



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
O1	1/8	SY5000
O2	1/4	SY7000
O2	1/4	SY9000
O3	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.

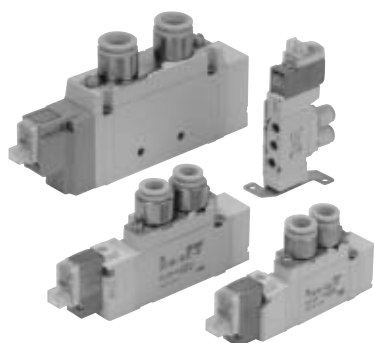
Electrical entry for D

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			
	2 position double	0.1 to 0.7			
Operating pressure range (MPa)	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) <small>Note</small>		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 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)			Grommet	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)			Grommet	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)			Grommet	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.

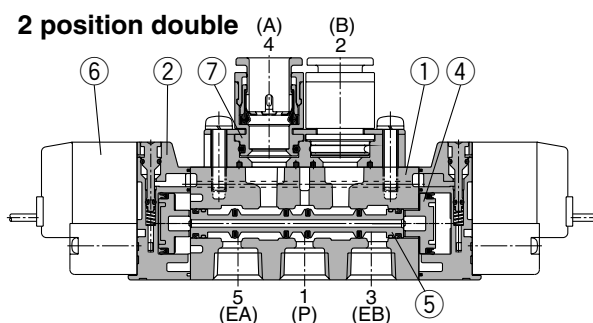
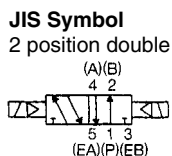
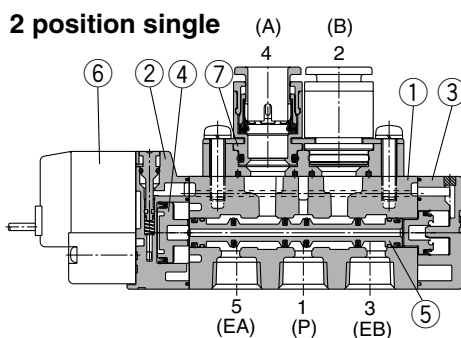
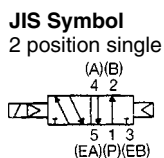
Series SY9000

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)			Grommet	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	1/2	C12 (One-touch fitting for ø12)										
		Double												
	3 position	Closed center												
		Exhaust center												

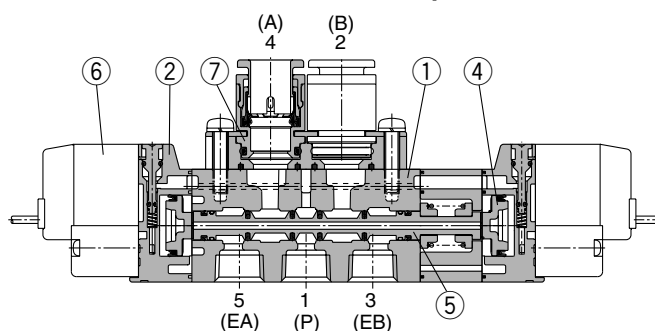
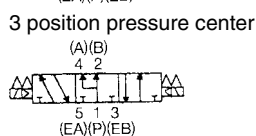
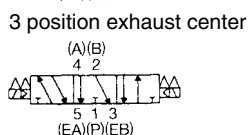
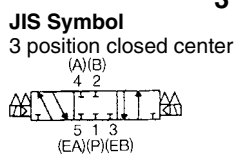
Note [] : Denotes normal position.

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.

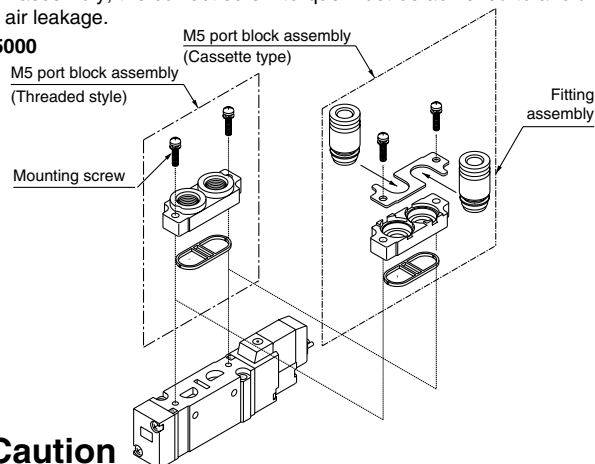
Description	part no.
Bracket (For F1)	SX ³ 000-16-2A (with mounting screw)
Bracket (For F2)	SX ³ 000-16-1A (with mounting screw)

* 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	M plug connector	Without connector
M		With lead wire
MN	M8 connector	Without lead wire
MO		Without connector
WO	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 terminal	With connector
DO	DIN 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"	

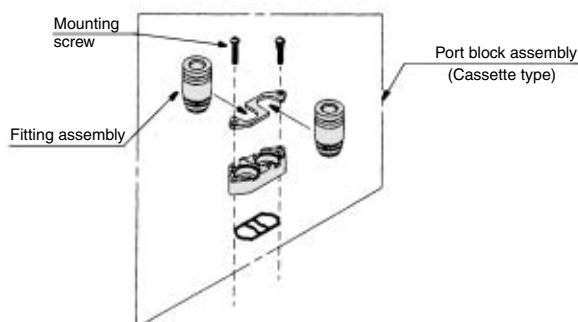
* Only replacement of the fittings assembly is possible.

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

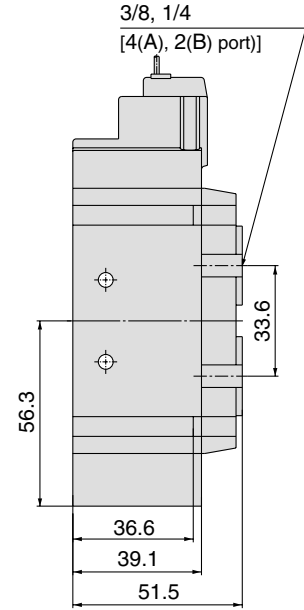
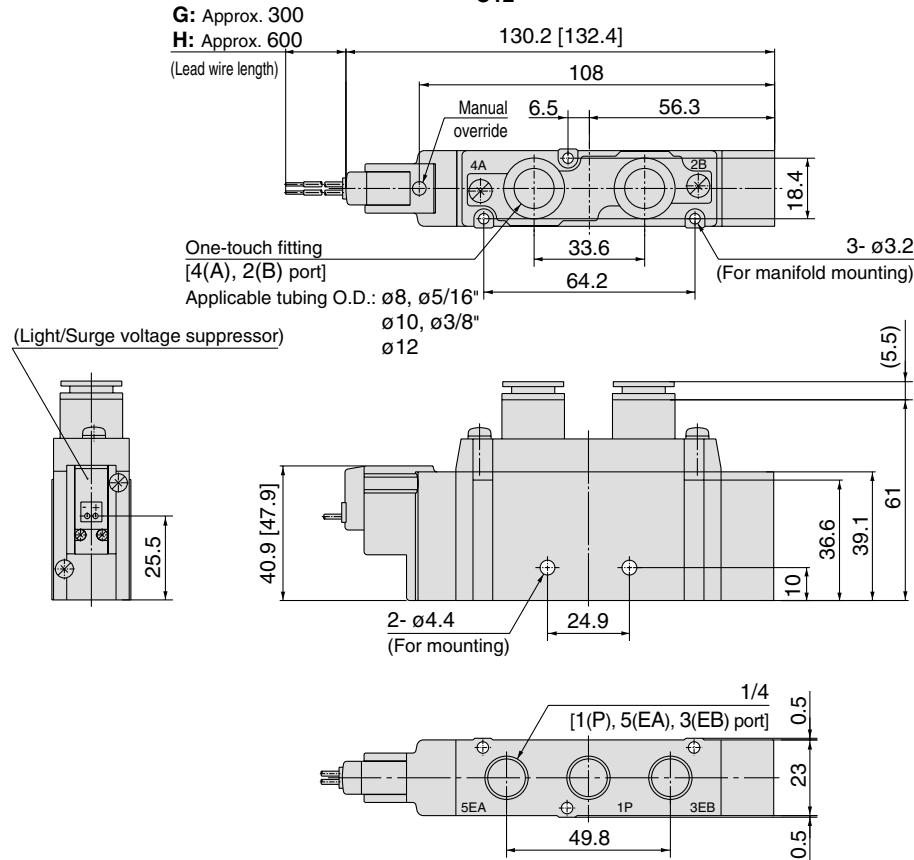
Dimensions: Series SY9000



2 position single

Grommet (G), (H): SYJ9120-□_G□□□_{C8, N9}
 -□_{C10, N11}□□_{C12}

SY9120-□_G□□□₀₂□₀₃



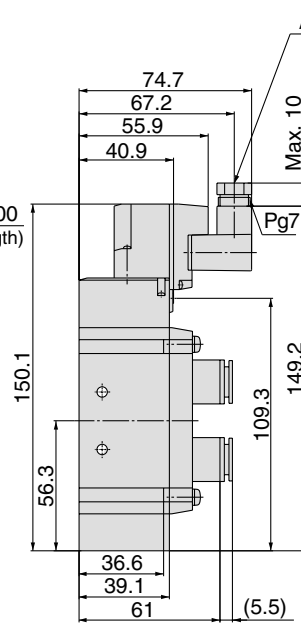
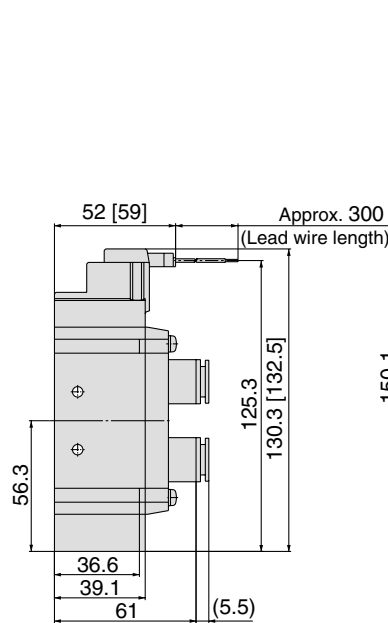
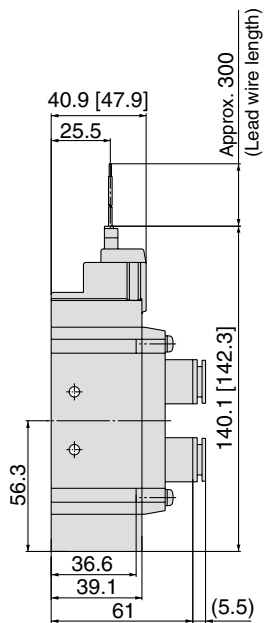
- SV
- SZ
- SY**
- SYJ
- SX

L plug connector (L):
 SY9120-□_L□□□_{C8, N9}
 -□_{C10, N11}□□_{C12}

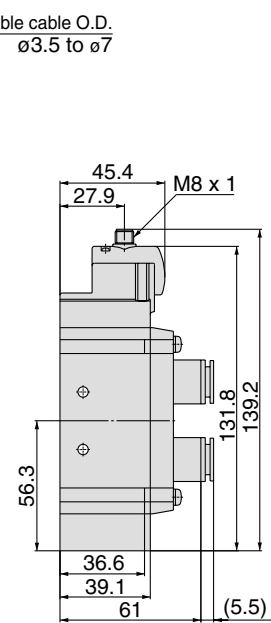
M plug connector (M):
 SY9120-□_M□□□_{C8, N9}
 -□_{C10, N11}□□_{C12}

DIN terminal (D):
 SY9120-□_D□□□_{C8, N9}
 -□_{C10, N11}□□_{C12}

M8 connector (WO):
 SY9120-□_{WO}□□□_{C8, N9}
 -□_{C10, N11}□□_{C12}



Applicable cable O.D.
 ø3.5 to ø7



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

Dimensions: Series SY9000



2 position double

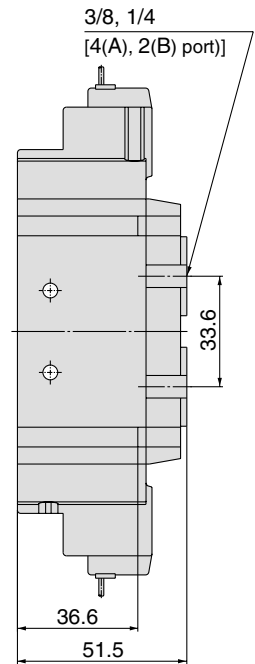
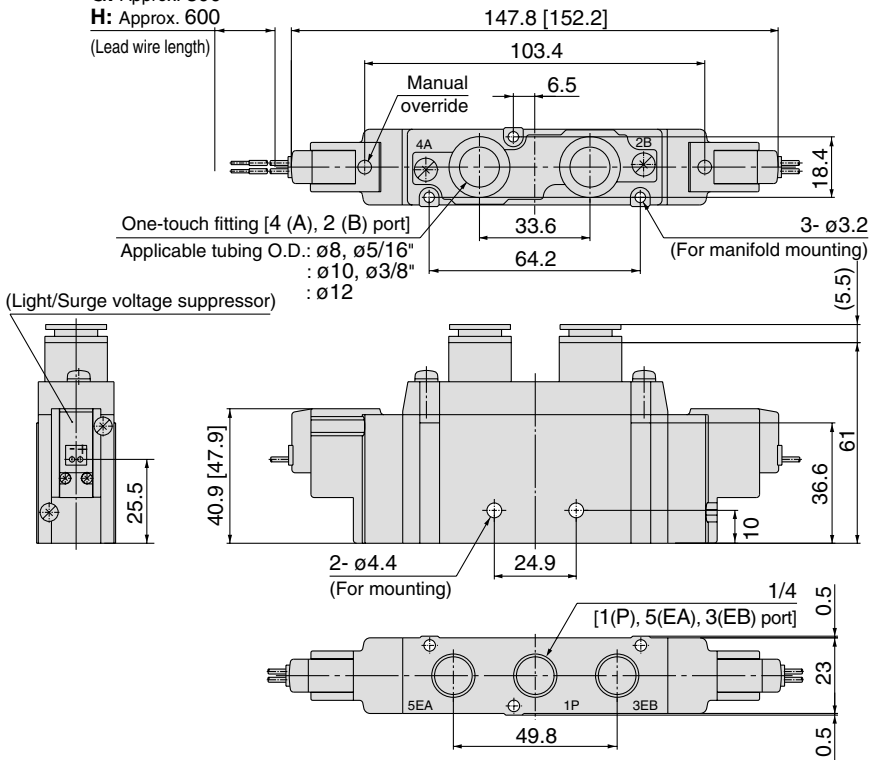
Grommet (G), (H): SYJ9220-□^G□^H□^{C8, N9}□^{C10, N11}□^{C12}

G: Approx. 300

H: Approx. 600

(Lead wire length)

SY9220-□^G□^H□^{C8, N9}□^{C10, N11}□^{C12}-02□⁰³□

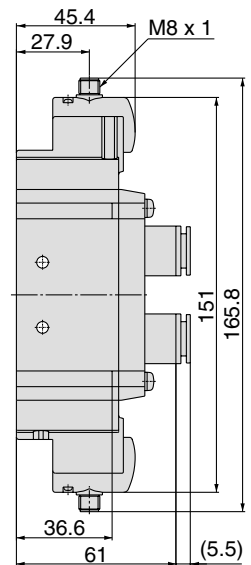
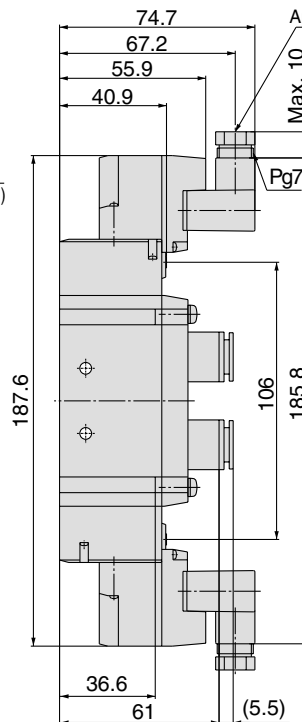
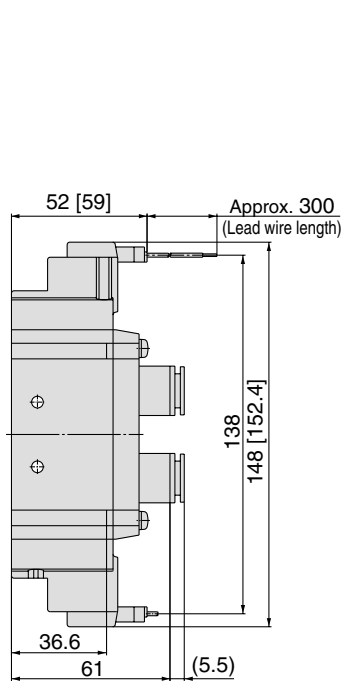
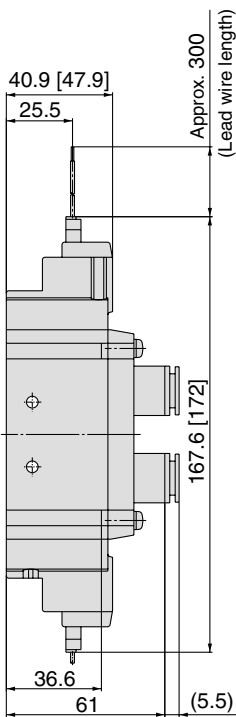


L plug connector (L):
SY9220-□L□^{C8, N9}□^{C10, N11}□^{C12}

M plug connector (M):
SY9220-□M□^{C8, N9}□^{C10, N11}□^{C12}

DIN terminal (D):
SY9220-□D□^{C8, N9}□^{C10, N11}□^{C12}

M8 connector (WO):
SY9220-□WO□^{C8, N9}□^{C10, N11}□^{C12}



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

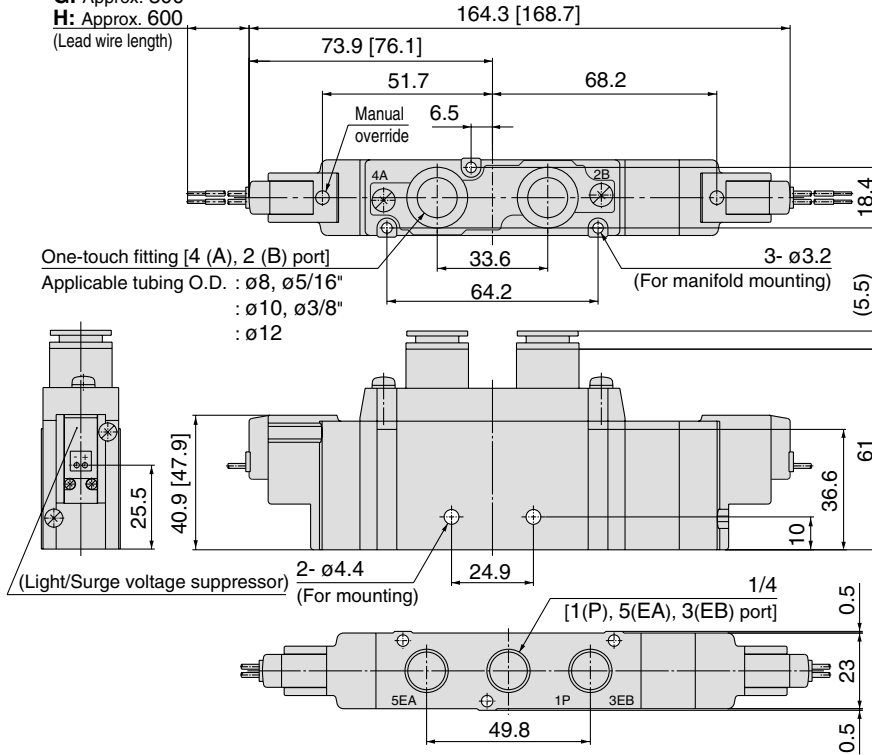
Dimensions: Series SY9000



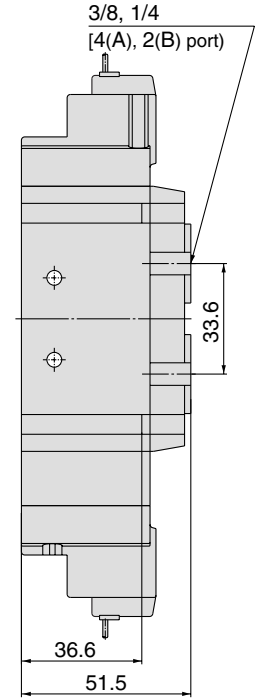
3 position closed center/exhaust center/pressure

Grommet (G), (H): SY9³/₅420-□^G□□-C8, N9
C10, N11 □
C12

G: Approx. 300
H: Approx. 600
(Lead wire length)



SY9³/₅420-□^G□□-02 □
03 □



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

L plug connector (L):

SY9³/₅420-□^L□□-C8, N9
C10, N11 □
C12

M plug connector (M):

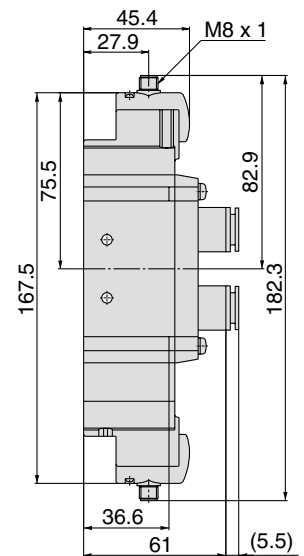
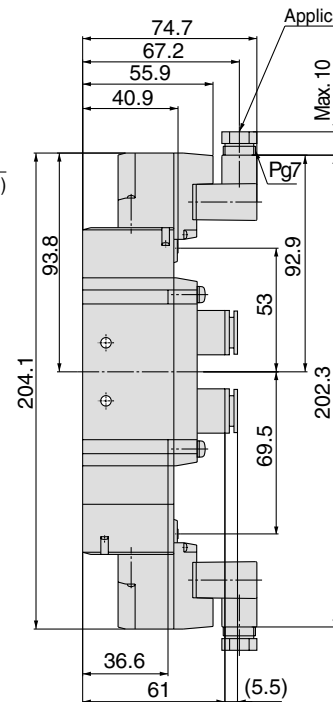
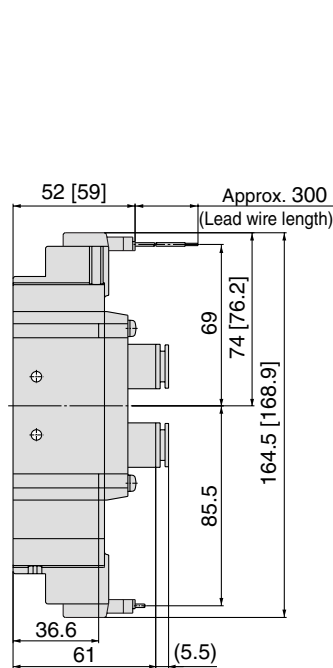
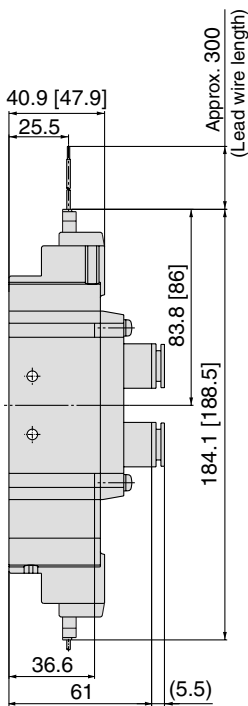
SY9³/₅420-□^M□□-C8, N9
C10, N11 □
C12

DIN terminal (D):

SY9³/₅420-□^D□□-C8, N9
C10, N11 □
C12

M8 connector (WO):

SY9³/₅420-□^{WO}□□-C8, N9
C10, N11 □
C12



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.

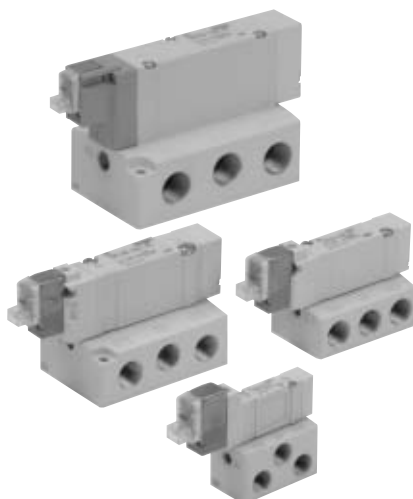
* "DOZ" is not available.
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.

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	104 (69)	109 (74)	117 (82)
		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			

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	144 (82)	150 (87)	192 (129)	158 (95)
		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				

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	239 (110)	245 (116)	287 (158)	253 (124)
		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				
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	239 (110)	245 (116)	287 (158)	253 (124)
		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				

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

Series SY9000

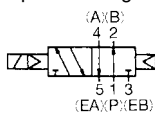
Valve model	Type of actuation		Port size	Flow characteristics ^{Note 1)}						Weight (g) ^{Note 2)}			
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			Grommet	L plug connector, M plug connector	DIN terminal	W M8 connector
				C (dm ³ /(s·bar))	b	Cv	C (dm ³ /(s·bar))	b	Cv				
SY9□40-□-03	2 position	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	512(215)	518(221)	560(263)	526(229)
		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				
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	491 (194)	497 (200)	539	505(208)
		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				

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

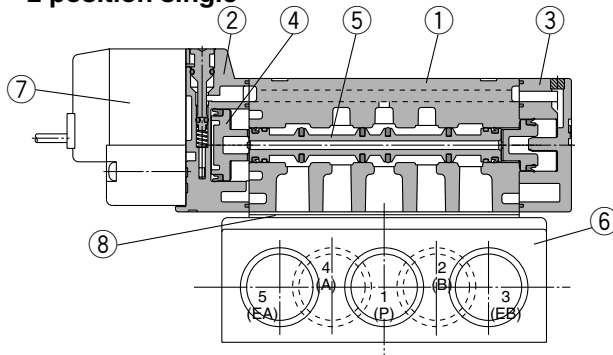
Construction

Series SY

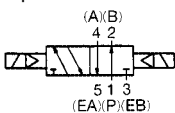
JIS Symbol
2 position single



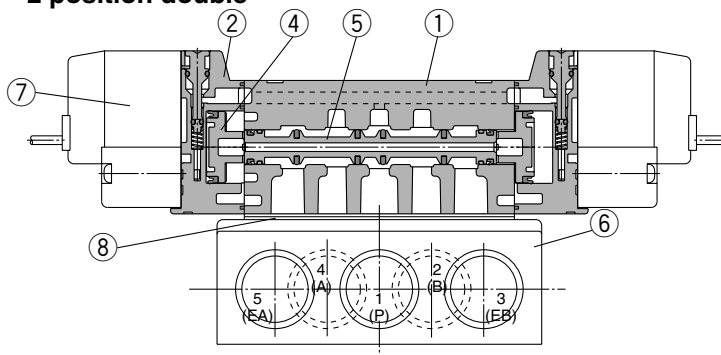
2 position single



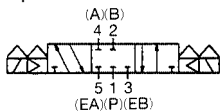
JIS Symbol
2 position double



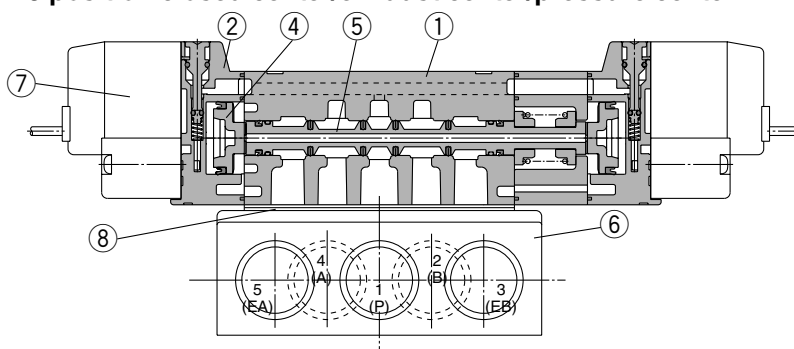
2 position double



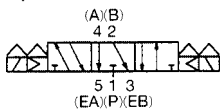
JIS Symbol
3 position closed center



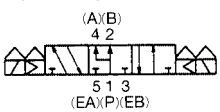
3 position closed center/exhaust center/pressure center



3 position exhaust center



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)

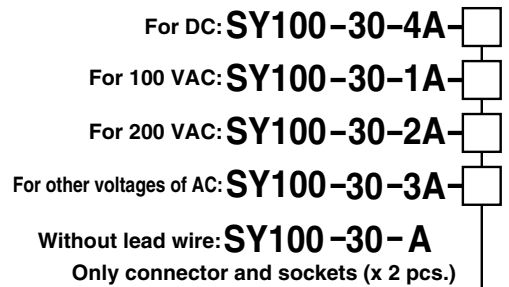
* For AC voltage valves there is no "S" option. It is already built-in to the rectifier circuit.
* For "R" and "U", DC voltage is only available.
* Power saving circuit is only available in the "Z" type.

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.

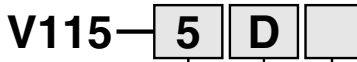
How to Order Connector Assembly for L/M Plug Connector



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.

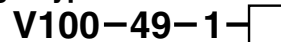
Electrical entry

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

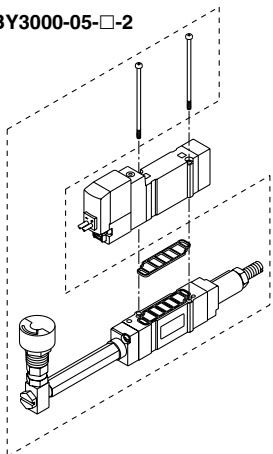
Pressure gauge connection port

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

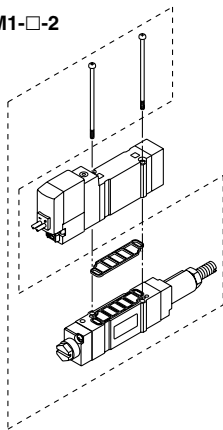
Regulating port

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

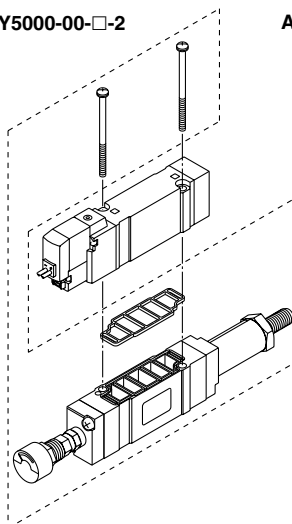
Pressure gauge connection port

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

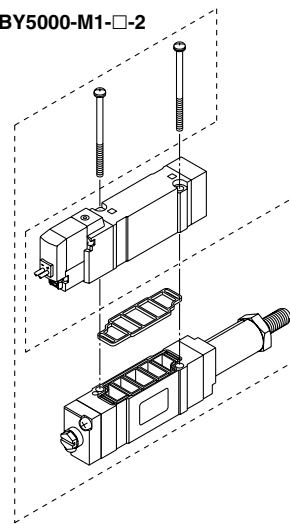
Regulating port

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

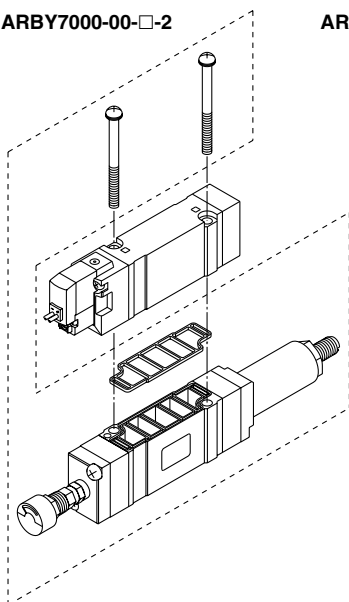
Pressure gauge connection port

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

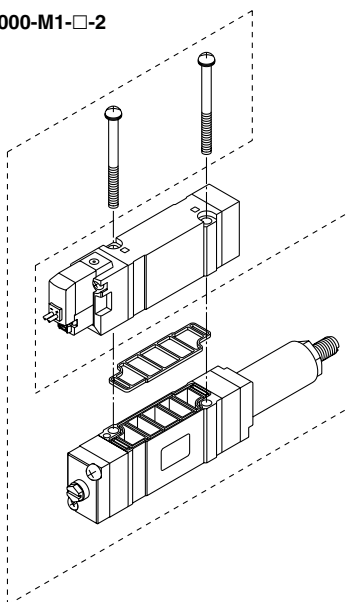
Regulating port

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 torques

M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

SV

SZ

SY

SYJ

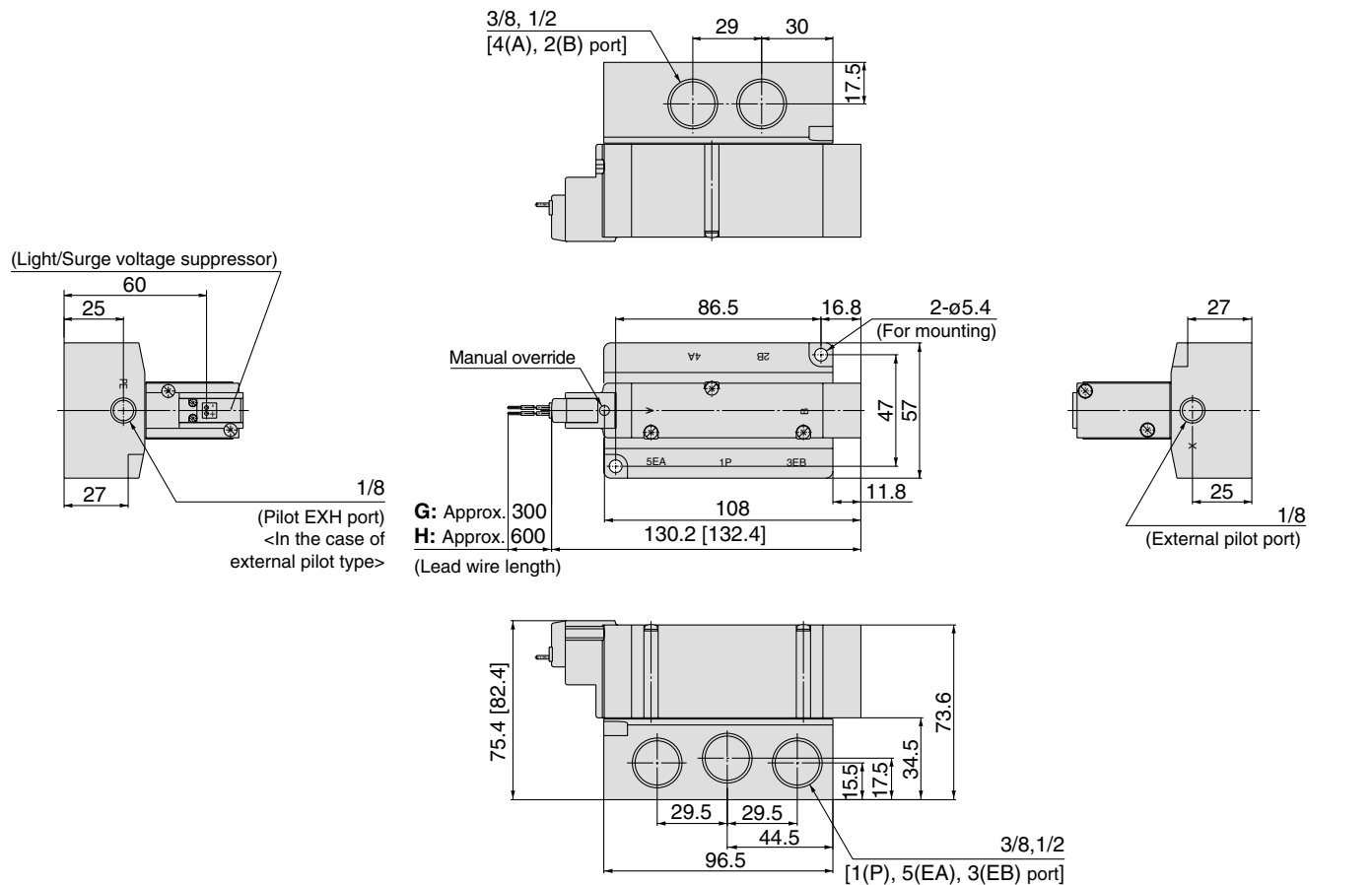
SX

Dimensions: Series SY9000



2 position single

Grommet (G), (H): SYJ9140-□^G_H□□-03□



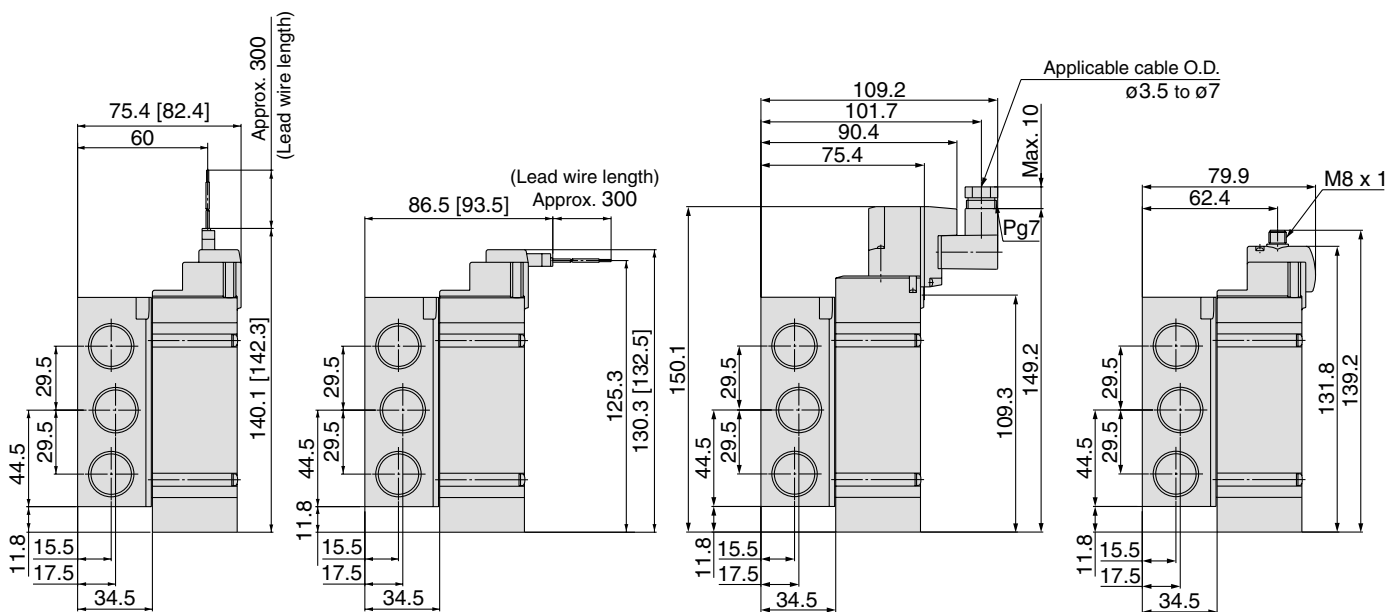
- SV
- SZ
- SY**
- SYJ
- SX

L plug connector (L):
SY9140(R)-□L□□-03□

M plug connector (M):
SY9140(R)-□M□□-03□

DIN terminal (D):
SY9140(R)-□D□□-03□

M8 connector (WO):
SY9140(R)-□WO□□-03□



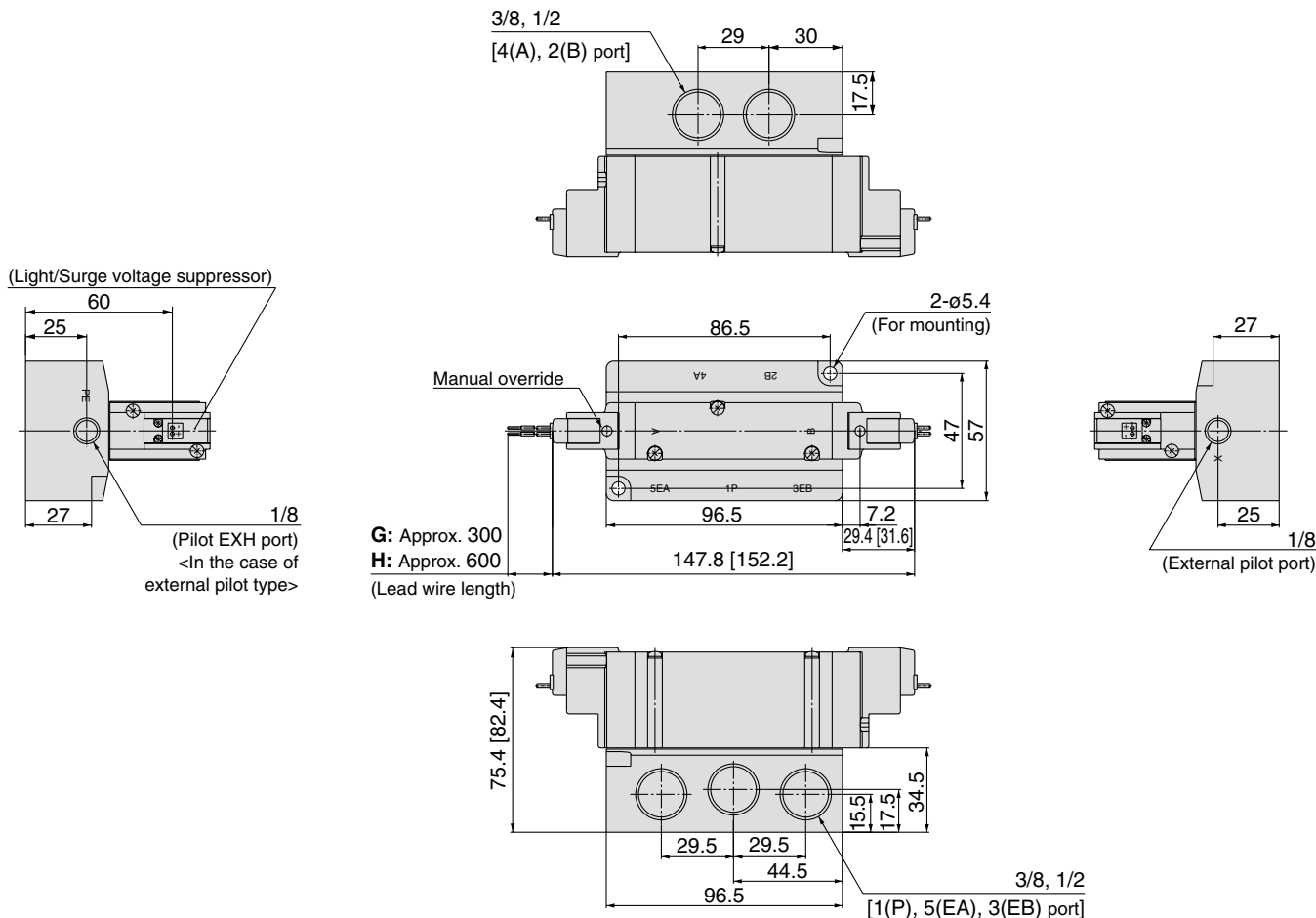
Note) Refer to page 1-4-210 for dimensions of connector types.

Dimensions: Series SY9000



2 position double

Grommet (G), (H): SY9240(R)-□^G_H□□-03□₀₄□

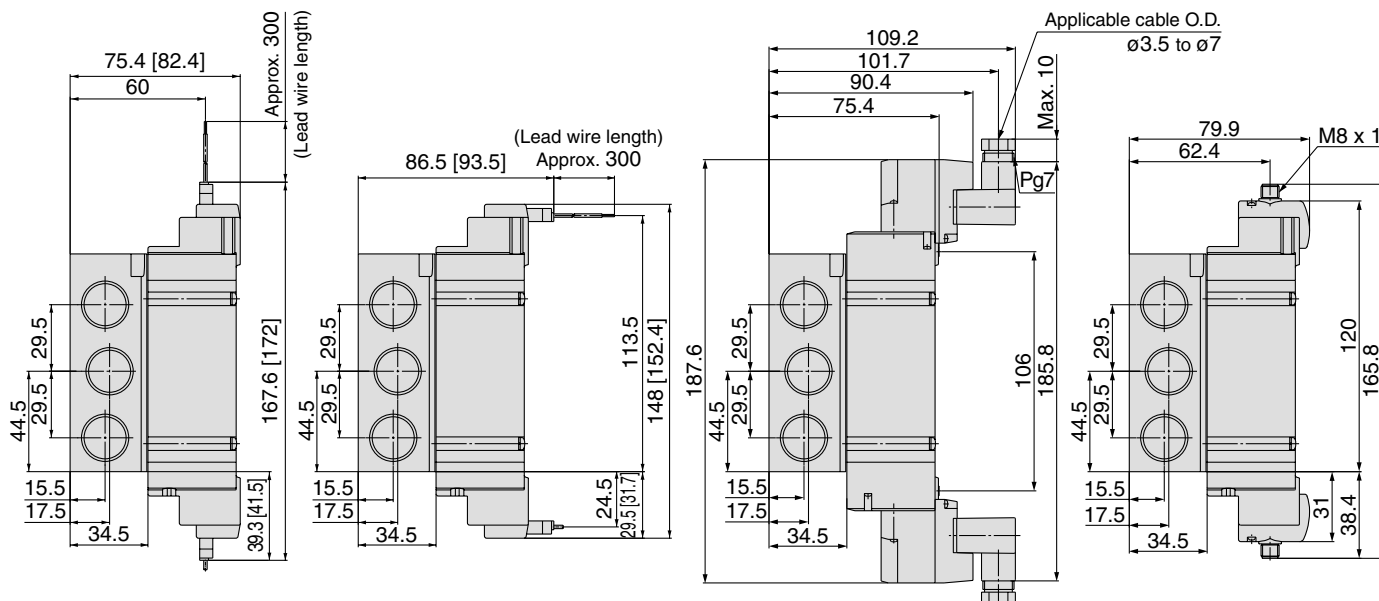


L plug connector (L):
SY9240(R)-□L□□-03□₀₄□

M plug connector (M):
SY9240(R)-□M□□-03□₀₄□

DIN terminal (D):
SY9240(R)-□D□□-03□₀₄□

M8 connector (WO):
SY9240(R)-□WO□□-03□₀₄□



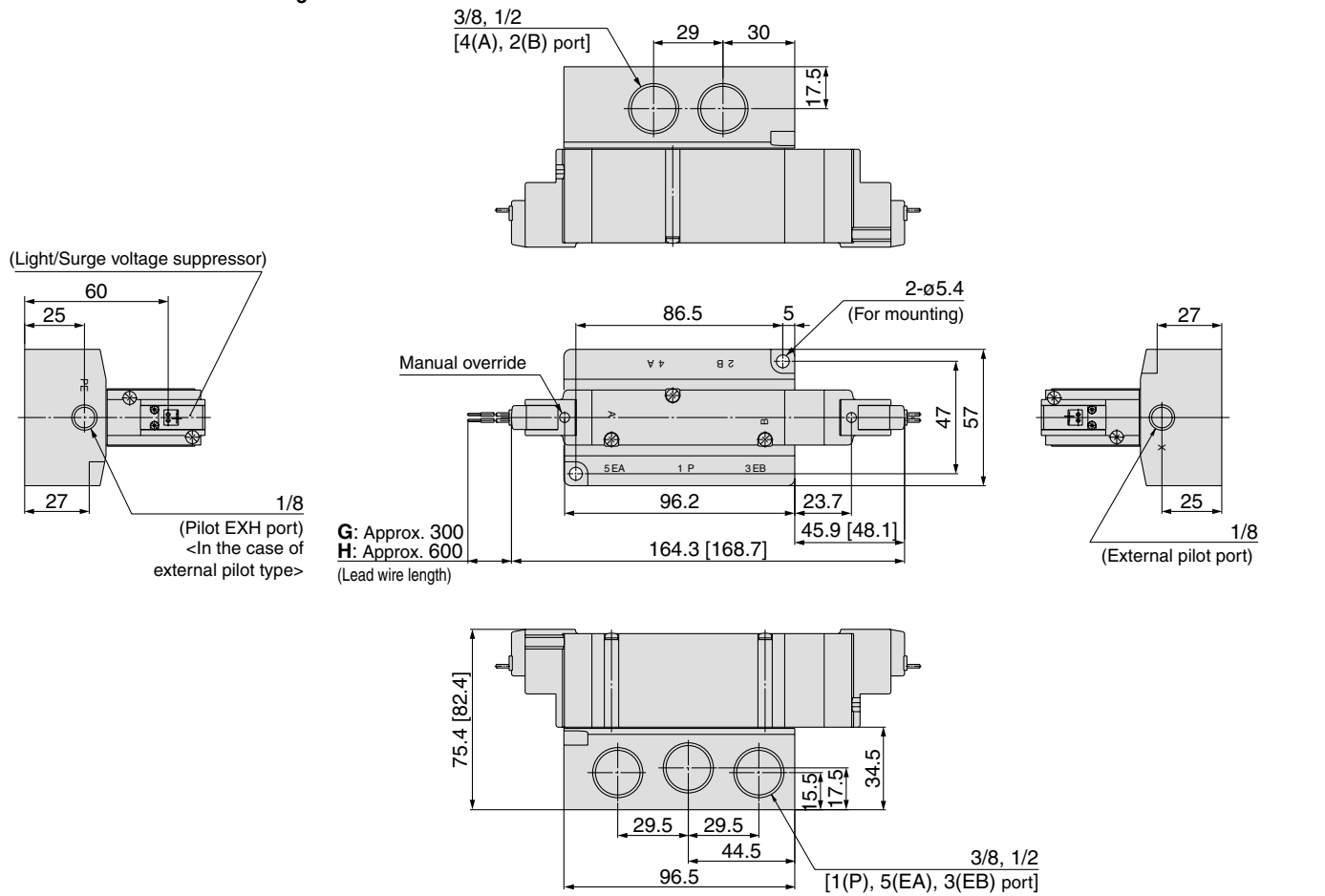
Note) Refer to page 1-4-210 for dimensions of connector types.



Dimensions: Series SY9000

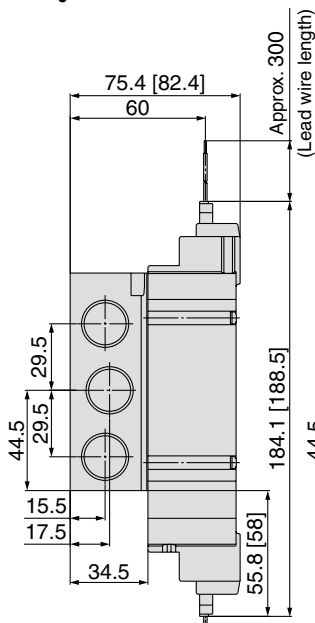
3 position closed center/exhaust center/pressure center

Grommet (G), (H): SY9³₄40-□G□□-⁰³₀₄□

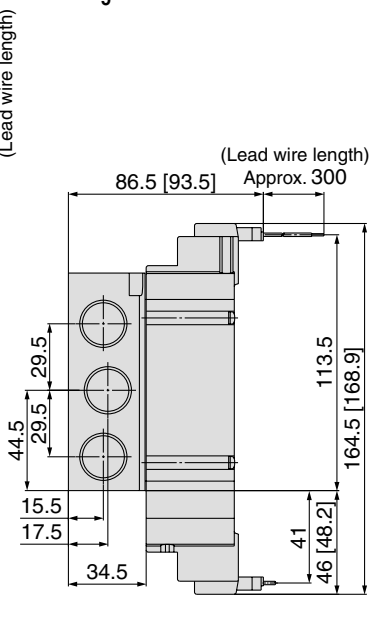


- SV
- SZ
- SY**
- SYJ
- SX

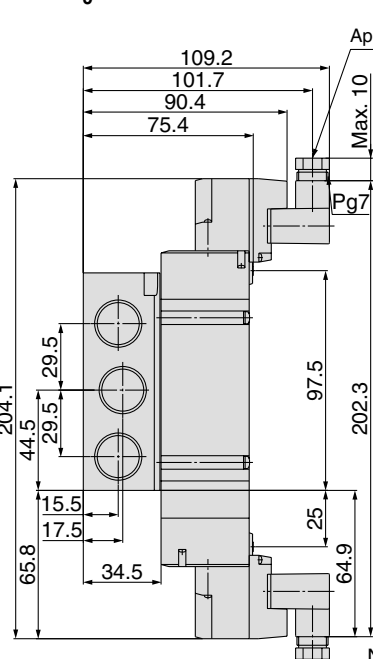
L plug connector (L):
SY9³₄40(R)-□L□□-⁰³₀₄□



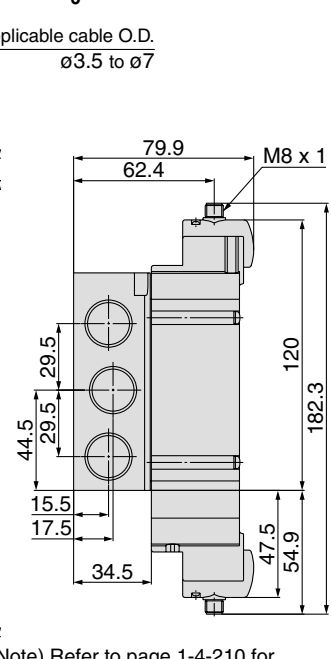
M plug connector (M):
SY9³₄40(R)-□M□□-⁰³₀₄□



DIN terminal (D):
SY9³₄40(R)-□D□□-⁰³₀₄□



M8 connector (WO):
SY9³₄40(R)-□WO□□-⁰³₀₄□



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

How to Order Valves

SY 9 1 20 [] [] 5 L [] [] 02 []

Series

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 specifications

Nil	Internal pilot
R	External pilot

* In the case of external pilot specifications, it cannot be used as a single unit.

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 (50/60Hz)	
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.

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

A, B port size Thread piping

Symbol	Port size
02	1/4
03	3/8

One-touch fitting (Metric size)

Symbol	Port size
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
N9	One-touch fitting for ø5/16"
N11	One-touch fitting for ø3/8"

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.

SV
SZ
SY
SYJ
SX

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		

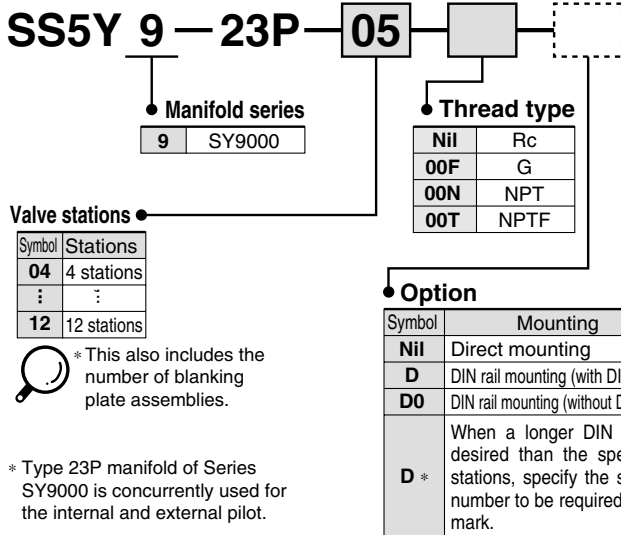
* "LN", "MN" type: with 2 sockets.
* DIN terminal type "Y" conforming to DIN4365C standard is also available. For details, refer to catalog on page 1-4-201.
* For connector cable of M8 connector, refer to page 1-4-209.

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 page 1-4-61.

Series SY9000 Body Ported Manifold Stacking Type Flat Ribbon Cable

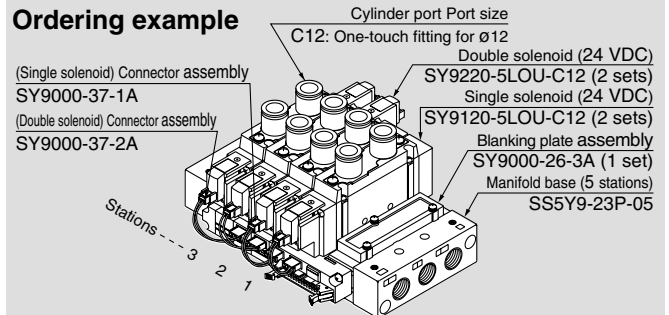
Type **23P**

How to Order Manifold



How to Order Valve Manifold Assembly

Ordering example

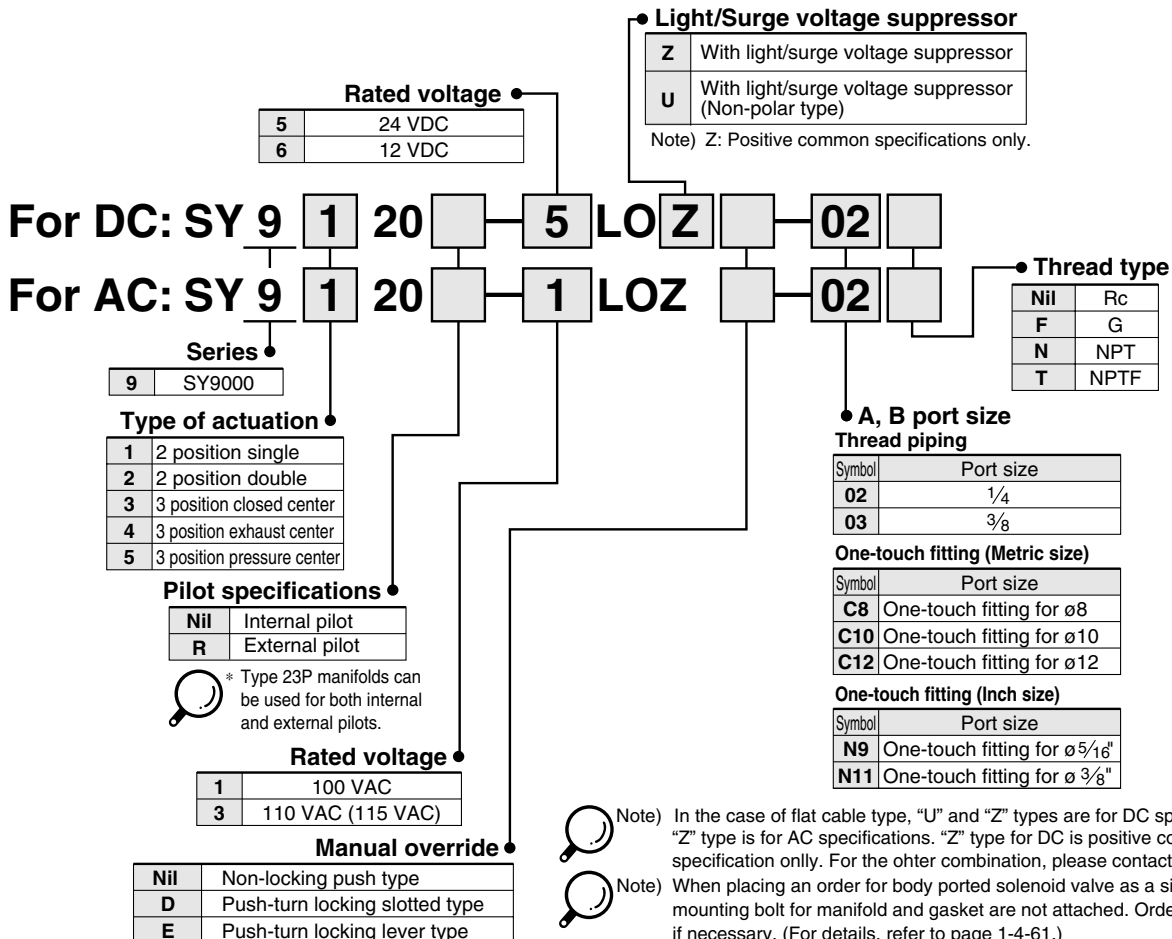


SS5Y9-23P-05	1 set (Type 23, 5 stations manifold base part no.)
* SY9000-26-3A	1 set (Blanking plate assembly part no.)
* SY9120-5LOU-C12	2 sets (Single solenoid part no.)
* SY9220-5LOU-C12	2 sets (Double solenoid part no.)
* SY9000-37-1A	2 sets (Connector assembly part no.)
* SY9000-37-2A	2 sets (Connector assembly part no.)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

How to Order Valves



Series SY9000 Base Mounted Manifold Stacking Type Individual Wiring

Type **43**

How to Order Manifold

SS5Y9-43-05U **C8**

Manifold series
9 SY9000

Valve stations

Symbol	Stations
02	2 stations
⋮	⋮
20	20 stations

* This also includes the number of blanking plate assemblies.

P, R port outlets

Symbol	Port outlet	Applicable stations
U	U side	2 to 10 stations
D	D side	
B	Both sides	2 to 20 stations

SUP/EXH block assembly specifications

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

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Option

Symbol	Mounting
Nil	Direct mounting
D	DIN rail mounting (with DIN rail)
DO	DIN rail mounting (without DIN rail)
D*	When a longer DIN rail is desired than the specified stations, specify the station number to be required into * mark.

A, B port size

Symbol	Port size
02	1/4
03	3/8

One-touch fitting (Metric size)

Symbol	Port size
C8	One-touch fitting for $\phi 8$
C10	One-touch fitting for $\phi 10$
C12	One-touch fitting for $\phi 12$
M	Mixed

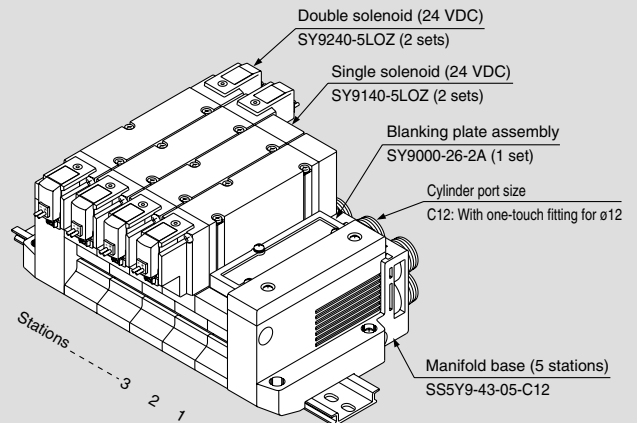
One-touch fitting (Inch size)

Symbol	Port size
N9	One-touch fitting for $\phi 5/16$ "
N11	One-touch fitting for $\phi 3/8$ "
M	Mixed

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

How to Order Valve Manifold Assembly

Ordering example



SS5Y9-43-05B-C12 1 set (Type 43, 5 stations manifold base part no.)
 * **SY9000-26-2A** 1 set (Blanking plate assembly part no.)
 * **SY9140-5LOZ** 2 sets (Single solenoid part no.)
 * **SY9220-5LOZ** 2 sets (Double solenoid part no.)

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

Add the valve and option part number under the manifold base part number. In the case of complex arrangement, specify them on the manifold specification sheet.

How to Order Valves

SY 9 **2** **40** **5** **L**

• **Series**

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**

For DC

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

For 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	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.
 * 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.

SV

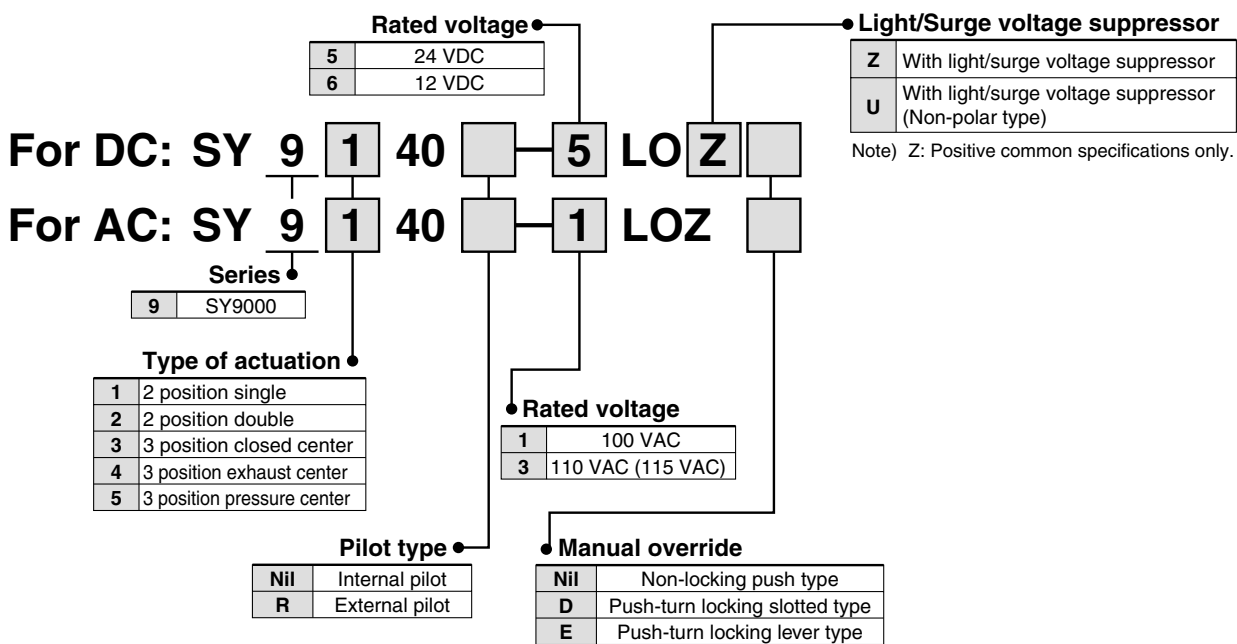
SZ

SY

SYJ

SX

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 SY9000
For single solenoid	SY9000-37-1A
Double solenoid, 3 position type	SY9000-37-2A
Single with spacer assembly	SY9000-37-3A
Double, 3 position with spacer assembly	SY9000-37-4A

For 100 VAC

For DC	For SY9000
For single solenoid	SY9000-37-1B
Double solenoid, 3 position type	SY9000-37-2B
Single with spacer assembly	SY9000-37-3B
Double, 3 position with spacer assembly	SY9000-37-4B

For 110 VAC (115 VAC)

For DC	For SY9000
For single solenoid	SY9000-37-1C
Double solenoid, 3 position type	SY9000-37-2C
Single with spacer assembly	SY9000-37-3C
Double, 3 position with spacer assembly	SY9000-37-4C