



Series SY3000/5000/7000/9000 Body Ported Valve Single Unit

How to Order

SY 5 1 20 — **5 L** — **01**

Series

3	SY3000
5	SY5000
7	SY7000
9	SY9000

Type of actuation

1	2 position single (A)(B) (EA)(P)(EB)
2	2 position double (A)(B) (EA)(P)(EB)
3	3 position closed center (A)(B) (EA)(P)(EB)
4	3 position exhaust center (A)(B) (EA)(P)(EB)
5	3 position pressure center (A)(B) (EA)(P)(EB)

Coil specifications

Nil	Standard
T	With power saving circuit (24, 12 VDC only)

* Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Rated voltage

DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

AC (50/60Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

* DC specifications of type "D" and "DO" is only available with 12 and 24 VDC.
* For type "W□", DC voltage is only available.

Electrical entry

24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC				24, 12 VDC/ 100, 110, 200, 220 VAC
Grommet	L plug connector	M plug connector	MN: Without lead wire	DIN terminal
G: Lead wire length 300 mm	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	MN: Without lead wire	
H: Lead wire length 600 mm	LN: Without lead wire	LO: Without connector	MO: Without connector	DO: Without connector

24, 12, 6, 5, 3 VDC

M8 connector

WO: Without connector cable

* "LN", "MN" type: with 2 sockets.
* For DIN terminal of SY3000 series, refer to page 1-4-207.
* DIN terminal type "Y" conforming to DIN 43650C is available, too. For details, refer to page 1-4-201.
* For connector cable of M8 connector, refer to page 1-4-209.

A, B port size Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
01	1/8	SY5000
02	1/4	SY7000
02	1/4	SY9000
03	3/8	

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	
C8	One-touch fitting for ø8	SY9000
C10	One-touch fitting for ø10	
C12	One-touch fitting for ø12	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø 5/32"	SY3000
N7	One-touch fitting for ø 1/4"	
N3	One-touch fitting for ø 5/32"	SY5000
N7	One-touch fitting for ø 1/4"	
N9	One-touch fitting for ø 5/16"	SY7000
N9	One-touch fitting for ø 5/16"	
N11	One-touch fitting for ø 3/8"	SY9000
N9	One-touch fitting for ø 5/16"	
N11	One-touch fitting for ø 3/8"	

Bracket

Nil: Without bracket
F1: With foot bracket (2 position single only)
F2: With side bracket

* SY9000 has no bracket.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Manual override

Nil: Non-locking push type
D: Push-turn locking slotted type
E: Push-turn locking lever type

Light/Surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
* For "R" and "U", DC voltage is only available.
* Power saving circuit is only available in the "Z" type.

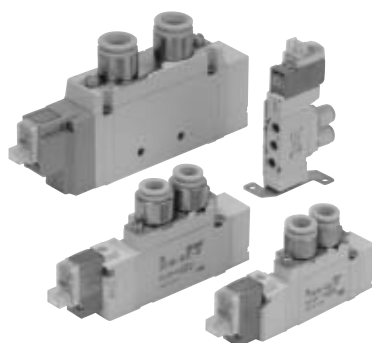
Electrical entry for D

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor

* "DOZ" is not available.
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to catalog on page 1-4-61.)

Specifications



Series		SY3000	SY5000	SY7000	SY9000
Fluid		Air			
Internal pilot	2 position single	0.15 to 0.7			
Operating pressure range (MPa)	2 position double	0.1 to 0.7			
	3 position	0.2 to 0.7			
Ambient and fluid temperature (°C)		-10 to 50 (No freezing. Refer to page 1-7-5.)			
Max. operating frequency (Hz)	2 position single, double	10	5	5	5
	3 position	3	3	3	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type			
Pilot exhaust method		Common exhaust type for main and pilot valve			
Lubrication		Not required			
Mounting orientation		Unrestricted			
Impact/Vibration resistance (m/s ²) ^{Note)}		150/30			
Enclosure		Dustproof (* DIN terminal, M8 connector conforms to IP65)			



* Based on IEC529)

Note) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

SV

SZ

SY

SYJ

SX



Made to Order Specifications

(For details, refer to pages 1-4-188 to 202.)

Solenoid Specifications

Electrical entry		Grommet (G), (H) L plug connector (L) M plug connector (M)	DIN terminal (D) M8 connector (W)
Coil rated voltage (V)	DC	24, 12, 6, 5, 3	
	AC 50/60 Hz	100, 110, 200, 220*	
Allowable voltage fluctuation (%)		±10% of rated voltage	
Power consumption (W)	DC	Standard	0.35 (With indicator light: 0.4 DIN terminal with indicator light: 0.45)
		With power saving circuit	0.1 (With indicator light only)
Apparent power (VA)	AC	100 V	1.4 (With indicator light: 1.5)
		110 V	1.6 (With indicator light: 1.7)
		[115 V]	[1.7 (With indicator light: 1.8)]
		200 V	2.3 (With indicator light: 2.4)
		220 V [230 V]	2.5 (With indicator light: 2.6) [2.7 (With indicator light: 2.8)]
Surge voltage suppressor		Diode (DIN terminal is ZNR. G, L or M (Non-polar) is zener diode.)	
Indicator light		LED	



* In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.

* For 115 VAC and 230 VAC, the allowable voltage is -15% to +5% of rated voltage.

Response Time



Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage, without surge suppressor)

SY3000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	12 or less	15 or less	12 or less
2 position double	10 or less	13 or less	10 or less
3 position	15 or less	20 or less	16 or less

SY5000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	19 or less	26 or less	19 or less
2 position double	18 or less	22 or less	18 or less
3 position	32 or less	38 or less	32 or less

SY7000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	31 or less	38 or less	33 or less
2 position double	27 or less	30 or less	28 or less
3 position	50 or less	56 or less	50 or less

SY9000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		Type S, Z	Type R, U
2 position single	35 or less	41 or less	35 or less
2 position double	35 or less	41 or less	35 or less
3 position	62 or less	64 or less	62 or less

Series SY3000/5000/7000/9000

Flow Characteristics/Weight

Series SY3000

Valve model	Type of actuation		Port size		Flow characteristics						Weight (g)		
			1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grom- met	L, M plug connector	W M8 connector
			C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv					
SY3□20 -□-M5	2 position	Single	M5 x 0.8										
		Double											
	3 position	Closed center											
		Exhaust center											
SY3□20 -□-C4	2 position	Single	M5 x 0.8	C4 (One-touch fitting for ø4)									
		Double											
	3 position	Closed center											
		Exhaust center											
SY3□20 -□-C6	2 position	Single	M5 x 0.8	C6 (One-touch fitting for ø6)									
		Double											
	3 position	Closed center											
		Exhaust center											

Note [] : Denotes normal position.

Series SY7000

Valve model	Type of actuation		Port size		Flow characteristics						Weight (g)			
			1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grom- met	L, M plug connector	DIN terminal	W M8 connector
			C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv						
SY7□20 -□-02	2 position	Single	1/4											
		Double												
	3 position	Closed center												
		Exhaust center												
SY7□20 -□-C8	2 position	Single	1/4	C8 (One-touch fitting for ø8)										
		Double												
	3 position	Closed center												
		Exhaust center												
SY7□20 -□-C10	2 position	Single	1/4	C10 (One-touch fitting for ø10)										
		Double												
	3 position	Closed center												
		Exhaust center												

Note [] : Denotes normal position.

Series SY5000

Valve model	Type of actuation		Port size		Flow characteristics						Weight (g)			
			1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grom- met	L, M plug connector	DIN terminal	W M8 connector
			C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv						
SY5□20 -□-01	2 position	Single	1/8											
		Double												
	3 position	Closed center												
		Exhaust center												
SY5□20 -□-C4	2 position	Single	1/8	C4 (One-touch fitting for ø4)										
		Double												
	3 position	Closed center												
		Exhaust center												
SY5□20 -□-C6	2 position	Single	1/8	C6 (One-touch fitting for ø6)										
		Double												
	3 position	Closed center												
		Exhaust center												
SY5□20 -□-C8	2 position	Single	1/8	C8 (One-touch fitting for ø8)										
		Double												
	3 position	Closed center												
		Exhaust center												

Note [] : Denotes normal position.

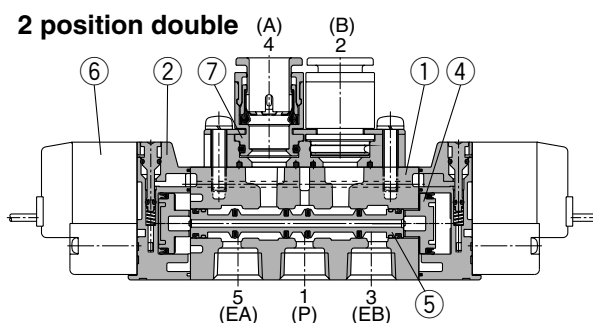
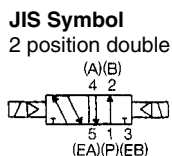
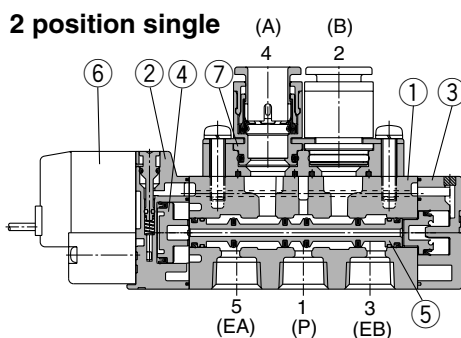
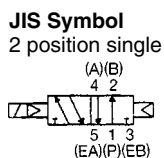
Series SY9000

Valve model	Type of actuation		Port size		Flow characteristics						Weight (g)			
			1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)			4/2→5/3 (A/B→EA/EB)			Grom- met	L, M plug connector	DIN terminal	W M8 connector
			C (dm ³ /s-bar)	b	Cv	C (dm ³ /s-bar)	b	Cv						
SY9□20 -□-02	2 position	Single	1/4											
		Double												
	3 position	Closed center												
		Exhaust center												
SY9□20 -□-03	2 position	Single	3/8											
		Double												
	3 position	Closed center												
		Exhaust center												
SY9□20 -□-C8	2 position	Single	1/4	C8 (One-touch fitting for ø8)										
		Double												
	3 position	Closed center												
		Exhaust center												
SY9□20 -□-C10	2 position	Single	1/4	C10 (One-touch fitting for ø10)										
		Double												
	3 position	Closed center												
		Exhaust center												
SY9□20 -□-C12	2 position	Single	1/4	C12 (One-touch fitting for ø12)										
		Double												
	3 position	Closed center												
		Exhaust center												

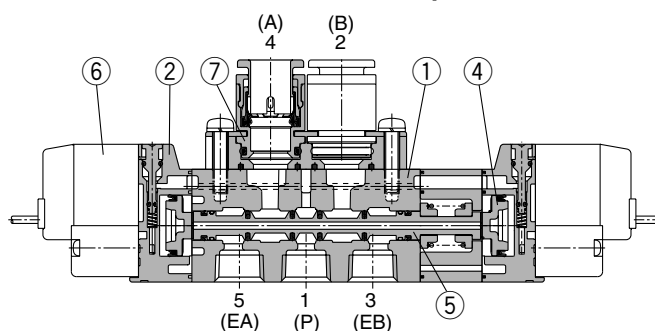
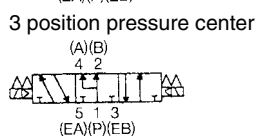
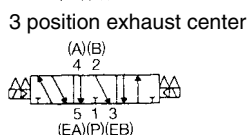
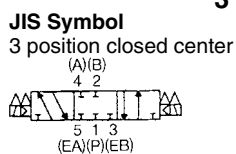
Note [] : Denotes normal position.

Construction

Series SY



3 position closed center/exhaust center/pressure center



(This figure shows a closed center type.)

Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted (SY3000: Zinc die-casted)	White
②	Adapter plate	Resin	White (SY9000: Gray)
③	End plate	Resin	White
④	Piston	Resin	—
⑤	Spool valve assembly	Aluminum, HNBR	—

Replacement Parts

No.	Description	Part no.
⑥	Pilot valve assembly	Refer to "How to Order Pilot Valve Assembly" on page 1-4-10.
⑦	M5 port block assembly	Refer to "How to Order Port Block Assembly" on page 1-4-11.

Bracket Assembly Part No.

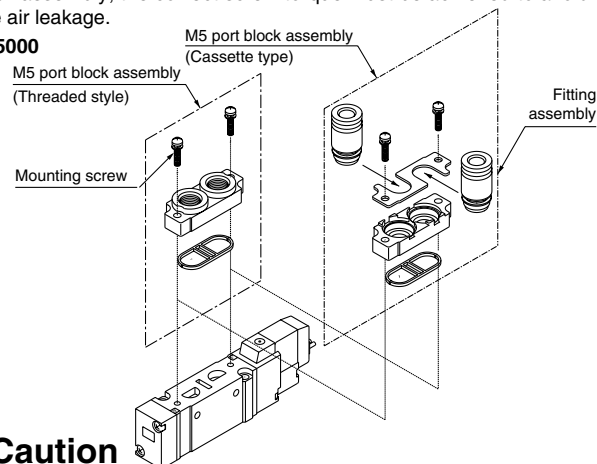
Description	part no.
Bracket (For F1)	SX ³ 000-16-2A (with mounting screw)
Bracket (For F2)	SX ³ 000-16-1A (with mounting screw)

* SY9000 has no bracket.

How to Change Port Block Assembly

If using body port type, both A and B port sizes can be changed by replacing the port block assembly mounted on the body. When changing this block assembly, the correct screw torque must be achieved to avoid possible air leakage.

For SY5000



Caution

Mounting screw tightening torques

SY3000 (M2): 0.12 N·m
SY⁵000 (M3): 0.6 N·m
SY9000 (M4): 1.4 N·m

* Refer to "How to Order Port Block Assembly" on page 1-4-11 for part no.

How to Order Pilot Valve Assembly

How to Order Connector Assembly for L/M Plug Connector

V111-5-G

Coil specifications

Nil	Standard: DC specifications
A	Standard: AC specifications
T	With power saving circuit (24 VDC, 12 VDC only)

* Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Rated voltage

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC
1	100 VDC ^{50/60} Hz
2	200 VAC ^{50/60} Hz
3	110 VAC ^{50/60} Hz [115 VAC ^{50/60} Hz]
4	220 VAC ^{50/60} Hz [230 VAC ^{50/60} Hz]

* For type "W□", DC voltage is only available.

Light/Surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

* For "R" and "U", DC voltage is only available.

* Power saving circuit is only available in the "Z" type.

Electrical entry

G	Grommet, 300 mm lead wire	
H	Grommet, 600 mm lead wire	
L	L plug connector	With lead wire
LN		Without lead wire
LO	Without connector	
M	M plug connector	With lead wire
MN		Without lead wire
MO		Without connector
WO	M8 connector Without connector cable	

Note) For connector cable of M8 connector, refer to page 1-4-209.

For DC: SY100-30-4A

For 100 VAC: SY100-30-1A

For 200 VAC: SY100-30-2A

For other voltages of AC: SY100-30-3A

Without lead wire: SY100-30-A

(with connector and 2 of sockets only)

Lead wire length

Nil	300 mm
6	600 mm
10	1000 mm
15	1500 mm
20	2000 mm
25	2500 mm
30	3000 mm
50	5000 mm

How to Order M8 Connector Cable

Straight type

V100-49-1-

Cable length

1	300 mm
2	500 mm
3	1000 mm
4	2000 mm
7	5000 mm

DIN terminal type

V115-5-D

Rated voltage

5	24 VDC
6	12 VDC
1	100 VAC ^{50/60} Hz
2	200 VAC ^{50/60} Hz
3	110 VAC ^{50/60} Hz [115 VAC ^{50/60} Hz]
4	220 VAC ^{50/60} Hz [230 VAC ^{50/60} Hz]

* DC specifications of type "D" and "DO" is only available with 12 and 24 VDC.

Light/Surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

* "DOZ" is not available.

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

D	DIN	With connector
DO	terminal	Without connector

Note) Do not replace V111 (G, H, L, M) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

How to Order Port Block Assembly

SY 000—6A—

Series

3	SY3000
5	SY5000
7	SY7000
9	SY9000

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

A, B port size

Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
01	1/8	SY5000
02	1/4	SY7000
02	1/4	SY9000
03	3/8	

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	SY7000
C8	One-touch fitting for ø8	
C10	One-touch fitting for ø10	SY9000
C8	One-touch fitting for ø8	
C10	One-touch fitting for ø10	
C12	One-touch fitting for ø12	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø 5/32"	SY3000
N7	One-touch fitting for ø 1/4"	
N3	One-touch fitting for ø 5/32"	SY5000
N7	One-touch fitting for ø 1/4"	
N9	One-touch fitting for ø 5/16"	SY7000
N9	One-touch fitting for ø 5/16"	
N11	One-touch fitting for ø 3/8"	SY9000
N9	One-touch fitting for ø 5/16"	
N11	One-touch fitting for ø 3/8"	

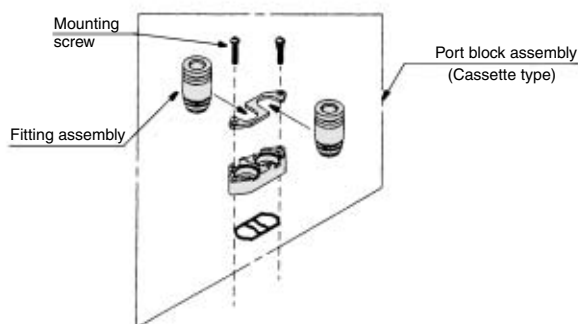
* Only replacement of the fittings assembly is possible.

Metric size

SY3000	One-touch fitting for ø4	VVQ1000-50A-C4
	One-touch fitting for ø6	VVQ1000-50A-C6
SY5000	One-touch fitting for ø4	VVQ1000-51A-C4
	One-touch fitting for ø6	VVQ1000-51A-C6
	One-touch fitting for ø8	VVQ1000-51A-C8
SY7000	One-touch fitting for ø8	VVQ2000-51A-C8
	One-touch fitting for ø10	VVQ2000-51A-C10
SY9000	One-touch fitting for ø8	VVQ4000-50B-C8
	One-touch fitting for ø10	VVQ4000-50B-C10
	One-touch fitting for ø12	VVQ4000-50B-C12

Inch size

SY3000	One-touch fitting for ø 5/32"	VVQ1000-50A-N3
	One-touch fitting for ø 1/4"	VVQ1000-50A-N7
SY5000	One-touch fitting for ø 5/32"	VVQ1000-51A-N3
	One-touch fitting for ø 1/4"	VVQ1000-51A-N7
	One-touch fitting for ø 5/16"	VVQ1000-51A-N9
SY7000	One-touch fitting for ø 5/16"	VVQ2000-51A-N9
	One-touch fitting for ø 3/8"	VVQ2000-51A-N11
SY9000	One-touch fitting for ø 5/16"	VVQ4000-50B-N9
	One-touch fitting for ø 3/8"	VVQ4000-50B-N11



SV

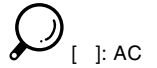
SZ

SY

SYJ

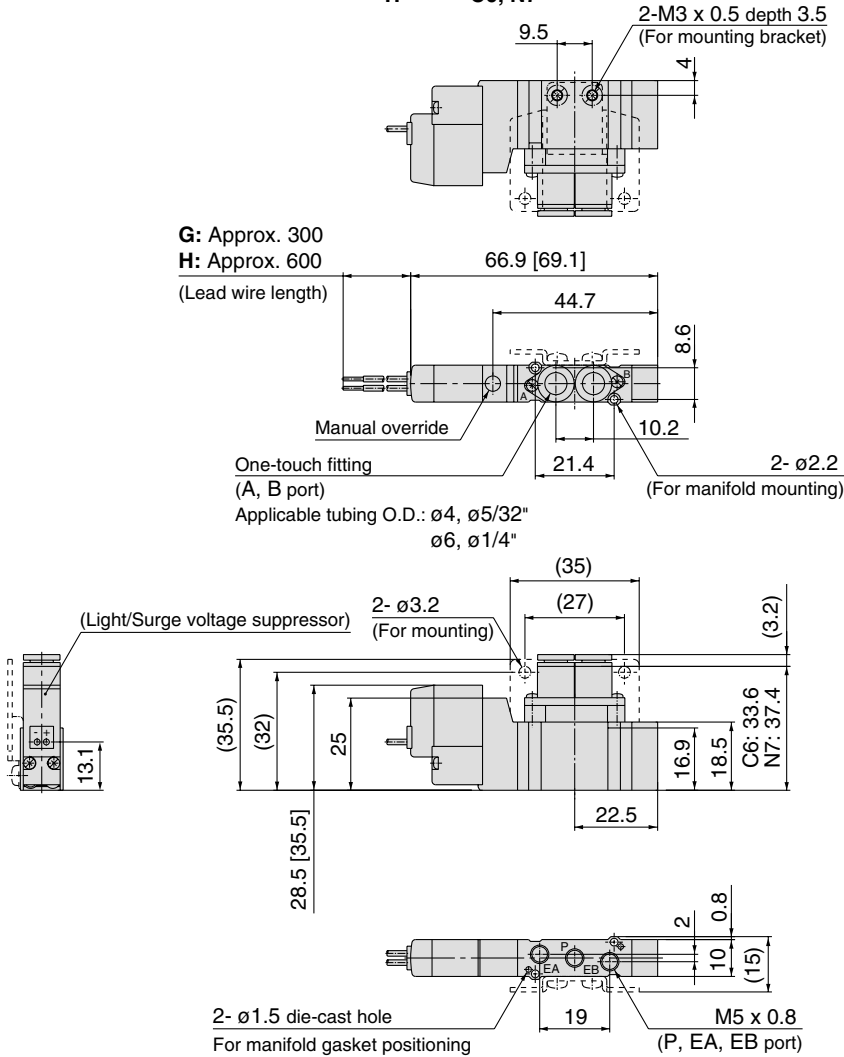
SX

Dimensions: Series SY3000



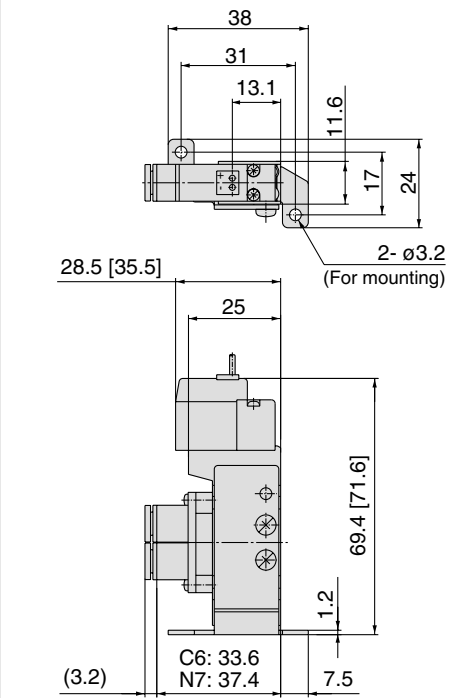
2 position single

Grommet (G), (H): SY3120-□^G□□- C4, N3
C6, N7(-F2)

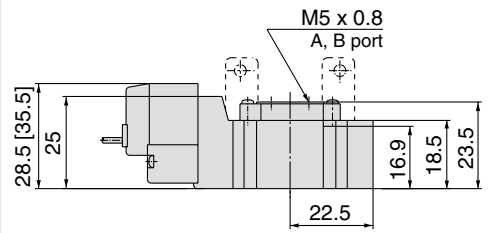


Foot bracket

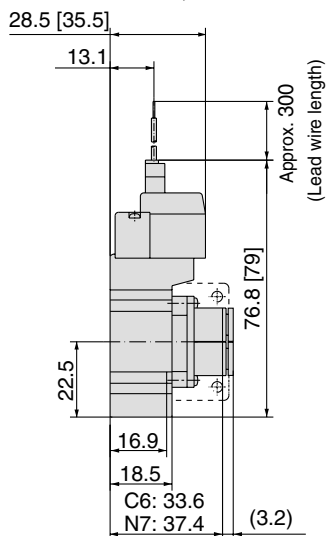
SY3120-□^G□□- C4, N3
C6, N7(-F1)



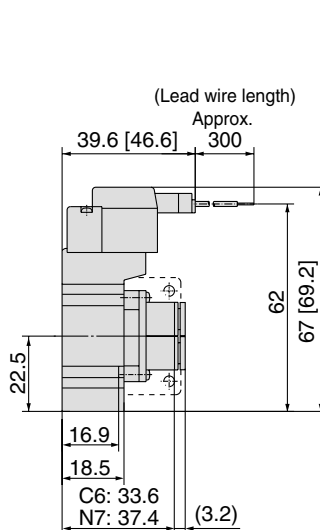
SY3120-□^G□□-M5(-F2)



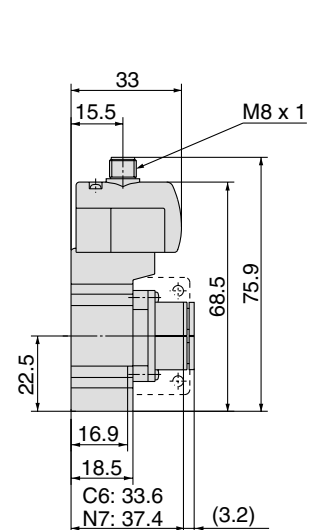
L plug connector (L):
SY3120-□L□□- C4, N3
C6, N7 (-F1)



M plug connector (M):
SY3120-□M□□- C4, N3
C6, N7(-F1)



M8 connector (WO):
SY3120-□WO□□- C4, N3
C6, N7 (-F1)



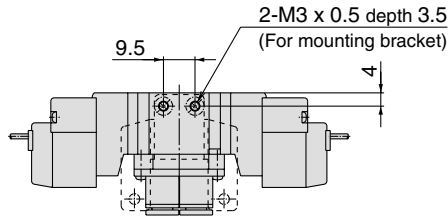
Note) Refer to page 1-4-210 for dimensions of connector types.

Dimensions: Series SY3000

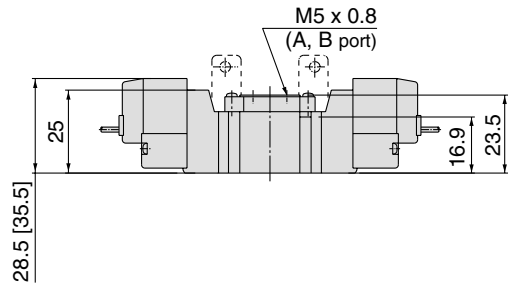


2 position double

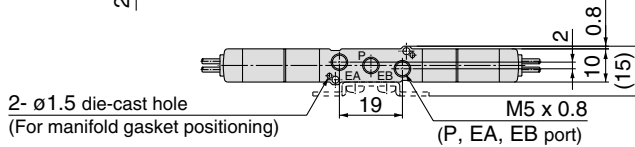
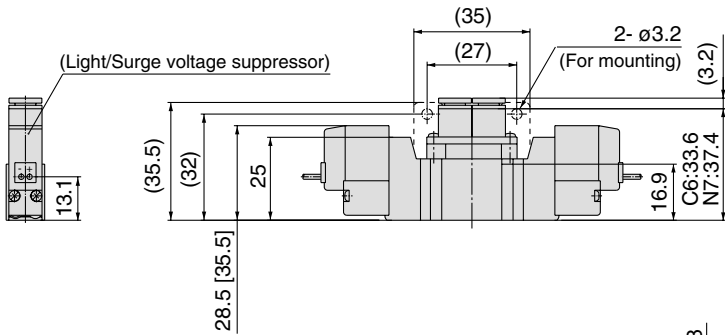
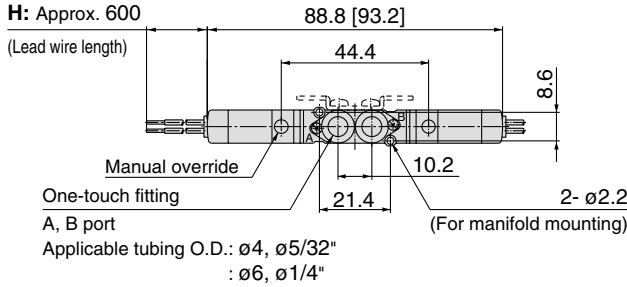
Grommet (G), (H): SY3220-□G□□-C4, N3
C6, N7(-F2)



SY3220-□G□□-M5(-F2)

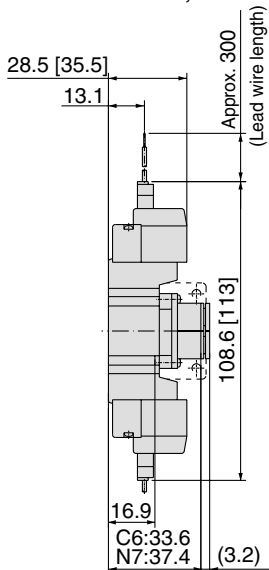


G: Approx. 300
H: Approx. 600

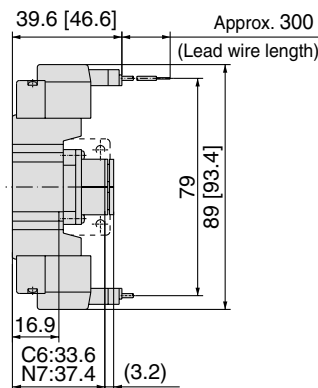


- SV
- SZ
- SY**
- SYJ
- SX

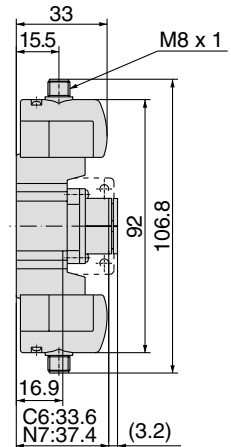
L plug connector (L):
SY3220-□L□□-C4, N3
C6, N7(-F1)



M plug connector (M):
SY3220-□M□□-C4, N3
C6, N7(-F1)

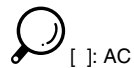


M8 connector (WO):
SY3220-WO□□-C4, N3
C6, N7(-F1)



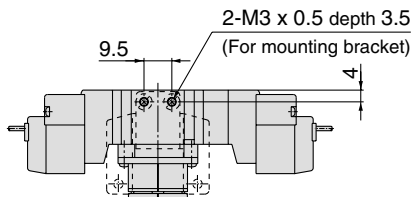
Note) Refer to page 1-4-210 for dimensions of connector types.

Dimensions: Series SY3000

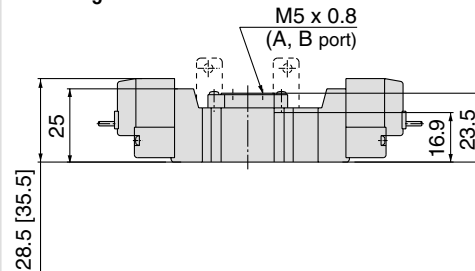


3 position closed center/exhaust center/pressure center

Grommet (G), (H): SY3³/₅20-□G□□-C₄, N₃(-F2)
C₆, N₇



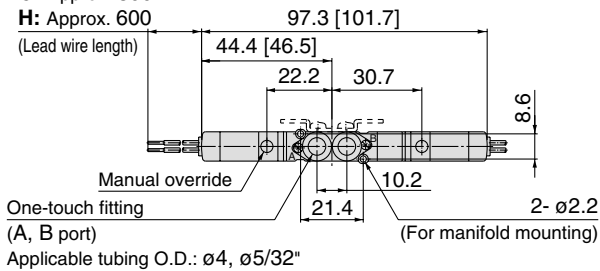
SY3³/₅20-□H□□-M5(-F2)



G: Approx. 300

H: Approx. 600

(Lead wire length)



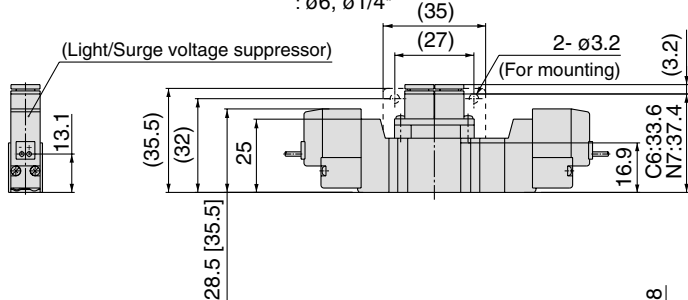
Manual override

One-touch fitting

(A, B port)

Applicable tubing O.D.: ø4, ø5/32"

: ø6, ø1/4"

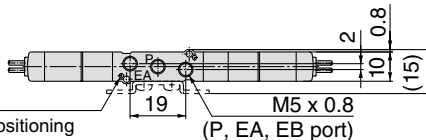


(Light/Surge voltage suppressor)

(For mounting)

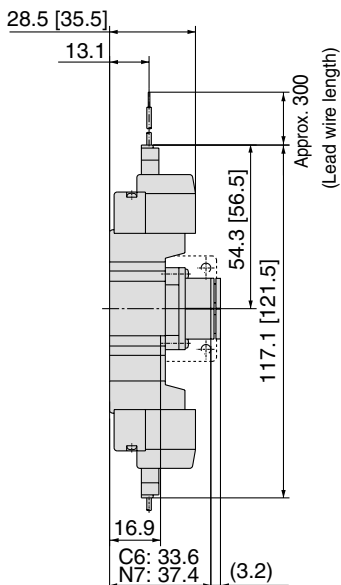
2-ø1.5 die-cast hole

For manifold gasket positioning



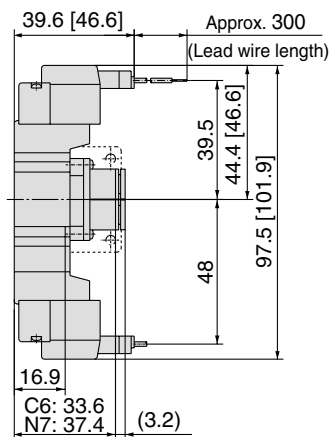
L plug connector (L):

SY3³/₅20-□L□□-C₄, N₃(-F2)
C₆, N₇



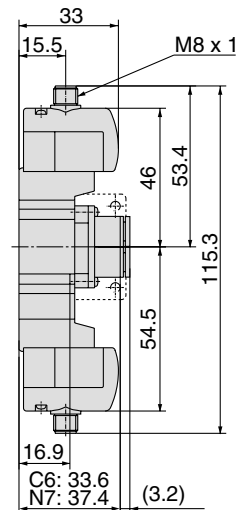
M plug connector (M):

SY3220-□M□□-C₄, N₃(-F2)
C₆, N₇



M8 connector (WO):

SY3³/₅20-□WO□□-C₄, N₃(-F2)
C₆, N₇



Note) Refer to page 1-4-210 for dimensions of connector types.



Series SY3000/5000/7000/9000 Base Mounted Valve Single Unit

How to Order

SY 5 2 40 **5 L**

Series

3	SY3000
5	SY5000
7	SY7000
9	SY9000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Pilot type

Nil	Internal pilot
R	External pilot

Coil specifications

Nil	Standard
T	With power saving circuit (24, 12 VDC only)

* Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Rated voltage

DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

AC (50/60 Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

* DC specifications of type "D" and "DO" is only available with 12 and 24 VDC.
* For type "W□", DC voltage is only available.

Port size

Symbol	Port size	Applicable series
Nil	Without sub-plate	
01	1/8 With sub-plate	SY3000
02	1/4 With sub-plate	SY5000 SY7000
03	3/8 With sub-plate	SY7000 SY9000
04	1/2 With sub-plate	SY9000

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Manual override

Nil: Non-locking push type 	D: Push-turn locking slotted type 	E: Push-turn locking lever type
---------------------------------------	--	--

(Light/Surge voltage suppressor)

Electrical entry for G, H, L, M, W		Electrical entry for D	
Nil	Without light/surge voltage suppressor	Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor	S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor	Z	With light/surge voltage suppressor (Non-polar type)
R	With surge voltage suppressor (Non-polar type)		
U	With light/surge voltage suppressor (Non-polar type)		

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
* For "R" and "U", DC voltage is only available.
* Power saving circuit is only available in the "Z" type.

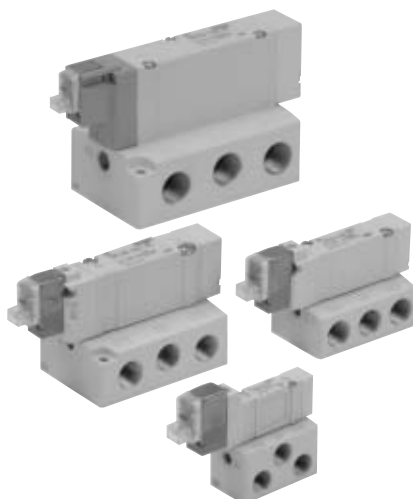
* "DOZ" is not available.
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

24, 12, 6, 5, 3 VDC / 100, 110, 200, 220 VAC				24, 12 VDC / 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	MN plug connector	DIN terminal (Except SY3000)	M8 connector
G: Lead wire length 300 mm 	L: With lead wire (Length 300 mm) 	M: With lead wire (Length 300 mm) 	MN: Without lead wire 	D: With connector 	WO: Without connector cable
H: Lead wire length 600 mm 	LN: Without lead wire 	LO: Without connector 	MO: Without connector 	DO: Without connector 	

* "LN", "MN" type: with 2 sockets.
* For DIN terminal of SY3000 series, refer to page 1-4-207.
* DIN terminal type "Y" conforming to DIN43650C standard is also available. For details, refer to page 1-4-201.
* For connector cable of M8 connector, refer to page 1-4-210.

Specifications



Made to Order Specification
(For details, refer to pages 1-4-188 to 202.)

Series		SY3000	SY5000	SY7000	SY9000
Fluid		Air			
Internal pilot Operating pressure range (MPa)	2 position single	0.15 to 0.7			
	2 position double	0.1 to 0.7			
	3 position	0.2 to 0.7			
External pilot Operating pressure range (MPa)	Operating pressure range		-100 kPa to 0.7		
	Pilot pressure range	2 position single	0.25 to 0.7		
		2 position double	0.25 to 0.7		
		3 position	0.25 to 0.7		
Ambient and fluid temperature (°C)		-10 to 50 (No freezing. Refer to page 1-7-4.)			
Max. operating frequency (Hz)	2 position single, double	10	5	5	5
	3 position	3	3	3	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type			
Pilot exhaust method	Internal pilot	Common exhaust type for main and pilot valve			
	External pilot	Pilot valve individual exhaust			
Lubrication		Not required			
Mounting orientation		Unrestricted			
Impact/Vibration resistance (m/s ²) ^{Note)}		150/30			
Enclosure		Dustproof (* DIN terminal, M8 connector conforms to IP65)			



* Based on IEC529)

Note) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition. (Values at the initial period)

Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values at the initial period)

SV

SZ

SY

SYJ

SX

Response Time



Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage)

SY3000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)			
	Without light/surge voltage suppressor		With light/surge voltage suppressor	
	Type S, Z	Type R, U	Type S, Z	Type R, U
2 position single	12 or less	15 or less	12 or less	15 or less
2 position double	10 or less	13 or less	10 or less	13 or less
3 position	15 or less	20 or less	16 or less	20 or less

SY5000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)			
	Without light/surge voltage suppressor		With light/surge voltage suppressor	
	Type S, Z	Type R, U	Type S, Z	Type R, U
2 position single	19 or less	26 or less	19 or less	26 or less
2 position double	18 or less	22 or less	18 or less	22 or less
3 position	32 or less	38 or less	32 or less	38 or less

SY7000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)			
	Without light/surge voltage suppressor		With light/surge voltage suppressor	
	Type S, Z	Type R, U	Type S, Z	Type R, U
2 position single	31 or less	38 or less	33 or less	40 or less
2 position double	27 or less	30 or less	28 or less	35 or less
3 position	50 or less	56 or less	50 or less	56 or less

SY9000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)			
	Without light/surge voltage suppressor		With light/surge voltage suppressor	
	Type S, Z	Type R, U	Type S, Z	Type R, U
2 position single	35 or less	41 or less	35 or less	41 or less
2 position double	35 or less	41 or less	35 or less	41 or less
3 position	62 or less	64 or less	62 or less	64 or less

Solenoid Specifications

Electrical entry		Grommet (G), (H) L plug connector: L M plug connector: M DIN terminal (D) M8 connector (W)	
Coil rated voltage (V)	DC	24, 12, 6, 5, 3	
	AC 50/60Hz	100, 110, 200, 220 *	
Allowable voltage fluctuation (%)		±10% of rated voltage	
Power consumption (W)	DC	Standard 0.35 (with indicator light: 0.4 DIN terminal with indicator light: 0.45)	
	With power saving circuit	0.1 (With indicator light only)	
Apparent power	AC	100 V	1.4 (With indicator light: 1.5)
		110 V [115 V]	1.6 (With indicator light: 1.7) 1.7 (With indicator light: 1.8)
		200 V	2.3 (With indicator light: 2.4)
		220 V [230 V]	2.5 (With indicator light: 2.6) 2.7 (With indicator light: 2.8)
		Surge voltage suppressor	Diode (Varistor is for DIN terminal and Non-polar type.)
Indicator light		LED (AC of DIN terminal is neon bulb.)	



* In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.

* For 115 VAC and 230 VAC, the allowable voltage is -15% to 5% of rated voltage.

Flow Characteristics/Weight

Series SY3000

Valve model	Type of actuation		Port size	Flow characteristics ^{Note 1)}						Weight (g) ^{Note 2)}		
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	L plug connector, M plug connector	W M8 connector
				C (dm ³ /(s·bar))	b	Cv	C (dm ³ /(s·bar))	b	Cv			
SY3□40-□-01	2 position	Single	1/8	1.0	0.30	0.24	1.1	0.30	0.26	84 (50)	85 (53)	89 (57)
		Double										
	3 position	Closed center		0.77	0.28	0.18	0.85	0.30	0.19			
		Exhaust center		0.73	0.31	0.18	1.1 (0.55)	0.26 (0.52)	0.24 (0.16)			
		Pressure center		1.2 (0.51)	0.24 (0.45)	0.29 (0.14)	0.89	0.47	0.24			
				104 (69)	109 (74)	117 (82)						

Note 1) [] : Denotes the normal position. Note 2) () : Denotes without sub-plate.

Series SY5000

Valve model	Type of actuation		Port size	Flow characteristics ^{Note 1)}						Weight (g) ^{Note 2)}			
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	L plug connector, M plug connector	DIN terminal	W M8 connector
				C (dm ³ /(s·bar))	b	Cv	C (dm ³ /(s·bar))	b	Cv				
SY5□40-□-02	2 position	Single	1/4	2.4	0.41	0.64	2.8	0.29	0.66	121 (58)	123 (61)	154 (82)	127 (65)
		Double											
	3 position	Closed center		1.8	0.47	0.50	1.8	0.40	0.47				
		Exhaust center		1.4	0.55	0.44	3.0 (1.2)	0.33 (0.48)	0.72 (0.37)				
		Pressure center		3.3 (0.84)	0.36 (0.60)	0.85 (0.28)	1.8	0.40	0.48				
				144 (82)	150 (87)	192 (129)	158 (95)						

Note 1) [] : Denotes the normal position. Note 2) () : Denotes without sub-plate.

Series SY7000

Valve model	Type of actuation		Port size	Flow characteristics ^{Note 1)}						Weight (g) ^{Note 2)}			
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	L plug connector, M plug connector	DIN terminal	W M8 connector
				C (dm ³ /(s·bar))	b	Cv	C (dm ³ /(s·bar))	b	Cv				
SY7□40-□-02	2 position	Single	1/4	4.1	0.41	1.1	4.1	0.29	1.0	218 (89)	221 (92)	242 (113)	225 (96)
		Double											
	3 position	Closed center		3.0	0.43	0.80	2.6	0.41	0.72				
		Exhaust center		2.6	0.42	0.71	4.7 (1.7)	0.35 (0.48)	1.1 (0.49)				
		Pressure center		5.3 (2.3)	0.39 (0.49)	1.3 (0.65)	2.2	0.49	0.63				
				239 (110)	245 (116)	287 (158)	253 (124)						
SY7□40-□-03	2 position	Single	3/8	4.9	0.29	1.2	4.5	0.27	1.1	218 (89)	221 (92)	242 (113)	225 (96)
		Double											
	3 position	Closed center		3.0	0.40	0.80	2.6	0.45	0.73				
		Exhaust center		2.6	0.42	0.71	4.8 (1.7)	0.35 (0.48)	1.1 (0.49)				
		Pressure center		5.3 (2.3)	0.31 (0.51)	1.3 (0.64)	2.3	0.45	0.66				
				239 (110)	245 (116)	287 (158)	253 (124)						

Note 1) [] : Denotes the normal position. Note 2) () : Denotes without sub-plate.

Series SY9000

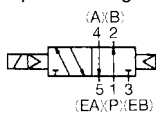
Valve model	Type of actuation		Port size	Flow characteristics ^{Note 1)}						Weight (g) ^{Note 2)}			
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	L plug connector, M plug connector	DIN terminal	W M8 connector
				C (dm ³ /(s·bar))	b	Cv	C (dm ³ /(s·bar))	b	Cv				
SY9□40-□-03	2 position	Single	3/8	7.9	0.34	2.0	9.6	0.43	2.6	469(172)	472(175)	493(196)	476(179)
		Double											
	3 position	Closed center		7.5	0.33	1.8	7.3	0.30	1.7				
		Exhaust center		7.2	0.34	1.7	13 (4.0)	0.23 (0.41)	2.8 (0.95)				
		Pressure center		12 (3.3)	0.26 (0.41)	2.8 (0.84)	6.7	0.40	1.9				
				512(215)	518(221)	560(263)	526(229)						
SY9□40-□-04	2 position	Single	1/2	8.0	0.48	2.2	10	0.29	2.5	448 (151)	453 (156)	472	457(160)
		Double											
	3 position	Closed center		7.6	0.32	1.8	7.3	0.32	1.8				
		Exhaust center		7.3	0.42	2.0	13 (4.7)	0.32 (0.54)	3.6 (1.5)				
		Pressure center		12 (3.3)	0.33 (0.51)	3.3 (0.94)	7.4	0.33	1.9				
				491 (194)	497 (200)	539	505(208)						

Note 1) [] : Denotes the normal position. Note 2) () : Denotes without sub-plate.

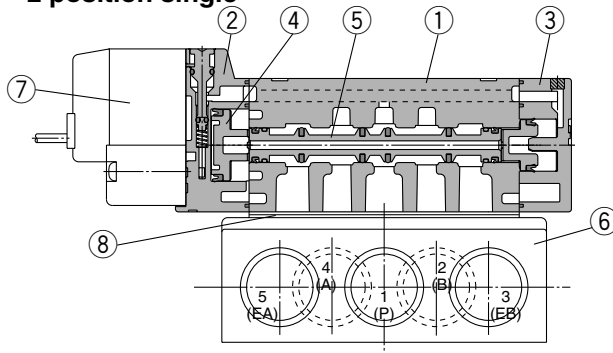
Construction

Series SY

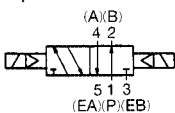
JIS Symbol
2 position single



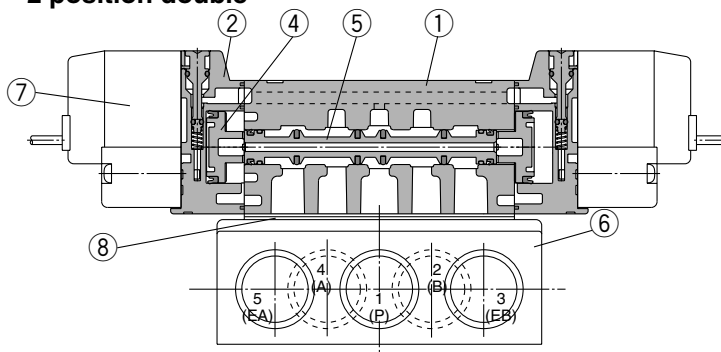
2 position single



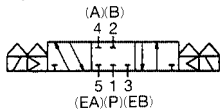
JIS Symbol
2 position double



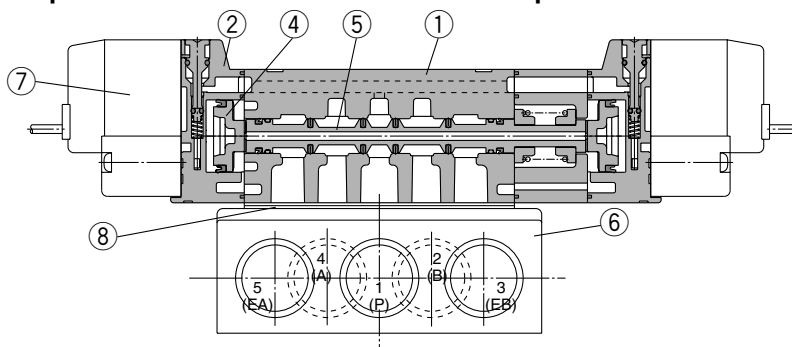
2 position double



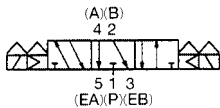
JIS Symbol
3 position closed center



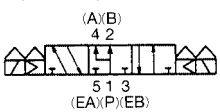
3 position closed center/exhaust center/pressure center



JIS Symbol
3 position exhaust center



JIS Symbol
3 position pressure center



(This figure shows a closed center type.)

Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted (SY3000: Zinc die-casted)	White
②	Adapter plate	Resin	White (SY9000: Gray)
③	End plate	Resin	White
④	Piston	Resin	—
⑤	Spool valve assembly	Aluminum, HNBR	—

Replacement Parts

No.	Description	Part no.				Note
		SY3□40	SY5□40	SY7□40	SY9□40	
⑥	Sub-plate	SY3000-27-1*	SY5000-27-1*	1/4: SY7000-27-1* 3/8: SY7000-27-2*	3/8: SY9000-27-1* 1/2: SY9000-27-2*	Aluminum die-casted
⑦	Pilot valve assembly	Refer to "How to Order Pilot Valve Assembly" on page 1-4-187.				
⑧	Gasket	SY3000-11-25	SY5000-11-15	SY7000-11-11	SY9000-11-2	HNBR
—	Round head combination screw	SY3000-23-4 (M2 x 21)	M3 x 26	M4 x 31	SY9000-18-2 (M3 x 42)	For valve mounting (Matt nickel plated)

* Thread type

⚠ Caution

Mounting screw
tightening torques

M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

How to Order Pilot Valve Assembly



Coil specifications

Nil	Standard: DC specifications
A	Standard: AC specifications
T	With power saving circuit (24 VDC, 12 VDC only)

* Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Rated voltage

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC
1	100 VAC $\frac{50}{60}$ Hz
2	200 VAC $\frac{50}{60}$ Hz
3	110 VAC $\frac{50}{60}$ Hz [115 VAC $\frac{50}{60}$ Hz]
4	220 VAC $\frac{50}{60}$ Hz [230 VAC $\frac{50}{60}$ Hz]

* For type "W□", DC voltage is only available.

Light/Surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

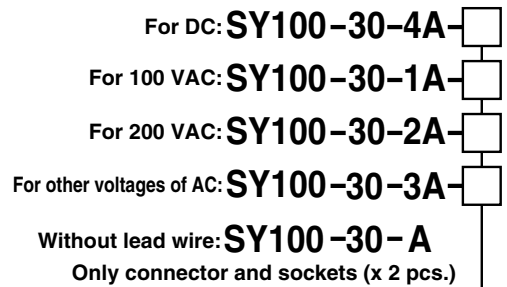
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
* For "R" and "U", DC voltage is only available.
* Power saving circuit is only available in the "Z" type.

Electrical entry

G	Grommet, 300 mm lead wire	
H	Grommet, 600 mm lead wire	
L	L plug connector	With lead wire
LN		Without lead wire
LO	Without connector	
M	M plug connector	With lead wire
MN		Without lead wire
MO		Without connector
WO	M8 connector Without connector cable	

Note) For connector cable of M8 connector, refer to page 1-4-210.

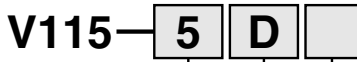
How to Order Connector Assembly for L/M Plug Connector



Lead wire length

Nil	300 mm
6	600 mm
10	1000 mm
15	1500 mm
20	2000 mm
25	2500 mm
30	3000 mm
50	5000 mm

DIN terminal type



Rated voltage

5	24 VDC
6	12 VDC
1	100 VAC $\frac{50}{60}$ Hz
2	200 VAC $\frac{50}{60}$ Hz
3	110 VAC $\frac{50}{60}$ Hz [115 VAC $\frac{50}{60}$ Hz]
4	220 VAC $\frac{50}{60}$ Hz [230 VAC $\frac{50}{60}$ Hz]

* DC specifications of type "D" and "DO" is only available with 12 and 24 VDC.

Light/Surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

* "DOZ" is not available.
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

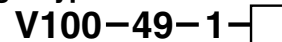
Electrical entry

D	DIN terminal	With connector
DO	terminal	Without connector

Note) Do not replace V111 (G, H, L, M) to V115 (DIN terminal) and vice versa when replacing pilot valve assembly only.

How to Order M8 Connector Cable

Straight type



Cable length

1	300 mm
2	500 mm
3	1000 mm
4	2000 mm
7	5000 mm

How to Order Interface Regulator

Series SY3000

ARBY3000-05-P-2

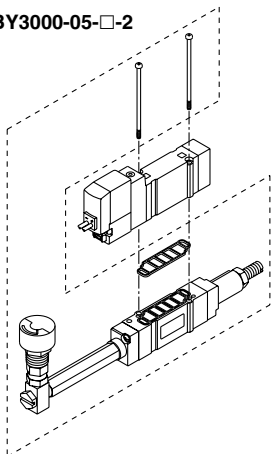
Pressure gauge
connection port

Regulating port

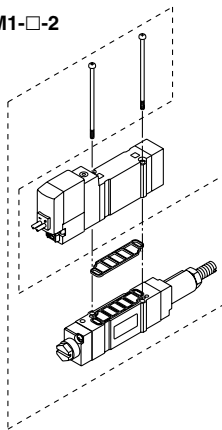
05	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

ARBY3000-05-□-2



ARBY3000-M1-□-2



Series SY5000

ARBY5000-00-P-2

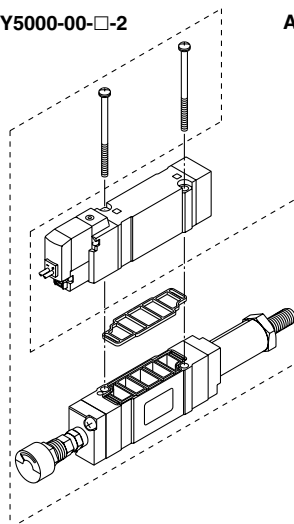
Pressure gauge
connection port

Regulating port

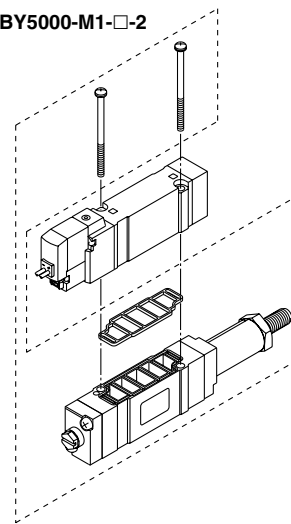
00	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

ARBY5000-00-□-2



ARBY5000-M1-□-2



Series SY7000

ARBY7000-00-P-2

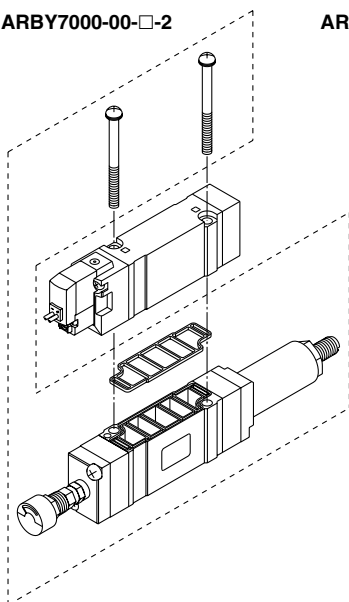
Pressure gauge
connection port

Regulating port

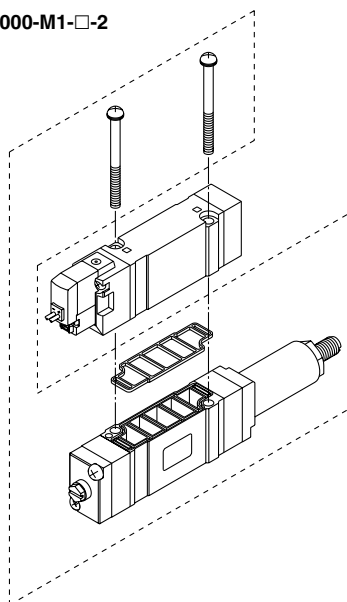
00	Pressure gauge (G15-10-01)
M1	Plug (M-5P)

P	P port
A1	A port (P controlled type, A port regulation)
B1	B port (P controlled type, B port regulation)

ARBY7000-00-□-2



ARBY7000-M1-□-2



Accessory

Series	Round head combination screw	Gasket
ARBY3000	SY3000-23-10 (M2 x 36)	SX3000-57-4
ARBY5000	M3 x 48.5, Matt nickel plated	SX5000-57-6
ARBY7000	M4 x 57, Matt nickel plated	SX7000-57-4

⚠ Caution

Mounting screw
tightening torquesM2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

SV

SZ

SY

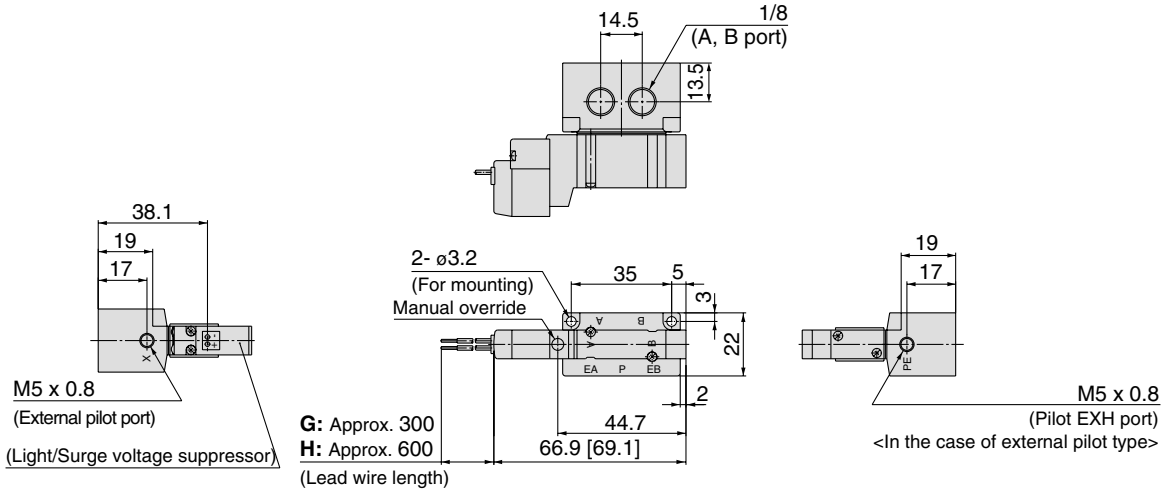
SYJ

SX

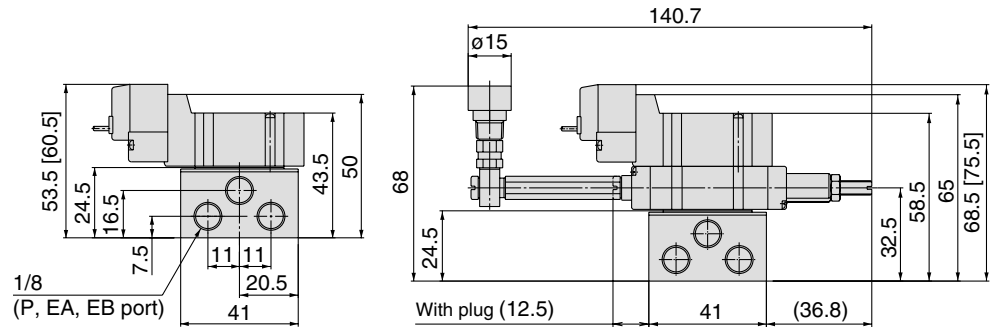
Dimensions: Series SY3000

2 position single

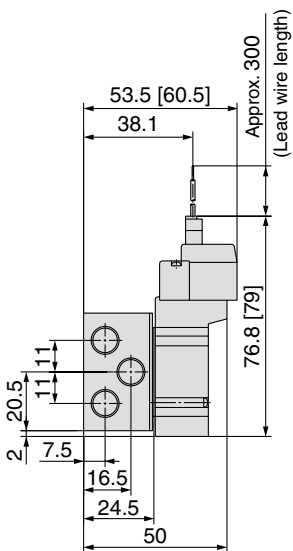
Grommet (G), (H): SY3140(R)-□ $\frac{G}{H}$ □□-01□



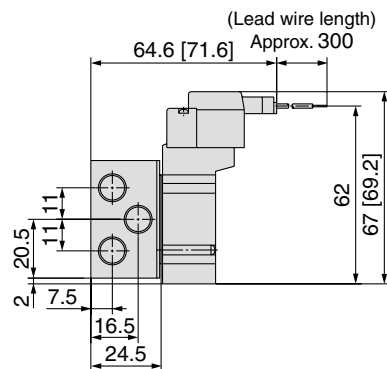
With interface regulator



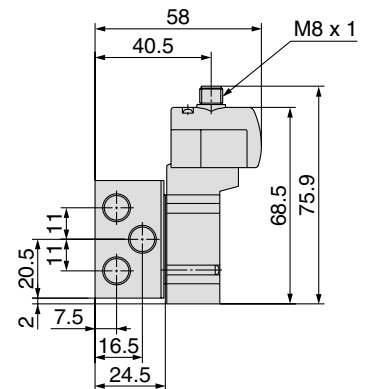
L plug connector (L):
SY3140(R)-□L□□-01□



M plug connector (M):
SY3140(R)-□M□□-01□



M8 connector (WO):
SY3140(R)-□WO□□-01□



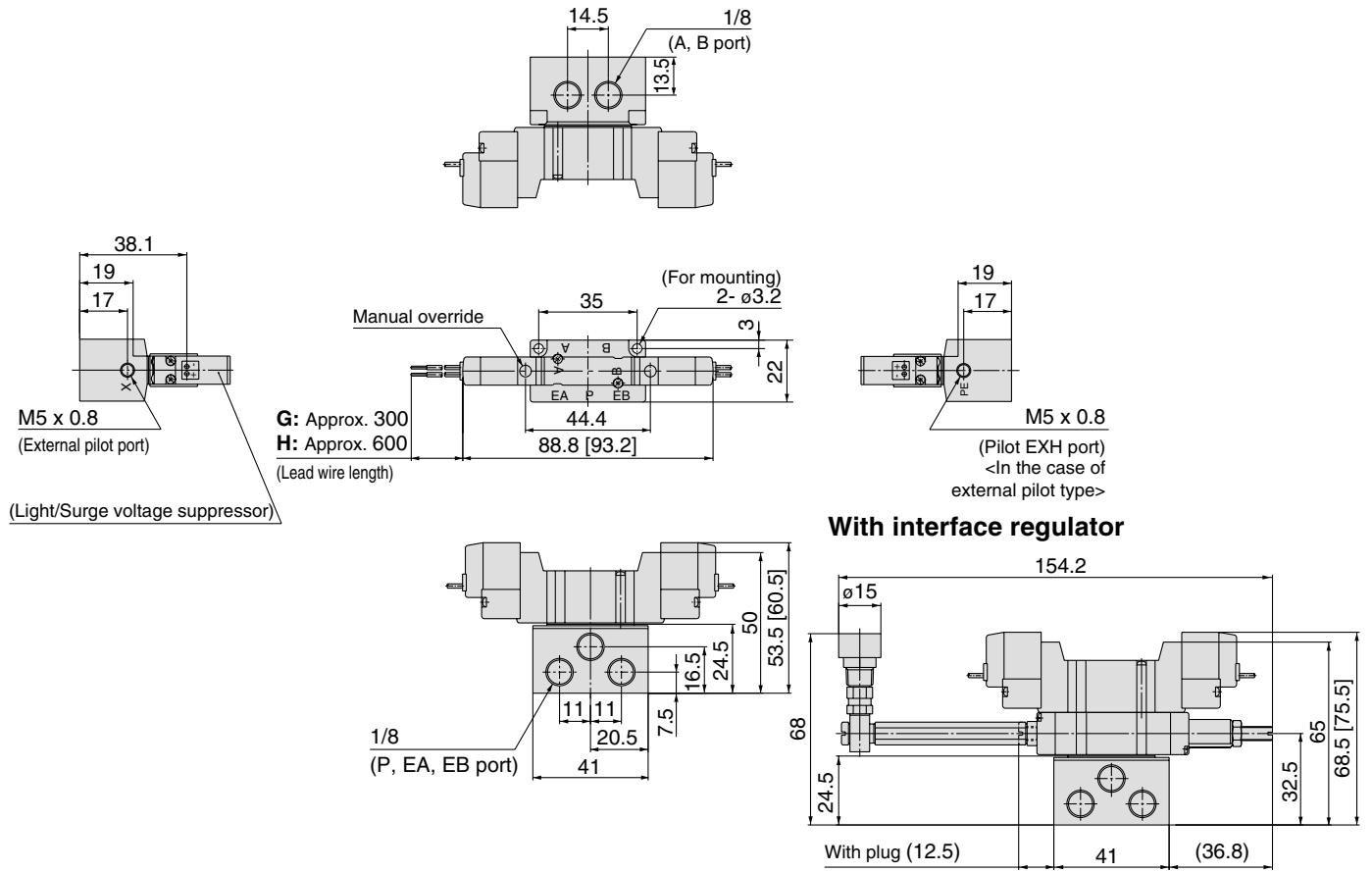
Note) Refer to page 1-4-210 for dimensions of connector types.

Dimensions: Series SY3000



2 position double

Grommet (G), (H): SY3240(R)-□ $\frac{G}{H}$ □□-01□



SV

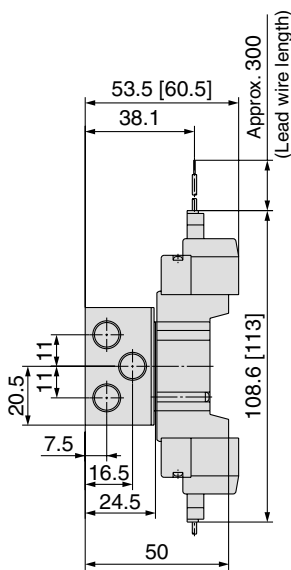
SZ

SY

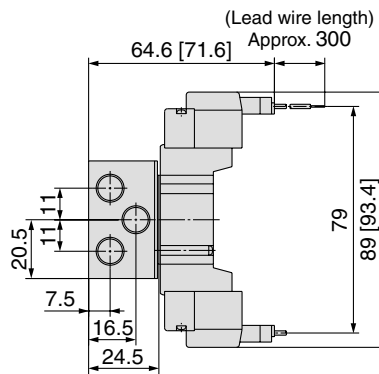
SYJ

SX

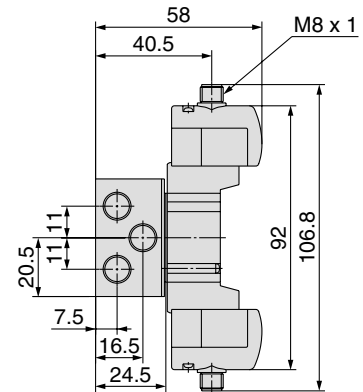
L plug connector (L):
SY3240(R)-□L□□-01□



M plug connector (M):
SY3240(R)-□M□□-01□



M8 connector (WO):
SY3240(R)-□WO□□-01□

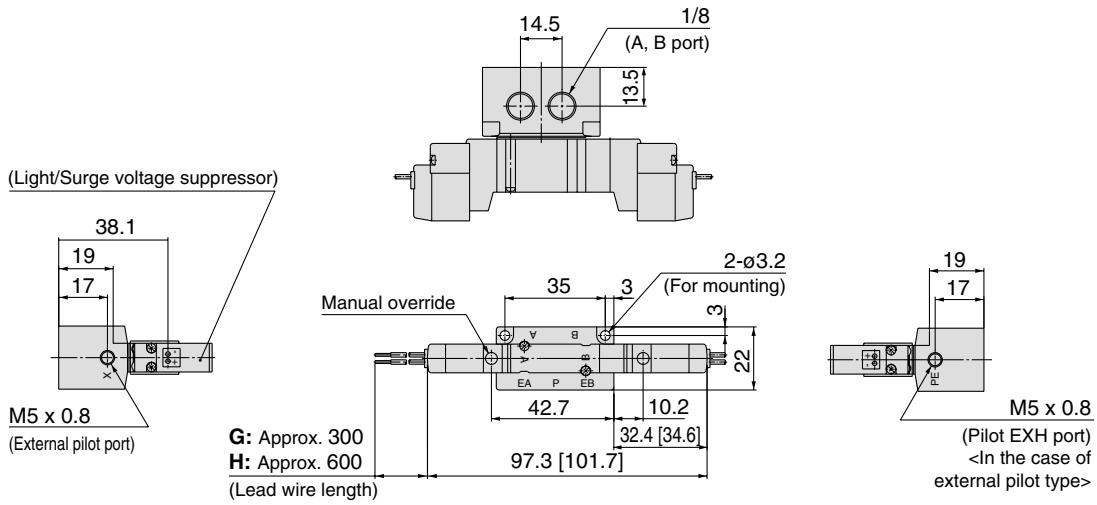


Note) Refer to page 1-4-210 for dimensions of connector types.

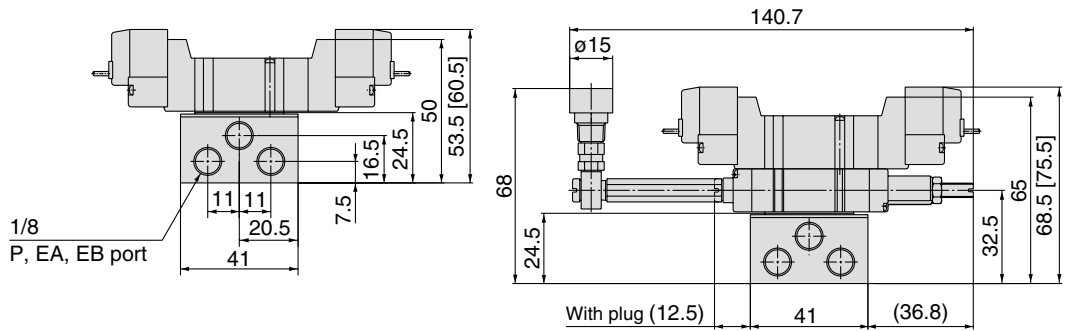
Dimensions: Series SY3000

3 position closed center/exhaust center/pressure center

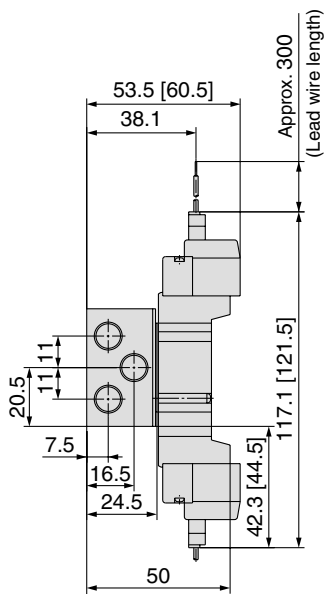
Grommet (G), (H): SY3³/₅40(R)-□G□□-01□



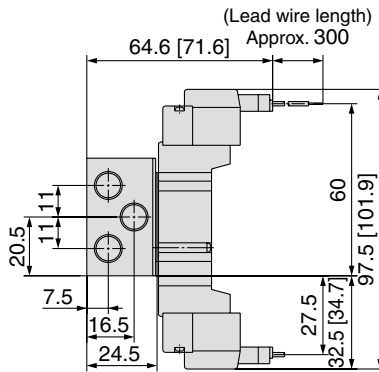
With interface regulator



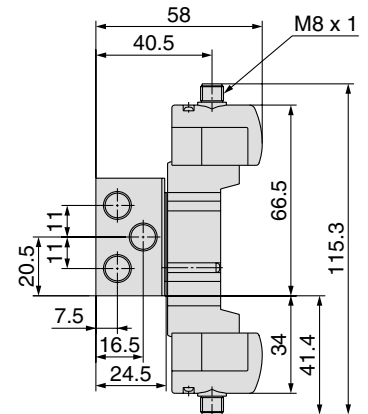
L plug connector (L):
SY3³/₅40(R)-□L□□-01□



M plug connector (M):
SY3³/₅40(R)-□M□□-01□



M8 connector (WO):
SY3³/₅40(R)-□WO□□-01□



Note) Refer to page 1-4-210 for dimensions of connector types.

How to Order Valves

SY 5 1 20 [] 5 L [] [] 01 []

Series

3	SY3000
5	SY5000
7	SY7000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)



* Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Rated voltage

DC		AC (50/60 Hz)	
5	24 VDC	1	100 VAC
6	12 VDC	2	200 VAC
V	6 VDC	3	110 VAC [115 VAC]
S	5 VDC	4	220 VAC [230 VAC]
R	3 VDC		



* DC specifications of type "D" and "DO" is only available with 12 and 24 VDC.
* For type "W□", DC voltage is only available.

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Light/Surge voltage suppressor
Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)



* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

* For "R" and "U", DC voltage is only available.

* Power saving circuit is only available in the "Z" type.

Electrical entry for D

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)



* "DOZ" is not available.

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

A, B port size
Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
01	1/8	SY5000
02	1/4	SY7000

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
N3	One-touch fitting for ø5/32"	
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	

Electrical entry

24, 12, 6, 5, 3 VDC/ 100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	D: With connector	WO: Without connector cable
H: Lead wire length 600 mm	LN: Without lead wire	MN: Without lead wire	DO: Without connector	
	LO: Without connector	MO: Without connector		



* "LN", "MN" type: with 2 sockets.
* For DIN terminal of SY3000 series, refer to page 1-4-207.
* DIN terminal type "Y" conforming to DIN4365C standard is also available. For details, refer to catalog on page 1-4-201.
* For connector cable of M8 connector, refer to page 1-4-209.



Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary.
(For details, refer to catalog in page 1-4-61.)

SV

SZ

SY

SYJ

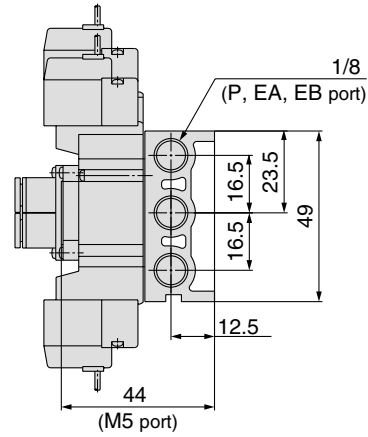
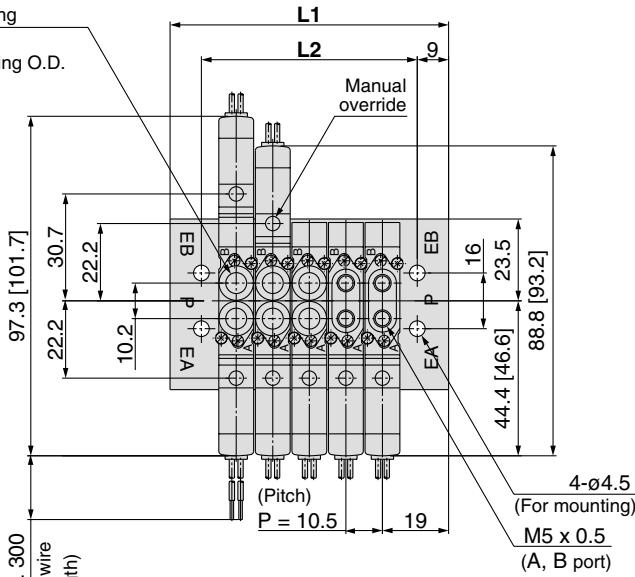
SX

SY3000/SS5Y3-20-Stations-



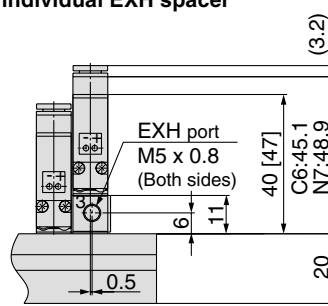
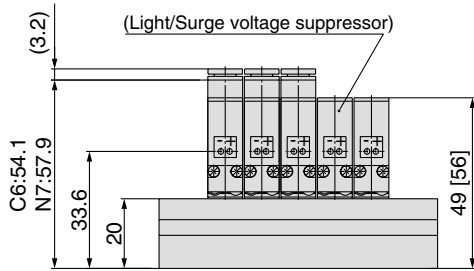
Grommet (G)

One-touch fitting
(A, B port)
Applicable tubing O.D.
: $\phi 4$, $\phi 5/32$ "
: $\phi 6$, $\phi 1/4$ "



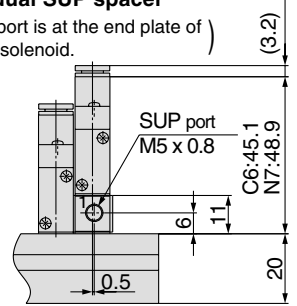
(Station n) ----- (Station 1)

Dimensions when mounting individual EXH spacer



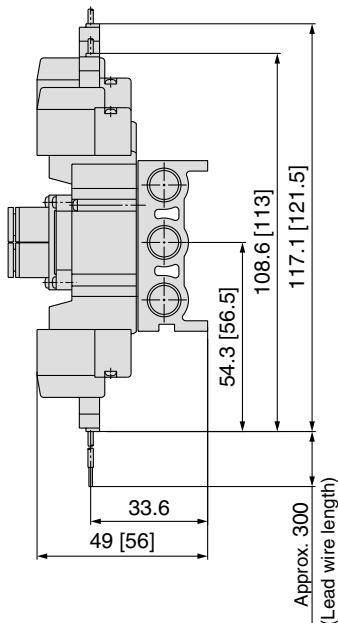
Dimensions when mounting individual SUP spacer

(SUP port is at the end plate of single solenoid.)

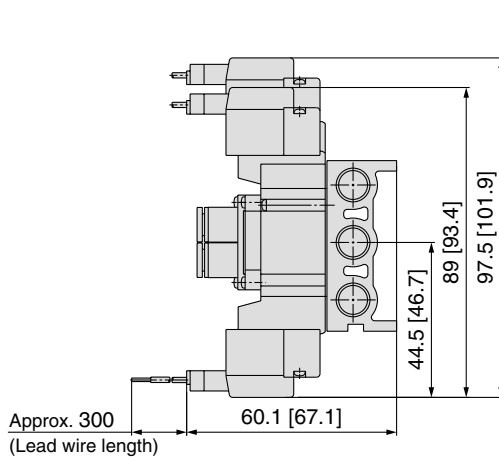


- SV
- SZ
- SY**
- SYJ
- SX

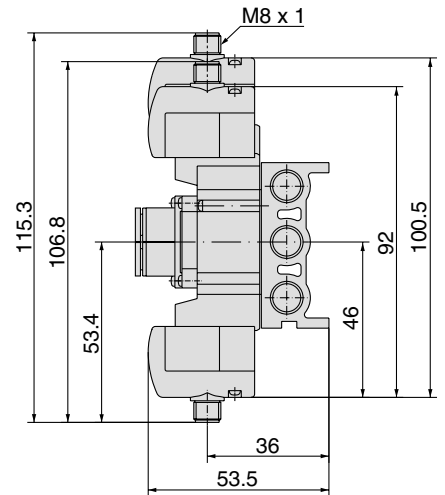
L plug connector (L)



M plug connector (M)



M8 connector (WO)



Note) Refer to page 1-4-210 for dimensions of connector types.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	48.5	59	69.5	80	90.5	101	111.5	122	132.5	143	153.5	164	174.5	185	195.5	206	216.5	227	237.5
L2	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5

How to Order Valves

Rated voltage

5	24 VDC
6	12 VDC

Series

3	SY3000
5	SY5000
7	SY7000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Rated voltage

1	100 VAC
3	110 VAC (115 VAC)

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Light/Surge voltage suppressor

Z	With light/surge voltage suppressor
U	With light/surge voltage suppressor (Non-polar type)

Note) Z: Positive common specifications only.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

A, B port size Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
01	1/8	SY5000
02	1/4	SY7000

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	SY3000
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	SY5000
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	SY7000

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	SY3000
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	SY5000
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	SY7000

Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary.
(For details, refer to page 1-4-61.)

Note) In the case of flat cable type, "U" and "Z" types are for DC specifications and "Z" type is for AC specifications. "Z" for DC is positive common specifications only. For the other combination, please contact SMC.

For DC: SY **5** **1** **20** — **5** LO **Z** **01**

For AC: SY **5** **1** **20** — **1** LO **Z** **01**

- SV
- SZ
- SY**
- SYJ
- SX

How to Order Valves

SY 3 1 60 — **5 L** — **C6**

Series

3	SY3000
5	SY5000
7	SY7000

Type of actuation

1	2 position single (A)(B)
2	2 position double (A)(B)
3	3 position closed center (A)(B)
4	3 position exhaust center (A)(B)
5	3 position pressure center (A)(B)

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

* Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Rated voltage

DC	
5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

AC (50/60Hz)	
1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

* DC specifications of type "D", "DO" is only available with 12 and 24 VDC.
 * "D", "DO" only available for SY5000, SY7000.
 * For type "W□", DC voltage is only available.

A, B port size
Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY3000
O1	1/8	SY5000
O2	1/4	SY7000

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	SY3000
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	SY5000
C8	One-touch fitting for ø8	SY7000
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	SY7000

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	SY3000
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	SY5000
N9	One-touch fitting for ø5/16"	SY7000
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	SY7000

Manual override

<p>Nil: Non-locking push type</p>	<p>D: Push-turn locking slotted type</p>	<p>E: Push-turn locking lever type</p>
--	---	---

Light/Surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With light/surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
 * Power saving circuit is only available in the "Z" type.

Electrical entry for D (SY5000/7000 only)

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.


Electrical entry

24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC				24, 12 VDC/100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector		DIN terminal (SY5000, 7000)	M8 connector
G: Lead wire length 300 mm 	L: With lead wire (Length 300 mm) 	M: With lead wire (Length 300 mm) 	MN: Without lead wire 	D: With connector 	WO: Without connector cable
H: Lead wire length 600 mm 	LN: Without lead wire 	LO: Without connector 	MO: Without connector 	DO: Without connector 	

* "LN", "MN" type: with 2 sockets.
 * For connector cable of M8 connector, refer to page 1-4-210.

Specifications


Series		SY3000	SY5000	SY7000
Fluid		Air		
Internal pilot Operating pressure range (MPa)	2 position single	0.15 to 0.7		
	2 position double	0.1 to 0.7		
	3 position	0.2 to 0.7		
Ambient and fluid temperature (°C)		Max. 50		
Max. operating frequency (Hz)	2 position double	10	5	5
	3 position	3	3	3
Manual override (Manual operation)		Non-locking push type, Push-turn locking slotted type, Push-turn locking lever type		
Pilot exhaust method		Common exhaust type for main and pilot valve		
Lubrication		Not required		
Mounting position		Unrestricted		
Impact/Vibration resistance ^(Note)		150/30		
Enclosure		Dustproof (* DIN terminal, M8 connector conforms to IP65)		

-  Note) Impact resistance: No malfunction occurred when it is tested with a drop tester in the axial direction and at the right angles to the main valve and armature in both energized and de-energized states every once for each condition.
- Vibration resistance: No malfunction occurred in a one-sweep test between 45 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature. (Values in the initial stage)


* Based on IEC529

Solenoid Specifications

Electrical entry		Grommet (G), (H) L plug connector (L) M plug connector (M) DIN terminal (D) M8 connector (W)	
Coil rated voltage (V)	DC	24 , 12 , 6 , 5 , 3	
	AC 50/60Hz	100 , 110 , 200 , 220*	
Allowable voltage fluctuation (%)		±10% of rated voltage	
Power consumption (W)	DC	Standard	0.35 [With indicator light: 0.4 (DIN terminal with indicator light: 0.45)]
		With power saving circuit	0.1 (With indicator light only)
Apparent power* VA	AC	100V	1.4 (With indicator light: 1.5)
		110V [115V]	1.6 (With indicator light: 1.7) [1.7 (With indicator light: 1.8)]
		200V	2.3 (With indicator light: 2.4)
		220V [230V]	2.5 (With indicator light: 2.6) [2.7 (With indicator light: 2.8)]
Surge voltage suppressor		Diode (Varistor is for DIN terminal and non-polar)	
Indicator light		LED (AC of DIN connector is neon bulb.)	

-  * In common between 110 VAC and 115 VAC, and between 220 VAC and 230 VAC.
* For 115 VAC and 230 VAC, the allowable voltage is -15% to 5% of rated voltage.

Response Time

-  Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage)

SY3000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without surge voltage suppressor	With surge voltage suppressor	
		S, Z type	R, U type
2 position single	12 or less	15 or less	12 or less
2 position double	10 or less	13 or less	10 or less
3 position	15 or less	20 or less	16 or less

SY5000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without surge voltage suppressor	With surge voltage suppressor	
		S, Z type	R, U type
2 position single	19 or less	26 or less	19 or less
2 position double	18 or less	22 or less	18 or less
3 position	32 or less	38 or less	32 or less

SY7000

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)		
	Without light/surge voltage suppressor	With light/surge voltage suppressor	
		S, Z type	R, U type
2 position single	31 or less	38 or less	33 or less
2 position double	27 or less	30 or less	28 or less
3 position	50 or less	56 or less	50 or less

SV

SZ

SY


SYJ

SX

Weight

Series SY3000

Valve model	Type of actuation		Port size	Weight (g)		
			A, B	Grommet	L, M plug connector	M8 Connector
SY3□60-□-M5	2 position	Single	M5 x 0.8	49	51	55
		Double		70	73	81
	3 position	Closed center		73	76	84
		Exhaust center				
		Pressure center				
SY3□60-□-C4	2 position	Single	C4 (One-touch fitting for ø4)	62	61	65
		Double		80	83	91
	3 position	Closed center		82	86	94
		Exhaust center				
		Pressure center				
SY3□60-□-C6	2 position	Single	C6 (One-touch fitting for ø6)	55	57	61
		Double		76	79	87
	3 position	Closed center		78	82	90
		Exhaust center				
		Pressure center				

 Note) []: Denotes normal position.

Series SY7000

Valve model	Type of actuation		Port size	Weight (g)			
			A, B	Grommet	L, M plug connector	DIN terminal	M8 Connector
SY7□60-□-02	2 position	Single	1/4	103	105	126	109
		Double		125	128	170	136
	3 position	Closed center		133	136	178	144
		Exhaust center					
		Pressure center					
SY7□60-□-C8	2 position	Single	C8 (One-touch fitting for ø8)	138	139	160	143
		Double		160	163	205	171
	3 position	Closed center		168	171	213	179
		Exhaust center					
		Pressure center					
SY7□60-□-C10	2 position	Single	C10 (One-touch fitting for ø10)	123	125	146	129
		Double		145	149	191	157
	3 position	Closed center		153	157	199	165
		Exhaust center					
		Pressure center					

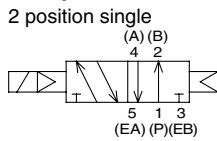
Series SY5000

Valve model	Type of actuation		Port size	Weight (g)			
			A, B	Grommet	L, M plug connector	DIN terminal	M8 Connector
SY5□60-□-01	2 position	Single	1/8	67	69	90	71
		Double		91	94	136	102
	3 position	Closed center		97	100	142	108
		Exhaust center					
		Pressure center					
SY5□60-□-C4	2 position	Single	C4 (One-touch fitting for ø4)	91	93	114	97
		Double		113	116	158	124
	3 position	Closed center		119	122	164	130
		Exhaust center					
		Pressure center					
SY5□60-□-C6	2 position	Single	C6 (One-touch fitting for ø6)	86	88	109	92
		Double		108	111	153	119
	3 position	Closed center		114	117	159	125
		Exhaust center					
		Pressure center					
SY5□60-□-C8	2 position	Single	C8 (One-touch fitting for ø8)	78	80	101	84
		Double		100	103	145	111
	3 position	Closed center		106	109	151	117
		Exhaust center					
		Pressure center					

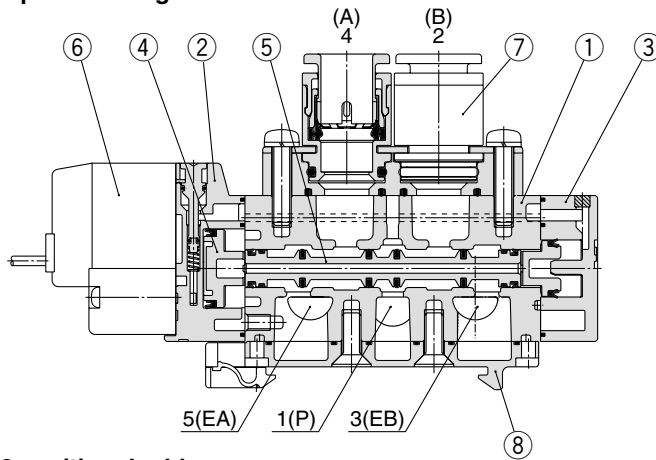
Construction

Series SY

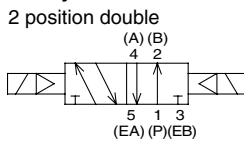
JIS Symbol



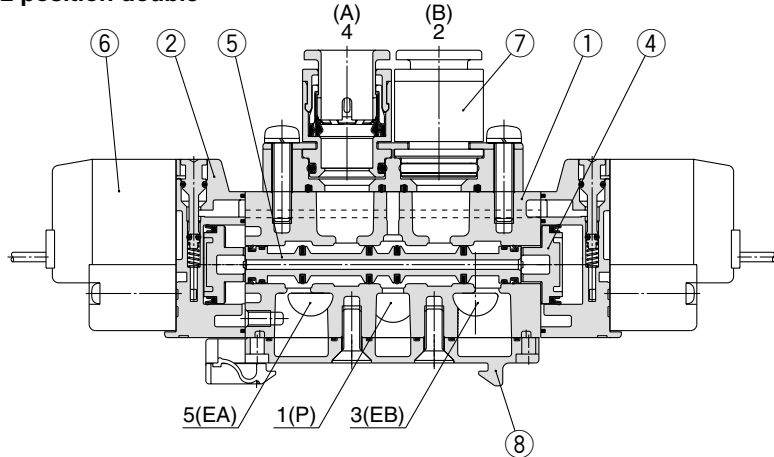
2 position single



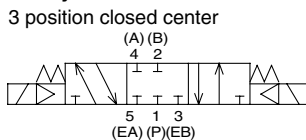
JIS Symbol



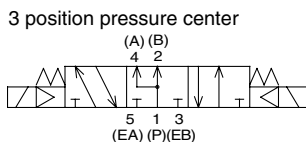
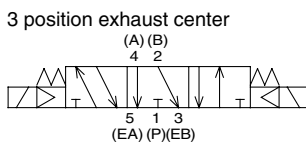
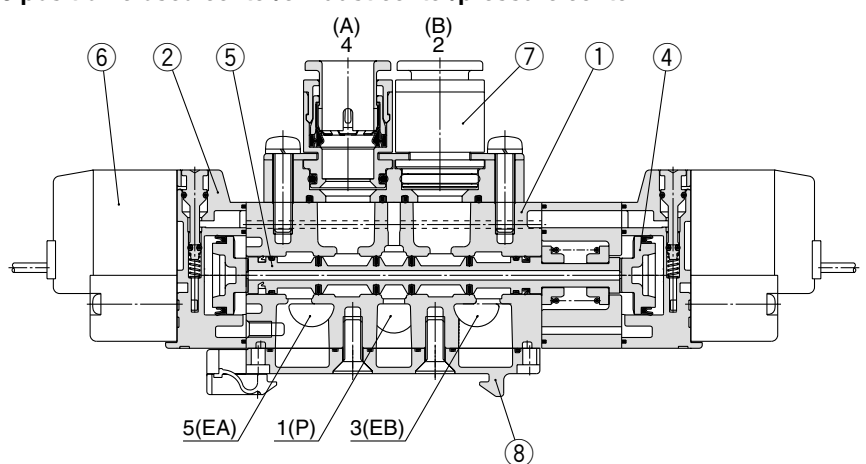
2 position double



JIS Symbol



3 position closed center/exhaust center/pressure center



(This figure shows a closed center type.)

Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted SY3000: (Zinc die-casted)	White
②	Adapter plate	Resin	White
③	End plate	Resin	White
④	Piston	Resin	—
⑤	Spool valve assembly	Aluminum/NBR	—

Replacement Parts

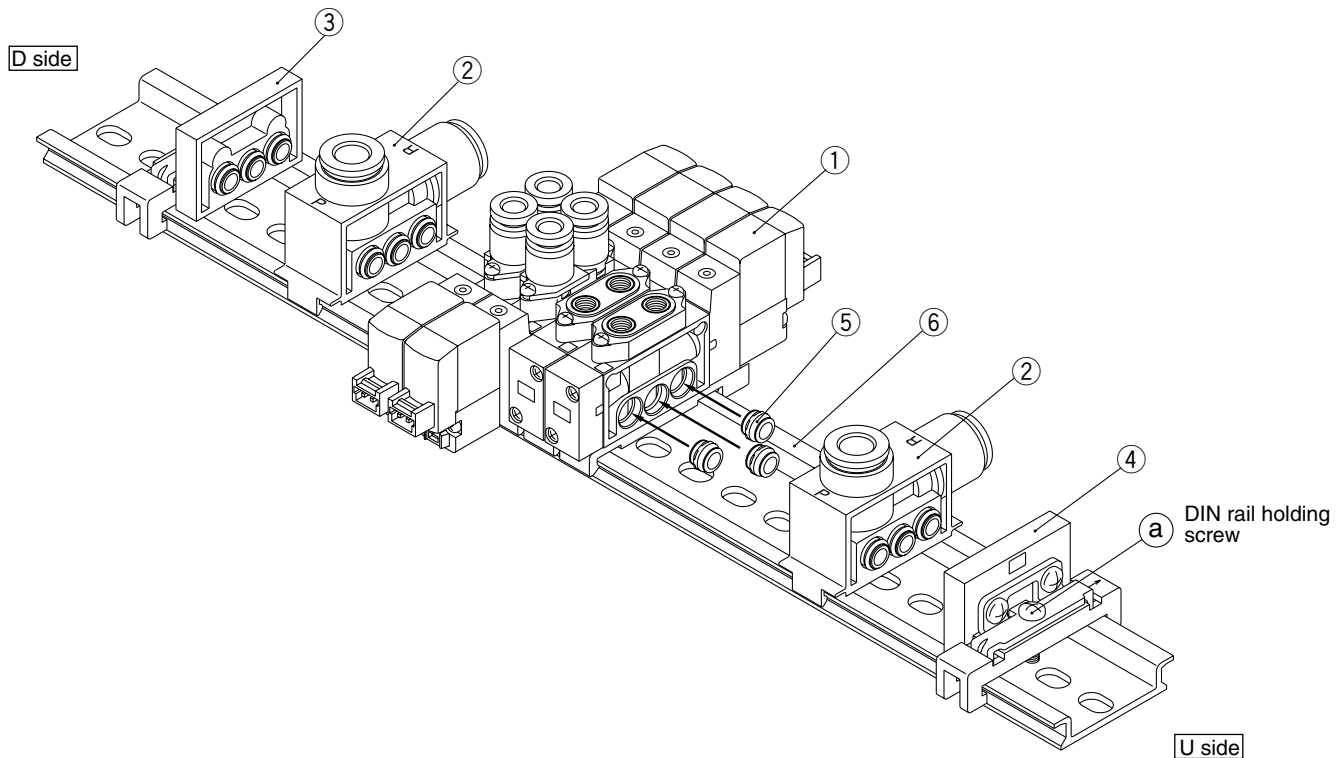
No.	Description	Part no.
⑥	Pilot valve assembly	Refer to "How to Order Pilot Valve Assembly" on page 1-4-69.
⑦	Port block assembly	Refer to "How to Order Port Block Assembly" on page 1-4-70.
⑧	Bottom cover assembly ^{Note)}	SY3000-41-2A (with screw, gasket)
		SY5000-41-2A (with screw, gasket)

Note) There is no bottom cover assembly available for SY7000.

- SV
- SZ
- SY**
- SYJ
- SX

DIN Rail Manifold Exploded View

SY3000 Type 60



Replacement Parts

No.	Description	Part no.	Note
①	Valve	SY3□60-□□-□	□ at the end of part number denotes A. B port size: M5, C4, C6, N3, N7. Includes bushing assembly (SY3000-52-1A) 3 pcs.
②	SUP/EXH block assembly	SY3000-55- ¹ / ₂ A	P, R port (1: One-touch fitting for ø8, 2: One-touch fitting for ø5/16") Includes bushing assembly (SY3000-52-1A) 3 pcs.
③	End block assembly	SY3000-56-1A	For D side (Bushing assembly: Not available for SY3000-52-1A)
④	End block assembly	SY3000-56-1B	For U side (Bushing assembly: Not available for SY3000-52-1A)
⑤	Bushing assembly	SY3000-52-1A	
⑥	DIN rail	VZ1000-11-1-□	Refer to page 1-4-72.

How to Order Valves

SY 5 2 40 [] [] 5 L [] []

Series

3	SY3000
5	SY5000
7	SY7000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Pilot type

Nil	Internal pilot
R	External pilot

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

* Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Rated voltage

DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

AC (50/60 Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

* DC specifications of type "D" and "DO" is only available with 12 and 24 VDC.
* For type "W□", DC voltage is only available.

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Light/Surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
* For "R" and "U", DC voltage is only available.
* Power saving circuit is only available in the "Z" type.

Electrical entry for D

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

* "DOZ" is not available.
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm lead H: Lead wire length 600 mm	L: With lead wire (Length 300 mm) LN: Without lead wire LO: Without	M: With lead wire (Length 300 mm) MN: Without lead	D: With connector DO: Without connector	WO: Without connector cable

* "LN", "MN" type: with 2 sockets.
* DIN terminal type "Y" conforming to DIN43650C standard is also available. For details, refer to catalog on page 1-4-201.
* For connector cable of M8 connector, refer to page 1-4-210.

SV

SZ

SY

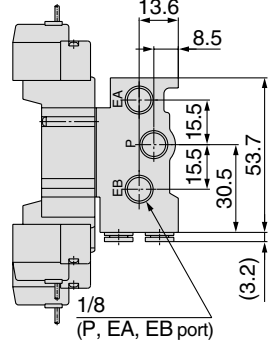
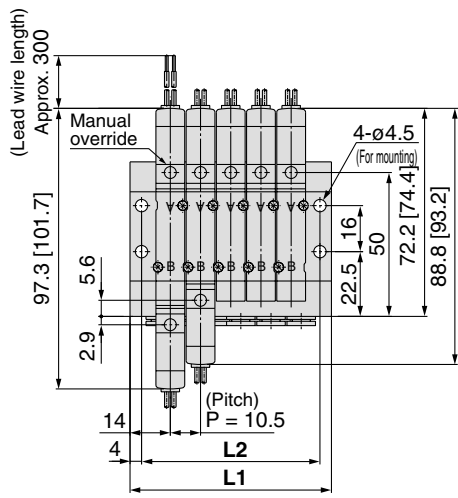
SYJ

SX

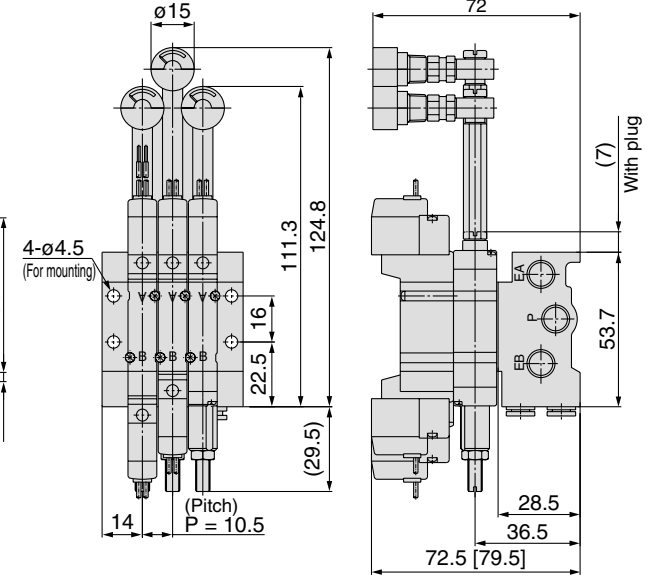
SY3000: SS5Y3-41- Stations -M5, C4, N3 **C6, N7**



Grommet (G)

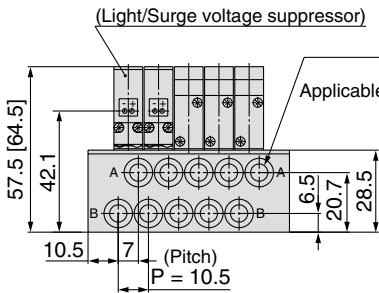


With interface regulator (with gauge)

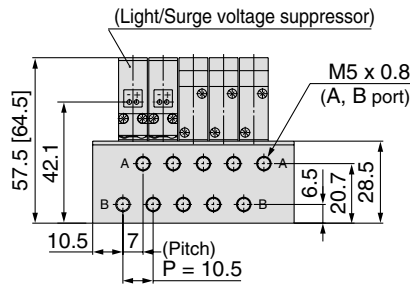


- SV
- SZ
- SY**
- SYJ
- SX

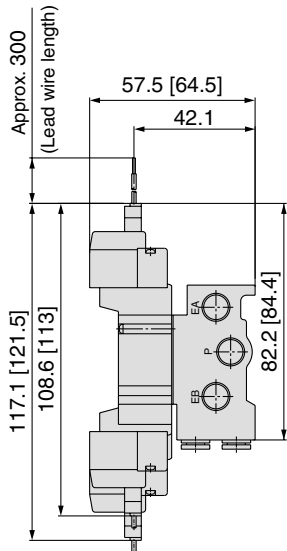
(Station 1) ----- (Station n)



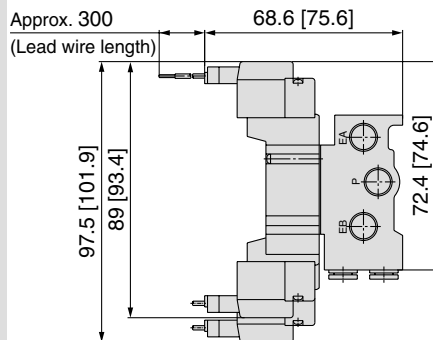
For M5



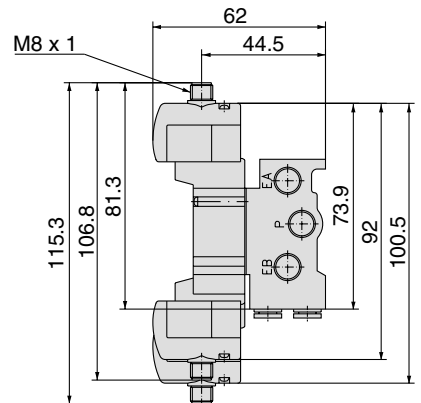
L plug connector (L)



M plug connector (M)



M8 connector (WO)



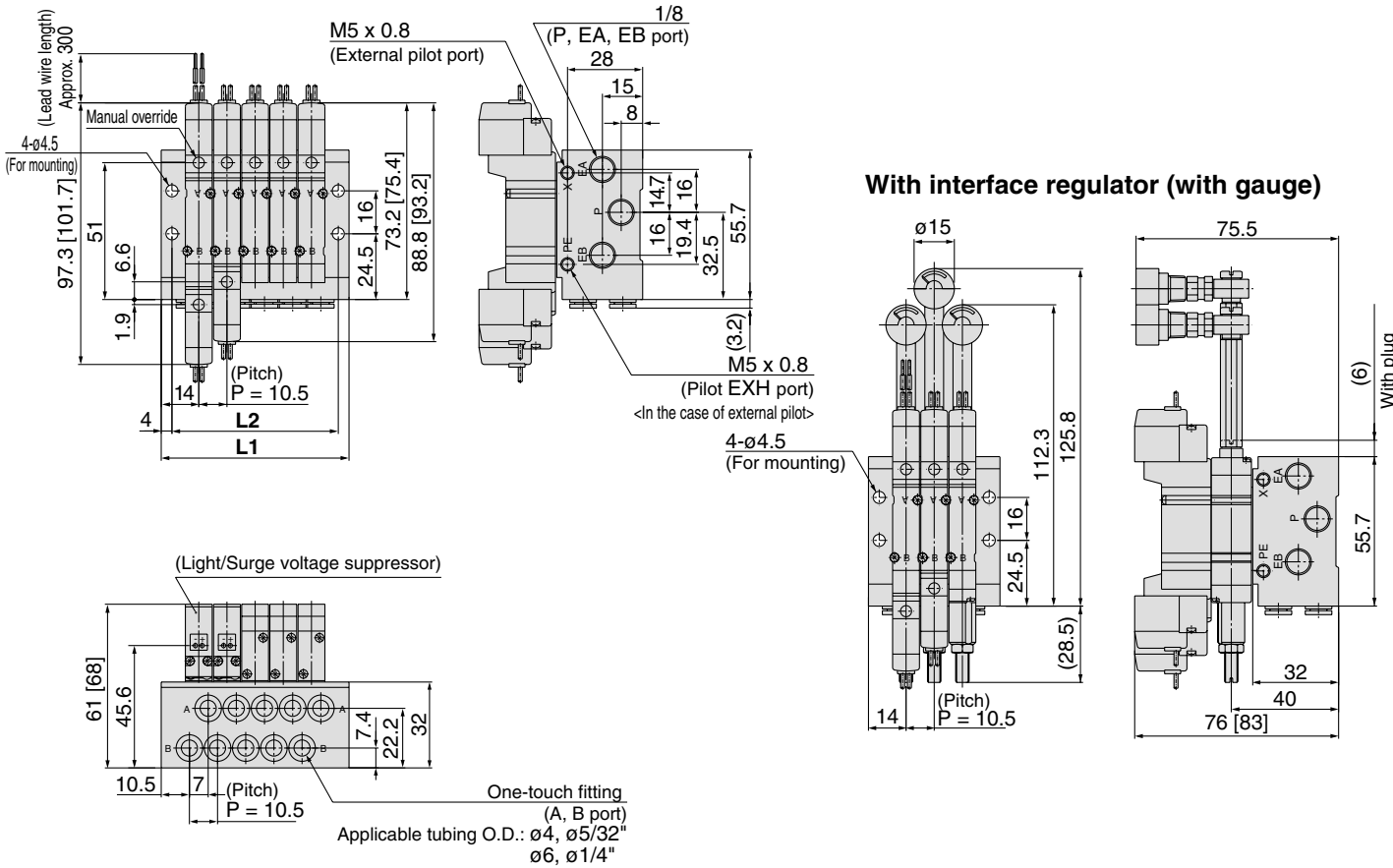
Note) Refer to page 1-4-20 for dimensions of connector types.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	38.5	49	59.5	70	80.5	91	101.5	112	122.5	133	143.5	154	164.5	175	185.5	196	206.5	217	227.5
L2	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5

SY3000: SS5Y3-42- Stations - C4, N3
C6, N7

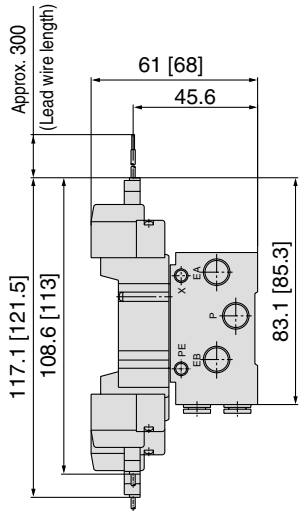


Grommet (G)

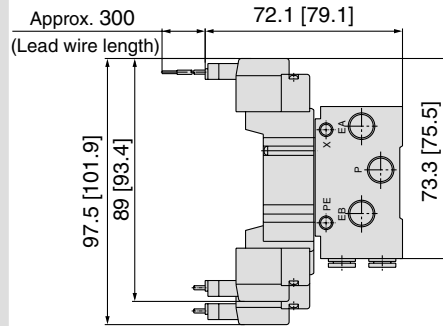


- SV
- SZ
- SY**
- SYJ
- SX

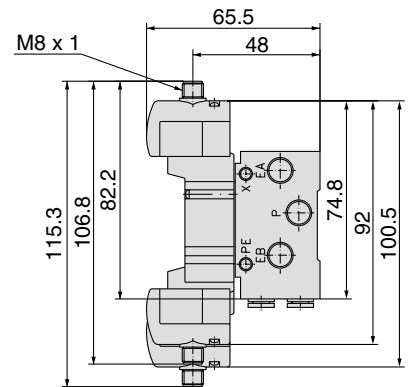
L plug connector (L)



M plug connector (M)



M8 connector (WO)

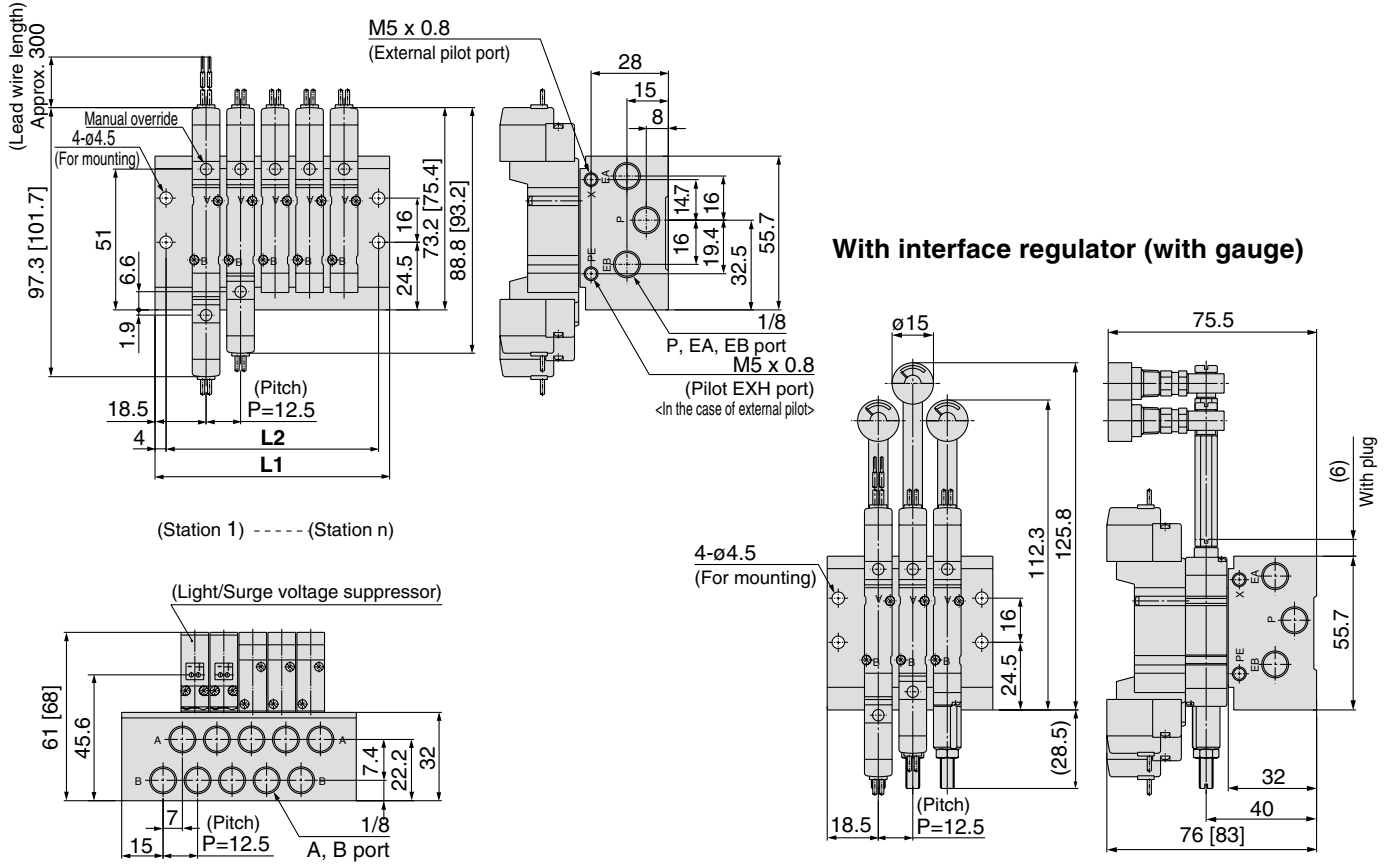


Note) Refer to page 1-4-210 for dimensions of connector types.

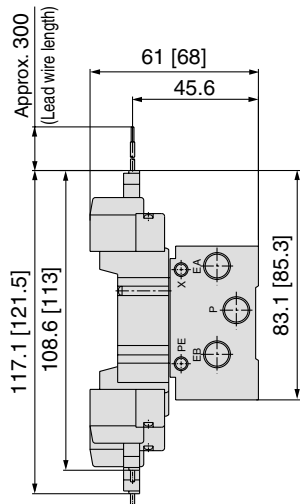
Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	38.5	49	59.5	70	80.5	91	101.5	112	122.5	133	143.5	154	164.5	175	185.5	196	206.5	217	227.5
L2	30.5	41	51.5	62	72.5	83	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5

SY3000: SS5Y3-42- Stations -01

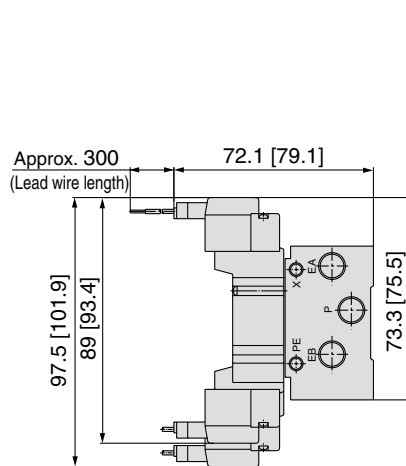
Grommet (G)



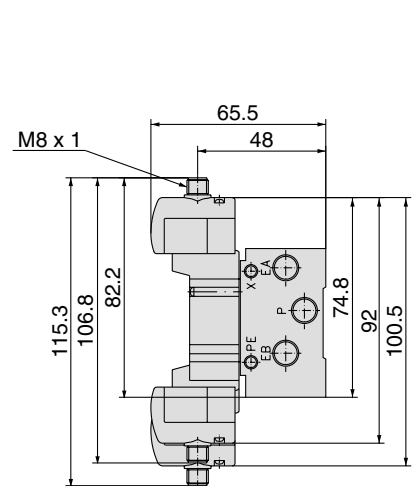
L plug connector (L)



M plug connector (M)



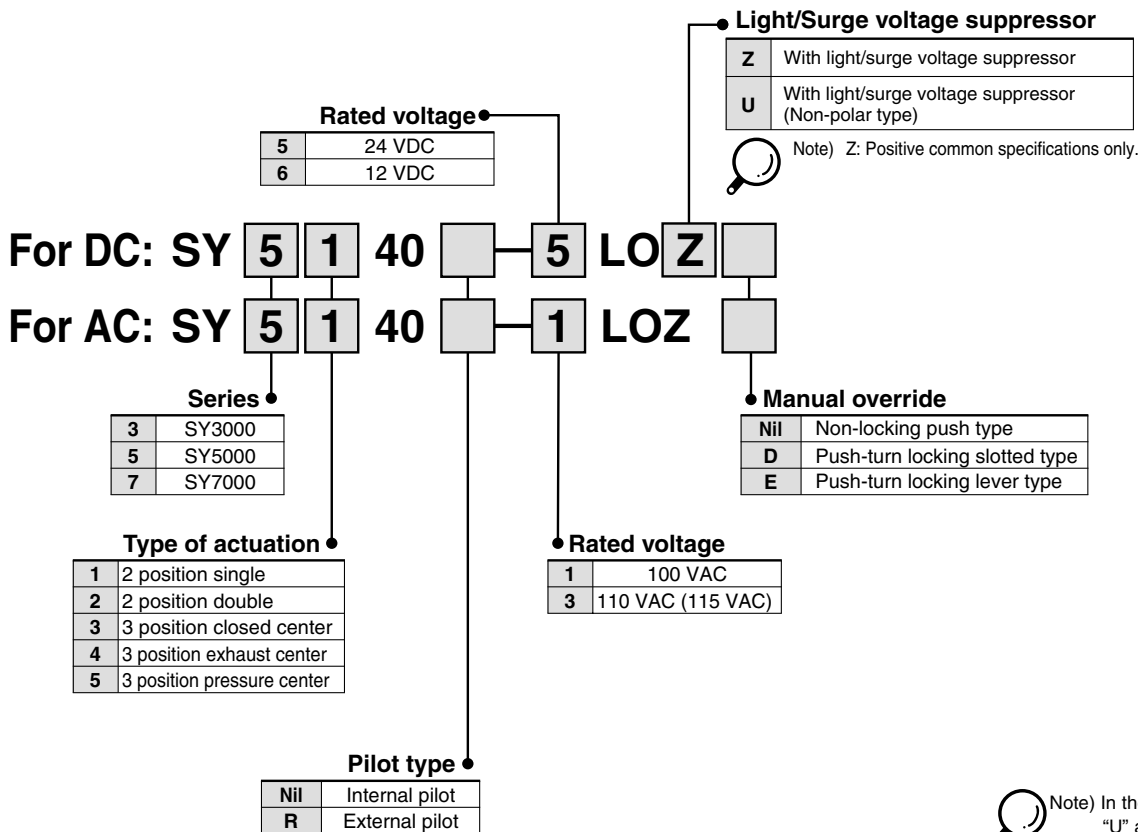
M8 connector (WO)



Note) Refer to page 1-4-210 for dimensions of connector types.

Stations n	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	47.5	60	72.5	85	97.5	110	122.5	135	147.5	160	172.5	185	197.5	210	222.5	235	247.5	260	272.5
L2	39.5	52	64.5	77	89.5	102	114.5	127	139.5	152	164.5	177	189.5	202	214.5	227	239.5	252	264.5

How to Order Valves



- SV
- SZ
- SY
- SYJ
- SX

Note) In the case of flat cable type, "U" and "Z" types are for DC specifications and "Z" type is for AC specifications. "Z" type for DC is positive common specification only. For the other combination, please contact SMC.

How to Order Connector Assembly

For 12/24 VDC

For DC	For SY3000	For SY5000/7000
For single solenoid	SY3000-37-3A	SY5000-37-3A
Double solenoid, 3 position type	SY3000-37-4A	SY5000-37-4A
Single with spacer assembly	SY5000-37-3A	SY5000-37-5A
Double, 3 position with spacer assembly	SY3000-37-6A	SY5000-37-6A

For 100 VAC

For DC	For SY3000	For SY5000/7000
For single solenoid	SY3000-37-32A	SY5000-37-15A
Double solenoid, 3 position type	SY3000-37-33A	SY5000-37-16A
Single with spacer assembly	SY5000-37-15A	SY5000-37-17A
Double, 3 position with spacer assembly	SY3000-37-34A	SY5000-37-18A

For 100 VAC (115 VAC)

For DC	For SY3000	For SY5000/7000
For single solenoid	SY3000-37-35A	SY5000-37-19A
Double solenoid, 3 position type	SY3000-37-36A	SY5000-37-20A
Single with spacer assembly	SY5000-37-19A	SY5000-37-21A
Double, 3 position with spacer assembly	SY3000-37-37A	SY5000-37-22A

How to Order Valves

SY 5 2 40 [] 5 L [] []

Series

3	SY3000
5	SY5000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Coil specifications

Nil	Standard
T	With power saving circuit (24, 12 VDC only)

* Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Rated voltage

DC	
5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

AC (Hz) 50/60	
1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

* DC specifications of type "D" and "DO" is only available with 12 and 24 VDC.
 * For type "W□", DC voltage is only available.
 * "D" and "DO" only available for SY5000.

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Light/Surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
 * For "R" and "U", DC voltage is only available.
 * Power saving circuit is only available in the "Z" type.

Electrical entry for D

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

* "DOZ" is not available.
 * For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC			24, 12 VDC/100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm	L: With lead wire (Length 300 mm) LN: Without lead wire	M: With lead wire (Length 300 mm) MN: Without lead wire	(SY5000) D: With connector DO: Without connector	WO: Without connector cable
H: Lead wire length 600 mm	LO: Without connector	MO: Without connector		

* "LN", "MN" type: with 2 sockets.
 * D and DO only available for SY5000.
 * DIN terminal type "Y" conforming to DIN43650C standard is also available. For details, refer to page 1-4-201.
 * For connector cable of M8 connector, refer to page 1-4-209.

SV

SZ

SY

SYJ

SX

Series SY3000/5000 Base Mounted Monifold Stacking Type/DIN Rail Mounted Plug-in

How to Order Manifold

Type 45F (D-sub connector, 25 pins)

SS5Y 3 - 45 F D - 05 U - C4

Series

3	SY3000
5	SY5000

Common specifications

Nil	Positive common
N	Negative common

Connector mounting position

Symbol	Mounting position
U	U side
D	D side

Valve stations

Symbol	Stations	Note
02	2 stations	Single wiring spec. (Applicable up to 20 solenoid valves.)
:	:	
20	20 stations	

- * This also includes the number of blanking plate assemblies.
- * Two stations are necessary for the double, 3 position (Dual body type).

SUP/EXH block assembly mounting position

Symbol	Mounting position	Stations
U	U side	2 to 10 stations
D	D side	2 to 10 stations
B	(Both sides)	2 to 20 stations
M	Special specifications	

- * For special specifications, indicate separately on the manifold specification sheet.

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for $\phi 4$	SY3000
C6	One-touch fitting for $\phi 6$	
M	Mixed	
C4	One-touch fitting for $\phi 4$	SY5000
C6	One-touch fitting for $\phi 6$	
C8	One-touch fitting for $\phi 8$	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for $\phi 5/32$ "	SY3000
N7	One-touch fitting for $\phi 1/4$ "	
M	Mixed	
N3	One-touch fitting for $\phi 5/32$ "	SY5000
N7	One-touch fitting for $\phi 1/4$ "	
N9	One-touch fitting for $\phi 5/16$ "	
M	Mixed	

- * In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

Voltage

Nil	24 VDC
12V	12 VDC

Option

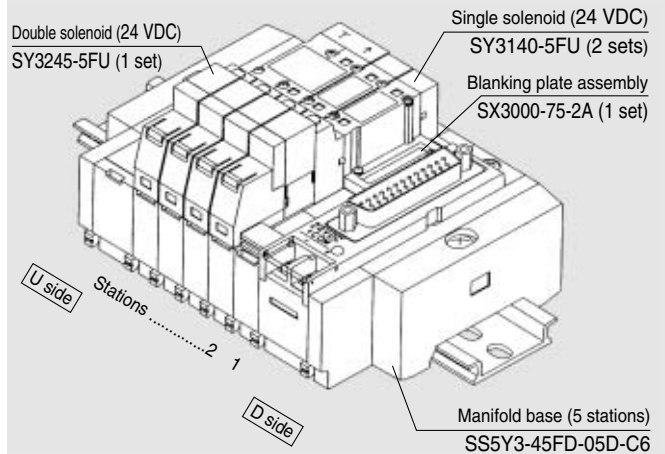
When a longer DIN rail is desired than the specified stations, specify the station number to be required.
(20 stations at maximum)



For external pilot and built-in silencer, refer to page 1-4-197.

How to Order Valve Manifold Assembly

Example (Type 45F/D-sub connector (25 pins))



SS5Y3-45FD-05U-C6 1 set
(Type 45F, D-sub connector 5 port manifold base part no.)
* SX3000-75-2A 1 set (Blanking plate assembly part no.)
* SY3140-5FU 2 sets (Single solenoid part no.)
* SY3245-5FU 1 set (Double solenoid part no.)

The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

- The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of connector box.
- When ordering double solenoid valves/3 position (Dual body type), please keep in mind that they require two manifold stations.

How to Order Valves

(Type 45F, 45P□, 45T, 45T1)

2 position single SY 3 1 4 0 - 5 FU

Double, 3 position SY 3 2 4 5 - 5 FU

Series

3	SY3000
5	SY5000

Type of actuation

2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Dual body type (Double, 3 position)

Rated voltage

5	24 VDC
6	12 VDC

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Series SY3000/5000 Base Mounted Monifold Stacking Type/DIN Rail Mounted Serial Transmission (Integrated)

How to Order Manifold

SS5Y **3** - 45S **A** - 05 **U** - C6

Series	
3	SY3000
5	SY5000
Model	
Symbol	Specifications
0	Without SI unit
A	With general type SI unit (Series EX300)
B	Mitsubishi Electric Corp.: MELSECNET/ MINI-S3 Data Link System
C	OMRON Corp.: SYSBUS Wire System
D	SHARP Corp.: Satellite I/O Link System
E	Matsushita Electric Works: MEWNET-F System
F1	NKE Corp.: Uni-wire System (16 output points)
G	Rockwell Automation: Allen Bradley Remote I/O (RIO) System
H	NKE Corp.: Uni-wire H System
J1	SUNX Corp.: S-LINK System (16 output points)
J2	SUNX Corp.: S-LINK System (8 output points)
K	Fuji Electric Co.: T-LINK Mini System
Q	DeviceNet, CompoBus/D (OMRON Corp.)
R1	OMRON Corp.: CompoBus/S System (16 output points)
R2	OMRON Corp.: CompoBus/S System (8 output points)
U	JEMANET (JPCN-1)
V	Mitsubishi Electric Corp.: CC-LINK System

* For the general purpose type, a transmission unit is require on the CPU side.
* Even though when it is not equipped with SI unit, DIN rail length is long enough for future expectancy of mounting SI unit.

Valve stations

Symbol	Stations	Note
02	2 stations	Single wining spec. (Applicable up to 16 solenoid valves.)
:	:	
16	16 stations	

* This also includes the number of blanking plate assemblies.
* Two stations are necessary for the double, 3 position (Dual body type).

SUP/EXH block assembly mounting position

Symbol	Mounting position	Stations
U	U side	2 to 10 stations
D	D side	2 to 10 stations
B	(Both sides)	2 to 16 stations
M	Special specifications	

* For special specifications, indicate separately on the manifold specification sheet.

SI Unit Part No.

Symbol	Specifications	For SS5Y□-45S	Symbol	Specifications:	For SS5Y□-45S
A	With general type SI unit (Series EX300)	EX322-S001	J1	SUNX Corp.: S-LINK System (16 output points)	EX122-SSL1
B	Mitsubishi Electric Corp.: MELSECNET/ MINI-S3 Data Link System	EX122-SMB1	J2	SUNX Corp.: S-LINK System (8 output points)	EX122-SSL2
C	OMRON Corp.: SYSBUS Wire System	EX122-STA1	K	Fuji Electric Co.: T-LINK Mini System	EX122-SFU1
D	SHARP Corp.: Satellite I/O Link System	EX122-SSH1	Q	Device Net: CompoBus/D (OMRON Corp.)	EX122-SDN1
E	Matsushita Electric Works: MEWNET-F System	EX122-SPA1	R1	OMRON Corp.: CompoBus/S (16 output points)	EX122-SCS1
F1	NKE Corp.: Uni-wire System (16 output points)	EX122-SUW1	R2	OMRON Corp.: CompoBus/S (8 output points)	EX122-SCS2
G	Rockwell Automation: Allen Bradley Remote I/O (RIO) System	EX122-SAB1	U	JEMANET (JPCN-1)	EX122-SJN1
H	NKE Corp.: Uni-wire H System	EX122-SUH1	V	Mitsubishi Electric Corp.: CC-LINK System	EX122-SMJ1

Option
When a longer DIN rail is desired than the specified stations, specify the station number to be required.
(Max. 20 stations)

A, B port size One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

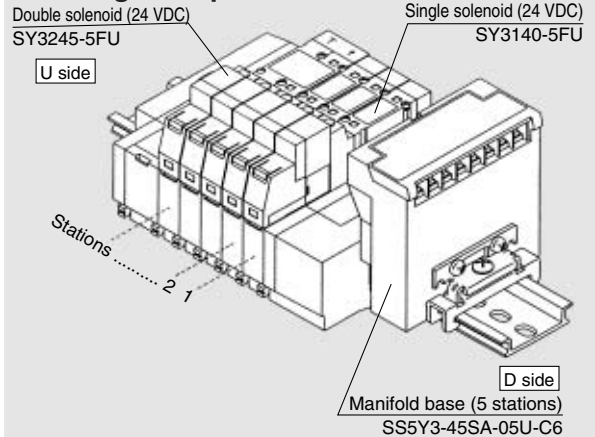
One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
M	Mixed	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

* In the case of mixed specifications, indicate separately on the manifold specification sheet.

How to Order Valve Manifold Assembly

Ordering example



SS5Y3-45SA-05U-C6 1 set (Type 45S with serial unit 5 stations manifold base part no.)
* SY3140-5FU 3 sets (Single solenoid part no.)
* SY3245-5FU 1 set (Double solenoid part no.)

* The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

* The valve arrangement is numbered as the 1st. station from D side.
* When ordering double solenoid valves/3 position (Dual body type), please keep in mind that they require two manifold stations.
* Serial unit is available only for the D-side mounting type.

How to Order Valves

2 position single SY **3** 1 4 0 - 5 FU
Double 3 position SY **3** 2 4 5 - 5 FU

Series	
3	SY3000
5	SY5000

Type of actuation

2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

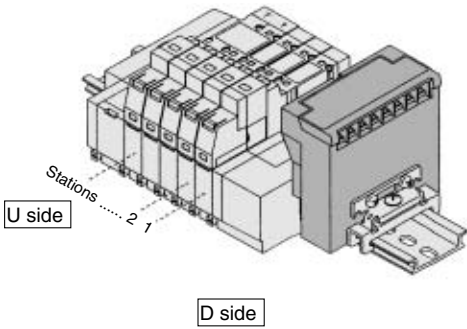
Rated voltage
5 24 VDC

Dual body type (Double, 3 position)

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

- The serial transmission system reduces wiring work, while minimizing wiring and saving space.
- 16 stations max. (Specify a model with more than 8 stations by using a manifold specification sheet.)



- The total number of stations is tabulated starting from station one on the D side.
- Maximum station: Up to 16 solenoids (16 single solenoids).

Item	Specifications
External power supply	24 VDC +10%/−5%
Current consumption (Internal unit)	0.1A SA, SB, SD, SE, SF1, SG, SJ1, SJ2, SK, SR1, SR2, SH, SU, SV
	0.3A SC, SQ

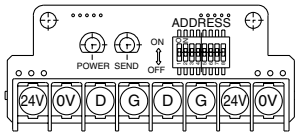
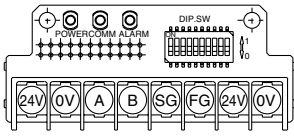
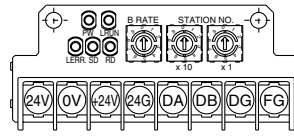
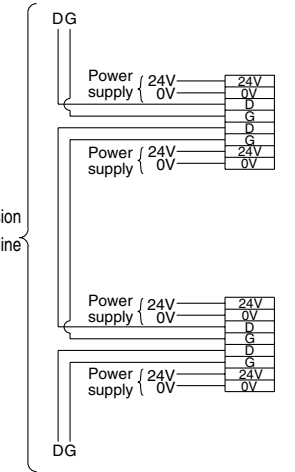
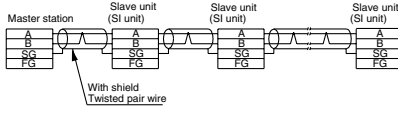
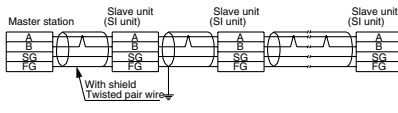
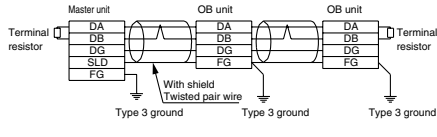
	Type SA Applicable to Series EX300	Type SB Mitsubishi Electric Corporation MELSECNET/mini-S3 Data Link System																		
Name of terminal block, LED	<table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>TRD</td> <td>Lights up when receiving data.</td> </tr> <tr> <td>RUN/ERR</td> <td>Flashes when received data is normal; lights up when abnormal.</td> </tr> </tbody> </table>	LED	Description	TRD	Lights up when receiving data.	RUN/ERR	Flashes when received data is normal; lights up when abnormal.	<table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lights up when power supply is ON.</td> </tr> <tr> <td>RUN</td> <td>Lights up when the data transmission with the master station is normal.</td> </tr> <tr> <td>RD</td> <td>Lights up when receiving data.</td> </tr> <tr> <td>SD</td> <td>Lights up when sending data.</td> </tr> <tr> <td>ERR.</td> <td>Lights up when data reception error occurs; goes off when the error is corrected.</td> </tr> </tbody> </table>	LED	Description	POWER	Lights up when power supply is ON.	RUN	Lights up when the data transmission with the master station is normal.	RD	Lights up when receiving data.	SD	Lights up when sending data.	ERR.	Lights up when data reception error occurs; goes off when the error is corrected.
LED	Description																			
TRD	Lights up when receiving data.																			
RUN/ERR	Flashes when received data is normal; lights up when abnormal.																			
LED	Description																			
POWER	Lights up when power supply is ON.																			
RUN	Lights up when the data transmission with the master station is normal.																			
RD	Lights up when receiving data.																			
SD	Lights up when sending data.																			
ERR.	Lights up when data reception error occurs; goes off when the error is corrected.																			
Note	<ul style="list-style-type: none"> • Connection to T unit PLC manufacturer's I/O card enables serial transmission. EX300-TMB1 For models of Mitsubishi Electric Corporation EX300-TTA1 For models of OMRON Corporation EX300-TFU1 For models of Fuji Electric Co., Ltd. EX300-T001 For general models * Up to 32 points per unit. • No. of output points: 16 points 	<ul style="list-style-type: none"> • MELSECNET/mini-S3 Data Link System Master unit: AJ71PT32-S3, AJ71T32-S3, A1SJ71PT32-S3 * No. of output points: 16 points No. of sta. occupied: 2 stations 																		
Cable wiring	<p>* Ground either the reception side or the transmission side of the shielding wire shield.</p>	<p>* Ground either the reception side or the transmission side of the shielding wire shield.</p>																		

- SV
- SZ
- SY
- SYJ
- SX

	Type SC OMRON Corporation SYSBUS Wiring System	Type SD SHARP Corporation Satellite I/O Link System	Type SE Matsushita Electric Works, Ltd. MEWNET-F System																								
Name of terminal block, LED	<table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>RUN</td> <td>Lights up when transmission is normal and PLC is in operation mode.</td> </tr> <tr> <td>T/R</td> <td>Flashes when transmission is normal; lights up when it is abnormal.</td> </tr> </tbody> </table>	LED	Description	RUN	Lights up when transmission is normal and PLC is in operation mode.	T/R	Flashes when transmission is normal; lights up when it is abnormal.	<table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lights up when power supply is ON.</td> </tr> <tr> <td>RUN</td> <td>Lights up when power supply is ON and the slave unit is operating normally.</td> </tr> <tr> <td>ERROR</td> <td>Lights up in cases of abnormal slave unit switch setting, abnormal communications, when the master unit PLC has stopped or if the slave unit is defective.</td> </tr> <tr> <td>R.SET HOLD</td> <td>Lights up when receiving the control input from the master unit.</td> </tr> </tbody> </table>	LED	Description	POWER	Lights up when power supply is ON.	RUN	Lights up when power supply is ON and the slave unit is operating normally.	ERROR	Lights up in cases of abnormal slave unit switch setting, abnormal communications, when the master unit PLC has stopped or if the slave unit is defective.	R.SET HOLD	Lights up when receiving the control input from the master unit.	<table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lights up when power supply is ON.</td> </tr> <tr> <td>COMM.</td> <td>Flashes when sending and receiving data.</td> </tr> <tr> <td>ALARM</td> <td>Lights up when the unit is abnormal; flashes for setting error.</td> </tr> </tbody> </table>	LED	Description	POWER	Lights up when power supply is ON.	COMM.	Flashes when sending and receiving data.	ALARM	Lights up when the unit is abnormal; flashes for setting error.
LED	Description																										
RUN	Lights up when transmission is normal and PLC is in operation mode.																										
T/R	Flashes when transmission is normal; lights up when it is abnormal.																										
LED	Description																										
POWER	Lights up when power supply is ON.																										
RUN	Lights up when power supply is ON and the slave unit is operating normally.																										
ERROR	Lights up in cases of abnormal slave unit switch setting, abnormal communications, when the master unit PLC has stopped or if the slave unit is defective.																										
R.SET HOLD	Lights up when receiving the control input from the master unit.																										
LED	Description																										
POWER	Lights up when power supply is ON.																										
COMM.	Flashes when sending and receiving data.																										
ALARM	Lights up when the unit is abnormal; flashes for setting error.																										
Note	<ul style="list-style-type: none"> • SYSBUS Wire System Master unit: Type C500-RM201, Type C200H-RM201 • No. of output points: 16 points 	<ul style="list-style-type: none"> • Satellite I/O Link System Master unit: ZW-31LM, JW-31LM, JW-23LM • No. of output points: 16 points 	<ul style="list-style-type: none"> • MEWNET-F System Master unit: AFP3740, AFP5740 • No. of output points: 16 points 																								
Cable wiring		<p>a) 2-wire type Wiring does not include signal ground line (SG).</p> <p>a) 3-wire type Wiring does not include signal ground line (SG).</p>																									

	Type SF1 NKE Corporation Uni-wire System	Type SG Rockwell Automation, Inc. Allen Bradley Remote I/O (RIO) System	Type SJ1, SJ2 SUNX Corporation S-LINK System																				
Name of terminal block, LED	<table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lights up when power supply is ON.</td> </tr> <tr> <td>SEND</td> <td>Transmission indicator: Flashes when normal; goes out or lights up when abnormal.</td> </tr> </tbody> </table>	LED	Description	POWER	Lights up when power supply is ON.	SEND	Transmission indicator: Flashes when normal; goes out or lights up when abnormal.	<table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lights up when power supply is ON.</td> </tr> <tr> <td>COM.</td> <td>Lights up when communication is normal. Flashes when communication is initialized. Goes out for abnormal communication.</td> </tr> <tr> <td>ERROR</td> <td>Lights up for abnormal communication.</td> </tr> </tbody> </table>	LED	Description	POWER	Lights up when power supply is ON.	COM.	Lights up when communication is normal. Flashes when communication is initialized. Goes out for abnormal communication.	ERROR	Lights up for abnormal communication.	<table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lights up when power supply is ON.</td> </tr> <tr> <td>SEND</td> <td>Transmission indicator: Flashes when normal, flashes slowly when abnormal.</td> </tr> </tbody> </table>	LED	Description	POWER	Lights up when power supply is ON.	SEND	Transmission indicator: Flashes when normal, flashes slowly when abnormal.
LED	Description																						
POWER	Lights up when power supply is ON.																						
SEND	Transmission indicator: Flashes when normal; goes out or lights up when abnormal.																						
LED	Description																						
POWER	Lights up when power supply is ON.																						
COM.	Lights up when communication is normal. Flashes when communication is initialized. Goes out for abnormal communication.																						
ERROR	Lights up for abnormal communication.																						
LED	Description																						
POWER	Lights up when power supply is ON.																						
SEND	Transmission indicator: Flashes when normal, flashes slowly when abnormal.																						
Note	<ul style="list-style-type: none"> Uni-wire System Send unit: SD-120 No. of output points: 16 points 	<ul style="list-style-type: none"> Remote I/O (RIO) System No. of output points: 16 points 	<ul style="list-style-type: none"> S-LINK System S-LINK Controller: SL-CU1 No. of output points: 16 points (Type SJ1) No. of output points: 8 points (Type SJ2) 																				
Cable wiring			<p>a) Type T branching multi-drop wiring (S-LINK System) b) Crossover wiring (Sensor Link System)</p> <p>The above is the example of using dedicated S-LINK flat ribbon cable SL-RCMI00.</p>																				

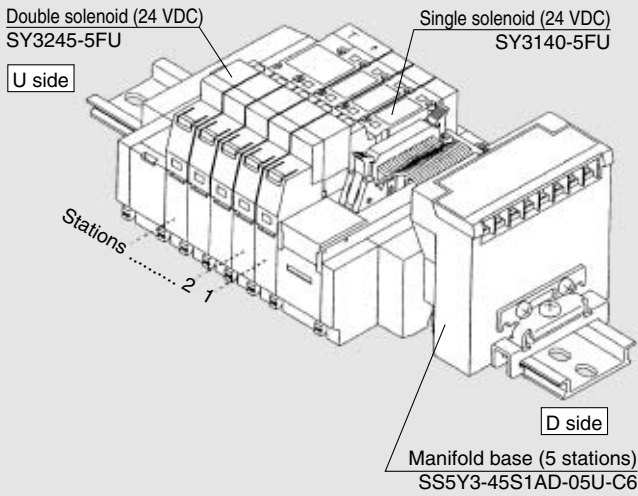
	Type SK Fuji Electric Co, Ltd. T Link Mini System	Type SDQ DeviceNet	Type SR1, SR2 OMRON Corporation CompoBus/S System																				
Name of terminal block, LED	<table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lights up when power supply is ON.</td> </tr> <tr> <td>SEND</td> <td>Lights up for abnormal transmission or power off at the processor side.</td> </tr> </tbody> </table>	LED	Description	POWER	Lights up when power supply is ON.	SEND	Lights up for abnormal transmission or power off at the processor side.	<table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Green light is ON when the circuit is powered. Goes out when SI unit is not online or the circuit is not powered.</td> </tr> <tr> <td>MOD/NET</td> <td>Green light is continuously ON when SI unit is on-line and in operation. Red light flashes for connection time-out (minor communication error). Red light is continuously ON for connection time-out (major communication error) or online impossibility.</td> </tr> </tbody> </table>	LED	Description	POWER	Green light is ON when the circuit is powered. Goes out when SI unit is not online or the circuit is not powered.	MOD/NET	Green light is continuously ON when SI unit is on-line and in operation. Red light flashes for connection time-out (minor communication error). Red light is continuously ON for connection time-out (major communication error) or online impossibility.	<table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lights up when transmission is ON; goes out when not powered.</td> </tr> <tr> <td>COMM</td> <td>Lights up for normal communication; goes out for abnormal communication or waiting.</td> </tr> <tr> <td>ERR</td> <td>Lights up for abnormal communication; goes out for normal communication or waiting.</td> </tr> </tbody> </table>	LED	Description	POWER	Lights up when transmission is ON; goes out when not powered.	COMM	Lights up for normal communication; goes out for abnormal communication or waiting.	ERR	Lights up for abnormal communication; goes out for normal communication or waiting.
LED	Description																						
POWER	Lights up when power supply is ON.																						
SEND	Lights up for abnormal transmission or power off at the processor side.																						
LED	Description																						
POWER	Green light is ON when the circuit is powered. Goes out when SI unit is not online or the circuit is not powered.																						
MOD/NET	Green light is continuously ON when SI unit is on-line and in operation. Red light flashes for connection time-out (minor communication error). Red light is continuously ON for connection time-out (major communication error) or online impossibility.																						
LED	Description																						
POWER	Lights up when transmission is ON; goes out when not powered.																						
COMM	Lights up for normal communication; goes out for abnormal communication or waiting.																						
ERR	Lights up for abnormal communication; goes out for normal communication or waiting.																						
Note	<ul style="list-style-type: none"> T Link Mini System Master unit: FTM100B Converter: FRC100A-G02 Repeater: FRC200A-C10 No. of output points: 16 points 	<ul style="list-style-type: none"> DeviceNet OMRON Corporation: CompoBus/D System Master station unit: C200HW-DSM21 No. of output points: 16 points 	<ul style="list-style-type: none"> CompoBus/S System Master unit: C200HW-SRM21 Master unit: COM1-SRM21 No. of output points: 16 points (Type SR1) No. of output points: 8 points (Type SR2) 																				
Cable wiring	<p>Connect the shielding wire to the SD terminal. If the shielding wire is not connected to the SD terminal, normal transmission will be impossible even for short distances. Furthermore, do not ground the shielding wire (SD).</p>																						

	Type SH NKE Corporation Uni-wire H System	Type SU JEMANET (JPCN-1)	Type SV Mitsubishi Electric Corporation CC-LINK System																										
Name of terminal block, LED	 <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lights up when power supply is ON. (Lights on when normal; flickers when voltage drops.)</td> </tr> <tr> <td>SEND</td> <td>Transmission indicator: flashes when normal; goes out or lights up when abnormal.</td> </tr> </tbody> </table>	LED	Description	POWER	Lights up when power supply is ON. (Lights on when normal; flickers when voltage drops.)	SEND	Transmission indicator: flashes when normal; goes out or lights up when abnormal.	 <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>Lights up when SI unit power supply is ON.</td> </tr> <tr> <td>COMM</td> <td>Lights up for normal communication.</td> </tr> <tr> <td>ALARM</td> <td>Lights up for abnormal communication.</td> </tr> </tbody> </table>	LED	Description	POWER	Lights up when SI unit power supply is ON.	COMM	Lights up for normal communication.	ALARM	Lights up for abnormal communication.	 <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>PWR</td> <td>Lights up when transmission power; goes out when not powered.</td> </tr> <tr> <td>L RUN</td> <td>Lights up when receiving normal data.</td> </tr> <tr> <td>SD</td> <td>Lights up when sending data.</td> </tr> <tr> <td>RD</td> <td>Lights up when receiving data.</td> </tr> <tr> <td>L ERR.</td> <td>Lights up for transmission error and setting error; flashes when station or transmission speed settings are changed during operation.</td> </tr> </tbody> </table>	LED	Description	PWR	Lights up when transmission power; goes out when not powered.	L RUN	Lights up when receiving normal data.	SD	Lights up when sending data.	RD	Lights up when receiving data.	L ERR.	Lights up for transmission error and setting error; flashes when station or transmission speed settings are changed during operation.
LED	Description																												
POWER	Lights up when power supply is ON. (Lights on when normal; flickers when voltage drops.)																												
SEND	Transmission indicator: flashes when normal; goes out or lights up when abnormal.																												
LED	Description																												
POWER	Lights up when SI unit power supply is ON.																												
COMM	Lights up for normal communication.																												
ALARM	Lights up for abnormal communication.																												
LED	Description																												
PWR	Lights up when transmission power; goes out when not powered.																												
L RUN	Lights up when receiving normal data.																												
SD	Lights up when sending data.																												
RD	Lights up when receiving data.																												
L ERR.	Lights up for transmission error and setting error; flashes when station or transmission speed settings are changed during operation.																												
Note	<ul style="list-style-type: none"> • Uni-wire H System Send unit: SD-H2 • No. of output points: 16 points 	<ul style="list-style-type: none"> • JEMA Net (JPCN-1) (Reference) AJ71J92-S3 (Mitsubishi Electric Corporation) A1SJ71J92-S3 (Mitsubishi Electric Corporation) C200HW-JRM21 (OMRON Corporation) NJ-JPCN-1 (Fuji Electric Co., Ltd.) NP1L-JP1 (Fuji Electric Co., Ltd.) • No. of output points: 16 points 	<ul style="list-style-type: none"> • CC-Link System Master unit: AJ61BT11 Master unit: A1SJ61BT11 Master unit: AJ61QBT11 Master unit: A1SJ61QBT11 • No. of output points: 16 points 																										
Cable wiring		<p>a) 2-wire type</p>  <p>a) 3-wire type</p> 																											

- SV
- SZ
- SY
- SYJ
- SX

How to Order Valve Manifold Assembly

Ordering example



- SS5Y3-45S1AD-05U-C6 1 set (Type 45S1 with serial unit 5 station manifold base part no.)
- * SY3140-5FU 3 sets (Single solenoid part no.)
- * SY3245-5FU 1 set (Double solenoid part no.)

The asterisk denotes the symbol for assembly.
Prefix it to the part nos. of the solenoid valve, etc.

- The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of SI unit.
- When ordering double solenoid valves/3 position (Dual body type), please keep in mind that they require two manifold stations.

How to Order Valves

2 position single **SY** **3** **1** **4** **0** — **5** **FU**

Double, 3 position **SY** **3** **2** **4** **5** — **5** **FU**

Series

3	SY3000
5	SY5000

Type of actuation

2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Dual body type (Double, 3 position)

5	24 VDC
---	--------

Rated voltage

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

SV

SZ

SY

SYJ

SX

Body Ported/How to Order Valves

Individual Wiring: For SS5Y³-20

SY 5 1 3 **5 L** **01**

• **Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

• **Series**

3	SY300
5	SY500

• **Type of actuation**

1	Normally closed (N.C.)
2	Normally open

• **Solenoid type**

Nil	Single solenoid
D	Double solenoid

• **Coil specifications**

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

* Power saving circuit is not available in the case of "D", "DO" or "W□" type.

• **Thread piping**

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY300
01	1/8	SY500

• **Manual override**

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

• **Rated voltage**

DC	AC		
5	1	24 VDC	100 VAC
6	2	12 VDC	200 VAC
V	3	6 VDC	110 VAC [115 VAC]
S	4	5 VDC	220 VAC [230 VAC]
R		3 VDC	

*DC specifications of type "D" and "DO" is only available with 12 and 24 VDC.
* For type "W□", DC voltage is only available.

• **Light/Surge voltage suppressor**

Electrical entry for G, H, L, M, W		Electrical entry for D (SY500 only)	
Nil	Without light/surge voltage suppressor	Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor	S	With surge voltage suppressor
Z	With light/surge voltage suppressor	Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)		
U	With light/surge voltage suppressor (Non-polar type)		

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
* For "R" and "U", DC voltage is only available.
* Power saving circuit is only available in the "Z" type.

* "DOZ" is not available.
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

• **Electrical entry**

24, 12, 6, 5, 3 VDC/ 100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	D: With connector DO: Without connector	WO: Without connector cable
H: Lead wire length 600 mm	LN: Without lead wire LO: Without connector	MN: Without lead wire MO: Without connector		

* "LN", "MN" type: with 2 sockets. * For connector cable of M8 connector, refer to page 1-4-209.

* For DIN terminal of SY300 series, refer to page 1-4-207.

* DIN terminal type "Y" conforming to DIN 43650C is also available. For details, refer to page 1-4-201.

• **Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

Note) When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary.
(For details, refer to catalog on page 1-4-61.)

• **Thread type**

Nil	Rc
F	G
N	NPT
T	NPTF

- SV
- SZ
- SY**
- SYJ
- SX

Body Ported/How to Order Valves

Flat ribbon cable: SS5Y³/₅-20P

Light/Surge voltage suppressor

Z	With light/surge voltage suppressor
U	With light/surge voltage suppressor (Non-polar type)

Note) Z: Positive common specifications only.

Rated voltage

5	24 VDC
6	12 VDC

A port size Thread piping

Symbol	Port size	Applicable series
M5	M5 x 0.8	SY300
01	1/8"	SY500

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY300
C6	One-touch fitting for ø6	SY300
C6	One-touch fitting for ø6	SY500
C8	One-touch fitting for ø8	SY500

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY300
N7	One-touch fitting for ø1/4"	SY300
N7	One-touch fitting for ø1/4"	SY500
N9	One-touch fitting for ø5/16"	SY500

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Rated voltage

1	100 VAC
3	110 VAC [115 VAC]

Series

3	SY300
5	SY500

Type of actuation

1	Normally closed (N.C.)
2	Normally open (N.C.)

Solenoid type

Nil	Single solenoid
D	Double solenoid

For DC: SY 5 1 3 [] 5 LO Z [] [] []

For AC: SY 5 1 3 [] 1 LOZ [] [] []

Base Mounted/How to Order Valves

Individual wiring: For SS5Y³/₅-41/42/45

Series

3	SY300
5	SY500

Type of actuation

1	Normally closed (N.C.)
2	Normally open (N.C.)

Solenoid type

Nil	Single solenoid
D	Double solenoid

Pilot type

Nil	Internal pilot
R	External pilot

* External pilot is not available for Type 41 manifold.

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

* Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Rated voltage

DC	AC
5	1
6	2
V	3
S	4
R	

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Light/Surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
 * For "R" and "U", DC voltage is only available.
 * Power saving circuit is only available in the "Z" type.

Electrical entry for D (SY500 only)

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor

* DOZ is not available.
 * For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

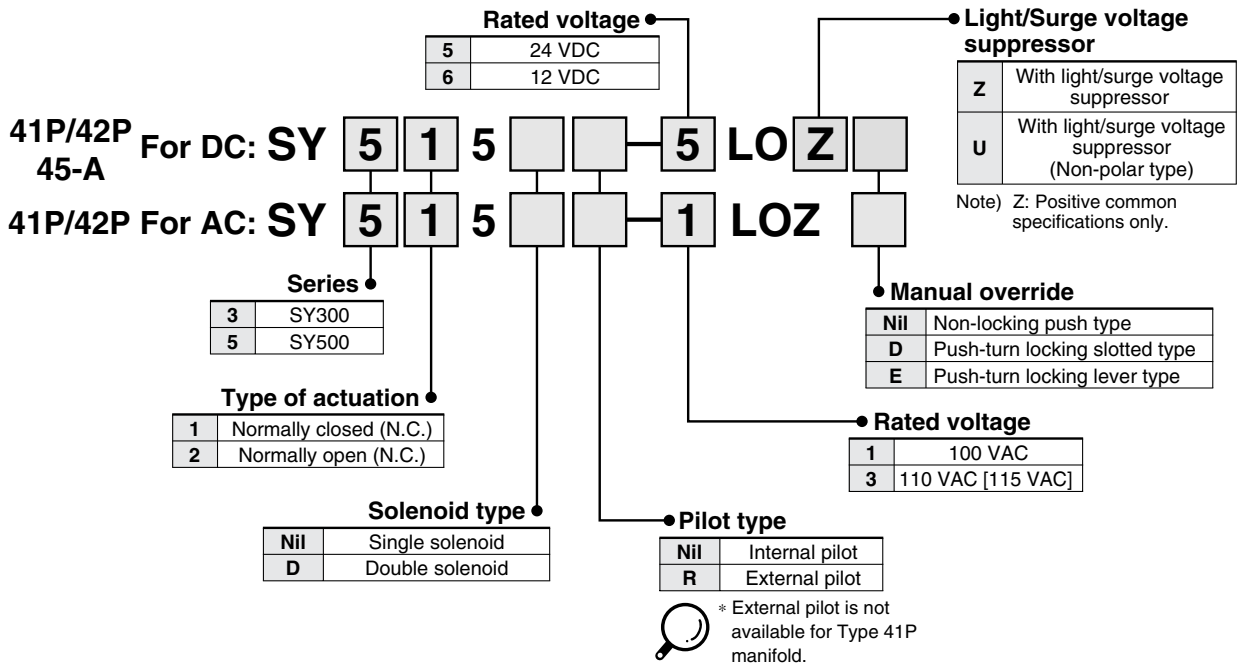
24, 12, 6, 5, 3 VDC/ 100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC		24, 12, 6, 5, 3 VDC	
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector		
G: Lead wire length 300 mm	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	D: With connector	WO: Without connector cable		
H: Lead wire length 600 mm	LN: Without lead wire	MN: Without lead wire	DO: Without connector			
	LO: Without connector	MO: Without connector				

* "LN", "MN" type: with 2 sockets.
 * For DIN terminal of SY300 series, refer to page 1-4-207.
 * DIN terminal type "Y" conforming to DIN

43650C is also available. For details, refer to page 1-4-201.
 * For connector cable of M8 connector, refer to page 1-4-209.

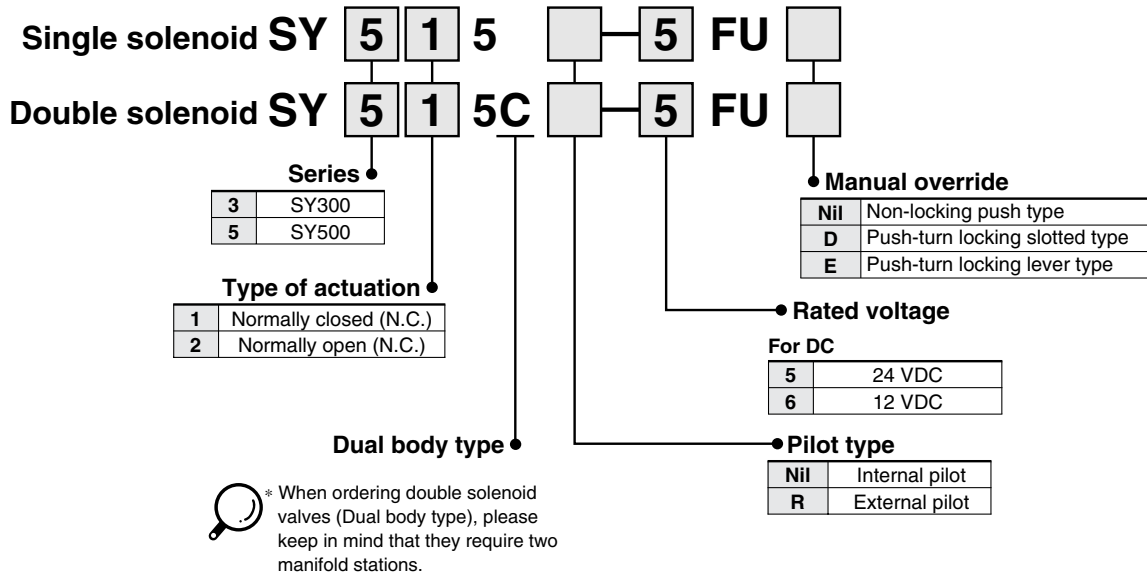
Base Mounted/How to Order Valves

Flat ribbon cable:
Connector box type: For SS5Y³-41P/42P/45-A



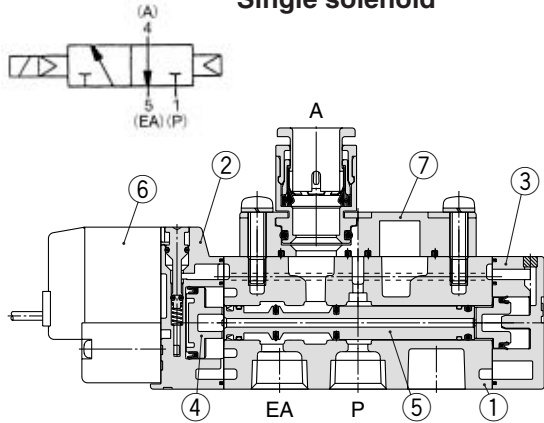
- SV
- SZ
- SY
- SYJ
- SX

Plug-in: For SS5Y³-45□

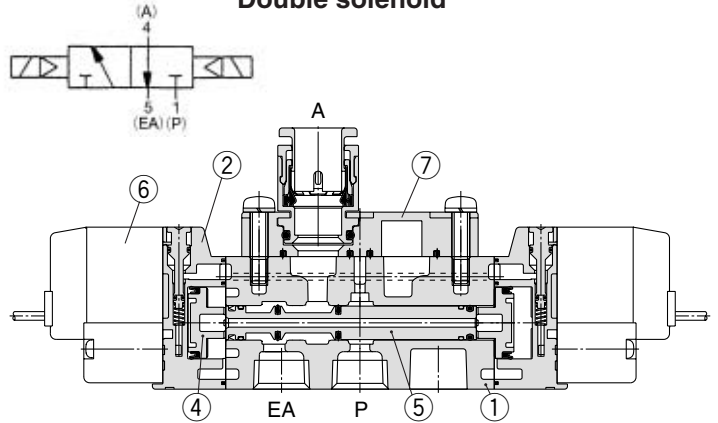


Construction

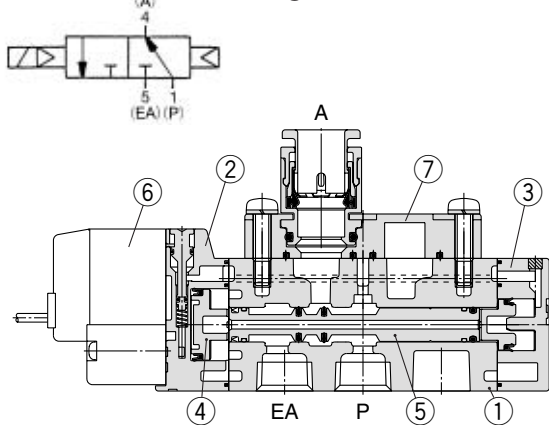
JIS Symbol
Single solenoid
**Normally closed (N.C.)
Single solenoid**



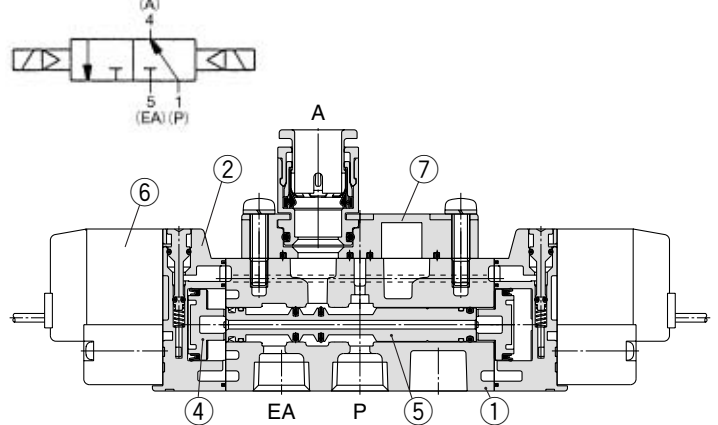
JIS Symbol
Double solenoid
**Normally closed (N.C.)
Double solenoid**



JIS Symbol
Single solenoid
**Normally open (N.O.)
Single solenoid**



JIS Symbol
Double solenoid
**Normally open (N.O.)
Double solenoid**



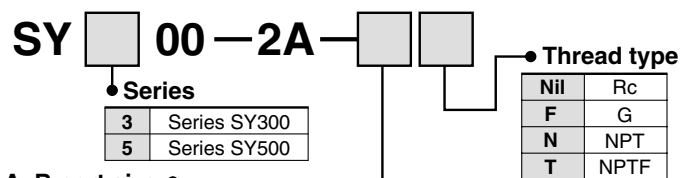
Component Parts

No.	Description	Material	Note
①	Body	Aluminum die-casted (SY3000: Zinc die-casted)	White
②	Adapter plate	Resin	White
③	End plate	Resin	White
④	Piston	Resin	—
⑤	Spool valve assembly	Aluminum, HNBR	—

Replacement Parts

No.	Description	No.
⑥	Pilot valve assembly	Refer to "How to Order Pilot Valve Assembly" on page 1-4-10.
⑦	M5 port block assembly	Refer to "How to Order Port Block Assembly" below.

How to Order M5 Port Block Assembly



A, B port size
Thread piping

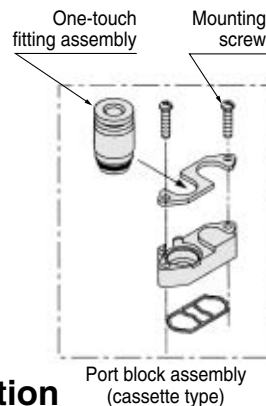
Symbol	Port size	Applicable series
M5	M5 x 0.8	SY300
O1	1/8	SY500

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY300
C6	One-touch fitting for ø6	
C4	One-touch fitting for ø4	SY500
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY300
N7	One-touch fitting for ø1/4"	
N3	One-touch fitting for ø5/32"	SY500
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	



* Only replacement of the fittings assembly is possible.

Metric size

Series	One-touch fitting for	Part No.
SY300	One-touch fitting for ø4	VVQ1000-50A-C4
	One-touch fitting for ø6	VVQ1000-50A-C6
SY500	One-touch fitting for ø4	VVQ1000-51A-C4
	One-touch fitting for ø8	VVQ1000-51A-C8

Inch size

Series	One-touch fitting for	Part No.
SY300	One-touch fitting for ø5/32"	VVQ1000-50A-N3
	One-touch fitting for ø1/4"	VVQ1000-50A-N7
SY500	One-touch fitting for ø5/32"	VVQ1000-51A-N3
	One-touch fitting for ø1/4"	VVQ1000-51A-N7
	One-touch fitting for ø5/16"	VVQ1000-51A-N9

Caution

Mounting screw tightening torques

SY300 (M2) : 0.12 N·m
SY500 (M3) : 0.6 N·m

Specifications

Dimensions, specifications, solenoid specifications, response time and effective area are the same as 5 port valve.

Weight

Series SY300

Valve model	Type of actuation	Weight (g)	
		Grommet	L, M plug connector
SY3□3-□□-M5	Single	51	53
	Double	68	74
SY3□3-□□-C4 N3	Single	56	59
	Double	74	79
SY3□3-□□-C6 N7	Single	54	57
	Double	72	77
SY3□5-□□	Single	47	50
	Double	65	70

Series SY500

Valve model	Type of actuation	Weight (g)		
		Grommet	L, M plug connector	DIN terminal
SY5□3-□-01□	Single	69	72	93
	Double	87	93	135
SY5□3-□-C4 N3	Single	82	82	103
	Double	100	102	144
SY5□3-□-C6 N7	Single	79	77	98
	Double	97	98	140
SY5□3-□-C8 N9	Single	75	84	105
	Double	93	105	147
SY5□5-□□	Single	55	58	79
	Double	73	78	120

SV

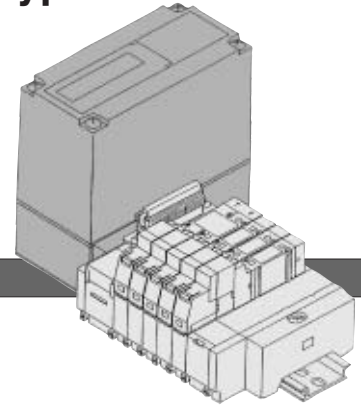
SZ

SY

SYJ

SX

Made to Order Specifications: Series *SX3000/5000* Serial Transmission Type With **SMC's IN313**



Serial Transmission Manifold Equipped with SMC's IN313

How to Order Manifold

Type 45S2 (Serial type with IN313)

SS5Y 3-45S2 U-06 D-C4 []

Series ●

3	SY3000
5	SY5000

SI unit mounting position ●

Symbol	Mounting position
U	U side
D	D side

Valve stations ●

Symbol	Stations	Note
02	2 stations	Single wiring spec. (Applicable up to 16 solenoid valves.)
:	:	
16	16 stations	



- * This also includes the number of blanking plate assemblies.
- * Two stations are necessary for the double, 3 position (Dual body type).

SUP/EXH block assembly mounting position ●

Symbol	Mounting position	Stations
U	U side	2 to 10 stations
D	D side	2 to 10 stations
B	Both sides	2 to 16 stations
M	Special specifications	

- * For special specifications, indicate separately on the manifold specification sheet.

A, B port size ●

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
M	Mixed	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

- * In the case of mixed specifications, indicate separately on the manifold specification sheet.

Option ●

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)



For external pilot specifications and built-in silencer, refer to page 1-4-196.

How to Order Applicable SI Unit

IN313 — MB1

● Applicable makers

MB1	For Mitsubishi Electric Corporation
TA1	For OMRON Corporation
FU1	For Fuji Electric Co., Ltd.
SH1	For SHARP Corporation
TY1	For Toyota Machine Works, Ltd.
TY2	
PA1	For Matsushita Electric Works Ltd.
HT1	For Hitachi, Ltd.
AB1	For Rockwell Automation, Inc.
TS1	For TOSHIBA Corporation

How to Order Valves

2 position single **SY 3 1 4 0 — 5 FU** []

Double, 3 position **SY 3 2 4 5 — 5 FU** []

Series ●

3	SY3000
5	SY5000

Type of actuation ●

2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Dual body type (Double, 3 position) ●

Rated voltage ●

5	24 VDC
---	--------

Manual override ●

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Type **45S3**

Made to Order Specifications: Series **SX3000/5000** Serial Transmission Type With **OMRON Corp's G71-OD16**

Serial Transmission Manifold Equipped with OMRON Corp's Transmission Unit G71-OD16

How to Order Manifold

Type 45S3 (Serial type with transmission unit)

SS5Y 3 - 45S3 [] U - 06 D - C4 []

Series

3	SY3000
5	SY5000

Specifications

Symbol	Specifications
Nil	With transmission unit
0 ^(Note)	Without transmission unit

Note) Even though when it is not equipped with transmission unit, DIN rail length is long enough for future expectancy of mounting transmission unit. When a shorter rail is required (same as type 45□), suffix "0" in the optional blank at the end of part number.

Transmission unit mounting position

Symbol	Mounting position
U	U side
D	D side

Valve stations

Symbol	Stations	Note
02	2 stations	Single wiring spec. (Applicable up to 16 solenoid valves.)
:	:	
16	16 stations	

* This also includes the number of blanking plate assemblies.
* Two stations are necessary for the double, 3 position (Dual body type).

SUP/EXH block assembly mounting position

Symbol	Mounting position	Stations
U	U side	2 to 10 stations
D	D side	2 to 10 stations
B	(Both sides)	2 to 16 stations
M		Special specifications

* For special specifications, indicate separately on the manifold specification sheet.

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

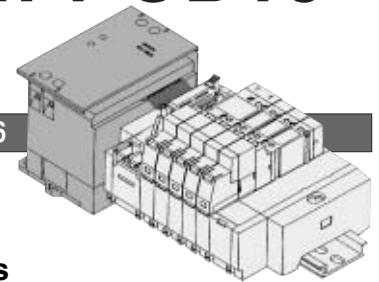
Symbol	Port size	Applicable series
N3	One-touch fitting for ø 5/32"	SY3000
N7	One-touch fitting for ø 1/4"	
M	Mixed	
N3	One-touch fitting for ø 5/32"	SY5000
N7	One-touch fitting for ø 1/4"	
N9	One-touch fitting for ø 5/16"	
M	Mixed	

* In the case of mixed specifications, indicate separately on the manifold specification sheet.

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

For external pilot specifications and built-in silencer, refer to page 1-4-196.



How to Order Valves

2 position single **SY 3 1 4 0 - 5 FU []**

Double, 3 position **SY 3 2 4 5 - 5 FU []**

Series

3	SY3000
5	SY5000

Type of actuation

2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Dual body type (Double, 3 position)

Rated voltage

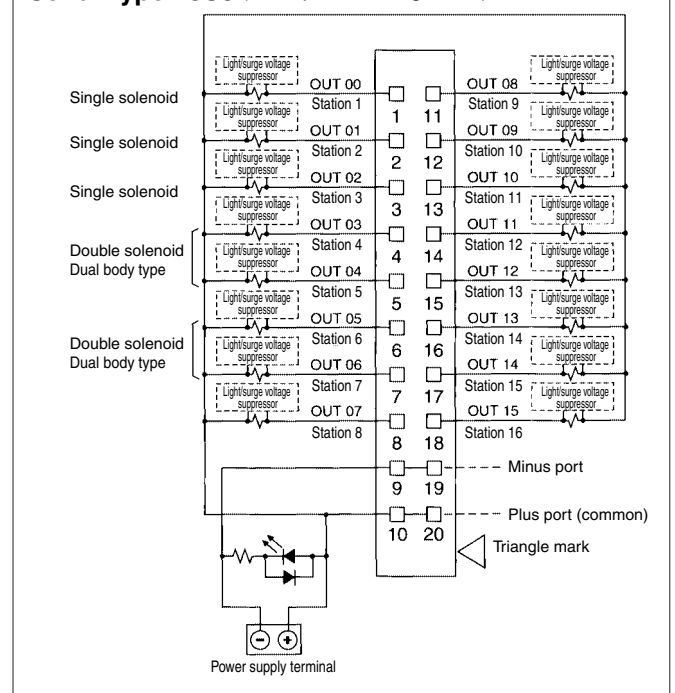
5	24 VDC
---	--------

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Internal Wiring of Manifold

Serial Type 45S3 (Example of arrangement)



- For specifications on OMRON Corp's transmitter terminals, refer to the instruction manual or the catalog of transmitter terminals, etc.
- Max. 16 solenoids are applicable. Please consult with SMC for more solenoids.

Caution

- The wiring specifications for SS5Y₃-45S30 are different from those for SS5Y₃-45PG.

How to Order Valves

SY 5 2 40 **5 L**

Series

3	SY3000
5	SY5000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Pilot type

Nil	Internal pilot
R	External pilot

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

* Power saving circuit is not available in the case of "D", "DO" or "W" type.

Rated voltage

DC

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

AC (50/60 Hz)

1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

* DC specifications of type "D" and "DO" is only available with 12 and 24 VDC.
 * For type "W", DC voltage is only available.
 * "D" and "DO" only available for SY5000.

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Light/Surge voltage suppressor

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
 * For "R" and "U", DC voltage is only available.
 * Power saving circuit is only available in the "Z" type.

Electrical entry for D (SY5000 only)

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor (Non-polar type)
Z	With light/surge voltage suppressor (Non-polar type)

* "DOZ" is not available.
 * For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC			24, 12 VDC/ 100, 110, 200, 220 VAC	24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	DIN terminal	M8 connector
G: Lead wire length 300 mm	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	(SY5000 only) D: With connector DO: Without connector	WO: Without connector cable
H: Lead wire length 600 mm	LN: Without lead wire LO: Without connector	MN: Without lead wire MO: Without connector		

* "LN", "MN" type: with 2 sockets.
 * "D" and "DO" only available for SY5000.
 * DIN terminal type "Y" conforming to DIN43650C standard is also available. For details, refer to page 1-4-201.
 * Setting "-5LOU" is available only for connector box type.
 * For connector cable of M8 connector, refer to pages 1-4-209 to 210.

SV
SZ
SY
SYJ
SX

Plug-in

How to Order Manifold

Type 45

SS5Y³₅-45 **F U 05 U R**

Series

3	SY3000
5	SY5000

Common specifications

Nil	Positive common
N	Negative common

No symbol is used for T, T1, S types.

Connector type

Symbol	Mounting position
F	D-sub connector
P	Flat ribbon cable 26 pins
PG	Flat ribbon cable 20 pins
PH	Flat ribbon cable 10 pins
T	Terminal block 9 pins
T1	Terminal block 18 pins
S <input type="checkbox"/>	Serial transmission type

* For details, refer to page 1-4-140.

Connector mounting position

Symbol	Mounting position
U	U side
D	D side

Valve stations

Symbol	Stations	Note
02	2 stations	Single wiring specifications
⋮	⋮	
20	20 stations	

- * This also includes the number of blanking plate assemblies.
- * Depending on the connector, the number of stations is limited. Refer to page 1-4-143.
- * Two stations are necessary for the double, 3 position (Dual body type).

SUP/EXH block assembly mounting position

Symbol	Mounting position	Stations
U	U side	2 to 10 stations
D	D side	
B	(Both sides)	2 to 20 stations
M	Special specifications	

* For special specifications, indicate separately on the manifold specification sheet.

SUP/EXH block assembly specifications

Symbol	Specifications
R	External pilot
S	Internal pilot/Built-in silencer
RS	External pilot/Built-in silencer

A, B port size

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY3000
C6	One-touch fitting for ø6	
M	Mixed	
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
M	Mixed	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY3000
N7	One-touch fitting for ø1/4"	
M	Mixed	
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
M	Mixed	

* In the case of mixed specifications, indicate separately on the manifold specification sheet.

Voltage

Nil	24 VDC
12V	12 VDC

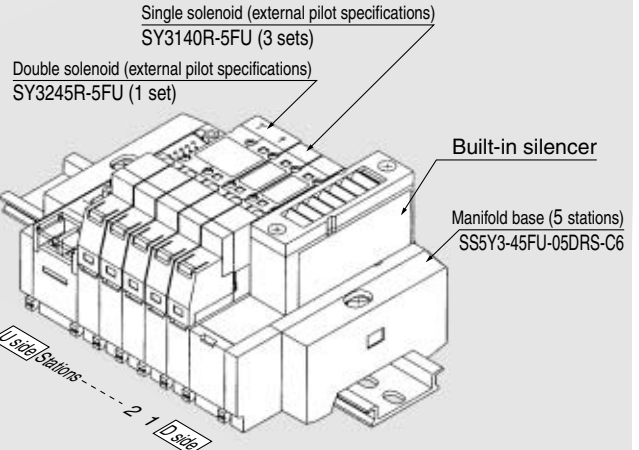
No symbol is used for T, T1, S types.

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (20 stations at maximum)

How to Order Valve Manifold Assembly

Ordering example



SS5Y3-45FU-05DRS-C6	1 set (External pilot with built-in silencer part no.)
* SY3140R-5FU	3 sets (Single solenoid part no.)
* SY3245R-5FU	1 set (Double solenoid part no.)

* The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of SUP/EXH block assembly. In ordering, specify the part nos. in the order from the 1st. station on D side. Besides, when the arrangement will be complicated, fill out the manifold specification sheet to instruct us. For manifolds with SUP/EXH block at each end of the manifold, external pilot ports and silencers will be also located at each end of the manifold. The SUP/EXH block assembly (SX3/5000-51-1A), for special usage, as shown on page 1-4-130, can also be mounted. Please specify the mounting position, by correctly filling in the blank space on the manifold specification sheet. Two stations of the manifold base are necessary for the double, 3 position (Dual body type). Use caution when specifying the number of stations required for the manifold base.

How to Order Valves

SY **3** **1** **4** **5** **FU**

Series

3	SY3000
5	SY5000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Body Option

0	Standard (Single only)
5	Dual body type (Double, 3 position)

Pilot type

Nil	Internal pilot
R	External pilot

Rated voltage

5	24 VDC
6	12 VDC
V*	6 VDC
S*	5 VDC
R*	3 VDC

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

* Mark: 45T and T1 only
S type is available for 24 VDC only.

Made to Order Specifications: Series SY3000/5000 Mixed Mounting

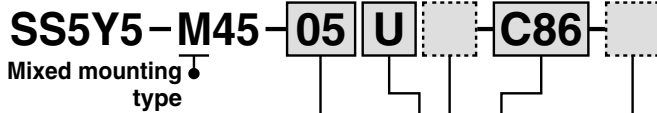
Type **M45**

Non plug-in

Use SY3000 together with SY5000, which has a large Cv and is mounted only in a place where it is needed, permits a selection of economic manifold bases.

How to Order Manifold

Type M45 (Mixed mounting type)



Valve stations

Symbol	Stations	SUP/EXH block assembly mounting position
02	2 stations	U
20	20 stations	D
		B
		M

The number of blanking plate ass'y is included, too.

* For special specifications, indicate separately on the manifold specification sheet.

SUP/EXH block assembly specifications

Symbol	Specifications
Nil	Standard/Internal pilot
S	Built-in silencer

* External pilot is unavailable for mixed mounting style.

Option

When a longer DIN rail is desired than the specified stations, specify the station number to be required. (Max. 20 stations)

A, B port size

One-touch fitting (Metric size)

Symbol	Port size
C44	SY5000: One-touch fitting for ø4 SY3000: One-touch fitting for ø4
C46	SY5000: One-touch fitting for ø4 SY3000: One-touch fitting for ø6
C64	SY5000: One-touch fitting for ø6 SY3000: One-touch fitting for ø4
C66	SY5000: One-touch fitting for ø6 SY3000: One-touch fitting for ø6
C84	SY5000: One-touch fitting for ø8 SY3000: One-touch fitting for ø4
C86	SY5000: One-touch fitting for ø8 SY3000: One-touch fitting for ø6
M	Mixed

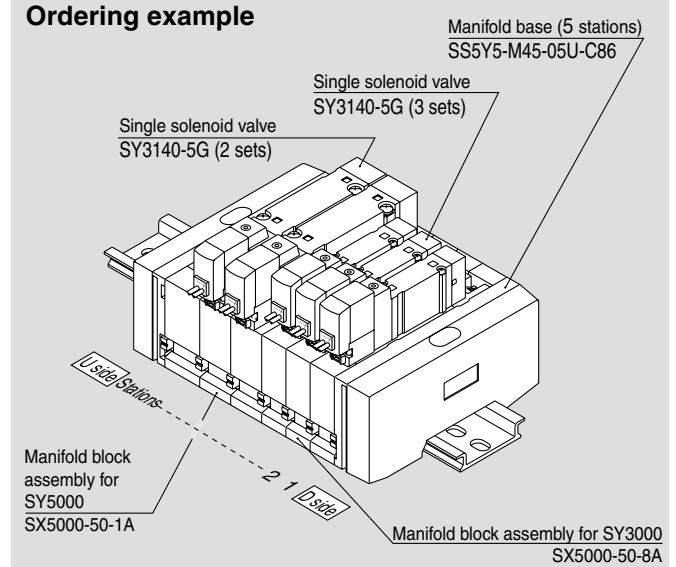
One-touch fitting (Inch size)

Symbol	Port size
N33	SY5000: One-touch fitting for ø ⁵ / ₃₂ " SY3000: One-touch fitting for ø ⁵ / ₃₂ "
N37	SY5000: One-touch fitting for ø ⁵ / ₃₂ " SY3000: One-touch fitting for ø ¹ / ₄ "
N73	SY5000: One-touch fitting for ø ¹ / ₄ " SY3000: One-touch fitting for ø ⁵ / ₃₂ "
N77	SY5000: One-touch fitting for ø ¹ / ₄ " SY3000: One-touch fitting for ø ¹ / ₄ "
N93	SY5000: One-touch fitting for ø ⁵ / ₁₆ " SY3000: One-touch fitting for ø ⁵ / ₃₂ "
N97	SY5000: One-touch fitting for ø ⁵ / ₁₆ " SY3000: One-touch fitting for ø ¹ / ₄ "
M	Mixed

* In the case of mixed specifications, indicate separately on the manifold specification sheet.

How to Order Valve Manifold Assembly

Ordering example



SS5Y5-M45-05U-C86 1 set (Type M45, manifold base part no.)
* **SY3140-5G** 3 sets (Single solenoid part no.)
* **SY5140-5G** 2 sets (Single solenoid part no.)

The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the solenoid valve, etc.

The valve arrangement is numbered as the 1st. station from D side regardless of the mounting position of SUP/EXH block assembly. In ordering, specify the part nos. in the order from the 1st. station on D side. Besides, when the arrangement will be complicated, fill out the manifold specification sheet to instruct us.

- SV
- SZ
- SY
- SYJ
- SX

How to Order Valves



Series

3	SY3000
5	SY5000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center

Coil specifications

Nil	Standard
T	With power saving circuit (24 VDC, 12 VDC only)

* Power saving circuit is not available in the case of "D", "DO" or "W□" type.

Electrical entry for G, H, L, M, W

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar type)
U	With light/surge voltage suppressor (Non-polar type)

* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
* For "R" and "U", DC voltage is only available.
* Power saving circuit is only available in the "Z" type.

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

Electrical entry

24, 12, 6, 5, 3 VDC/100, 110, 200, 220 VAC			24, 12, 6, 5, 3 VDC
Grommet	L plug connector	M plug connector	M8 connector
G: Lead wire length 300 mm	L: With lead wire (Length 300 mm)	M: With lead wire (Length 300 mm)	WO: Without connector cable
H: Lead wire length 600 mm	LN: Without lead wire	MN: Without lead wire	
	LO: Without connector	MO: Without connector	

* "LN", "MN" type: with 2 sockets.
* For connector cable of M8 connector, refer to page 1-4-209.

DC		Rated voltage	
5	24 VDC	1	100 VAC
6	12 VDC	2	200 VAC
V	6 VDC	3	110 VAC [115 VAC]
S	5 VDC	4	220 VAC [230 VAC]
R	3 VDC		

* For type "W□", DC voltage is only available.

Made to Order Specifications:

Series SY5000/7000/9000, SY500

DIN Terminal* (DIN 43650C)

* DIN terminal type conforming to DIN 43650C (DIN pitch 8 mm) standard.

How to Order Valves

Series

5	SY500
---	-------

Type of actuation

1	Normally open
2	Normally closed

Type

3	Body ported
5	Base mounted

Rated voltage

DC	
5	24 VDC
6	12 VDC
AC (50/60Hz)	
1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

Light/Surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With indicator light and surge voltage suppressor

Manual override

Nil	Non-locking push type
D	Push-turn locking slotted type
E	Push-turn locking lever type

A port size

Symbol	Port size
Nil	Base mounted
01	1/8
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
C8	One-touch fitting for ø8
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4"
N9	One-touch fitting for ø5/16"

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Electrical entry

Y: With connector
YO: Without connector

For body ported Thread piping

Symbol	Port size	Applicable series
01	1/8	SY5000
02	1/8	SY7000
03	3/8	SY9000

One-touch fitting (Metric size)

Symbol	Port size	Applicable series
C4	One-touch fitting for ø4	SY5000
C6	One-touch fitting for ø6	
C8	One-touch fitting for ø8	
C8	One-touch fitting for ø8	SY7000
C10	One-touch fitting for ø10	
C8	One-touch fitting for ø8	SY9000
C10	One-touch fitting for ø10	
C12	One-touch fitting for ø10	

One-touch fitting (Inch size)

Symbol	Port size	Applicable series
N3	One-touch fitting for ø5/32"	SY5000
N7	One-touch fitting for ø1/4"	
N9	One-touch fitting for ø5/16"	
N9	One-touch fitting for ø5/16"	SY7000
N11	One-touch fitting for ø3/8"	
N9	One-touch fitting for ø5/16"	SY9000
N11	One-touch fitting for ø3/8"	

Base Mounted

Symbol	Port size	Applicable series
Nil	Without sub-plate	SY5000
02	With sub-plate 1/4	
03	With sub-plate 3/8	SY7000
	With sub-plate 3/8	SY9000
04	With sub-plate 1/2	SY9000
	With sub-plate 1/2	

Note When placing an order for body ported solenoid valve as a single unit, mounting bolt for manifold and gasket are not attached. Order them separately, if necessary. (For details, refer to catalog on page 1-4-61.)

* "YOZ" is not available.
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

- SV
- SZ
- SY
- SYJ
- SX

How to Order Pilot Valve Assembly

V115-5Y

Rated voltage

DC	
5	24 VDC
6	12 VDC
AC (50/60Hz)	
1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

Light/Surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor

* "YOZ" is not available.
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

Electrical entry

Y	DIN	With connector
YO	terminal	Without connector

DIN Terminal Part No.

Without light	SY100-82-1	
With indicator light		
Rated voltage	Voltage symbol	No.
24 VDC	24VN	SY100-82-3-05
12 VDC	12VN	SY100-82-3-06
100 VAC	100VN	SY100-82-3-01
200 VAC	200VN	SY100-82-3-02
110 VAC (115 VAC)	110VN	SY100-82-3-03
220 VAC (230 VAC)	220VN	SY100-82-3-04

Caution

- Use caution in wiring because it won't meet the IP65 (enclosure) standard if you use the other cord than prescribed heavy-duty cord of size (ø3.5 to ø7.5). Also be sure to tighten the ground nut and holding screw with the prescribed torque range. Tighten the ground nut and set screw within the specified range of torque. For how to use DIN terminal. (wiring procedures, procedures for changing electrical entries, precautions, applicable cable circuit diagram), refer to page 1-4-207.
- Type D, DIN terminal with 9.4 mm pitch between terminals if not interchangeable.
- To distinguish from the Type D, DIN connector, "N" is listed at the end of voltage symbol. (For connector parts without lights, "N" is not indicated. Please refer to the name plate to distinguish.)
- Dimensions are completely the same as type D DIN terminal.
- When exchanging the pilot valve assembly only, "SY115-□D" is interchangeable with "SY115-□Y". Do not replace SY114 (G, L, M) to SY115 (DIN terminal), and vice versa.

Made to Order Specifications:

Series SY3000/5000/7000/9000

Body Ported

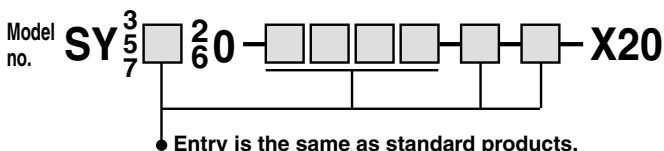
External Pilot/Fluoro Rubber

* for Main Value



Body Ported External Pilot

Applicable solenoid valves: Series SY3□₆₀²⁰, SY5□₆₀²⁰, SY7□₆₀²⁰



Operating Pressure Range MPa

Operating pressure range	-100 kPa to 0.7
Pilot pressure range	0.25 to 0.7

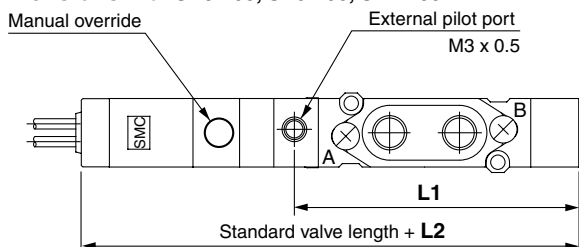
Dimensions: For SY3□₆₀²⁰60, SY5□₆₀²⁰60, SY7□₆₀²⁰60

Dimensions SY3000 becomes 6.5 mm longer.
SY5000 and SY7000 becomes 10 mm longer.

External Pilot Port

Series	Port size
SY3000	M3 x 0.5
SY⁵000	M5 x 0.8

Dimensions: For SY3□₆₀, SY5□₆₀, SY7□₆₀

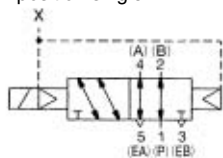


Dimensions/External Pilot Port Position

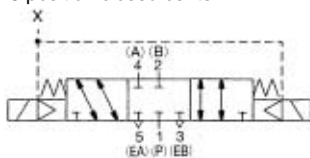
Series	L1 dimensions	L2 dimensions
SY3000	41.5	6.5
SY5000	60.4	9
SY7000	71.9	9

JIS Symbol

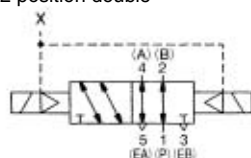
Body ported
2 position single



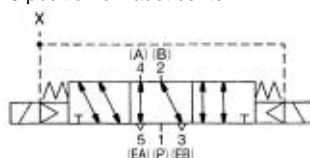
3 position closed center



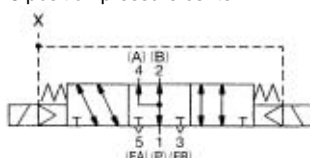
2 position double



3 position exhaust center



3 position pressure center

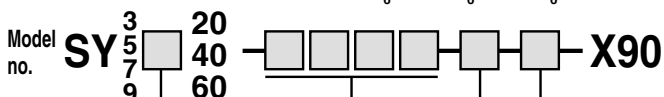


Main Valve Fluoro Rubber Specifications

Fluoro rubber is used for rubber parts of the main valve to allow use in applications such as the following.

- When using a lubricant other than the recommended turbine oil, and there is a possibility of malfunction due to swelling of the spool valve seals.

Applicable solenoid valves: Series SY3□₆₀²⁰, SY5□₆₀²⁰, SY7□₆₀²⁰, SY9□₆₀²⁰



● Entry is the same as standard products.

Specifications and performance are the same as standard products.