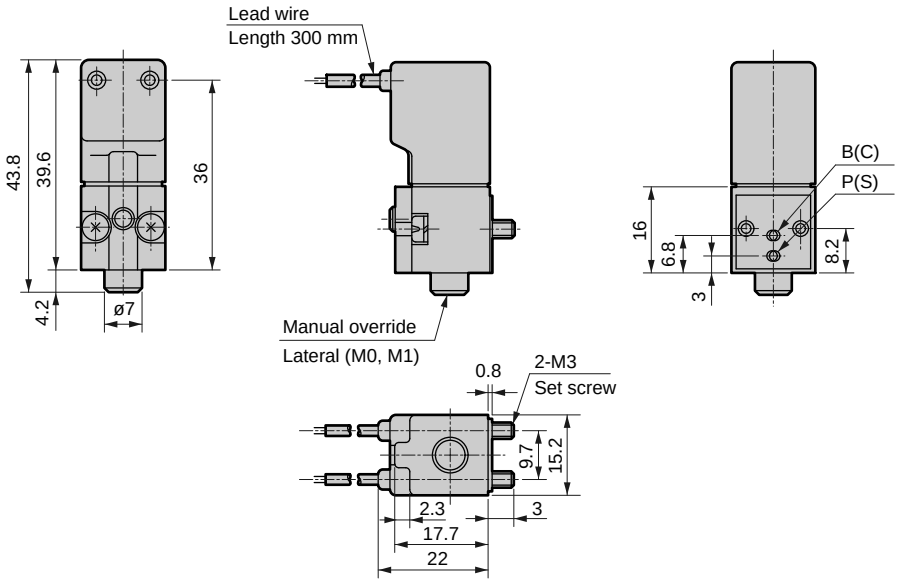
● L shaped bracket: (L)



Dimensions CAD

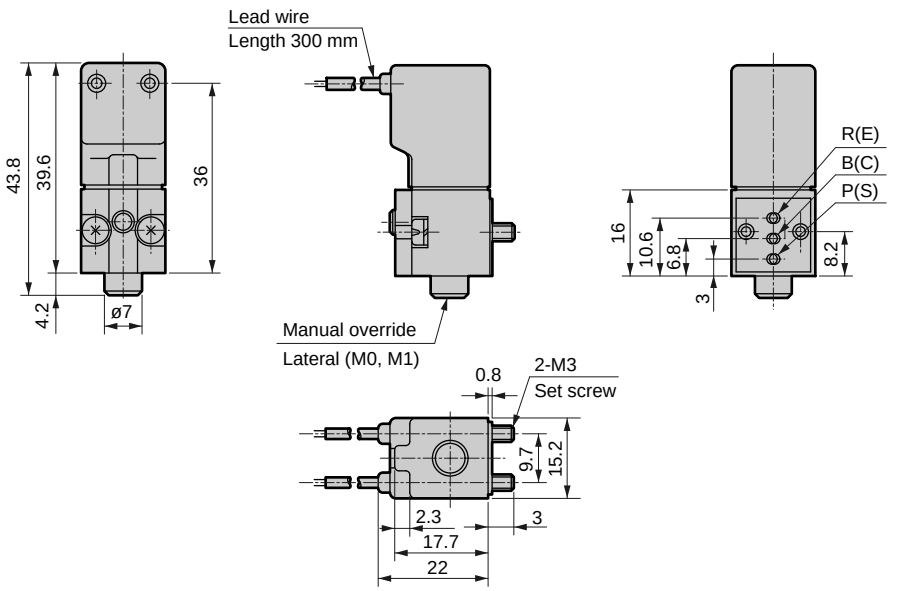
P512 $\frac{2}{6}$

● 2 port valve: Grommet lead wire



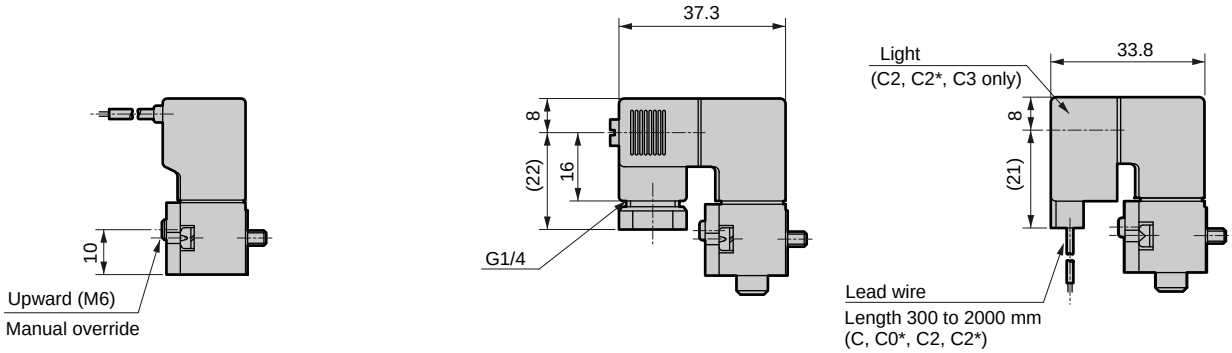
P513 $\frac{2}{6}$

● 3 port valve: Grommet lead wire

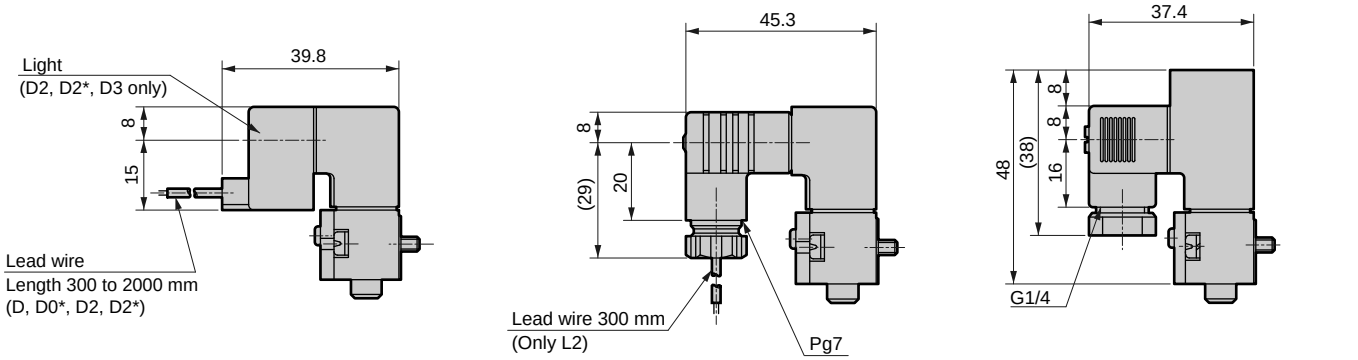


Dimensions

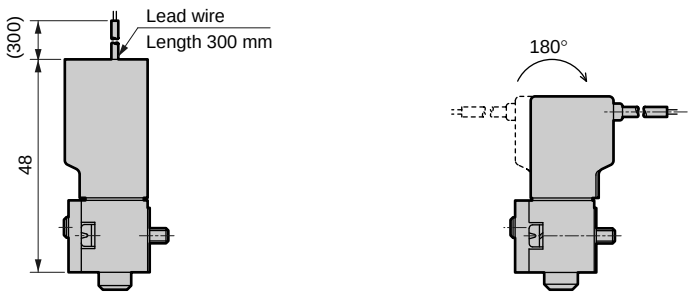
● Non-locking manual override upward: (M6) ● Small terminal box: (B) ● C-connector: (C, C0*, C1, C2, C2*, C3)



● D-connector: (D, D0*, D1, D2, D2*, D3) ● Small terminal box with light: (L, L2) with light and surge suppressor: (LS) ● Small terminal box with surge suppressor: (P)



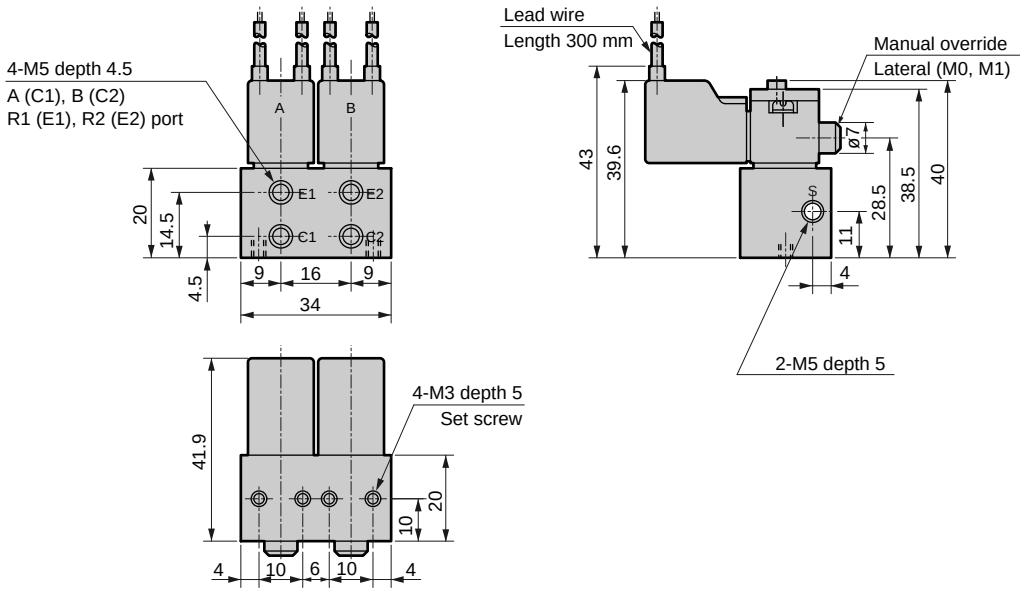
● Grommet lead wire with surge suppressor: (Q) ● Coil direction 180° rotation: (R)



Dimensions CAD

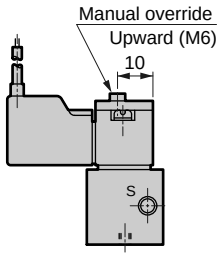
W2P513

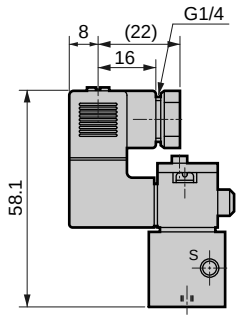
● Grommet lead wire

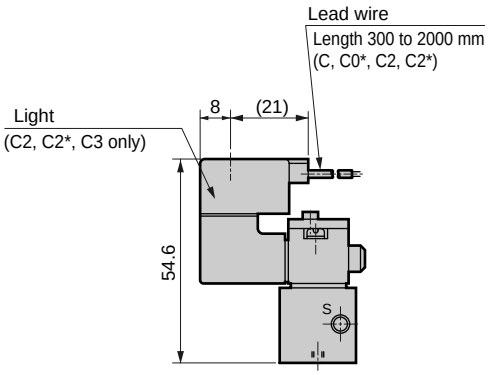


Dimensions

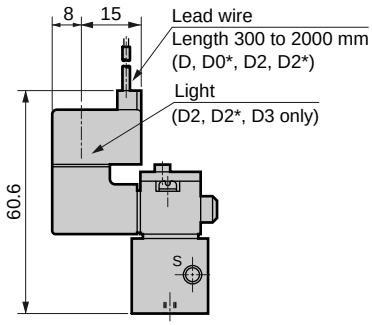
● Non-locking manual override upward: (M6) ● Small terminal box: (B) ● C-connector: (C, C0*, C1, C2, C2*, C3)

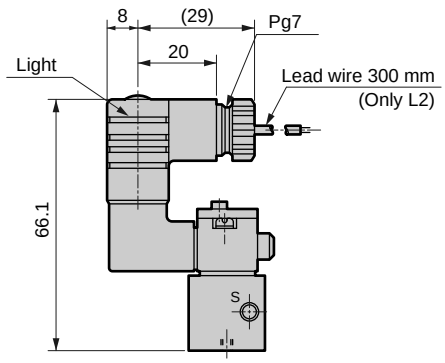


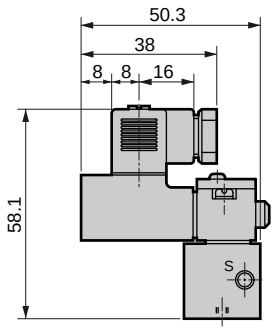




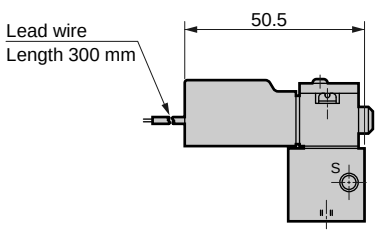
● D-connector: (D, D0*, D1, D2, D2*, D3) ● Small terminal box with light: (L, L2) with light and surge suppressor: (LS) ● Small terminal box with surge suppressor: (P)







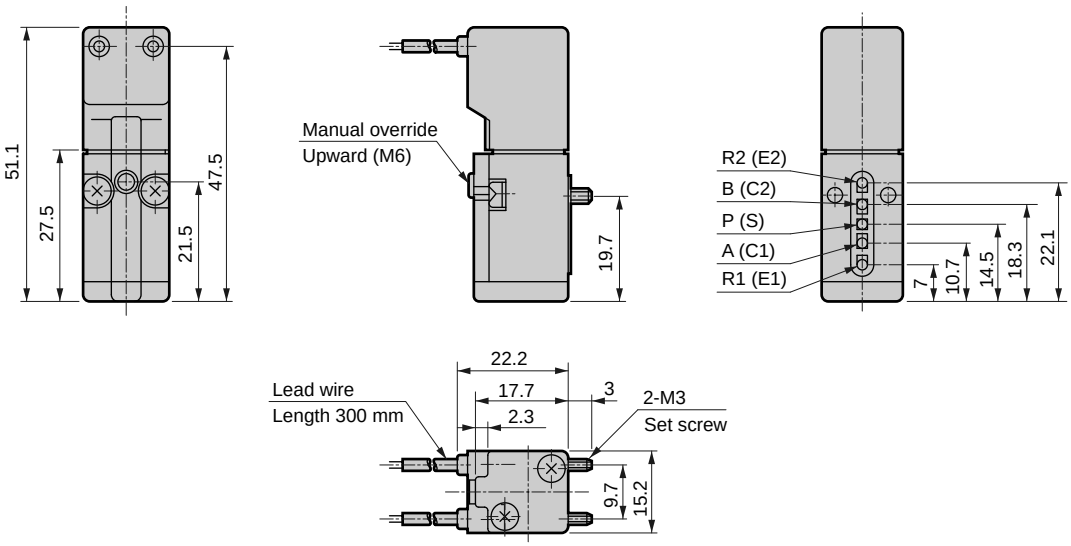
● Grommet lead wire with surge suppressor: (Q)



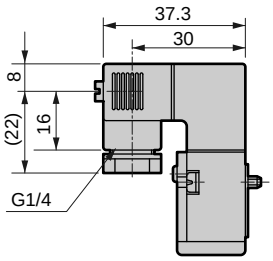
Dimensions CAD

P5142

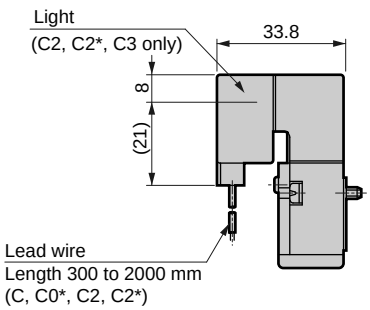
● Pilot type: Grommet lead wire



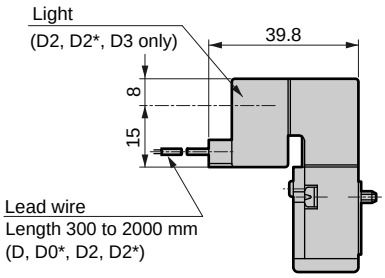
● Small terminal box: (B)



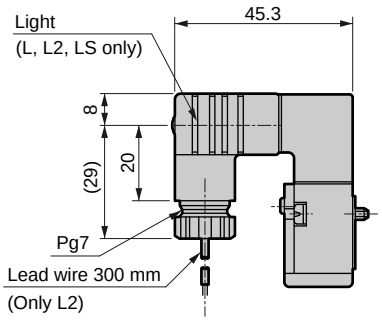
● C-connector: (C, C0*, C1, C2, C2*, C3)



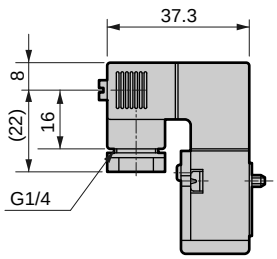
● D-connector: (D, D0*, D1, D2, D2*, D3)



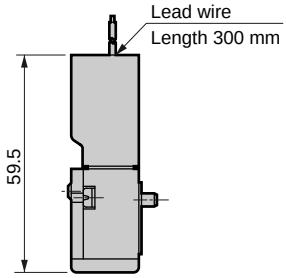
● Small terminal box with light: (L, L2) with light and surge suppressor: (LS)



● Small terminal box with surge suppressor: (P)



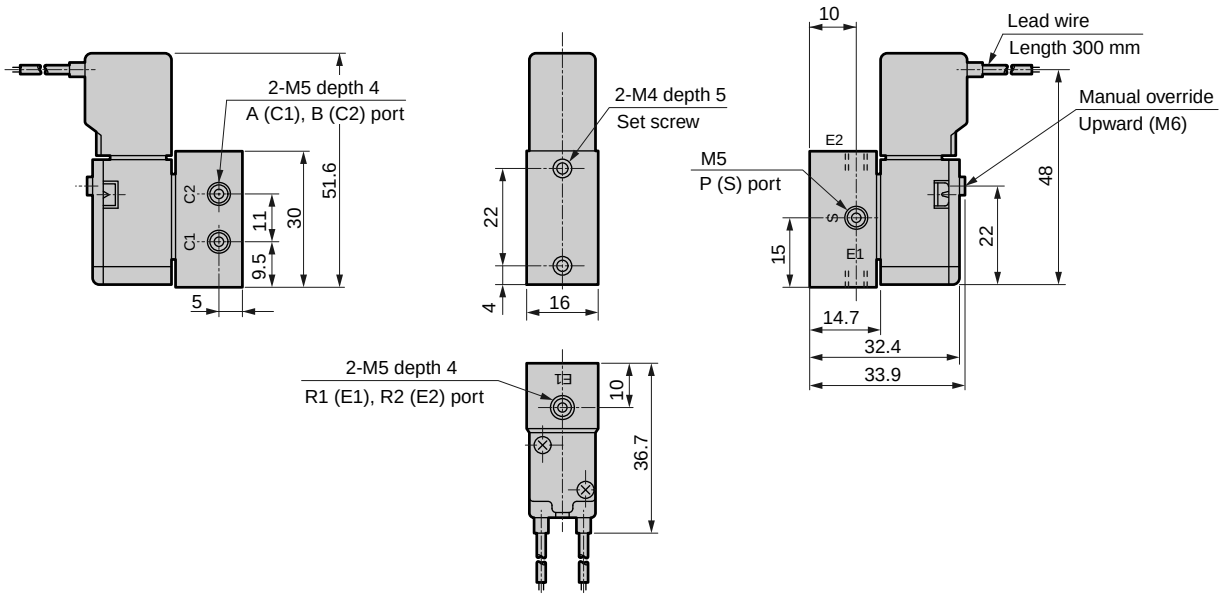
● Grommet lead wire with surge suppressor: (Q)



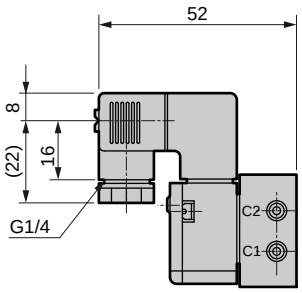
Dimensions

B5142

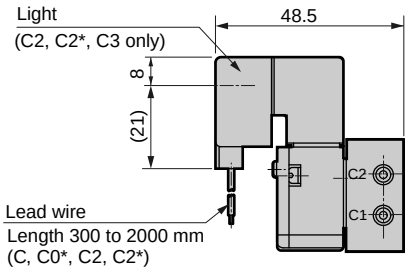
● Sub-base type: Grommet lead wire



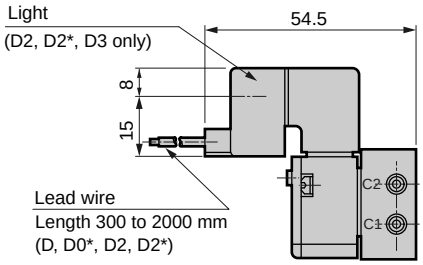
● Small terminal box: (B)



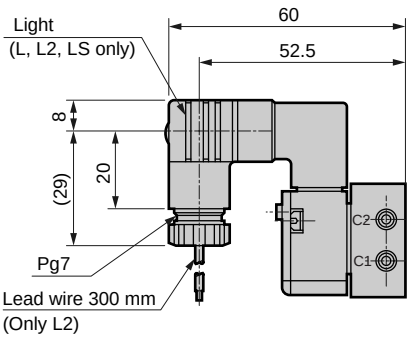
● C-connector: (C, C0*, C1, C2, C2*, C3)



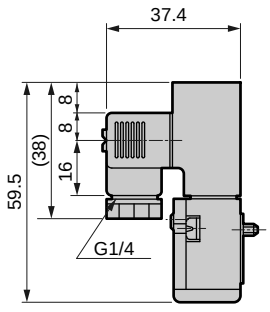
● D-connector: (D, D0*, D1, D2, D2*, D3)



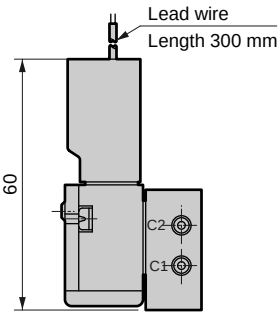
● Small terminal box with light: (L, L2)
with light and surge suppressor: (LS)



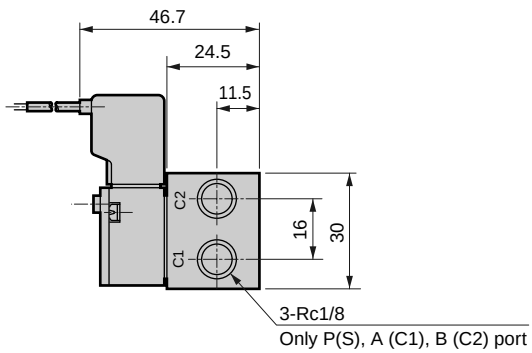
● Small terminal box with surge suppressor: (P)



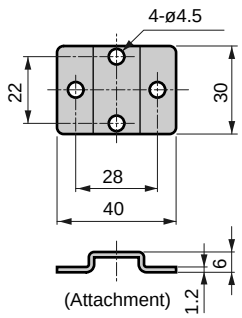
● Grommet lead wire with surge suppressor: (Q)



● Port size Rc1/8: (06)



● U shaped bracket: (U)



* Width of sub-plate is 19.

Individual wiring manifold

2, 3, 5 port pilot operated valve miniature pneumatic valve

B*P51* Series

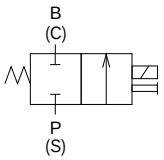
● Applicable cylinder bore size: ø6 to ø16

CE Refer to Intro 17 for details.

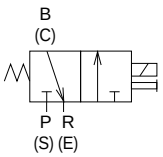
RoHS CAD

JIS symbol

● 2 port valve

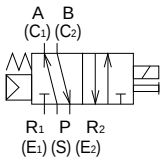


● 3 port valve



● 5 port valve

2-position single solenoid



Common specifications

Descriptions	
Manifold method	Manifold integrated
Manifold type	Common supply, common exhaust
Station number	2 to10 stations
Valve and operation type	Pilot operated poppet valve
Working fluid	Compressed air / low vacuum
Max. working pressure MPa	Refer to the following individual specifications.
Min. working pressure MPa	Refer to the following individual specifications.
Withstanding pressure MPa	Refer to the following individual specifications.
Ambient temperature °C	-10 to 50 (no freezing)
Fluid temperature °C	5 to 50
Lubrication	Not required
Protective structure	Dust proof
Vibration/impact m/s²	50 or less / 300 or less
Working environment	Containing corrosive gas is impermissible.

Electric specifications

Descriptions			
Rated voltage V	AC		100, 200 (50/60 Hz)
	DC		12, 24
Rated voltage fluctuation range			±10%
Starting current A	AC	100 V	0.056 / 0.044
		200 V	0.034 / 0.026
	DC	12 V	0.150
		24 V	0.075
Holding current A	AC	100 V	0.028 / 0.022
		200 V	0.017 / 0.013
	DC	12 V	0.150
		24 V	0.075
Power consumption W	AC	100 V	1.8 / 1.4
		200 V	2.1 / 1.6
	DC	12 V	1.8
		24 V	1.8
Heat proof class			B (molded coil)
Temperature rise °C			45

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	2 port valve		3 port valve		5 port valve
	P5122	P5126	P5132	P5136	P5142
Max. working pressure MPa	1.0	0.6	1.0	0.6	0.7
Min. working pressure MPa	0.1	0.1 Note 2	0.1	0.1 Note 2	0.15
Withstanding pressure MPa	1.5	1.5	1.5	1.5	1.05
Orifice mm	ø1.2	ø1.6	ø1.2	ø1.6	ø1.2
Response time Note 1 ms	30 or less		30 or less		60 or less

Note 1: Response time is the value when supply pressure 0.5 MPa, not lubricated and ON. The value varies depending on pressure and quality of lubricant.

Note 2: When the pressure class V (for low-pressure, low vacuum pressure) is designated, use is possible at a low pressure (0 to 0.29 MPa) and low vacuum (3.3 to 101.00 kPa (abs) {25 to 760 Torr}).

(Mix manifold)

● How to Indicate combinations

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

Symbol	Function
M2	2 port valve
M3	3 port valve
M4	5 port valve
MP	Masking plate

1	2	3	4	5
3 port valve (M3)	3 port valve (M3)	3 port valve (M3)	5 port valve (M4)	5 port valve (M4)

Example

The model number for a manifold with 5 stations, orifice: ø1.2, and 200 VAC with the layout shown in the left is as follows:

B5P5182-M6E-M5-AC200V

	M2	M3	M4	MP
-	0	3	2	0

(M3 = 1 to 3, M4 = 4, 5)

Indicate the required quantity. Indicate 0 even when not required.

Flow characteristics

Model no.	Solenoid position	C (dm³/ (s·bar))	b
P5122	2 port	0.11	0.15
P5126		0.15	0.18

Model no.	Solenoid position	P ⟶ B		B ⟶ R	
		C (dm³/ (s·bar))	b	C (dm³/ (s·bar))	b
P5132	3 port	0.11	0.15	0.15	0.34
P5136		0.15	0.18	0.15	0.29

Model no.	Solenoid position	P ⟶ A/B		A/B ⟶ R1/R2	
		C (dm³/ (s·bar))	b	C (dm³/ (s·bar))	b
P5142	5 port	0.09	0.23	0.13	0.18

Note 1: Effective sectional area S and sonic conductance C are converted as S≒5.0×C.

Copper and PTFE free

● Free of copper-based and PTFE based materials in flow path

**-Voltage- P6

How to order manifold

B	7	P51	8	2	–	M6	B		–	M5	–			–	DC24V	–	0	5	1	1
	Ⓐ		Ⓒ	Ⓑ		Ⓔ	Ⓓ			Ⓗ					Ⓚ		Indicate the quantity and display position of each valve function for the mixed manifold. Refer to page 1112.			

Ⓐ Model no.
Ⓑ Station number
Ⓒ Solenoid valve
Note 1
Ⓓ Orifice
Note 2
Ⓔ Manual override
Ⓕ Electric connection
Note: Refer to page1093 for a circuit diagram with surge suppressor and light.
Ⓖ Pressure class
Ⓗ Port size
Ⓘ Other options
Ⓙ Bracket
Ⓚ Voltage

Symbol	Descriptions	Ⓐ Model no. B*P 512	B*P 513	B*P 514
Ⓑ Station number				
2	2 stations	●	●	●
to	to			
10	10 stations			
Ⓒ Solenoid valve				
2	2 port valve	●		
3	3 port valve		●	
4	5 port valve			●
8	Mix manifold	●	●	●
Ⓓ Orifice				
2	ø1.2	●	●	●
6	ø1.6	●	●	
Ⓔ Manual override				
M0	Lateral non-locking type (standard) Note 3	●	●	
M1	Lateral locking type (option) Note 3	●	●	
M4	Non-locking, dust proof cover	●	●	
M6	Upward direction non-locking type (standard)	●	●	●
N	No manual override (option)	●	●	●
Ⓕ Electric connection				
Refer to the next page for electric connections.				
Ⓖ Pressure class				
Blank	Standard	●	●	●
V	Low pressure, low vacuum Note 5	●	●	
Ⓗ Port size				
M5	M5 (standard)	●	●	●
06	Rc1/8 (option)	●	●	●
Ⓘ Other options				
Blank	None	●	●	●
S	Surge suppressor attached Note 6	●	●	●
X	Continuous energizing (custom order)			●
Ⓙ Bracket				
Blank	None	●	●	●
L	L bracket attached	●	●	●
Ⓚ Voltage				
AC100V	Standard 100 VAC 50/60 Hz	●	●	●
AC200V	Standard 200 VAC 50/60 Hz	●	●	●
DC24V	Standard 24 VDC	●	●	●
DC12V	Standard 12 VDC	●	●	●
AC110V	Option 110 VAC 50/60 Hz	●	●	●
AC220V	Option 220 VAC 50/60 Hz	●	●	●

Note on model no. selection

Note 1: Consult with CKD when using with common supply and individual exhaust. The orifice combination is available as custom order.
Note 2: When using only the 5 port valve, the orifice selected with the 2 port valve is used. When using mixed with the 2, 3 port valve, the orifice selected with the 3 port valve is used.
Note 3: M0 (lateral nonlocking type) and M1 (lateral locking type) cannot be used with the pressure class V (for low pressure, low vacuum pressure).
Note 5: When the pressure class V (for low-pressure, low vacuum pressure) is designated, the orifice is "6". Draw the vacuum from the P(S) port.
Note 6: The suppression connector type is provided for 24 VDC or less.

<Example of model number>

B5P5142-M6E-M5-AC200V
5 port valve manifold
Common supply / common exhaust

Ⓑ Station number : 5 stations
Ⓒ Solenoid valve : 5 port valve
Ⓓ Orifice : ø1.2
Ⓔ Manual override : Uppward non-locking type
Ⓕ Electric connection : Grommet lead wire
Ⓗ Port size : M5
Ⓘ Other options : None
Ⓙ Bracket : None
Ⓚ Voltage : 200 VAC

(Electric connection list)

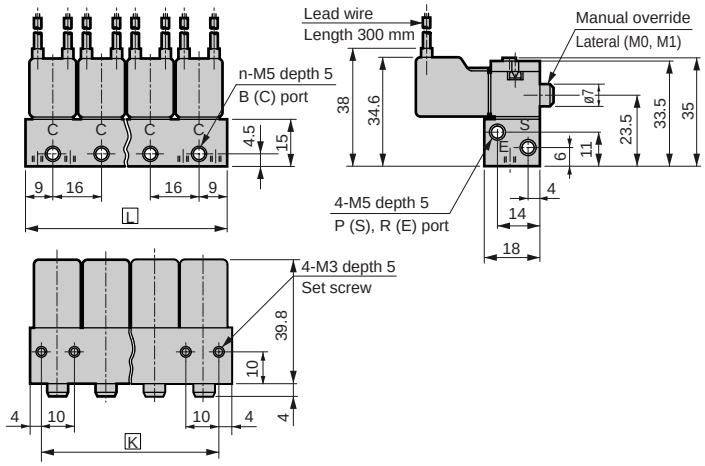
Symbol		Descriptions		A Model no. B*P 512	B*P 513	B*P 514
F Electric connection						
E	Standard	Grommet lead wire (300 mm)		●	●	●
B	Standard	Small terminal box		●	●	●
Q	Option	Grommet lead wire (300 mm)	With surge suppressor	●	●	
C-connector (lead wire lateral)						
C	Standard	Lead wire length (300 mm)		●	●	●
C00	Option	Lead wire length (500 mm)		●	●	●
C01	Option	Lead wire length (1000 mm)		●	●	●
C02	Option	Lead wire length (2000 mm)		●	●	●
C03	Option	Lead wire length (3000 mm)		●	●	●
C1	Option	No lead wire		●	●	●
C2	Option	Lead wire length (300 mm)	with surge suppressor, light	●	●	●
C20	Option	Lead wire length (500 mm)	with surge suppressor, light	●	●	●
C21	Option	Lead wire length (1000 mm)	with surge suppressor, light	●	●	●
C22	Option	Lead wire length (2000 mm)	with surge suppressor, light	●	●	●
C23	Option	Lead wire length (3000 mm)	with surge suppressor, light	●	●	●
C3	Option	No lead wire	with surge suppressor, light	●	●	●
D-connector (lead wire upward)						
D	Option	Lead wire length (300 mm)		●	●	●
D00	Option	Lead wire length (500 mm)		●	●	●
D01	Option	Lead wire length (1000 mm)		●	●	●
D02	Option	Lead wire length (2000 mm)		●	●	●
D03	Option	Lead wire length (3000 mm)		●	●	●
D1	Option	No lead wire		●	●	●
D2	Option	Lead wire length (300 mm)	with surge suppressor, light	●	●	●
D20	Option	Lead wire length (500 mm)	with surge suppressor, light	●	●	●
D21	Option	Lead wire length (1000 mm)	with surge suppressor, light	●	●	●
D22	Option	Lead wire length (2000 mm)	with surge suppressor, light	●	●	●
D23	Option	Lead wire length (3000 mm)	with surge suppressor, light	●	●	●
D3	Option	No lead wire	with surge suppressor, light	●	●	●
Small terminal box						
L	Option	No lead wire	With light	●	●	●
L2	Option	Lead wire length (300 mm)	With light	●	●	●
LS	Option	No lead wire	with surge suppressor, light	●	●	●
P	Option	No lead wire	With surge suppressor	●	●	●

Note 4: If DC voltage is selected for L and L2, the surge suppressor is built in.

Dimensions CAD

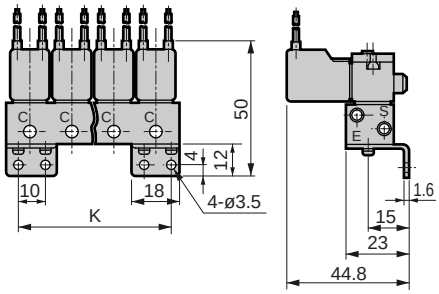
B*P51$^{2}_{3}$

● Grommet lead wire



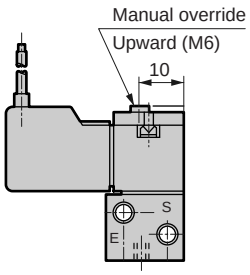
Station number	2	3	4	5	6	7	8	9	10
K	26	42	58	74	90	106	122	138	154
L	34	50	66	82	98	114	130	146	162

● L shaped bracket: (L)

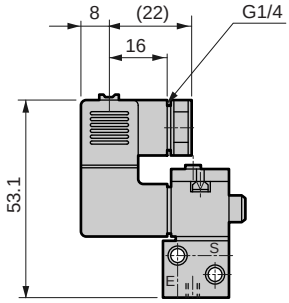


* The L bracket is enclosed.
When using two stations, the bracket is mounted only on the left or right.

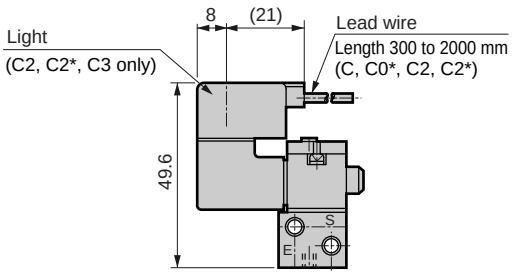
● Non-locking manual override upward



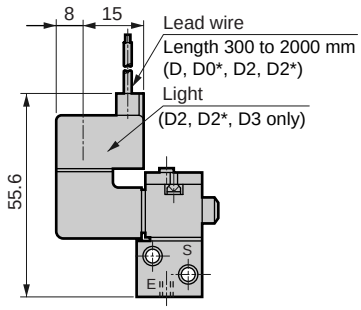
● Small terminal box: (B)



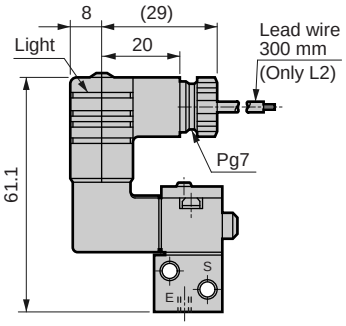
● C-connector: (C, C0*, C1, C2, C2*, C3)



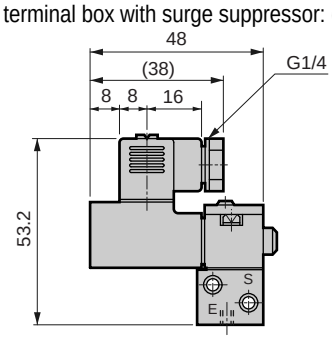
● D-connector: (D, D0*, D1, D2, D2*, D3)



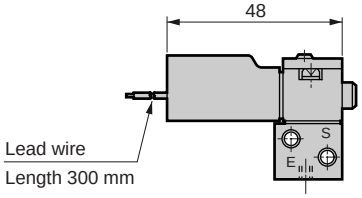
● Small terminal box with light: (L, L2)
with light and surge suppressor: (LS)



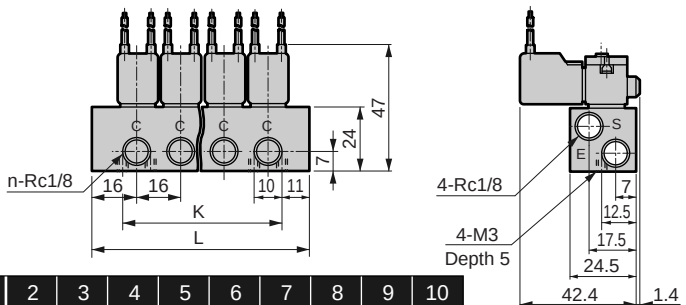
● Small terminal box with surge suppressor: (P)



● Grommet lead wire with surge suppressor: (Q)



● Port size Rc1/8: (06)



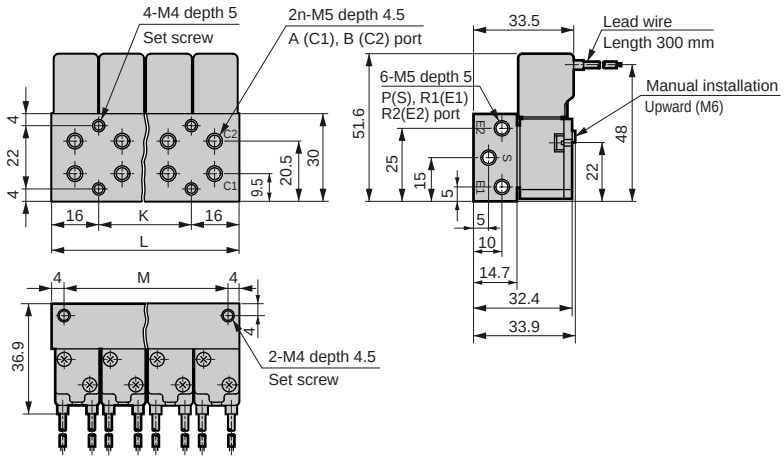
Station number	2	3	4	5	6	7	8	9	10
K	26	42	58	74	90	106	122	138	154
L	48	64	80	96	112	128	144	160	176

Dimensions CAD

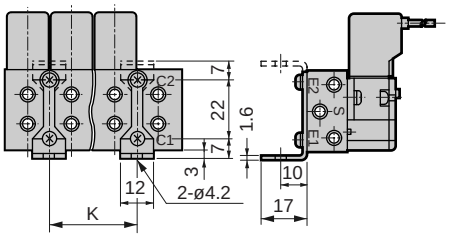
B*P514

● Grommet lead wire

* B*P518 (mixed manifold) has 2 port valve and 3 port valve mounted on the B*P514 manifold base.



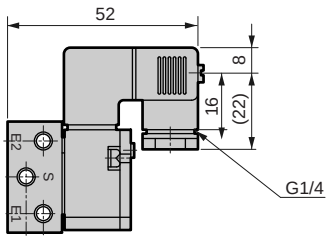
● L shaped bracket: (L)



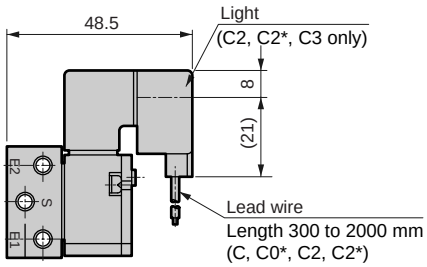
* The L bracket is enclosed.

Station number	2	3	4	5	6	7	8	9	10
K	0	16	32	48	64	80	96	112	128
L	32	48	64	80	96	112	128	144	160
M	24	40	56	72	88	104	120	136	152

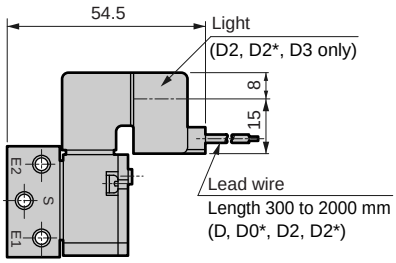
● Small terminal box: (B)



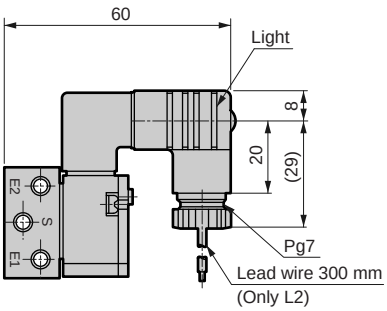
● C-connector: (C, C0*, C1, C2, C2*, C3)



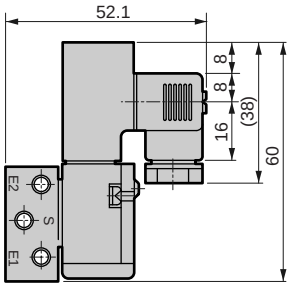
● D-connector: (D, D0*, D1, D2, D2*, D3)



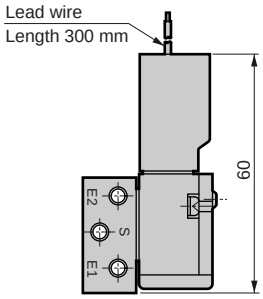
● Small terminal box with light: (L, L2)
with light and surge suppressor: (LS)



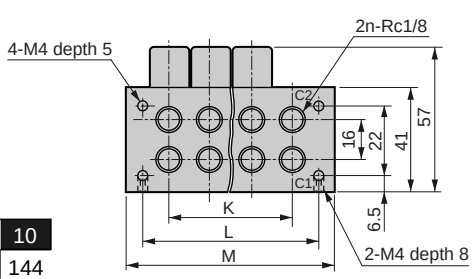
● Small terminal box with surge suppressor: (P)

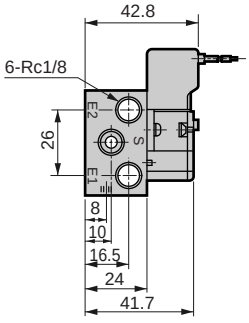


● Grommet lead wire with surge suppressor: (Q)



● Port size Rc1/8: (06)





Station number	2	3	4	5	6	7	8	9	10
K	16	32	48	68	80	96	112	128	144
L	36	52	68	84	100	116	132	148	164
M	48	64	80	96	112	128	144	160	176

Block manifold

2, 3, 5 port pilot operated valve miniature pneumatic valve

N*P51* Series

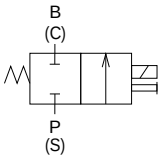
● Applicable cylinder bore size: ø6 to ø16

CE Refer to Intro 17 for details.

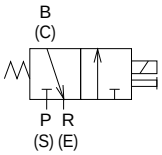
RoHS CAD

JIS symbol

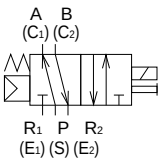
● 2 port valve



● 3 port valve



● 5 port valve
2-position single solenoid



Common specifications

Descriptions	
Manifold method	Manifold block type (DIN rail mount)
Manifold type	Common supply / common exhaust
Station number	2 to 25 stations
Valve and operation type	Pilot operated poppet valve
Working fluid	Compressed air / low vacuum
Max. working pressure MPa	Refer to the following individual specifications.
Min. working pressure MPa	Refer to the following individual specifications.
Withstanding pressure MPa	1.5
Ambient temperature °C	-10 to 40 (no freezing)
Fluid temperature °C	5 to 40
Lubrication	Not required
Protective structure	Dust proof
Vibration/impact m/s^2	50 or less / 300 or less
Working environment	Containing corrosive gas is impermissible.

Electric specifications

Descriptions			
Rated voltage V	AC		100, 200 (50/60 Hz)
	DC		12, 24
Rated voltage fluctuation range			±10%
Starting current A	AC	100 V	0.056 / 0.044
		200 V	0.034 / 0.026
	DC	12 V	0.150
		24 V	0.075
Holding current A	AC	100 V	0.028 / 0.022
		200 V	0.017 / 0.013
	DC	12 V	0.150
		24 V	0.075
Power consumption W	AC	100 V	1.8 / 1.4
		200 V	2.1 / 1.6
	DC	12 V	1.8
		24 V	1.8
Heat proof class			B (molded coil)
Temperature rise °C			45

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	2 port valve		3 port valve		5 port valve
	P5122	P5126	P5132	P5136	P5142
Max. working pressure MPa	1.0	0.6	1.0	0.6	0.7
Min. working pressure MPa	0.1	0.1 Note 2	0.1	0.1 Note 2	0.15
Orifice mm	ø1.2	ø1.6	ø1.2	ø1.6	ø1.2
Response time Note 1 ms	30 or less		30 or less		60 or less

Note 1: Response time is the value when supply pressure 0.5 MPa, not lubricated and ON. The value varies depending on pressure and quality of lubricant.
Note 2: When the pressure class V (for low-pressure, low vacuum pressure) is designated, use is possible at a low pressure (0 to 0.29 MPa) and low vacuum (3.3 to 101.00 kPa (abs) {25 to 760 Torr}).

Flow characteristics

Model no.	Solenoid position	C (dm³/ (s·bar))	b
P5122	2 port	0.11	0.15
P5126		0.15	0.18

Model no.	Solenoid position	P ⟶ B		B ⟶ R	
		C (dm³/ (s·bar))	b	C (dm³/ (s·bar))	b
P5132	3 port	0.11	0.15	0.15	0.34
P5136		0.15	0.18	0.15	0.29

Model no.	Solenoid position	P ⟶ A/B		A/B ⟶ R1/R2	
		C (dm³/ (s·bar))	b	C (dm³/ (s·bar))	b
P5142	5 port	0.09	0.23	0.13	0.18

Note 1: Effective sectional area S and sonic conductance C are converted as S≒5.0×C.

Copper and PTFE free

● Free of copper-based and PTFE based materials in flow path

**-Voltage- P6

How to order block manifold

Note: Complete manifold specification sheet (Page 1128).

Ⓐ Model no.

Ⓑ Station number

Ⓒ Solenoid valve
Note 2

Ⓓ Orifice
Note 3

Ⓔ Manual override

Ⓕ Electric connection
Note Refer to page 1093 for the circuit diagram with a surge suppressor and light.

Ⓖ Pressure class

Ⓗ Coil direction

Ⓘ Other options

Ⓙ Voltage

Symbol	Descriptions		Ⓐ Model no. 2 port N*P 512	3 port N*P 513	5 port N*P 514
Ⓑ Station number					
2	2 stations		●	●	●
to	to				
25	25 stations	Note 1			
Ⓒ Solenoid valve					
2	2 port valve		●		
3	3 port valve			●	
4	5 port valve				●
8	Mix manifold		●	●	●
Ⓓ Orifice					
2	ø1.2		●	●	●
6	ø1.6		●	●	
Ⓔ Manual override					
M0	Lateral non-locking type (standard)	Note 4	●	●	
M1	Lateral locking type (option)	Note 4	●	●	
M4	Non-locking, dust proof cover		●	●	
M6	Upward direction non-locking type (standard)		●	●	●
N	No manual override (option)		●	●	●
Ⓕ Electric connection					
Refer to the next page for electric connections.					
Ⓖ Pressure class					
Blank	Standard		●	●	●
V	Low pressure, low vacuum	Note 6	●	●	
Ⓗ Coil direction					
Blank	Standard direction		●	●	●
R	180° rotational direction	Note 7	●	●	●
Ⓘ Other options					
Blank	None		●	●	●
S	Surge suppressor attached		●	●	●
X	Continuous energizing (custom order)				●
Ⓙ Voltage					
AC100V	Standard	100 VAC 50/60 Hz	●	●	●
AC200V	Standard	200 VAC 50/60 Hz	●	●	●
DC24V	Standard	24 VDC	●	●	●
DC12V	Standard	12 VDC	●	●	●
AC110V	Option	110 VAC 50/60 Hz	●	●	●
AC220V	Option	220 VAC 50/60 Hz	●	●	●

Note on model no. selection

Note 1: Maximum station number is 25.

Note 2: When using only the 5 port valve, the orifice selected with the 2 port valve is used. When using mixed with the 2, 3 port valve, the orifice selected with the 3 port valve is used.

Note 3: The 2, 3 port valve orifice combination is available as custom order.

Note 4: M0 (lateral nonlocking type) and M1 (lateral locking type) cannot be used with the pressure class V (for low pressure, low vacuum pressure).

Note 6: When the pressure class V (for low pressure, low vacuum pressure) is designated, the orifice is "6". Draw the vacuum from the P(S) port.
There is no pressure class V (for low-pressure, low vacuum pressure) for the 5 port valve.

Note 7: If the coil direction R (180° rotation direction) is designated, the wire connection is compatible only with E as a standard. Consult with CKD for other wire connections.

<Example of model number>

N7P5132-M0B-S-AC100V

Miniature pneumatic valve block manifold

Ⓑ Station number : 7 stations
Ⓒ Solenoid valve : 3 port valve
Ⓓ Orifice : ø1.2
Ⓔ Manual override : Lateral non-locking type
Ⓕ Electric connection : Small terminal box
Ⓖ Pressure : Standard
Ⓗ Coil direction : Standard direction
Ⓘ Other options : Surge suppressor attached
Ⓙ Voltage : 100 VAC

(Electric connection list)

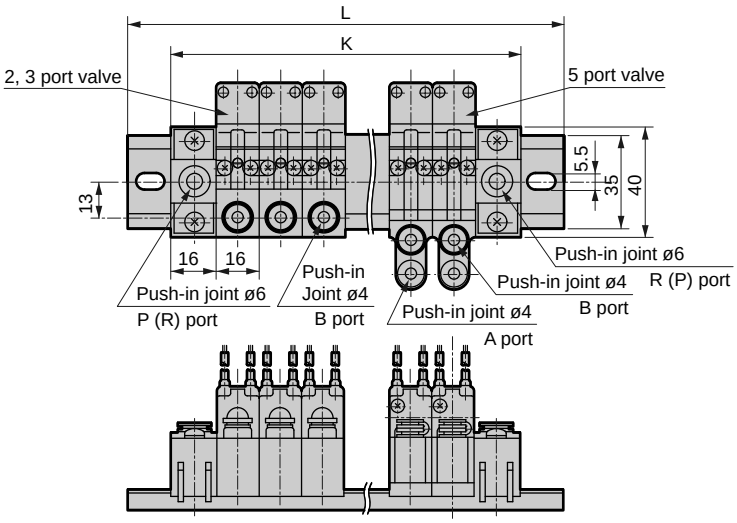
Symbol		Descriptions		Ⓐ Model no. 2 port N*P 512	3 port N*P 513	5 port N*P 514
Ⓕ Electric connection						
E	Standard	Grommet lead wire (300 mm)		●	●	●
B		Small terminal box		●	●	●
Q	Option	Grommet lead wire (300 mm)	With surge suppressor	●	●	●
C-connector (lead wire lateral)						
C	Standard	Lead wire length (300 mm)		●	●	●
C00	Option	Lead wire length (500 mm)		●	●	●
C01		Lead wire length (1000 mm)		●	●	●
C02		Lead wire length (2000 mm)		●	●	●
C03		Lead wire length (3000 mm)		●	●	●
C1		No lead wire		●	●	●
C2		Lead wire length (300 mm)	with surge suppressor, light	●	●	●
C20		Lead wire length (500 mm)	with surge suppressor, light	●	●	●
C21		Lead wire length (1000 mm)	with surge suppressor, light	●	●	●
C22		Lead wire length (2000 mm)	with surge suppressor, light	●	●	●
C23		Lead wire length (3000 mm)	with surge suppressor, light	●	●	●
C3		No lead wire	with surge suppressor, light	●	●	●
D-connector (lead wire upward)						
D	Option	Lead wire length (300 mm)		●	●	●
D00		Lead wire length (500 mm)		●	●	●
D01		Lead wire length (1000 mm)		●	●	●
D02		Lead wire length (2000 mm)		●	●	●
D03		Lead wire length (3000 mm)		●	●	●
D1		No lead wire		●	●	●
D2		Lead wire length (300 mm)	with surge suppressor, light	●	●	●
D20		Lead wire length (500 mm)	with surge suppressor, light	●	●	●
D21		Lead wire length (1000 mm)	with surge suppressor, light	●	●	●
D22		Lead wire length (2000 mm)	with surge suppressor, light	●	●	●
D23		Lead wire length (3000 mm)	with surge suppressor, light	●	●	●
D3		No lead wire	with surge suppressor, light	●	●	●
Small terminal box						
L	Option	No lead wire	With light	●	●	●
L2		Lead wire length (300 mm)	With light	●	●	●
LS		No lead wire	with surge suppressor, light	●	●	●
P		No lead wire	With surge suppressor	●	●	●

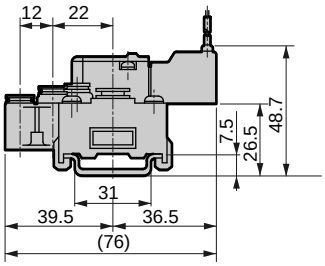
Note 5: If DC voltage is selected for L and L2, the surge suppressor is built in.

Dimensions CAD

N*P51

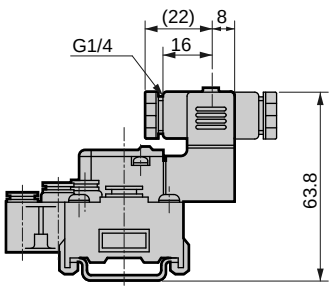
● Push-in joint upper porting: Grommet lead wire



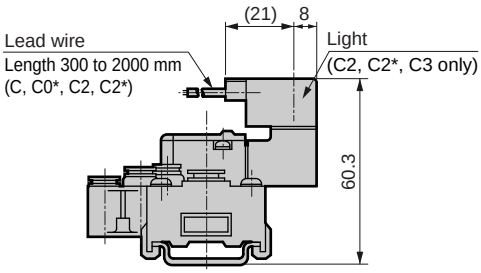


Station number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
K	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
L	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432	448	464

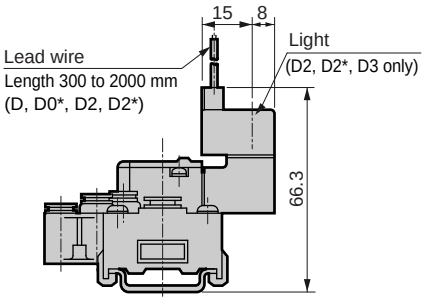
● Small terminal box: (B)



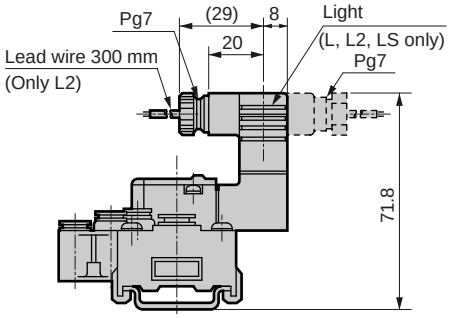
● C-connector: (C, C0*, C1, C2, C2*, C3)



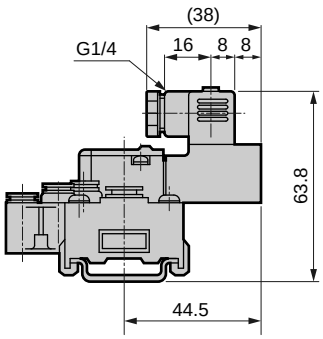
● D-connector: (D, D0*, D1, D2, D2*, D3)



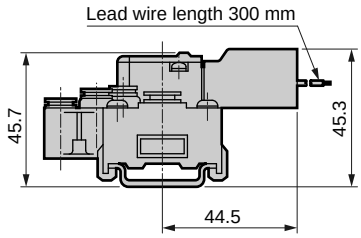
● Small terminal box with light: (L, L2)
with light and surge suppressor: (LS)



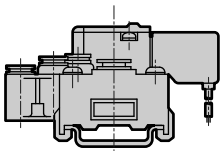
● Small terminal box
with surge suppressor: (P)



● Grommet lead wire
with surge suppressor: (Q)



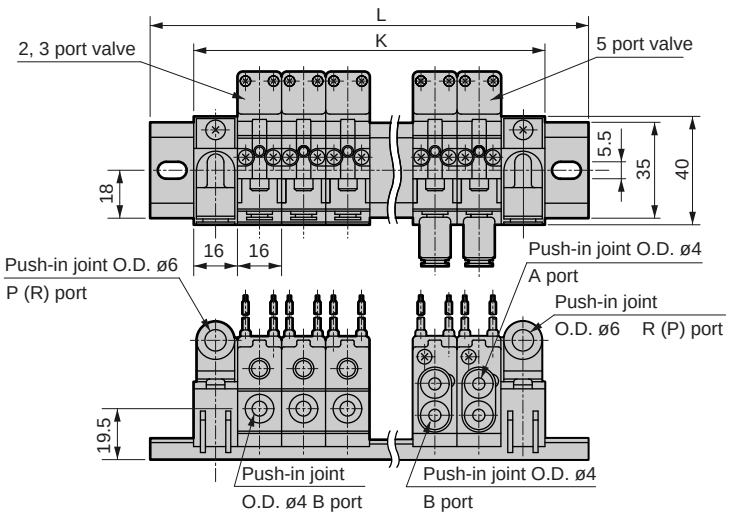
● Coil 180° rotation: (R)

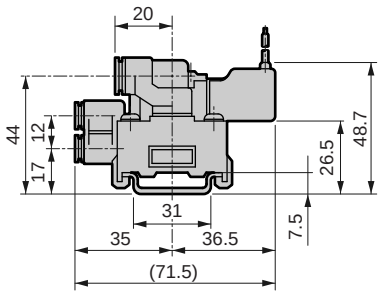


Dimensions

N*P51

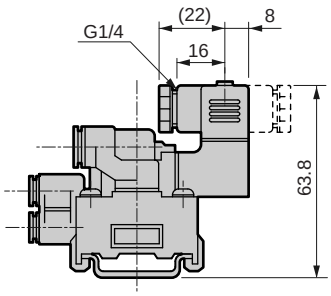
● Push-in joint side porting: Grommet lead wire



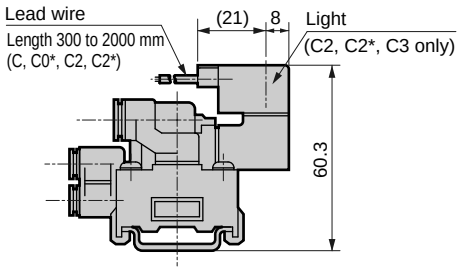


Station number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
K	48	64	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
L	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432	448	464

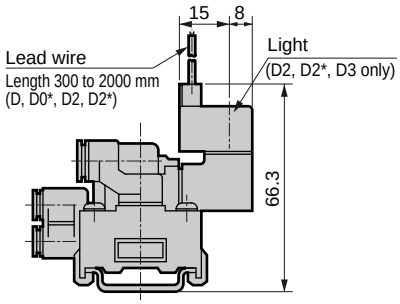
● Small terminal box: (B)



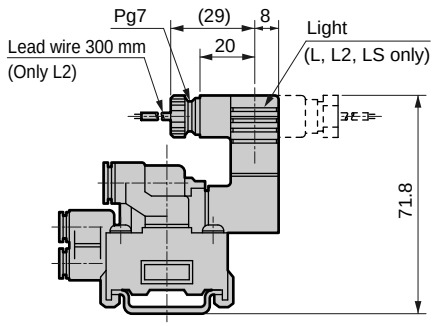
● C-connector: (C, C0*, C1, C2, C2*, C3)



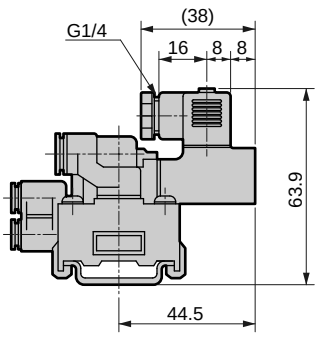
● D-connector: (D, D0*, D1, D2, D2*, D3)



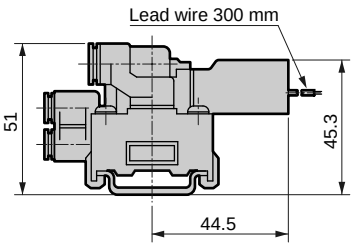
● Small terminal box with light: (L, L2)
with light and surge suppressor: (LS)



● Small terminal box
with surge suppressor: (P)



● Grommet lead wire
with surge suppressor: (Q)



● Coil 180° rotation: (R)