

# 5 Port Solenoid Valve

New

## Increased Flow For The SY Series



**SY3000**

**ø32** [Conventional]



Increased up to **ø50** (300 mm/s)\*

10 mm width can drive a ø50 cylinder.

**SY5000**

**ø50** [Conventional]



Increased up to **ø63** (300 mm/s)\*

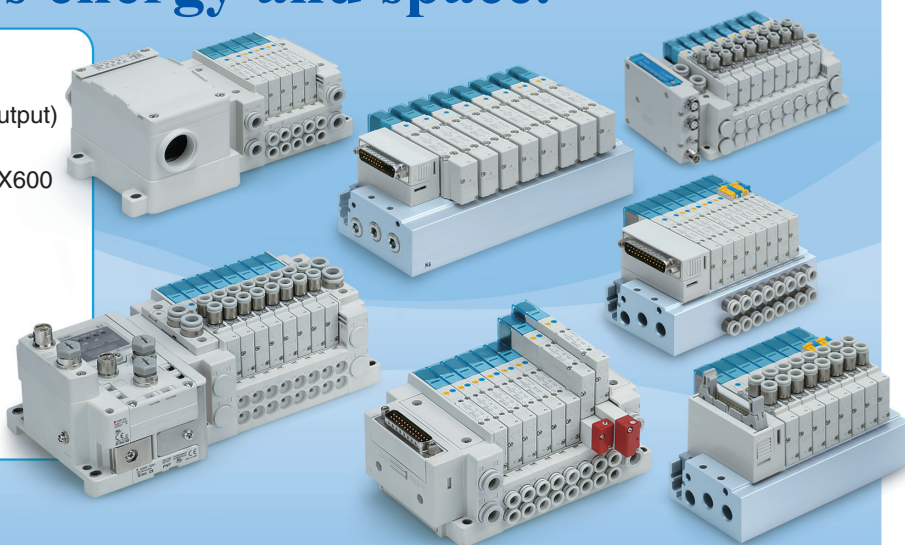
15 mm width can drive a ø63 cylinder.

\*Values based on comparison with the conventional SMC model. Refer to page 4 for common conditions.

Thanks to the flow increase, valve size can be reduced. Saves energy and space.

**New**

- Added the EX260 Integrated-type (For Output) Serial Transmission System.
- Added EtherNet/IP™, EtherCAT to the EX600 Integrated-type (For Input/Output) Serial Transmission System (Fieldbus System).
- Additional Options:  
Interface regulator assembly  
Individual SUP block assembly  
Individual EXH block assembly  
Dual flow fitting  
Name plate for manifolds



### Power Consumption

**0.1w** **0.35w**

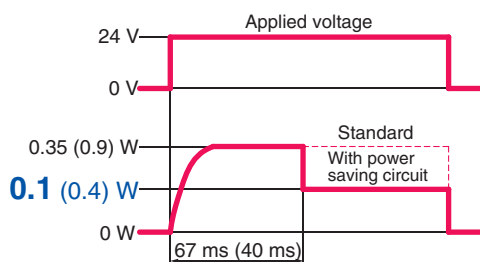
With power saving circuit

Standard

Power consumption is reduced by power saving circuit.

Power consumption is decreased by approx. 1/3 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 67 ms at 24 VDC.) Refer to the electrical power waveform as shown on the right.

[Electrical power waveform with power saving circuit]



The value in ( ) are for the quick response and high pressure types.

**Rubber seal**  
**Metal seal**

**Life**\*

**70 million cycles**  
(Rubber seal)

**200 million cycles**  
(Metal seal)

\* According to SMC life test conditions

**Series SY3000/5000**

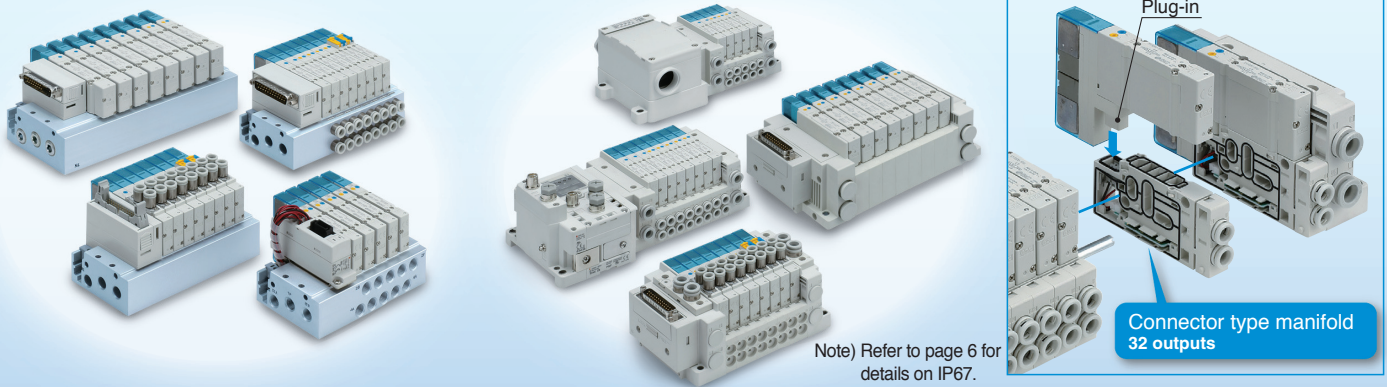


CAT.ES11-103B

# 5 Port Solenoid Valve

Series SY3000/5000

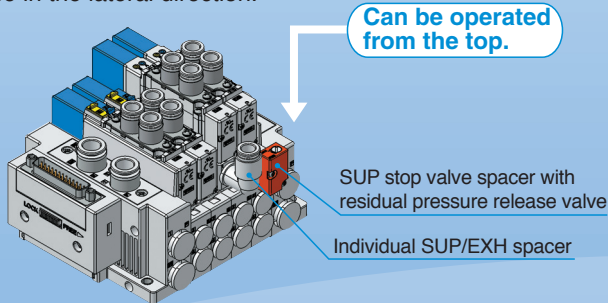
Plug-in metal base [IP40] Plug-in connector connecting base [IP67<sup>Note)</sup>] Connector type manifold



## Space saving / Improved operability

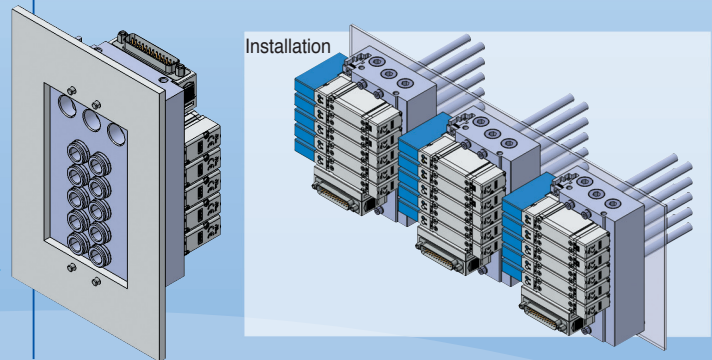
**Wiring, piping and operation are integrated on one side.**

Multiple layer type is available as an option. This saves space in the lateral direction.



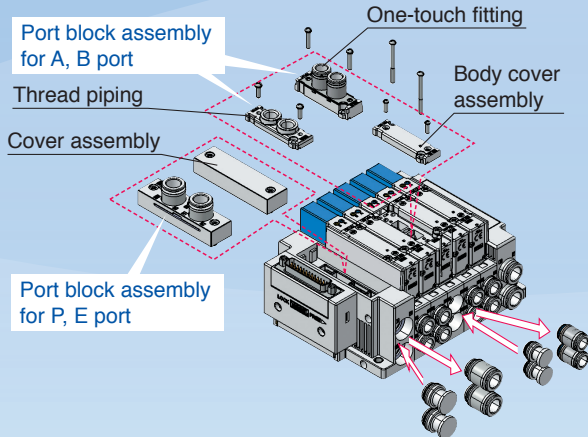
**Bottom ported is prepared. Space saving**

Bottom ported reduces the footprint.

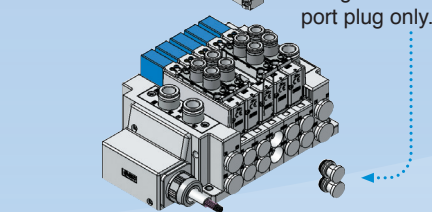


## Direction, size and type of the piping can be changed.

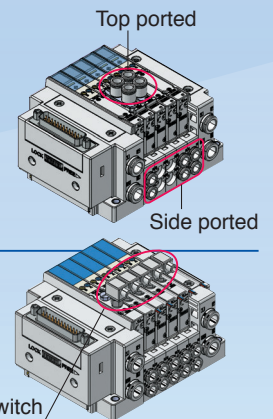
**To mount the piping on top**



**To mount the piping on the side**



**Mixed mounting of top ported and side ported is possible.**

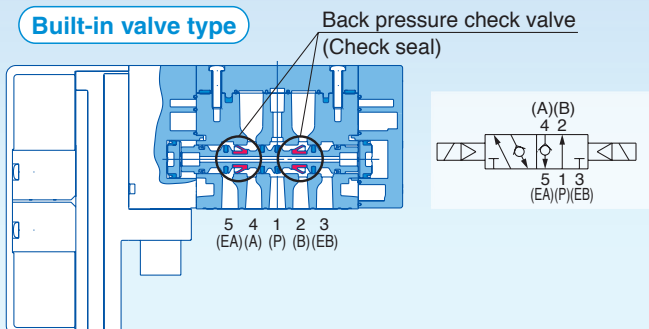


It is possible to detect the output of A and B port with a pressure switch by mounting the top ported valve onto the side ported or bottom ported manifold.

## Back pressure check valve

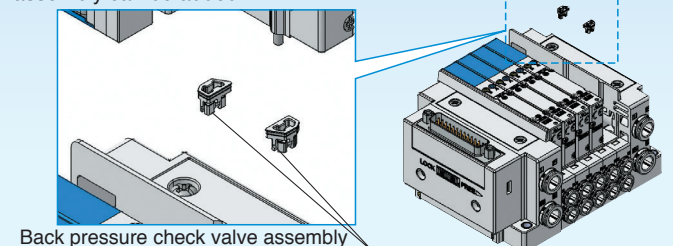
This prevents cylinder malfunction caused by the exhaust from other valves.

**Built-in valve type**



**Retrofit or pre-installed type**

If the product is affected by back pressure after installation, the back pressure check valve assembly can be added.



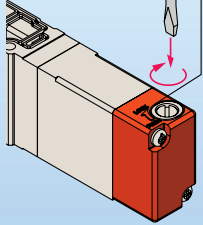


## Double check spacer with residual pressure release valve

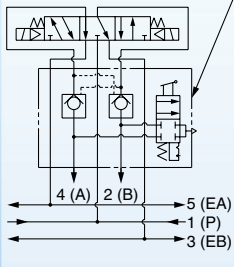
Long time of intermediate stop and position holding are possible.  
 [Intermediate stop] [Drop prevention]

Button for manual release of residual pressure

To exhaust residual pressure on cylinder side.

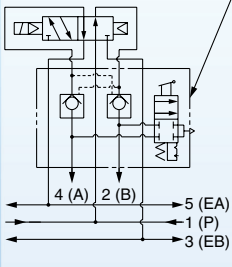


Double check spacer assembly



Exhaust center

Double check spacer assembly



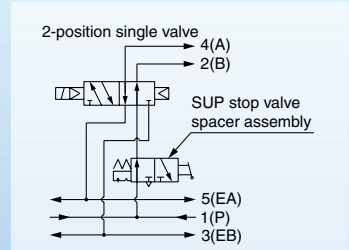
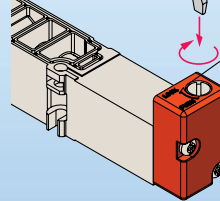
2-position single/double

## SUP stop valve spacer with residual pressure release valve

Air supply to each valve can be stopped individually. The valve and cylinder can be replaced without stopping other devices and equipment.

Button for manual release of residual pressure

To exhaust residual pressure on cylinder side.



2-position single valve example

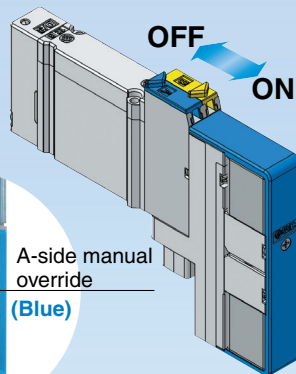
## Applicable to various type of serial wiring

Series	Applicable protocol
<b>EX510</b> 	<ul style="list-style-type: none"> <li>•DeviceNet™</li> <li>•PROFIBUS DP</li> <li>•CC-Link</li> </ul>
<b>EX500</b> 	<ul style="list-style-type: none"> <li>•DeviceNet™</li> <li>•PROFIBUS DP</li> <li>•CC-Link</li> <li>•EtherNet/IP™</li> </ul>
<b>EX600</b> 	<ul style="list-style-type: none"> <li>•DeviceNet™</li> <li>•PROFIBUS DP</li> <li>•CC-Link</li> <li><b>New</b> •EtherNet/IP™</li> <li><b>New</b> •EtherCAT</li> </ul>
<b>EX250</b> 	<ul style="list-style-type: none"> <li>•DeviceNet™</li> <li>•PROFIBUS DP</li> <li>•CANopen</li> <li>•CC-Link</li> <li>•AS-Interface</li> <li>•EtherNet/IP™</li> </ul>

Series	Applicable protocol
<b>EX260</b> 	<ul style="list-style-type: none"> <li>•DeviceNet™</li> <li>•PROFIBUS DP</li> <li>•CC-Link</li> <li>•EtherCAT</li> <li>•PROFINET</li> </ul>
<b>EX126</b> 	<ul style="list-style-type: none"> <li>•CC-Link</li> </ul>
<b>EX120</b> 	<ul style="list-style-type: none"> <li>•DeviceNet™</li> <li>•CC-Link</li> <li>•OMRON CompoBus/S</li> <li>•CompoNet™</li> </ul>

## Slide manual override provides better visibility.

ON/OFF operation and locking can be performed with the manual slide.



B-side manual override (Yellow)

A-side manual override (Blue)

ON/OFF state can be checked at a glance.

B-side manual override ON

A-side manual override OFF


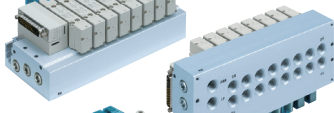
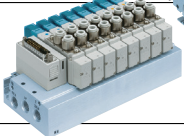


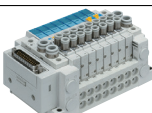
## 4-position dual 3-port valve available

(Only rubber seal type)

- Two 3-port valves built into one body
- 3-port valves on the A and B sides can operate independently.
- When used as a 3-port valve, only half the number of stations is required.
- Can also be used as a 4-position, 5-port valve.
- 4-position dual 3-port valve with back pressure check valve is available.

A side	B side	JIS symbol
N.C. valve	N.C. valve	
N.O. valve	N.O. valve	
N.C. valve	N.O. valve	

# Manifold Variations

Manifold Variations			Valve Series	Wiring											Common specification				
				Connection															
				5 ports	D-sub connector	Flat ribbon cable	PC wiring	Terminal block box	Lead wire	Circular connector	Serial transmission						Positive common	Negative common	
EX510	EX500	EX600	EX250								EX260	EX126	EX120						
Plug-in Metal Base	Side ported		Type 50□	SY3□0□	●	●	●	—	—	—	—	●	—	—	—	—	—	●	●
			SY5□0□	P. 15	P. 15	P. 15	—	—	—	—	—	—	—	—	—	—	—	—	—
	Bottom ported		Type 51□	SY3□0□	●	●	●	—	—	—	—	●	—	—	—	—	—	—	—
			SY5□0□	P. 15	P. 15	P. 15	—	—	—	—	—	—	—	—	—	—	—	—	—
	Top ported		Type 52□	SY3□3□	●	●	●	—	—	—	—	●	—	—	—	—	—	—	—
			SY5□3□	P. 29	P. 29	P. 29	—	—	—	—	—	—	—	—	—	—	—	—	—
Plug-in Connector Connecting Base	Side ported		Type 10□	SY3□0□	●	●	●	●	●	●	—	—	●	●	●	●	●	●	●
			SY5□0□	P. 49	P. 49	P. 49	P. 59	P. 67	P. 75	—	—	—	—	—	—	—	—	—	—
	Bottom ported		Type 11□	SY5□0□	●	●	●	●	●	●	—	—	—	—	—	—	—	—	—
			SY5□0□	P. 49	P. 49	P. 49	P. 59	P. 67	P. 75	—	—	—	—	—	—	—	—	—	—
	Top ported		Type 12□	SY3□3□	●	●	●	●	●	●	—	—	—	—	—	—	—	—	—
			SY5□3□	P. 55	P. 55	P. 55	P. 63	P. 71	P. 79	—	—	—	—	—	—	—	—	—	—

● Standard ○ Option ▲ Made-to-Order (Refer to page 14.)

## Wiring

### Plug-in Metal Base

D-sub connector



[IP40]

Flat ribbon cable,  
PC wiring



[IP40]

Serial transmission:  
EX510



[IP20]

D-sub connector



[IP40]

### Plug-in Connector Connecting Base

Circular connector



[IP67]

Serial transmission:  
EX500



[IP67]

Serial transmission:  
EX600



[IP67]  
\*Partially IP40

Serial transmission:  
EX250



[IP67]

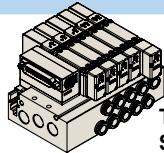




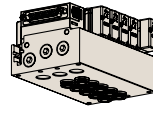
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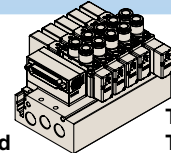
## Plug-in Metal Base



Type 50/  
Side ported

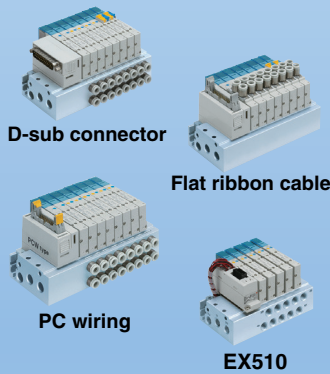


Type 51/  
Bottom ported



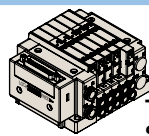
Type 52/  
Top ported

### Type 50/Side Ported, Type 51/Bottom Ported, Type 52/Top Ported P. 15



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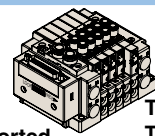
## Plug-in Connector Connecting Base



Type 10/  
Side ported

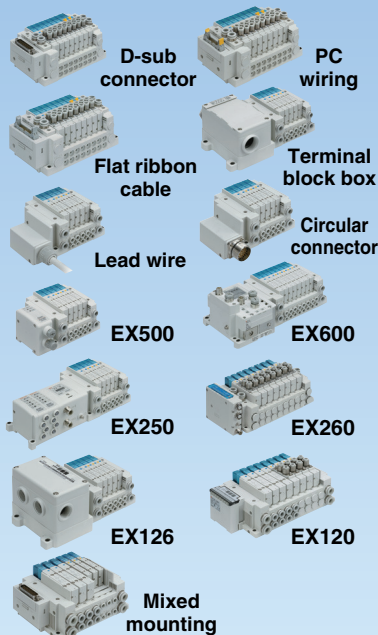


Type 11/  
Bottom ported



Type 12/  
Top ported

### Type 10/Side Ported, Type 11/Bottom Ported, Type 12/Top Ported P. 49



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# Series SY3000/5000 Type 50, 51, 52

## Plug-in Metal Base

### Manifold Specifications

Model		D-sub connector		Flat ribbon cable			Serial wiring
		F type	P type	PG type J type	PH type	S5 type (EX510)	
<b>Manifold type</b>		Plug-in metal base					
<b>SUP/EXH port type</b>		Common SUP/EXH					
<b>Valve stations</b>	<b>All double wiring</b>	2 to 12 stations		2 to 9 stations (J type: 2 to 8 stations)	2 to 4 stations	2 to 8 stations	
	<b>All single wiring</b>			2 to 12 stations	2 to 8 stations	2 to 12 stations	
<b>Applicable connector</b>		D-sub connector Conforming to MIL-C-24308 JIS-X-5101	Flat ribbon cable connector with strain relief Conforming to MIL-C-83503			—	
			Socket: 26 pins MIL type	Socket: 20 pins MIL type	Socket: 10 pins MIL type		
<b>Internal wiring</b>		Positive common, Negative common					
<b>Port size</b>	<b>1(P), 3/5(E) port</b>	<b>SY3000</b>	1/8				
		<b>SY5000</b>	1/4				
	<b>4(A), 2(B) port</b>	<b>SY3000</b>	M5 x 0.8, 1/8 ø2 One-touch fitting, ø3.2 One-touch fitting, ø4 One-touch fitting, ø6 One-touch fitting ø1/8" One-touch fitting, ø5/32" One-touch fitting, ø1/4" One-touch fitting				
		<b>SY5000</b>	1/8, 1/4 ø4 One-touch fitting, ø6 One-touch fitting, ø8 One-touch fitting ø5/32" One-touch fitting, ø1/4" One-touch fitting, ø5/16" One-touch fitting				
<b>Enclosure (Based on IEC60529)</b>		IP40				IP20	

### Manifold Flow-rate Characteristics <sup>Note 1)</sup> / Manifold Weight

#### Valve Seal Type: Rubber Seal

Model	Port size		Valve flow-rate characteristics				Weight: W [g] <sup>Note 2)</sup> (n: stations)	
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)		4/2→5/3 (A/B→E)		Fixed: C□	Replaceable: KC□
			C [dm <sup>3</sup> /(s·bar)]	b	C [dm <sup>3</sup> /(s·bar)]	b		
<b>SS5Y3-50 (Side ported)</b>	01	C6	1.1	0.19	1.1	0.15	39n + 247	43.5n + 247
<b>SS5Y3-51 (Bottom ported)</b>	01	C6	1.2	0.31	1.2	0.14	41.5n + 251	48.5n + 251
<b>SS5Y3-52 (Top ported)</b>	01	C6	1.1	0.29	1.2	0.20	44n + 247	
<b>SS5Y5-50 (Side ported)</b>	02	C8	2.6	0.28	2.6	0.14	93n + 379	110n + 379
<b>SS5Y5-51 (Bottom ported)</b>	02	C8	2.7	0.35	2.8	0.20	93n + 413	113n + 413
<b>SS5Y5-52 (Top ported)</b>	02	C8	2.6	0.26	3.1	0.13	103n + 379	

#### Valve Seal Type: Metal Seal

Model	Port size		Valve flow-rate characteristics				Weight: W [g] <sup>Note 2)</sup> (n: stations)	
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1→4/2 (P→A/B)		4/2→5/3 (A/B→E)		Fixed: C□	Replaceable: KC□
			C [dm <sup>3</sup> /(s·bar)]	b	C [dm <sup>3</sup> /(s·bar)]	b		
<b>SS5Y3-50 (Side ported)</b>	01	C6	0.9	0.14	1.0	0.12	39n + 247	43.5n + 247
<b>SS5Y3-51 (Bottom ported)</b>	01	C6	1.0	0.21	1.1	0.10	41.5n + 251	48.5n + 251
<b>SS5Y3-52 (Top ported)</b>	01	C6	1.1	0.15	1.1	0.14	44n + 247	
<b>SS5Y5-50 (Side ported)</b>	02	C8	2.2	0.20	2.3	0.13	93n + 379	110n + 379
<b>SS5Y5-51 (Bottom ported)</b>	02	C8	2.4	0.26	2.5	0.16	93n + 413	113n + 413
<b>SS5Y5-52 (Top ported)</b>	02	C8	2.4	0.18	2.6	0.12	103n + 379	

\* Calculation of effective area S and sonic conductance C:  $S = 5.0 \times C$

Note 1) The value is for manifold base with 5 stations and individually operated 2-position type.

Note 2) Weight: W is the value for the D-sub connector manifold.

To obtain the weight with valves attached, add the valve weights given on page 9 for the appropriate number of stations.



# Series SY3000/5000 Type 10, 11, 12

## Plug-in Connector Connecting Base

### Manifold Specifications

Model	D-sub connector	Flat ribbon cable			Terminal block box	Lead wire	Circular connector	Serial wiring			
	F type	P type	PG type J type	PH type	T type	L type	M type	S6□ type (EX600)	SA2 type (EX500) S4□ type (EX126)	S□ type (EX250) (EX260)	S3□ type (EX120)
<b>Manifold type</b>	Plug-in connector connecting base										
<b>SUP/EXH port type</b>	Common SUP/EXH (Common for 3/5 port)										
<b>Valve stations</b>	2 to 24 stations		2 to 18 stations (J type: 2 to 16 stations)	2 to 8 stations	2 to 20 stations	2 to 24 stations		2 to 16 stations	2 to 24 stations	2 to 16 stations	
<b>Applicable connector</b>	D-sub connector Conforming to MIL-C-24308 JIS-X-5101	Flat ribbon cable connector with strain relief Conforming to MIL-C-83503			—						
		Socket: 26 pins MIL type	Socket: 20 pins MIL type	Socket: 10 pins MIL type							
<b>Internal wiring</b>	Positive common, Negative common										
<b>Port size</b>	1(P), 3/5(E) port	<b>SY3000</b>	ø8 One-touch fitting ø5/16" One-touch fitting								
		<b>SY5000</b>	ø10 One-touch fitting ø3/8" One-touch fitting								
	4(A), 2(B) port	<b>SY3000</b>	ø2 One-touch fitting, ø3.2 One-touch fitting, ø4 One-touch fitting, ø6 One-touch fitting ø1/8" One-touch fitting, ø5/32" One-touch fitting, ø1/4" One-touch fitting								
		<b>SY5000</b>	ø4 One-touch fitting, ø6 One-touch fitting, ø8 One-touch fitting ø5/32" One-touch fitting, ø1/4" One-touch fitting, ø5/16" One-touch fitting								
<b>Enclosure (Based on IEC60529)</b>	IP40				IP67			IP67 (I/O unit: partially IP40)	IP67 (EX500 gateway unit, input unit: IP65)	IP67 (Partially IP40)	IP20

### Manifold Flow-rate Characteristics<sup>Note 1)</sup>/Manifold Weight

#### Valve Seal Type: Rubber Seal

Model	Port size		Valve flow-rate characteristics				Weight: W [g] <sup>Note 2)</sup> (n: stations)
	1, 3/5 (P, E)	4, 2 (A, B)	1→4/2 (P→A/B)		4/2→5/3 (A/B→E)		
			C [dm <sup>3</sup> /(s·bar)]	b	C [dm <sup>3</sup> /(s·bar)]	b	
<b>SS5Y3-10 (Side ported)</b>	C8	C6	1.4	0.30	1.6	0.19	28.9n + 293
<b>SS5Y3-12 (Top ported)</b>	C8	C6	1.2	0.29	1.3	0.19	25.1n + 314
<b>SS5Y5-10 (Side ported)</b>	C10	C8	3.3	0.30	3.6	0.17	74.7n + 398
<b>SS5Y5-11 (Bottom ported)</b>	C10	C8	3.3	0.29	4.2	0.26	76.8n + 445
<b>SS5Y5-12 (Top ported)</b>	C10	C8	2.8	0.27	3.8	0.23	66.3n + 417

#### Valve Seal Type: Metal Seal

Model	Port size		Valve flow-rate characteristics				Weight: W [g] <sup>Note 2)</sup> (n: stations)
	1, 3/5 (P, E)	4, 2 (A, B)	1→4/2 (P→A/B)		4/2→5/3 (A/B→E)		
			C [dm <sup>3</sup> /(s·bar)]	b	C [dm <sup>3</sup> /(s·bar)]	b	
<b>SS5Y3-10 (Side ported)</b>	C8	C6	1.2	0.19	1.3	0.18	28.9n + 293
<b>SS5Y3-12 (Top ported)</b>	C8	C6	1.2	0.16	1.3	0.18	25.1n + 314
<b>SS5Y5-10 (Side ported)</b>	C10	C8	2.7	0.24	3.1	0.17	74.7n + 398
<b>SS5Y5-11 (Bottom ported)</b>	C10	C8	2.8	0.25	3.5	0.15	76.8n + 445
<b>SS5Y5-12 (Top ported)</b>	C10	C8	2.6	0.18	3.0	0.16	66.3n + 417

\* Calculation of effective area S and sonic conductance C: S = 5.0 x C

Note 1) The value is for manifold base with 5 stations and individually operated 2-position type.

Note 2) Weight: W is the value of the internal pilot, and D-sub connector manifold with one-touch fitting straight piping type.

To obtain the weight with valves attached, add the valve weights given on page 9 for the appropriate number of stations.

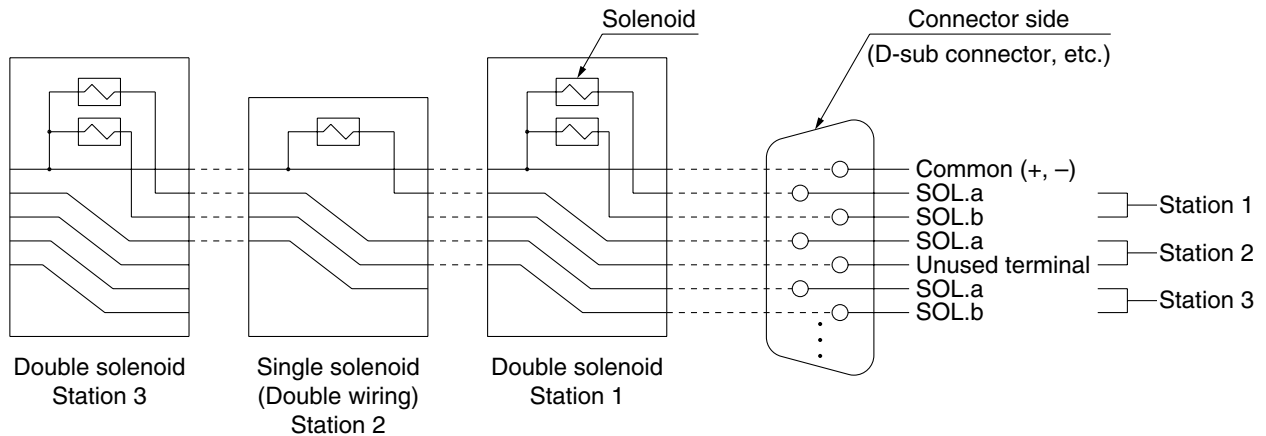
Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 EX510  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500  
 EX600  
 EX250  
 EX260  
 EX126  
 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Series SY3000/5000

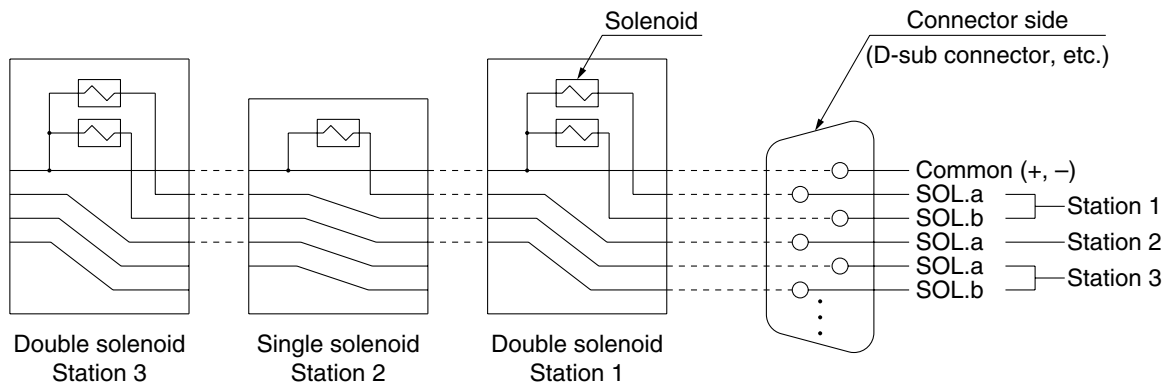
## Connector Wiring Layout

For both serial and parallel wiring, additional valves are sequentially assigned pins on the connector. This makes it completely unnecessary to disassemble the connector unit.

### ■ Single solenoid valve is installed to all double wiring. (in case of all double wiring) (Manifold specification sheet is not necessary.)



### ■ Single/double wiring are mixed. (Manifold specification sheet is necessary.)



Note) These diagrams are for the purpose of explanation, and differ from the connector wiring used for testing.



# Series SY3000/5000

## Valve Specifications 1

### Valve Specifications

Valve type		Rubber seal	Metal seal
Fluid		Air	
Internal pilot operating pressure range (MPa)	2-position single	0.15 to 0.7	0.1 to 0.7 (High pressure type: 0.1 to 1)
	2-position double	0.1 to 0.7	
	3-position	0.2 to 0.7	
	4-position dual 3-port valve	0.15 to 0.7	—
External pilot operating pressure range (MPa)	Operating pressure range		-100 kPa to 0.7 (4-position: -100 kPa to 0.6) -100 kPa to 0.7 (High pressure type: -100 kPa to 1)
	Pilot pressure range	2-position single	0.1 to 0.7 (High pressure type: 0.1 to 1)
		2-position double	
		3-position	
4-position dual 3-port valve		Operating pressure + 0.1 or more (Min. 0.25) to 0.7	—
Ambient and fluid temperature (°C)		-10 to 50 (No freezing)	
Max. operating frequency (Hz)	2-position single/double	5	20 <sup>Note 1)</sup>
	4-position dual 3-port valve	3	10 <sup>Note 1)</sup>
	3-position		
Manual override		Non-locking push type	
		Push-turn locking slotted type	
		Slide locking type	
Pilot exhaust type	Internal pilot	Main/Pilot valve common exhaust	
	External pilot	Pilot valve individual exhaust	
Lubrication		Not required	
Mounting orientation		Unrestricted	Single: Unrestricted Double/3-position: Main valve is horizontal.
Impact/Vibration resistance <sup>Note 2)</sup> (m/s <sup>2</sup> )		150/30	
Enclosure		IP67 (Based on IEC60529)	
Coil rated voltage (DC)		24, 12 V	
Allowable voltage fluctuation (V)		±10% of rated voltage <sup>Note 3)</sup>	
Power consumption (W)	Standard	0.35 (With indicator light: 0.4)	
	High pressure type, Quick response type	0.9 (With indicator light: 0.95)	
	With power saving circuit	Standard: 0.1 (With indicator light only), High pressure type: 0.4 (With indicator light only)	
Surge voltage suppressor		Diode (Varistor for non-polar type)	
Indicator light		LED	

Note 1) Use below 5 Hz for with power saving circuit.

Note 2) Impact resistance: No malfunction occurred when it is tested 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)

Note 3) Due to voltage drops by the internal circuit in S/Z type and T type (with power saving circuit), use within the allowable voltage fluctuation as follows.

$$S/Z \text{ type } \begin{cases} 24 \text{ VDC: } -7\% \text{ to } +10\% \\ 12 \text{ VDC: } -4\% \text{ to } +10\% \end{cases} \quad T \text{ type } \begin{cases} 24 \text{ VDC: } -8\% \text{ to } +10\% \\ 12 \text{ VDC: } -6\% \text{ to } +10\% \end{cases}$$

### Response Time

Series	Seal type	Model	Type of actuation	Response time (ms)						
				Standard			Quick response type			
				Without light/surge voltage suppressor	With light/surge voltage suppressor		Without light/surge voltage suppressor	With light/surge voltage suppressor		
		S/Z type	R/U type		S/Z type	R/U type		S/Z type	R/U type	
SY3000	Rubber seal	SY31□0	2-position single	15 or less	20 or less	15 or less	12 or less	15 or less	12 or less	
	Metal seal	SY31□1		15 or less	20 or less	15 or less	12 or less	15 or less	12 or less	
	Rubber seal	SY32□0	2-position double	12 or less	15 or less	12 or less	10 or less	13 or less	10 or less	
	Metal seal	SY32□1		12 or less	15 or less	12 or less	10 or less	13 or less	10 or less	
	Rubber seal	SY33/4/5□0	3-position	18 or less	22 or less	18 or less	14 or less	18 or less	14 or less	
	Metal seal	SY33/4/5□1		18 or less	22 or less	18 or less	14 or less	18 or less	14 or less	
	Rubber seal	SY3A/B/C□0	4-position dual 3-port valve	18 or less	22 or less	18 or less	15 or less	19 or less	15 or less	
SY5000	Rubber seal	SY51□0	2-position single	24 or less	31 or less	24 or less	18 or less	25 or less	18 or less	
	Metal seal	SY51□1		24 or less	31 or less	24 or less	18 or less	25 or less	18 or less	
	Rubber seal	SY52□0	2-position double	12 or less	15 or less	12 or less	10 or less	13 or less	10 or less	
	Metal seal	SY52□1		12 or less	15 or less	12 or less	10 or less	13 or less	10 or less	
	Rubber seal	SY53/4/5□0	3-position	30 or less	34 or less	30 or less	24 or less	28 or less	24 or less	
	Metal seal	SY53/4/5□1		28 or less	30 or less	28 or less	23 or less	25 or less	23 or less	
		Rubber seal	SY5A/B/C□0	4-position dual 3-port valve	35 or less	42 or less	35 or less	28 or less	35 or less	28 or less

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 Plug-in Connector Flat Ribbon Cable PC Wiring  
 EX510  
 Plug-in Connector Connecting Base  
 Plug-in Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500  
 EX600  
 EX250  
 EX260  
 EX126  
 EX120  
 One-touch Filings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Series SY3000/5000

# Valve Specifications 2

## Valve Weight

### Series SY3000

Valve model	Seal type	Type of actuation		Weight g
SY3□00	Rubber seal	2-position	Single	74
			Double	83
		3-position	Closed center	87
			Exhaust center	
			Pressure center	
		4-position	Dual 3-port valve	83

Valve model	Seal type	Type of actuation		Weight g
SY3□01	Metal seal	2-position	Single	76
			Double	86
		3-position	Closed center	90
			Exhaust center	
			Pressure center	

Valve model	Seal type	Type of actuation		Port size	
				4, 2 (A, B)	Weight g
SY3□30-M5	Rubber seal	2-position	Single	M5 x 0.8	74
			Double		83
		3-position	Closed center		87
			Exhaust center		
		4-position	Dual 3-port valve		83
SY3□30-C2	Rubber seal	2-position	Single	C2	82
			Double		91
		3-position	Closed center		95
			Exhaust center		
		4-position	Dual 3-port valve		91
SY3□30-C3	Rubber seal	2-position	Single	ø3.2 One-touch fitting	85
			Double		94
		3-position	Closed center		98
			Exhaust center		
		4-position	Dual 3-port valve		94
SY3□30-C4	Rubber seal	2-position	Single	C4	77
			Double		86
		3-position	Closed center		90
			Exhaust center		
		4-position	Dual 3-port valve		86
SY3□30-C6	Rubber seal	2-position	Single	ø6 One-touch fitting	80
			Double		89
		3-position	Closed center		93
			Exhaust center		
		4-position	Dual 3-port valve		89

Valve model	Seal type	Type of actuation		Port size	
				4, 2 (A, B)	Weight g
SY3□31-M5	Metal seal	2-position	Single	M5 x 0.8	76
			Double		86
		3-position	Closed center		90
			Exhaust center		
		4-position	Dual 3-port valve		83
SY3□31-C2	Metal seal	2-position	Single	C2	84
			Double		94
		3-position	Closed center		98
			Exhaust center		
		4-position	Dual 3-port valve		91
SY3□31-C3	Metal seal	2-position	Single	ø3.2 One-touch fitting	87
			Double		97
		3-position	Closed center		101
			Exhaust center		
		4-position	Dual 3-port valve		94
SY3□31-C4	Metal seal	2-position	Single	C4	79
			Double		89
		3-position	Closed center		93
			Exhaust center		
		4-position	Dual 3-port valve		86
SY3□31-C6	Metal seal	2-position	Single	C6	82
			Double		92
		3-position	Closed center		96
			Exhaust center		
		4-position	Dual 3-port valve		89

### Series SY5000

Valve model	Seal type	Type of actuation		Weight g
SY5□00	Rubber seal	2-position	Single	82
			Double	90
		3-position	Closed center	100
			Exhaust center	
			Pressure center	
		4-position	Dual 3-port valve	90

Valve model	Seal type	Type of actuation		Weight g
SY5□01	Metal seal	2-position	Single	91
			Double	101
		3-position	Closed center	111
			Exhaust center	
			Pressure center	

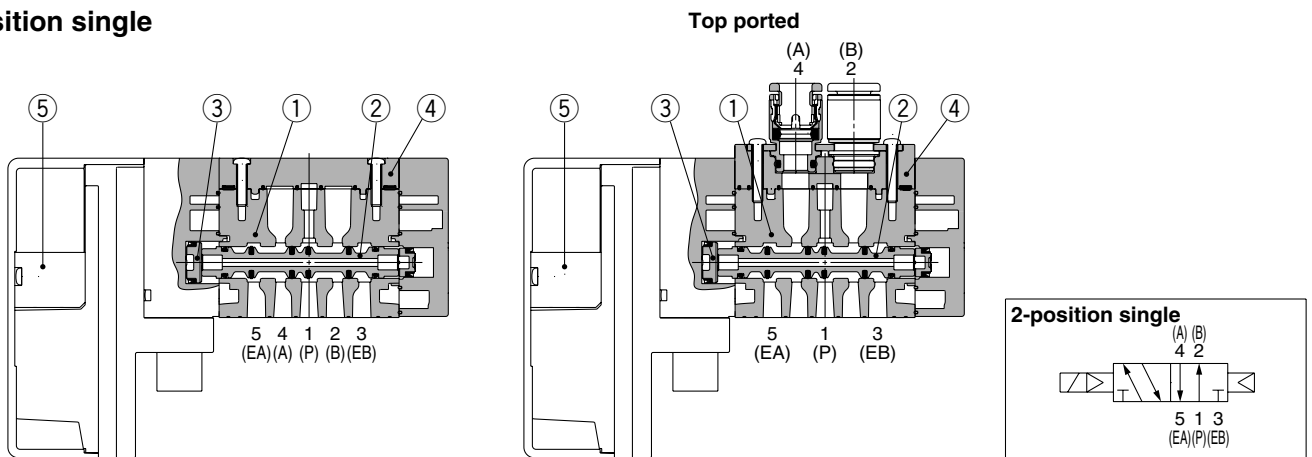
Valve model	Seal type	Type of actuation		Port size	
				4, 2 (A, B)	Weight g
SY5□30-01	Rubber seal	2-position	Single	1/8	102
			Double		110
		3-position	Closed center		120
			Exhaust center		
		4-position	Dual 3-port valve		110
SY5□30-C4	Rubber seal	2-position	Single	C4	115
			Double		123
		3-position	Closed center		133
			Exhaust center		
		4-position	Dual 3-port valve		123
SY5□30-C6	Rubber seal	2-position	Single	ø6 One-touch fitting	110
			Double		118
		3-position	Closed center		128
			Exhaust center		
		4-position	Dual 3-port valve		118
SY5□30-C8	Rubber seal	2-position	Single	ø8 One-touch fitting	99
			Double		107
		3-position	Closed center		117
			Exhaust center		
		4-position	Dual 3-port valve		107

Valve model	Seal type	Type of actuation		Port size	
				4, 2 (A, B)	Weight g
SY5□31-01	Metal seal	2-position	Single	1/8	111
			Double		121
		3-position	Closed center		131
			Exhaust center		
		4-position	Dual 3-port valve		110
SY5□31-C4	Metal seal	2-position	Single	C4	124
			Double		134
		3-position	Closed center		144
			Exhaust center		
		4-position	Dual 3-port valve		123
SY5□31-C6	Metal seal	2-position	Single	ø6 One-touch fitting	120
			Double		130
		3-position	Closed center		140
			Exhaust center		
		4-position	Dual 3-port valve		118
SY5□31-C8	Metal seal	2-position	Single	ø8 One-touch fitting	108
			Double		118
		3-position	Closed center		128
			Exhaust center		
		4-position	Dual 3-port valve		107

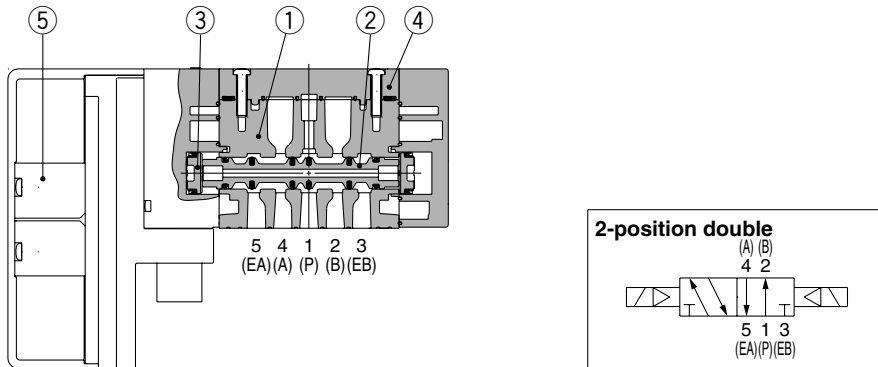
# Valve Construction 1

## Rubber Seal

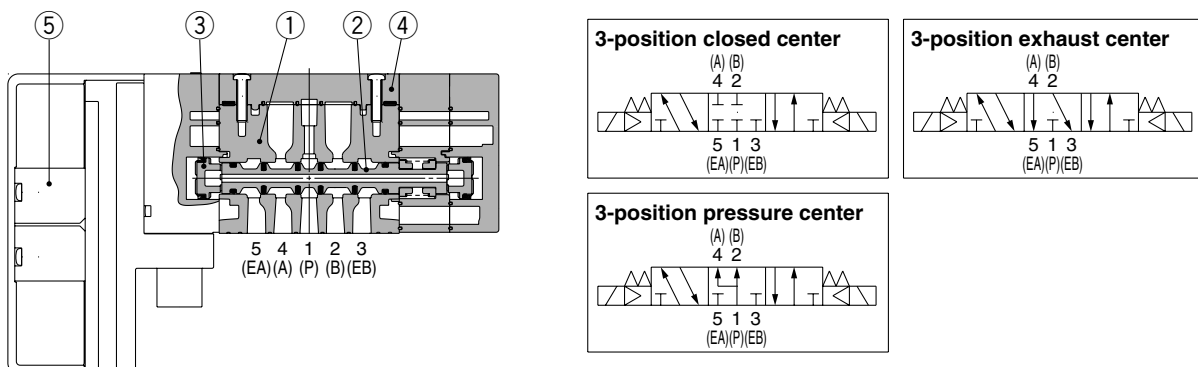
### 2-position single



### 2-position double



### 3-position closed center/exhaust center/pressure center



## Component Parts

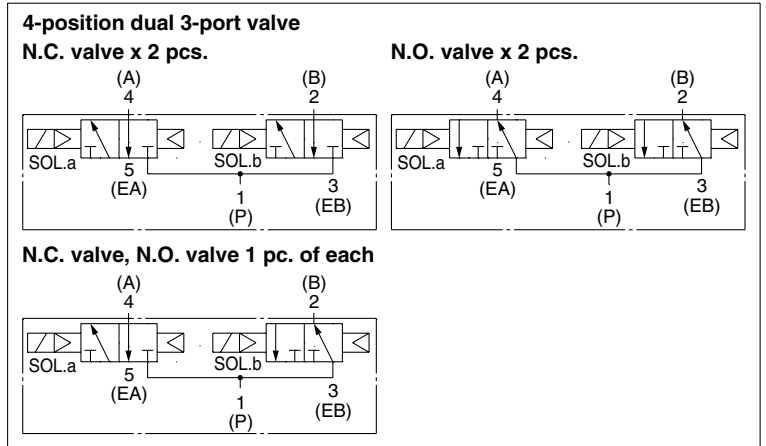
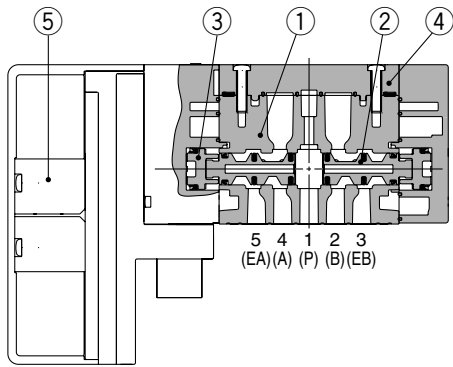
No.	Description	Material	Note
1	Body	SY3000: Zinc die-casted SY5000: Aluminum die-casted	
2	Spool valve	Special resin/HNBR ( 3-position valve: ) Aluminum/HNBR	
3	Piston	Resin	
4	Body cover assembly	Resin	For side/bottom ported
	Port block assembly	Resin ( SY5000 series threaded type: ) Zinc die-casted	For top ported
5	Pilot valve assembly	—	Refer to page 14.

# Series SY3000/5000

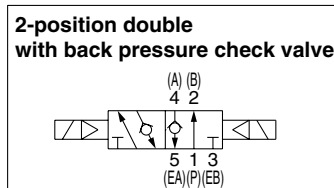
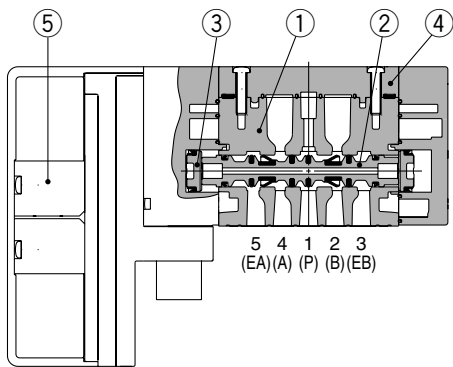
## Valve Construction 2

### Rubber Seal

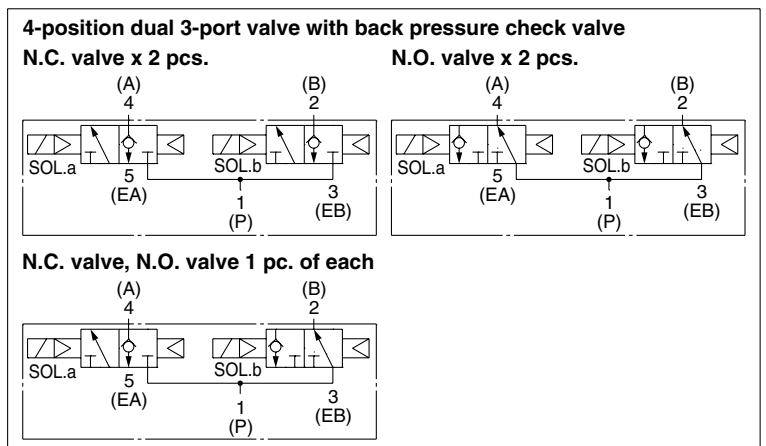
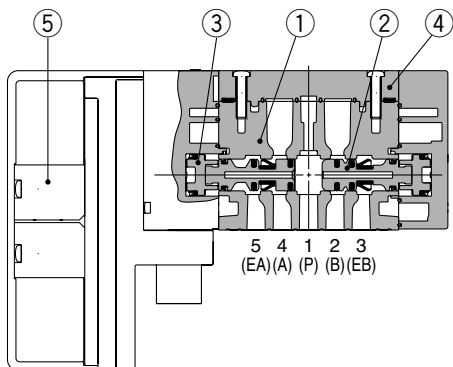
#### 4-position dual 3-port valve



#### 2-position double with back pressure check valve (Built-in valve type)



#### 4-position dual 3-port valve with back pressure check valve (Built-in valve type)

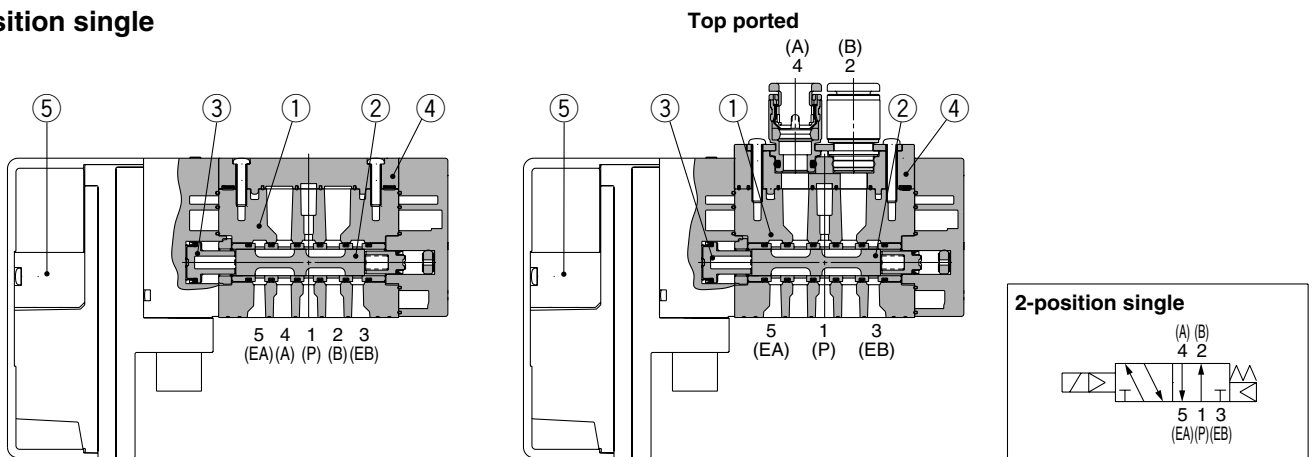




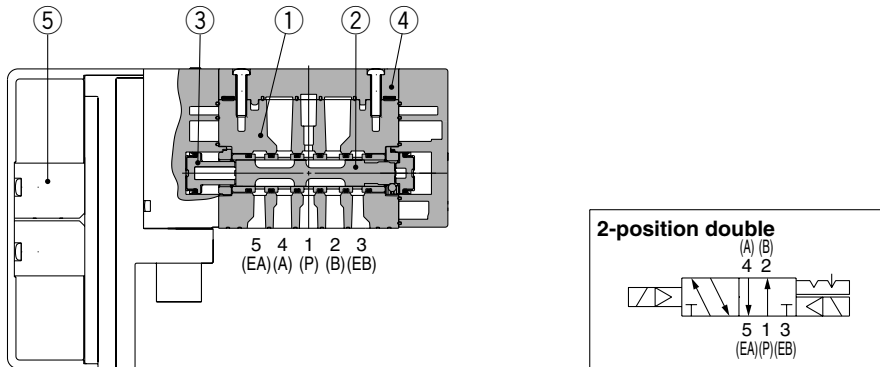
## Valve Construction 3

### Metal Seal

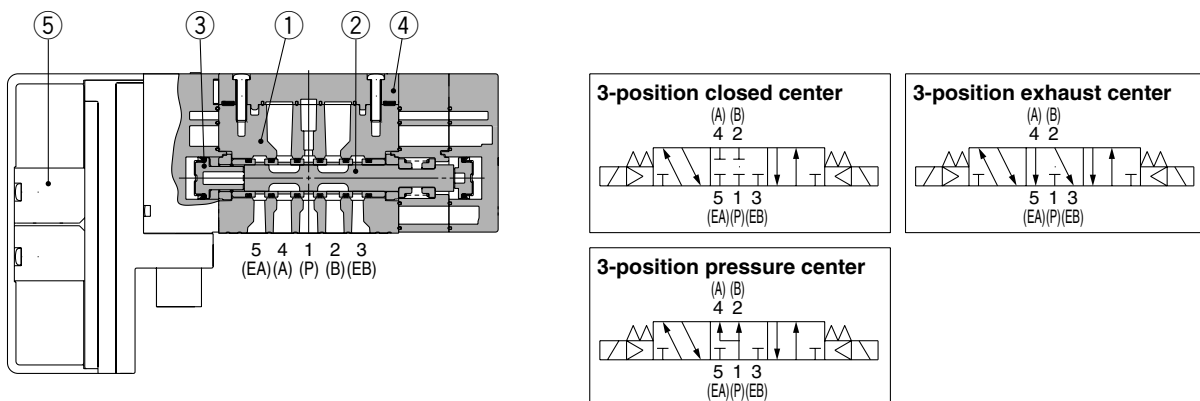
#### 2-position single



#### 2-position double



#### 3-position closed center/exhaust center/pressure center



### Component Parts

No.	Description	Material	Note
1	Body	SY3000: Zinc die-casted SY5000: Aluminum die-casted	
2	Spool, Sleeve	Stainless steel/HNBR	
3	Piston	Resin	
4	Body cover assembly	Resin	For side/bottom ported
	Port block assembly	Resin (SY5000 series threaded type: Zinc die-casted)	For top ported
5	Pilot valve assembly	—	Refer to page 14.

# Series SY3000/5000

# Valve Replacement Parts 1

## How to Order Port Block Assembly

SY    0V-6A    -    -      

● **Series**

3	3000
5	5000

● **Pilot type**

Nil	Internal pilot
R	External pilot

● **Option for mounting**

Nil	Standard (Valve mounting screw "not" falling-out-prevention type)
1	Valve mounting screw falling-out-prevention type

● **Thread type**

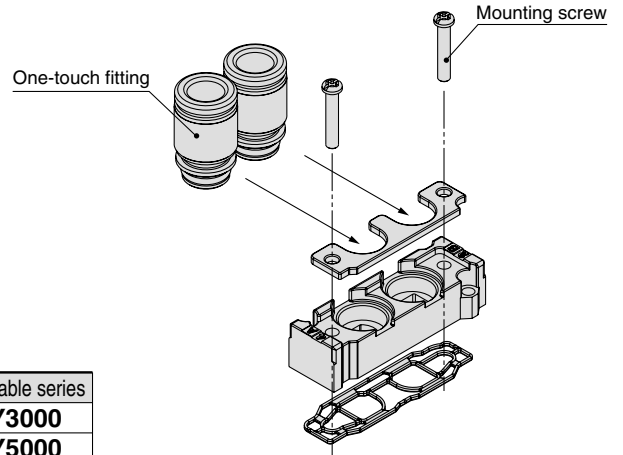
Nil	Rc
F	G
N	NPT
T	NPTF

\* Except M5

● **A, B port size**

**Thread piping**

Symbol	Port size	Applicable series
M5	M5 x 0.8	<b>SY3000</b>
O1	1/8	<b>SY5000</b>



● **One-touch fitting (Metric)**

Symbol	Port size	Applicable series	
		SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

● **One-touch fitting (Inch)**

Symbol	Port size	Applicable series	
		SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

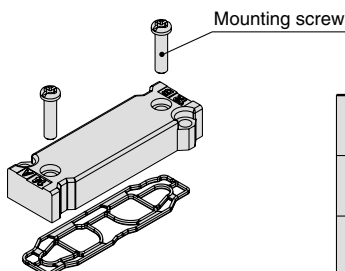
● **Possible to replace only the one-touch fitting.**

Port size		SY3000	SY5000
Metric size	ø2 One-touch fitting	VVQ1000-50A-C2	—
	ø3.2 One-touch fitting	VVQ1000-50A-C3	—
	ø4 One-touch fitting	VVQ1000-50A-C4	VVQ1000-51A-C4
	ø6 One-touch fitting	VVQ1000-50A-C6	VVQ1000-51A-C6
	ø8 One-touch fitting	—	VVQ1000-51A-C8
Inch size	ø1/8" One-touch fitting	VVQ1000-50A-N1	—
	ø5/32" One-touch fitting	VVQ1000-50A-N3	VVQ1000-51A-N3
	ø1/4" One-touch fitting	VVQ1000-50A-N7	VVQ1000-51A-N7
	ø5/16" One-touch fitting	—	VVQ1000-51A-N9

Refer to pages 156 and 157 for how to replace the port block assembly, one-touch fitting and body cover assembly.

## Body Cover Assembly

\* Used when the top ported is changed to the side or bottom ported.



Series		Part no.	
		Standard (Valve mounting screw "not" falling-out-prevention type)	Valve mounting screw falling-out-prevention type
SY3000	Internal pilot	SY30V-16A	SY30V-16A-1
	External pilot	SY30V-16AR	SY30V-16AR-1
SY5000	Internal pilot	SY50V-16A	SY50V-16A-1
	External pilot	SY50V-16AR	SY50V-16AR-1

## Valve Replacement Parts 2

### How to Order Pilot Valve Assembly (With a gasket and two mounting screws)

**V112**   -  **A**

**Pilot valve option**

<b>Nil</b>	Standard (0.7 MPa)
<b>B</b>	Quick response type (0.7 MPa)
<b>K</b>	High pressure type (1.0 MPa)*

\* Only metal seal type is available for the high pressure type. (1.0 MPa)

**Coil type**

<b>Nil</b>	Standard
<b>T</b>	With power saving circuit

**Rated voltage**

<b>5</b>	24 VDC
<b>6</b>	12 VDC

#### Caution

The coil specification and voltage (including light/surge voltage suppressor) cannot be changed by changing the pilot valve assembly.

#### How to replace pilot valves

**Pilot cover assembly**

Series	Part no.
<b>SY3000</b>	SY30V-25A
<b>SY5000</b>	SY50V-25A

\* Pilot cover x 1 + B tight flat head screw x 1

B tight flat head screw (M1.7)  
Tightening torque: 0.12 N·m

Pilot valve mounting screw (M2 x 16.5)  
Tightening torque: 0.15 N·m

Pilot valve mounting screw (M2 x 25)  
Tightening torque: 0.15 N·m

- Loosen B tight flat head screw to remove the pilot cover in the direction indicated by the arrow ①.
- Remove the pilot valve mounting screws.
- Remove the pilot valve in the direction indicated by the arrow ②.

\* Assemble by following the removal procedure in reverse.

Note 1) Ensure the gasket is mounted, and take care not to bend the socket.

Note 2) Be noted for mounting that there are two types of lengths for the pilot valve mounting screws.

### Made-to-Order for Valve



Please contact SMC for detailed dimensions, specifications, and lead times.

#### Main Valve Fluororubber Specification

Fluororubber 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 valve series SY3□<sub>3</sub>0, SY5□<sub>3</sub>0 (Only rubber seal type)

SY <sup>3</sup>/<sub>5</sub> □ <sup>0</sup>/<sub>3</sub> 0 □ □ □ □ - □ □ □ 1 - □ □ - □ - X90

- Entry is the same as standard products.  
The specification and performance are the same as those of standard products.

Type 50  
Side Ported

Type 51  
Bottom Ported

# Plug-in Metal Base

D-sub Connector

Flat Ribbon Cable

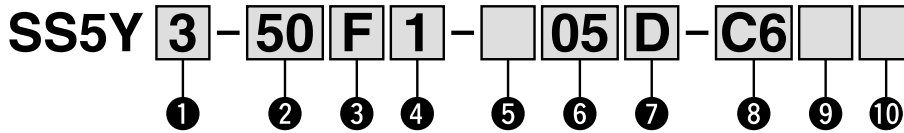
PC Wiring

# Series SY3000/5000



RoHS

## How to Order Manifold



### 1 Series

3	SY3000
5	SY5000

### 2 Type

50	Side ported
51	Bottom ported
50R	Side ported, External pilot

\* External pilot is not available for the bottom ported type.

### 3 Connector type

<b>F:</b> D-sub connector (25 pins) 	<b>P:</b> Flat ribbon cable (26 pins) 	<b>PG:</b> Flat ribbon cable (20 pins) 
<b>PH:</b> Flat ribbon cable (10 pins) 	<b>J:</b> PC wiring (20 pins) 	

### 4 Connector entry direction

1: Upward 	2: Lateral 
---------------	----------------

### 5 Wiring type

Nil	All double wiring <small>Note 1)</small>
S	All single wiring <small>Note 2)</small>

Note 1) All double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

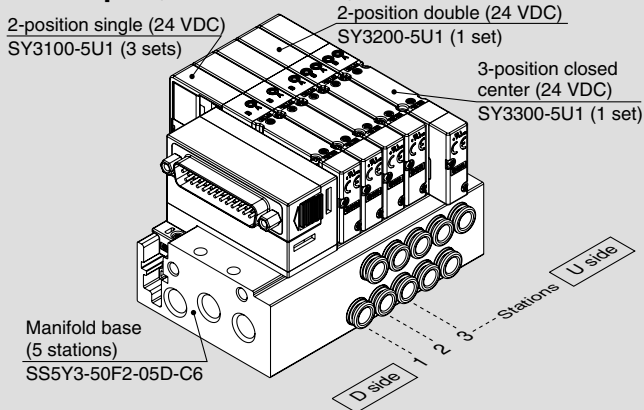
Note 2) All single wiring: Available only for the manifold which has 2-position single for all stations.

Note that 2-position double, 3- or 4-position valves cannot be used.

Note 3) Please contact SMC if a mixture of single wiring and double wiring is required.

## How to Order Manifold Assembly

### Example (SS5Y3-50F2-□)



SS5Y3-50F2-05D-C6 ... 1 set (Type 50 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed center part no.)  
 → The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note) When mixing top ported configurations, select from page 30. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 6 Valve stations

F: D-sub connector (25 pins)			P: Flat ribbon cable (26 pins)			PG: Flat ribbon cable (20 pins)		
Symbol	Stations	Note	Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	All	02	2 stations	All	02	2 stations	All
⋮	⋮	double wiring	⋮	⋮	double wiring	⋮	⋮	double wiring
12	12 stations		12	12 stations		09	9 stations	
02	2 stations	All	02	2 stations	All	02	2 stations	All
⋮	⋮	single wiring	⋮	⋮	single wiring	⋮	⋮	single wiring
12	12 stations		12	12 stations		12	12 stations	

PH: Flat ribbon cable (10 pins)			J: PC wiring (20 pins)		
Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	All	02	2 stations	All
⋮	⋮	double wiring	⋮	⋮	double wiring
04	4 stations		08	8 stations	
02	2 stations	All	02	2 stations	All
⋮	⋮	single wiring	⋮	⋮	single wiring
08	8 stations		12	12 stations	

\* This also includes the number of blanking plate assembly.

### 7 P, E port entry

U	U side <small>Note 1)</small>
D	D side <small>Note 1) Note 2)</small>
B	Both sides

Note 1) Plugs are mounted on the opposite side of the selected ports.

Note 2) Only D side is available for Type 51 (Bottom ported).

Refer to the page on the right for 8

### 9 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

### 10 Mounting

Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	⋮
D12	For 12 stations

Specify a longer rail than the standard length.

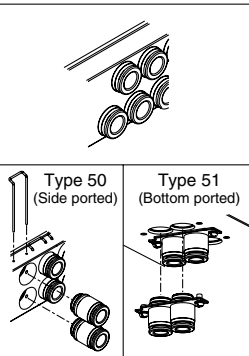
\* Only direct mounting is available for Type 51 (Bottom ported).

## 8 A, B port size (Thread piping)

Symbol	A, B port	SY3000	SY5000
M5	M5 x 0.8	●	—
01	1/8	●	●
02	1/4	—	●

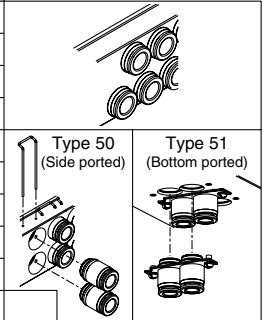
## A, B port size (Metric)

Symbol	A, B port	SY3000	SY5000	
Fixed	C2	ø2 One-touch fitting	●	—
	C3	ø3.2 One-touch fitting	●	—
	C4	ø4 One-touch fitting	●	●
	C6	ø6 One-touch fitting	●	●
	C8	ø8 One-touch fitting	—	●
Replaceable	KC2	ø2 One-touch fitting	●	—
	KC3	ø3.2 One-touch fitting	●	—
	KC4	ø4 One-touch fitting	●	●
	KC6	ø6 One-touch fitting	●	●
	KC8	ø8 One-touch fitting	—	●
	M*	Mixed sizes	●	●
P, E port size (Thread piping)		1/8	1/4	



## A, B port size (Inch)

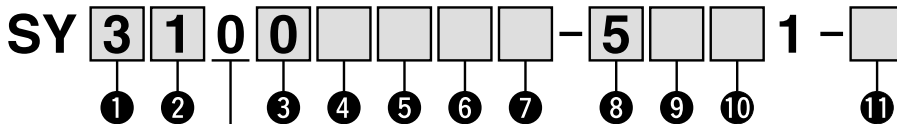
Symbol	A, B port	SY3000	SY5000	
Fixed	N1	ø1/8" One-touch fitting	●	—
	N3	ø5/32" One-touch fitting	●	●
	N7	ø1/4" One-touch fitting	●	●
	N9	ø5/16" One-touch fitting	—	●
Replaceable	KN1	ø1/8" One-touch fitting	●	—
	KN3	ø5/32" One-touch fitting	●	●
	KN7	ø1/4" One-touch fitting	●	●
	KN9	ø5/16" One-touch fitting	—	●
	M*	Mixed sizes	●	●
P, E port size (Thread piping)		1/8	1/4	



\* When ports are mixed sizes, indicate the piping specifications on the manifold specification sheet.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type  
 \* The built-in valve type back pressure check valve is not available for the 3-position type.

### Base mounted

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

5	24 VDC
6	12 VDC

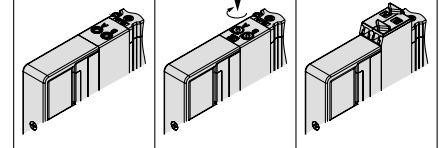
### 9 Light/surge voltage suppressor and common specification

Nil	Without light/surge voltage suppressor (Non-polar)
R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override

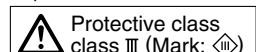
Nil:	Non-locking push type	D:	Push-turn locking slotted type	F:	Slide locking type
------	-----------------------	----	--------------------------------	----	--------------------



### 11 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.  
 \* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.  
 Refer to page 47 for part numbers of the base gasket and mounting screw.  
 \* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

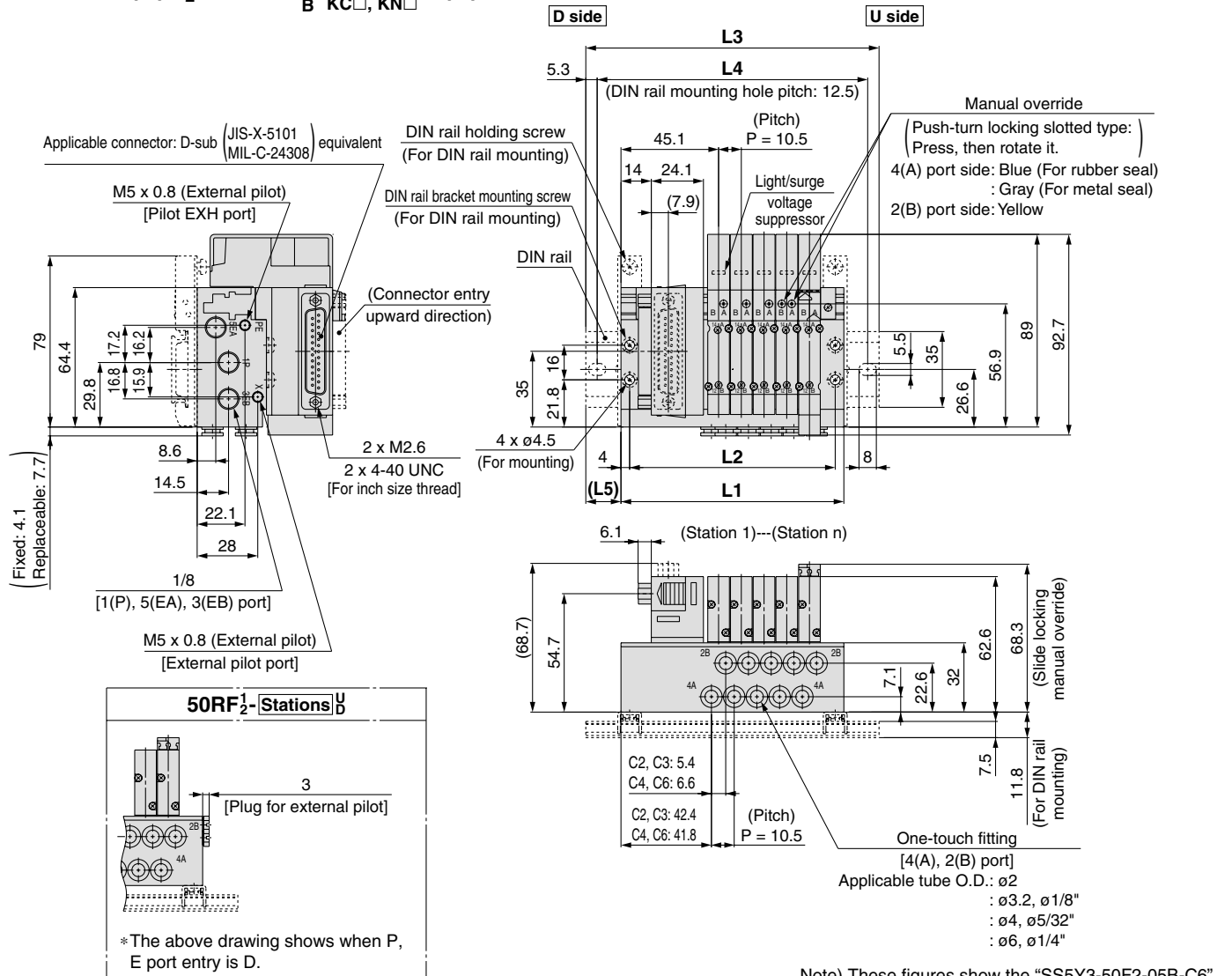




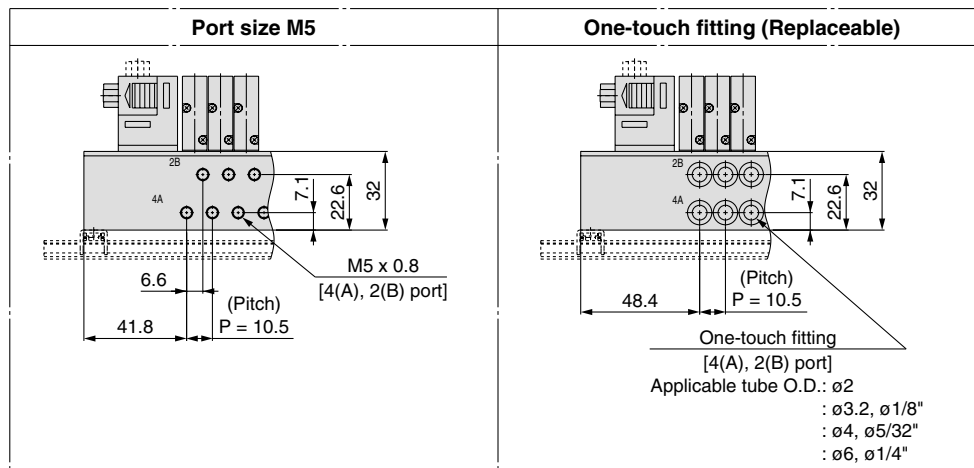
# Series SY3000/5000

## Dimensions: Type 50/D-sub Connector/Series SY3000

SS5Y3-50(R)F<sub>2</sub>-Stations  $\begin{matrix} U \\ D \end{matrix} \begin{matrix} M5 \\ C \square, N \square \\ B \\ KC \square, KN \square \end{matrix} \square (D)$



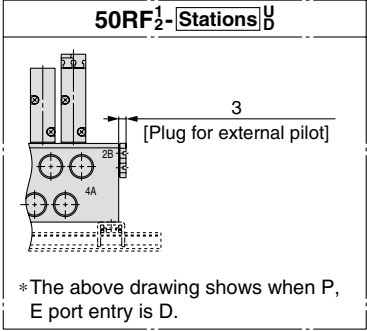
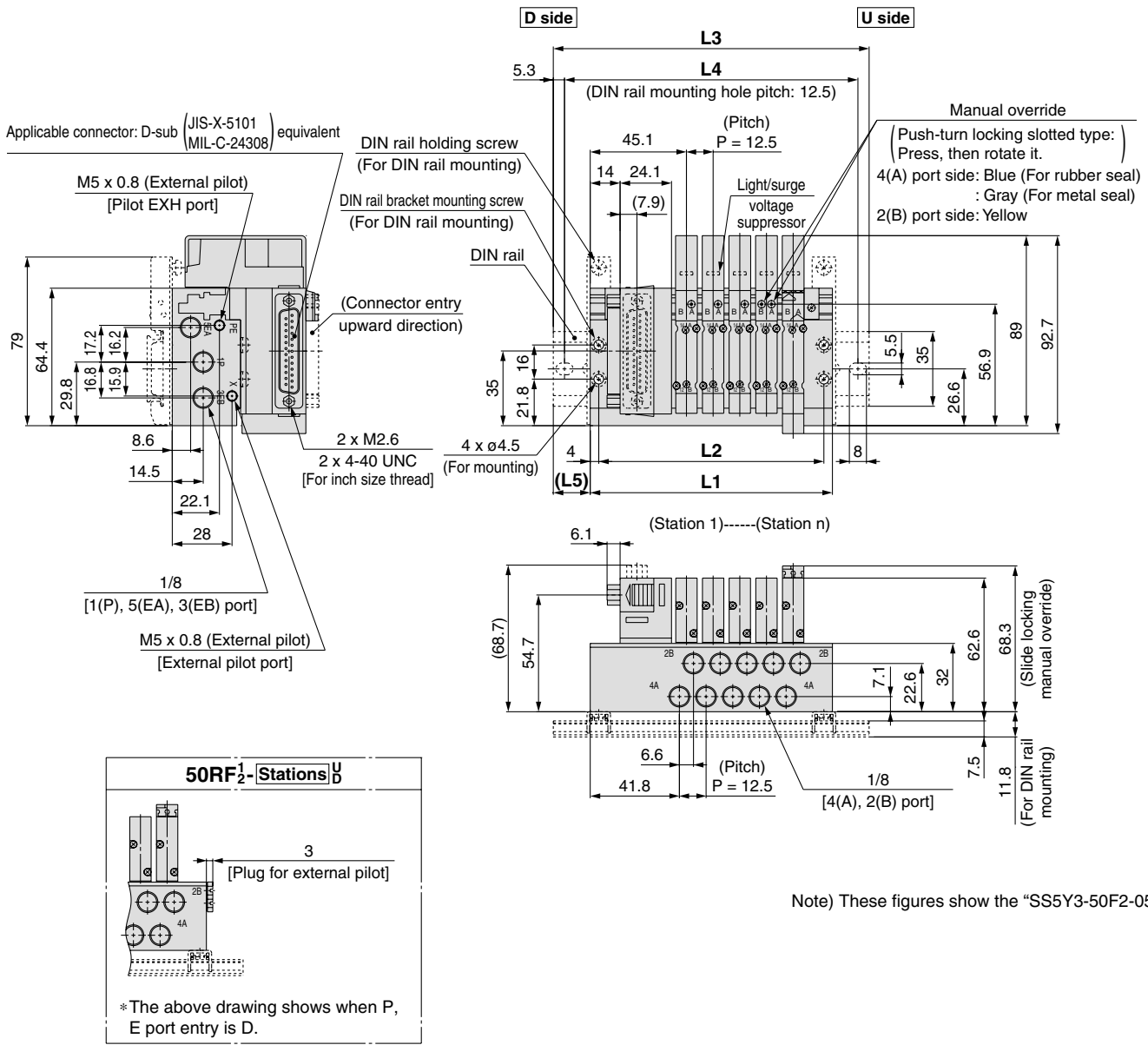
Note) These figures show the "SS5Y3-50F2-05B-C6".



n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14	15	16	17

## Dimensions: Type 50/D-sub Connector/Series SY3000

SS5Y3-50(R)F<sub>2</sub><sup>1</sup>-Stations<sub>D</sub><sup>U</sup>-01□(D)

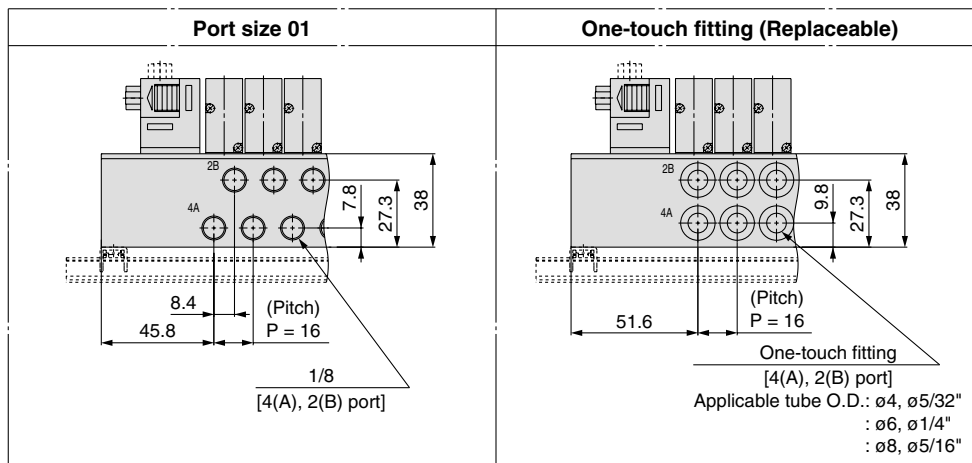
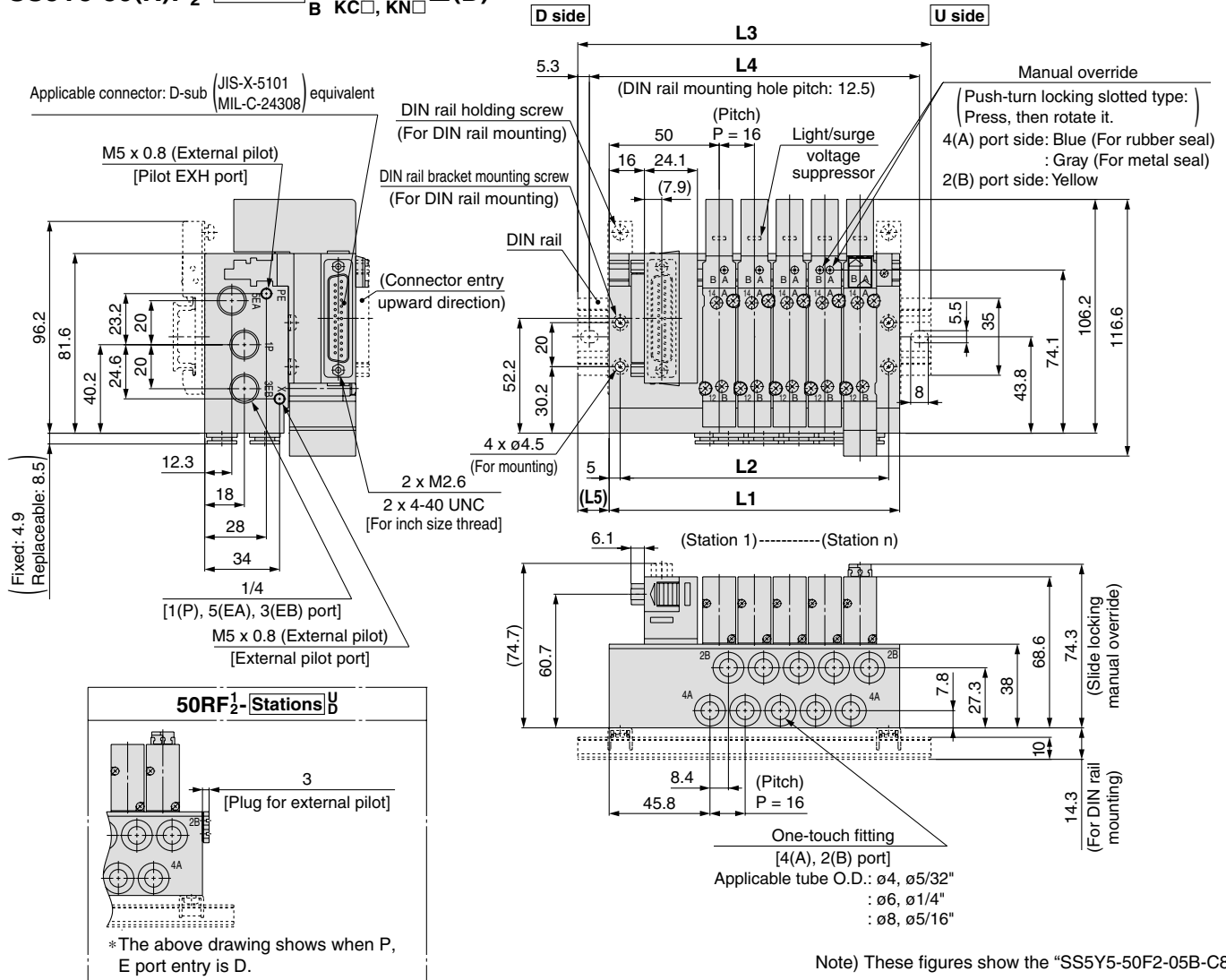


n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
L2	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
L3	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5
L4	100	112.5	125	137.5	150	162.5	175	187.5	200	212.5	225
L5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5

# Series SY3000/5000

## Dimensions: Type 50/D-sub Connector/Series SY5000

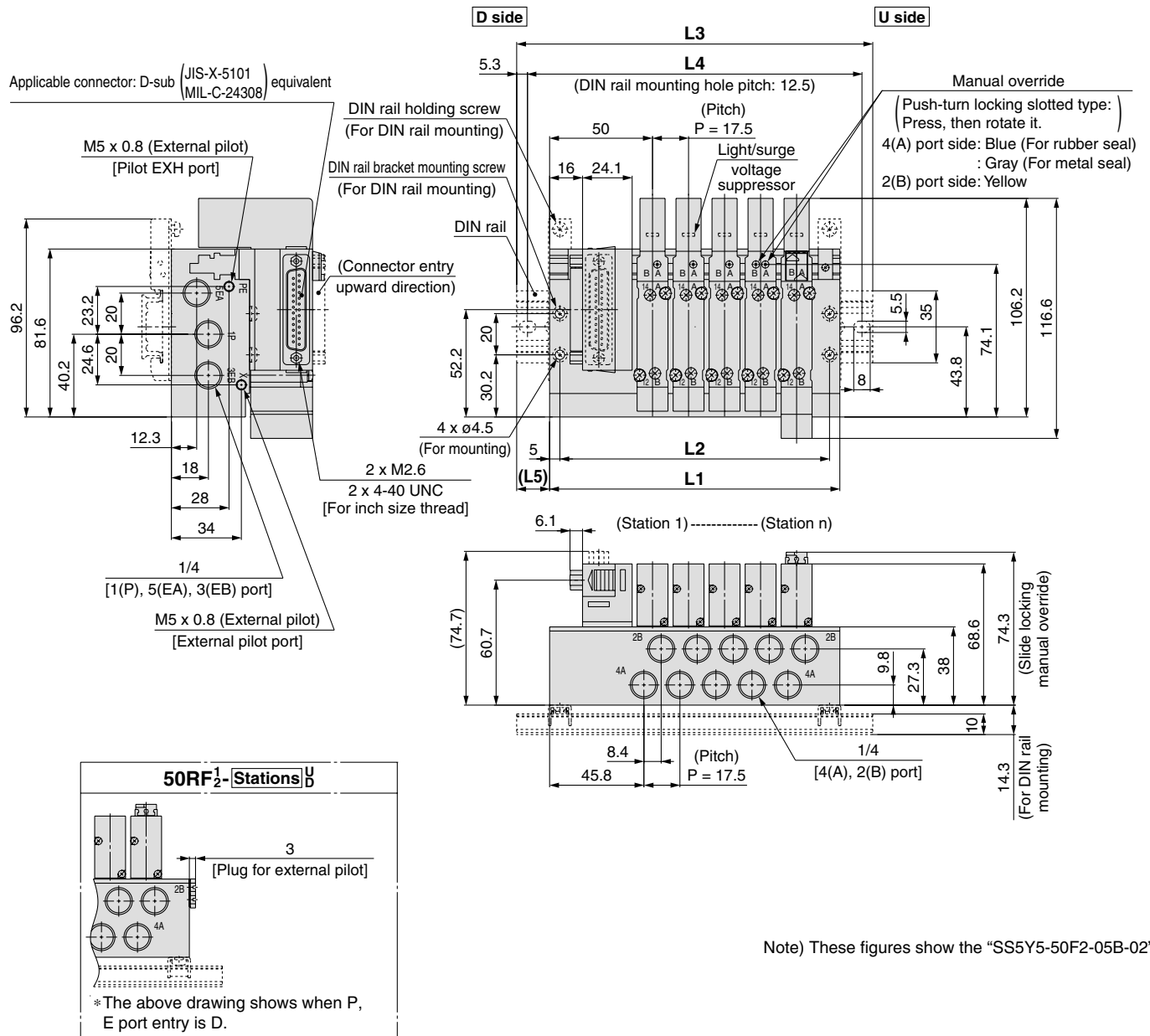
SS5Y5-50(R)F<sub>2</sub>-Stations  $\begin{matrix} U \\ D \end{matrix} \begin{matrix} 01 \\ C \square, N \square \\ B \\ KC \square, KN \square \end{matrix} \begin{matrix} \square \\ (D) \end{matrix}$



n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	110.5	135.5	148	160.5	173	198	210.5	223	248	260.5	273
L4	100	125	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5
L5	13.5	18	16	14.5	12.5	17	15.5	13.5	18	16.5	14.5

## Dimensions: Type 50/D-sub Connector/Series SY5000

SS5Y5-50(R)F<sub>2</sub>-Stations<sup>U</sup><sub>D</sub>-02□(D)



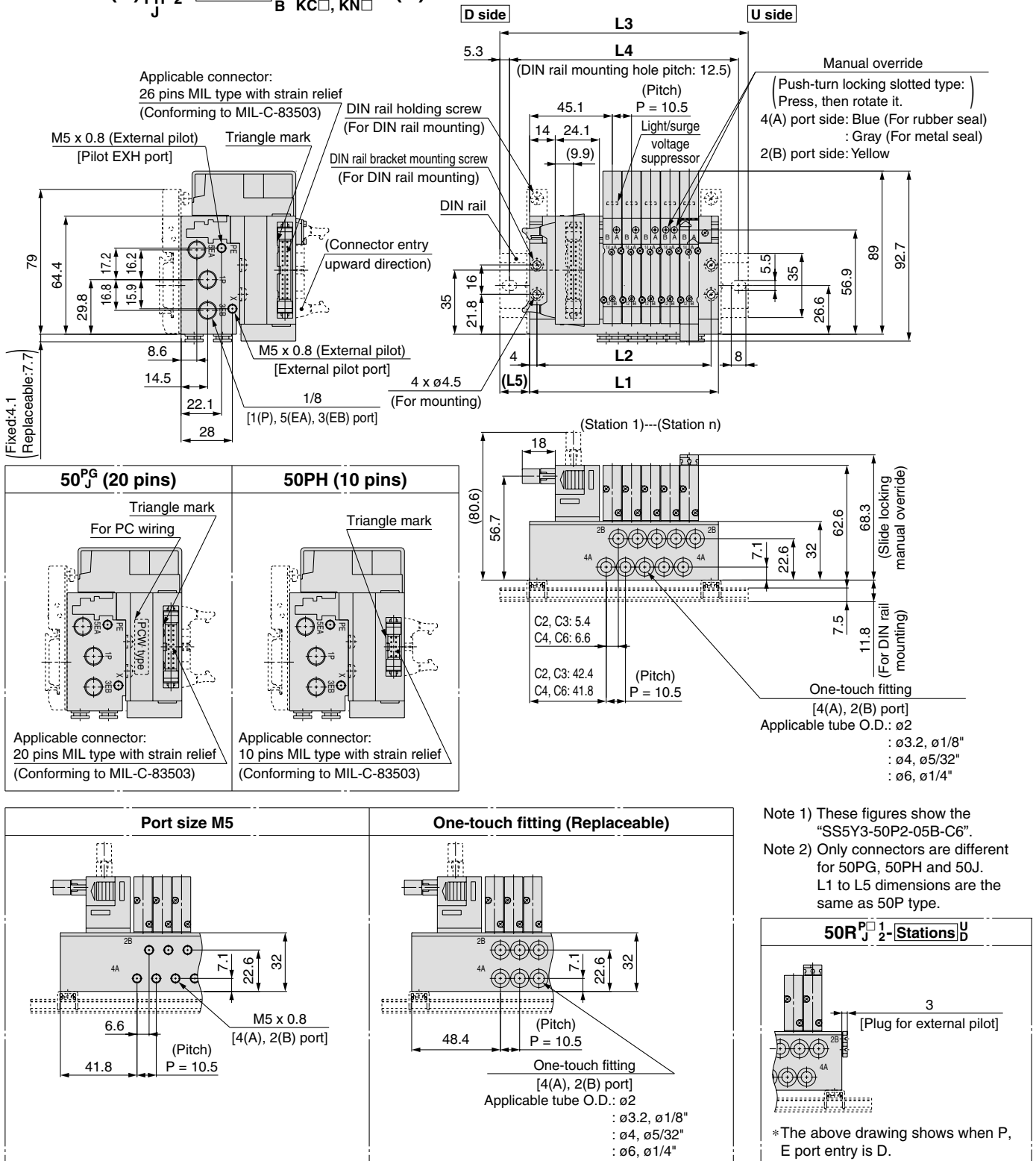
Note) These figures show the "SS5Y5-50F2-05B-02".

n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	123	135.5	148	173	185.5	210.5	223	235.5	260.5	273	298
L4	112.5	125	137.5	162.5	175	200	212.5	225	250	262.5	287.5
L5	17.5	15	12.5	16	13.5	17.5	15	12.5	16	13.5	17.5

# Series SY3000/5000

## Dimensions: Type 50/Flat Ribbon Cable/Series SY3000

SS5Y3-50(R)  $\begin{matrix} P \\ PG \\ PH \end{matrix} \begin{matrix} 1 \\ 2 \end{matrix}$  - Stations  $\begin{matrix} U \\ D \end{matrix} \begin{matrix} M5 \\ C, N, \square \\ B, KC, KN, \square \end{matrix} \begin{matrix} \square \\ (D) \end{matrix}$

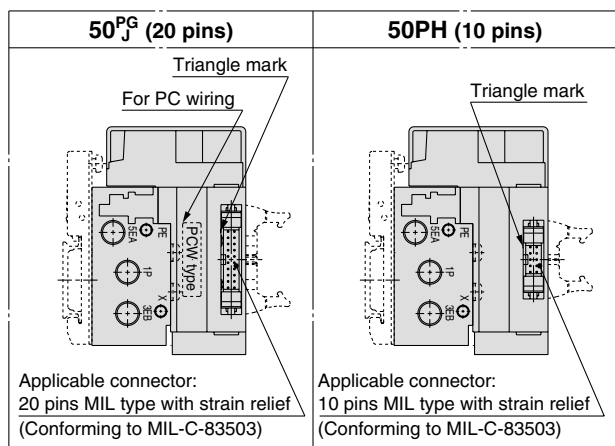
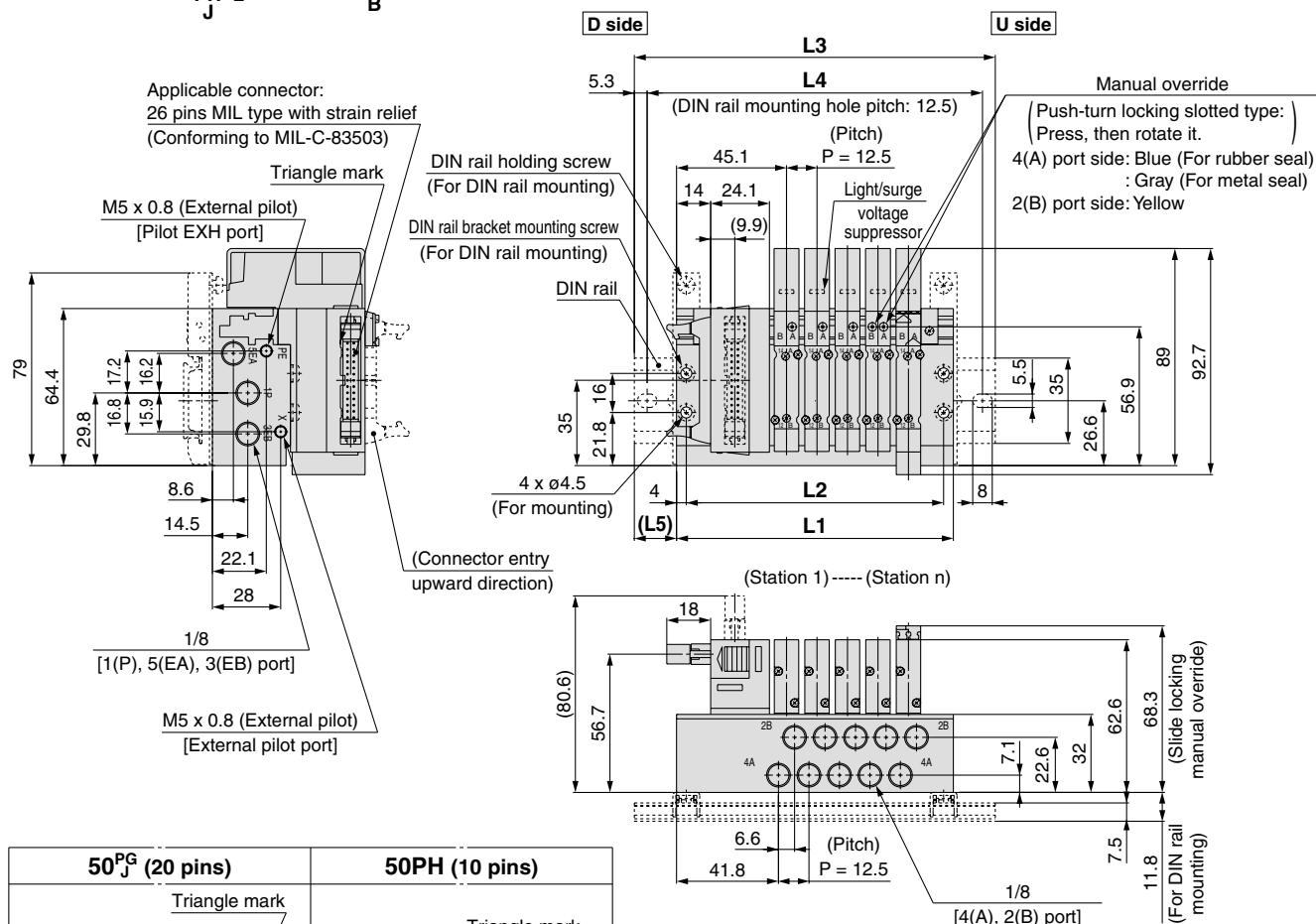


n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14	15	16	17

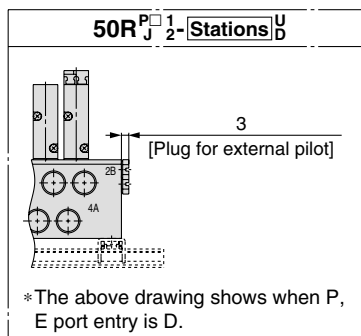


## Dimensions: Type 50/Flat Ribbon Cable/Series SY3000

**SS5Y3-50(R)**  $\frac{P}{J} \frac{1}{2}$  - Stations  $\frac{U}{D}$  - 01 □ (D)



Note 1) These figures show the "SS5Y3-50P2-05B-01".  
 Note 2) Only connectors are different for 50PG, 50PH and 50J.  
 L1 to L5 dimensions are the same as 50P type.

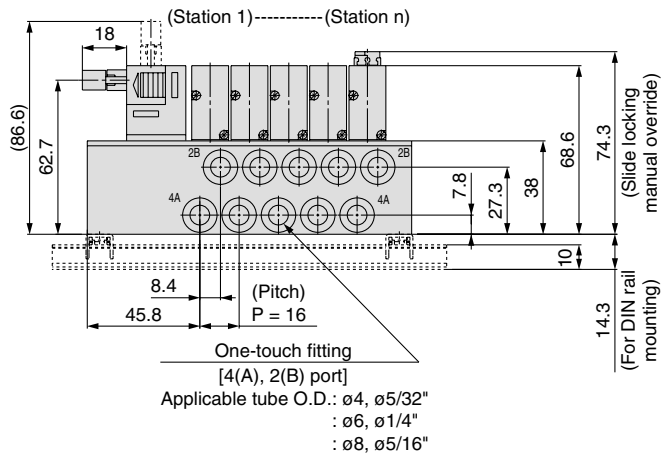
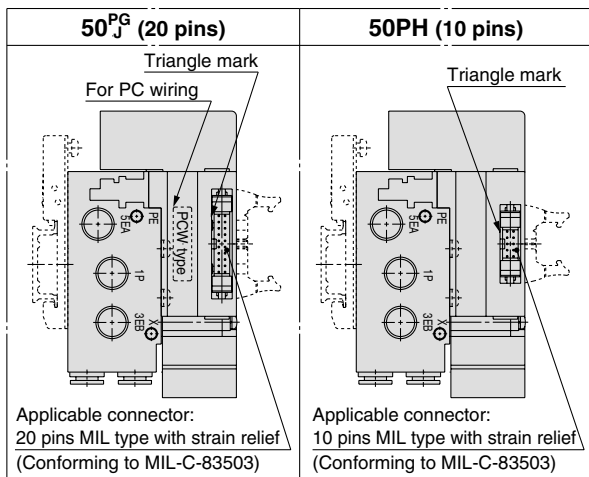
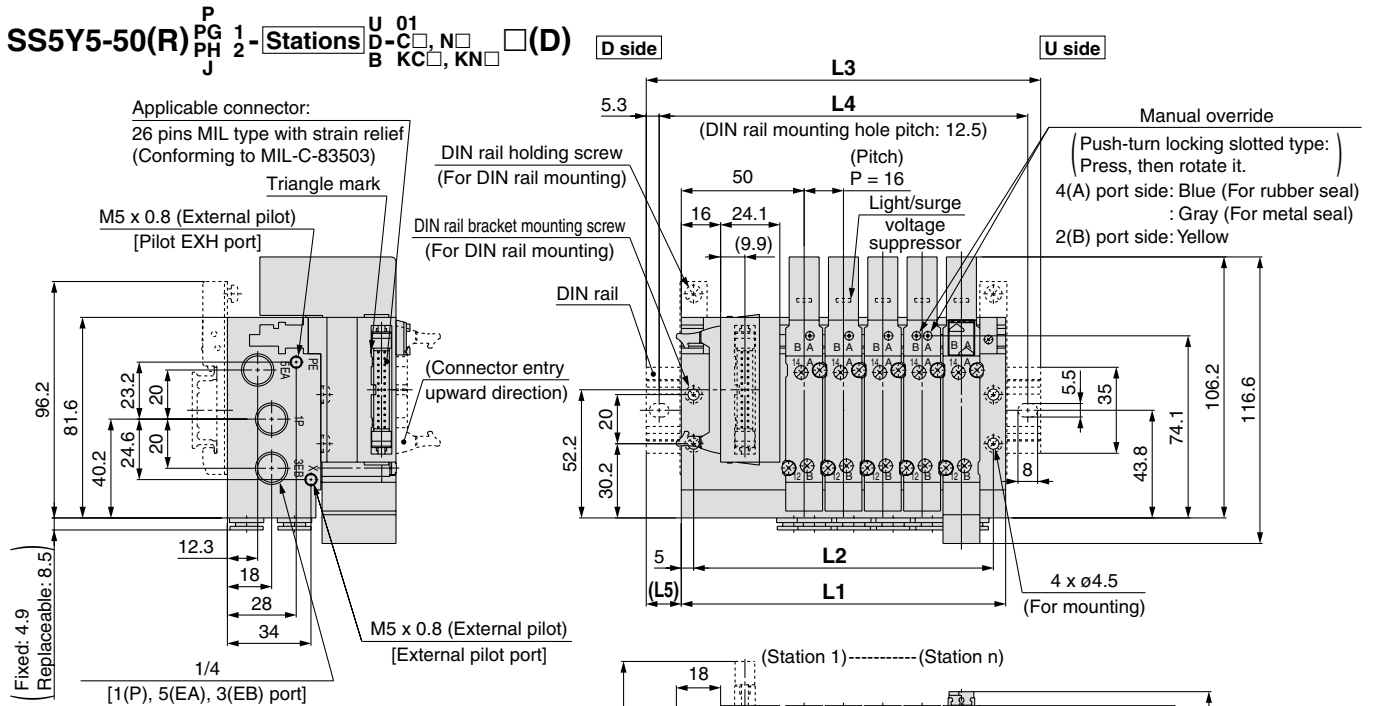


n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
L2	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
L3	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5
L4	100	112.5	125	137.5	150	162.5	175	187.5	200	212.5	225
L5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5

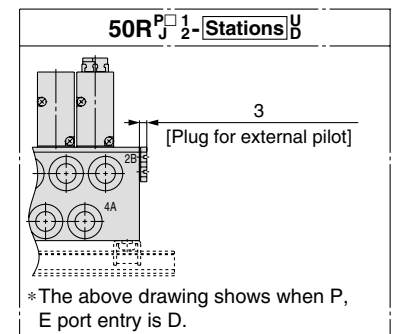
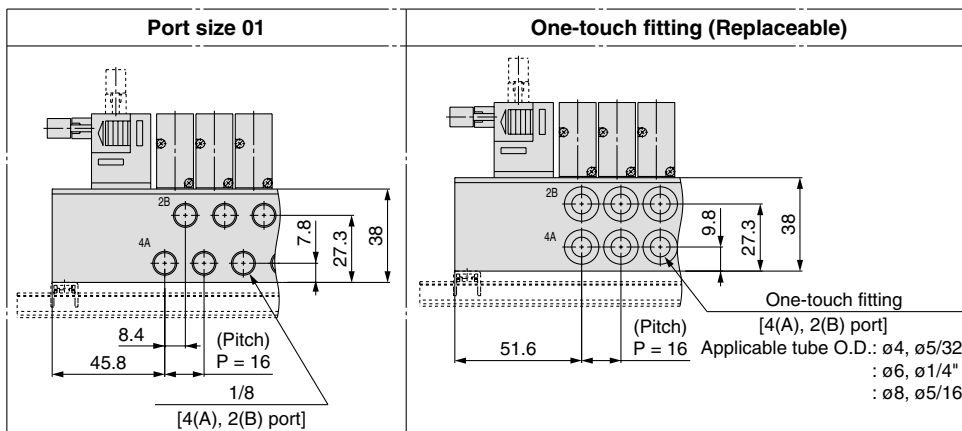
Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
**EX500 EX600 EX250 EX260 EX126 EX120**  
 One-touch Filings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Series SY3000/5000

## Dimensions: Type 50/Flat Ribbon Cable/Series SY5000



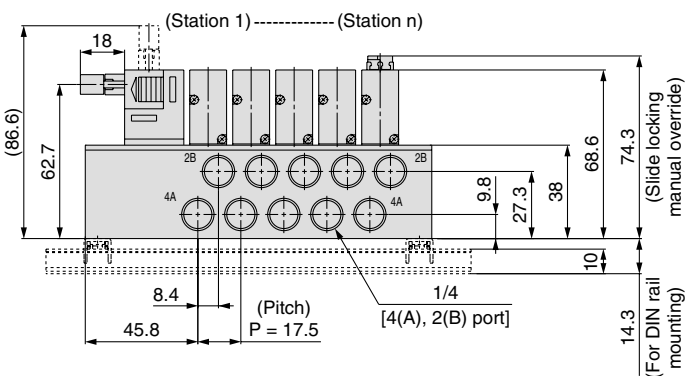
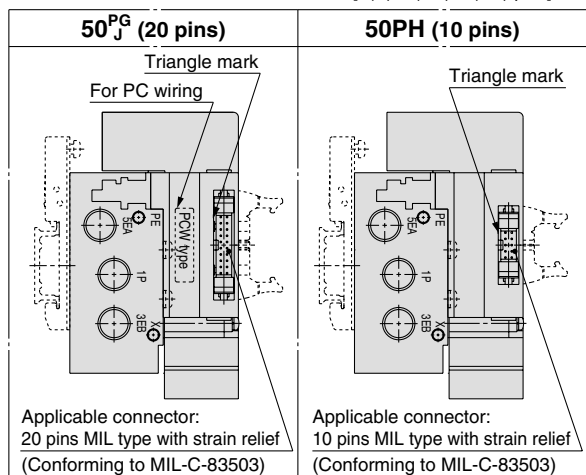
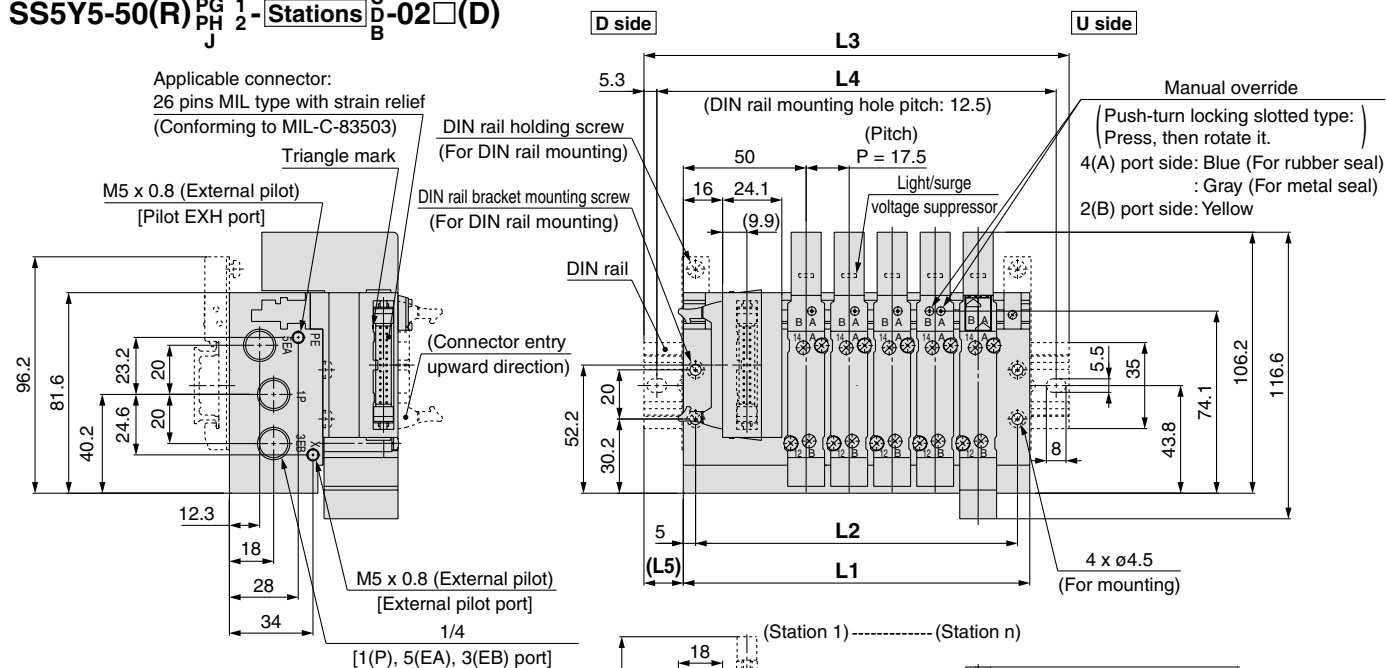
Note 1) These figures show the "SS5Y5-50P2-05B-C8".  
Note 2) Only connectors are different for 50PG, 50PH and 50J.  
L1 to L5 dimensions are the same as 50P type.



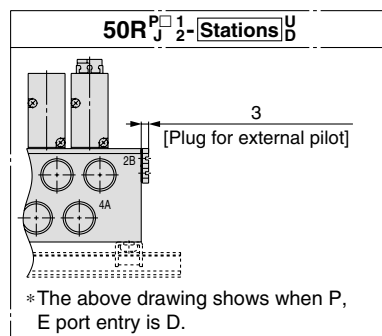
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	110.5	135.5	148	160.5	173	198	210.5	223	248	260.5	273
L4	100	125	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5
L5	13.5	18	16	14.5	12.5	17	15.5	13.5	18	16.5	14.5

## Dimensions: Type 50/Flat Ribbon Cable/Series SY5000

SS5Y5-50(R)  $\frac{P}{PH} \frac{1}{2}$  - Stations  $\frac{U}{D}$  - 02 □ (D)



Note 1) These figures show the "SS5Y5-50P2-05B-02".  
 Note 2) Only connectors are different for 50PG, 50PH and 50J.  
 L1 to L5 dimensions are the same as 50P type.



\* The above drawing shows when P, E port entry is D.

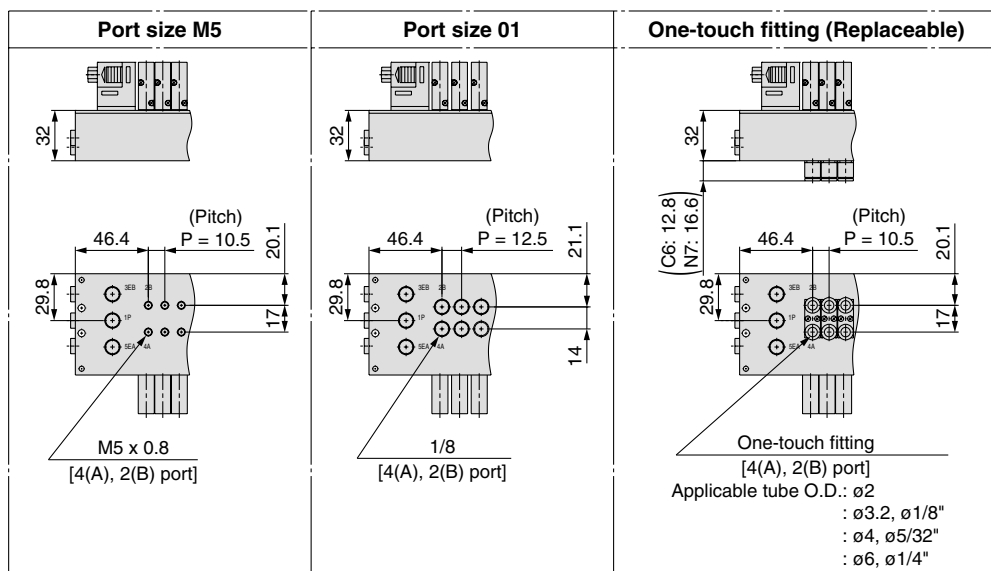
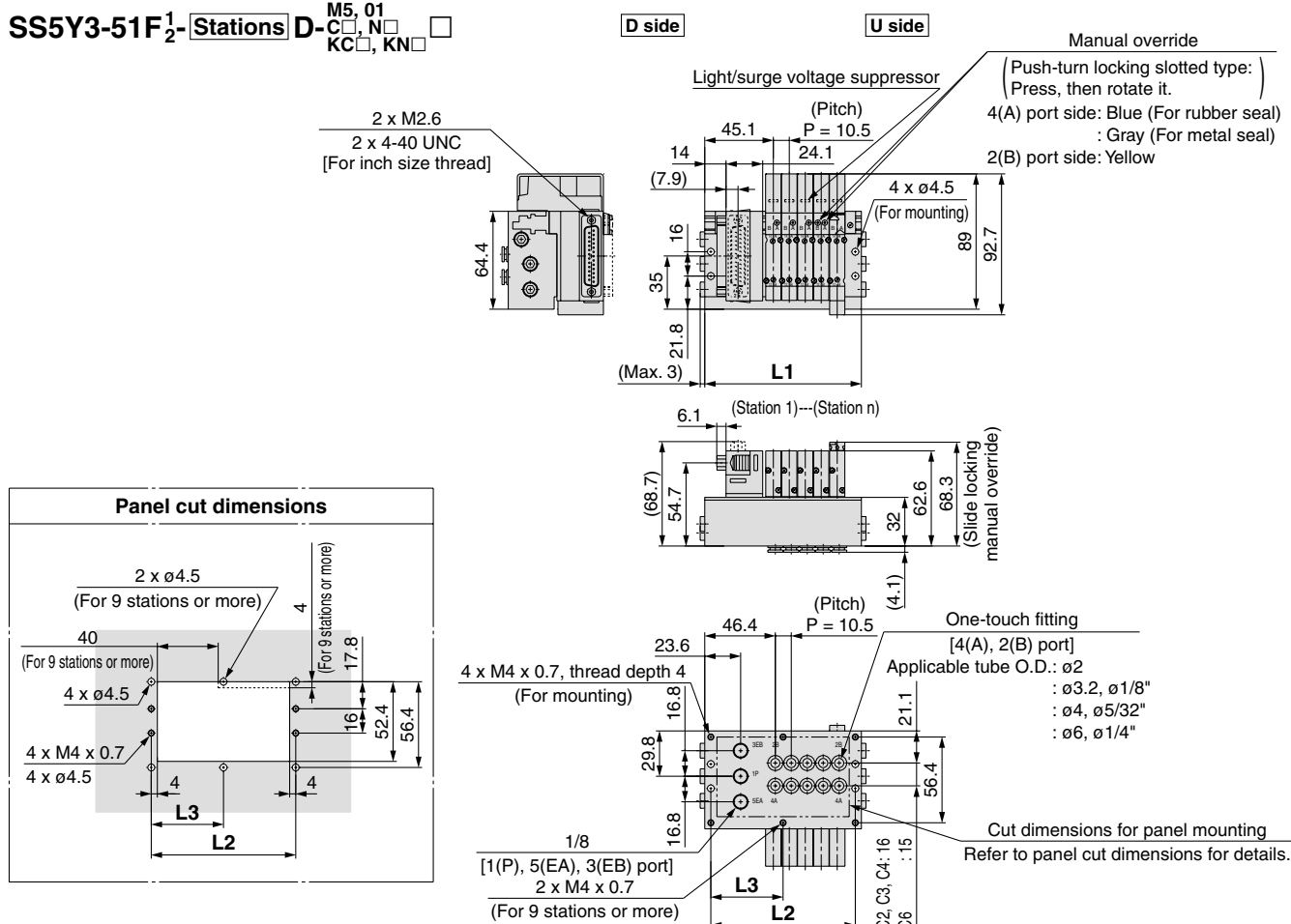
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	123	135.5	148	173	185.5	210.5	223	235.5	260.5	273	298
L4	112.5	125	137.5	162.5	175	200	212.5	225	250	262.5	287.5
L5	17.5	15	12.5	16	13.5	17.5	15	12.5	16	13.5	17.5

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
**EX500**  
**EX600**  
**EX250**  
**EX260**  
**EX126**  
**EX120**  
 One-touch Filings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Series SY3000/5000

## Dimensions: Type 51/D-sub Connector/Series SY3000

SS5Y3-51F<sub>2</sub>- Stations D-  M5,  01  
 C,  N,   
 KC,  KN,



Note) These figures show the "SS5Y3-51F2-05D-C6".

### Port Size M5, C, N, KC, KN

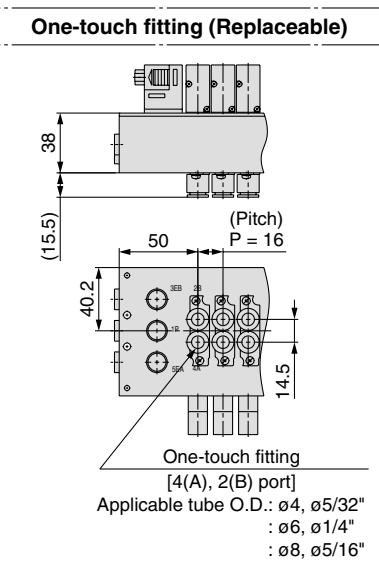
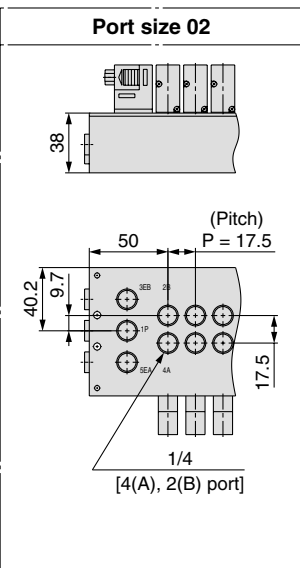
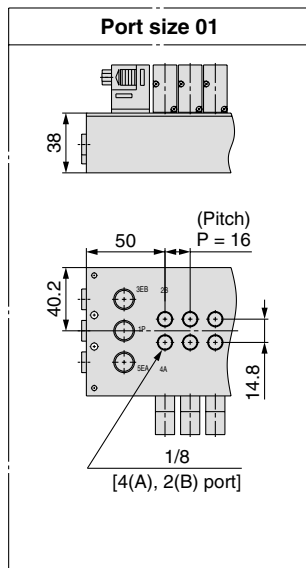
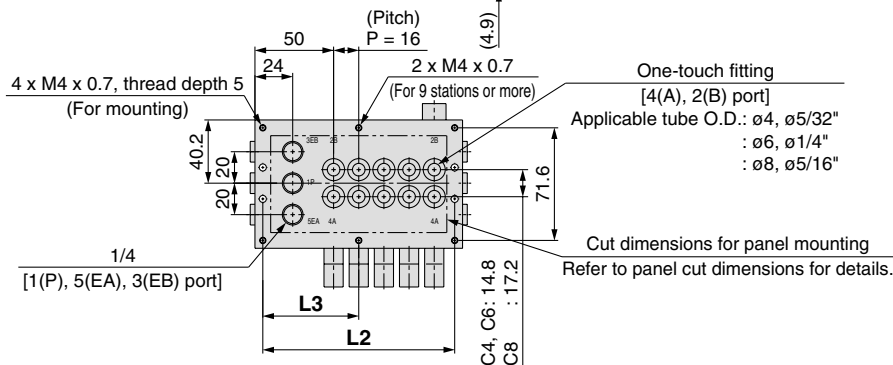
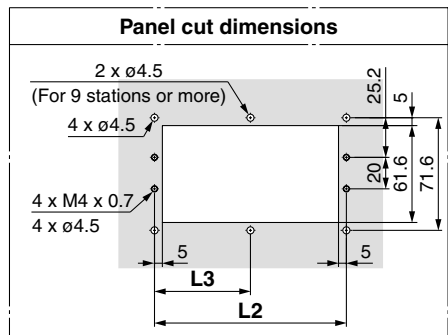
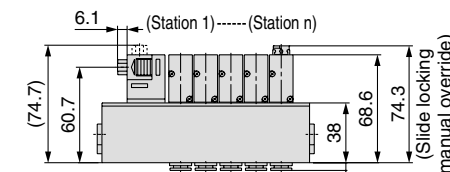
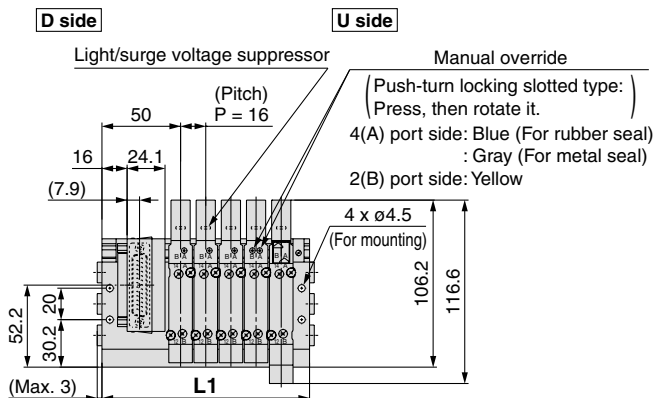
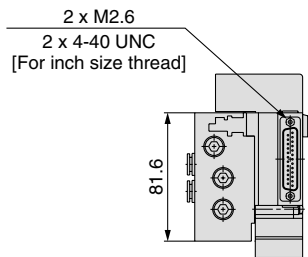
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	—	—	—	—	—	—	—	68.5	73.8	79	84.3

### Port Size 01

n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
L2	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
L3	—	—	—	—	—	—	—	77.8	84	90.3	96.5

## Dimensions: Type 51/D-sub Connector/Series SY5000

SS5Y5-51F<sub>2</sub>- Stations D-  01,  02  
 C,  N,   
 KC,  KN,



Note) These figures show the "SS5Y5-51F2-05D-C8".

### Port Size 01, C, N, KC, KN

n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	—	—	—	—	—	—	—	93	101	109	117

### Port Size 02

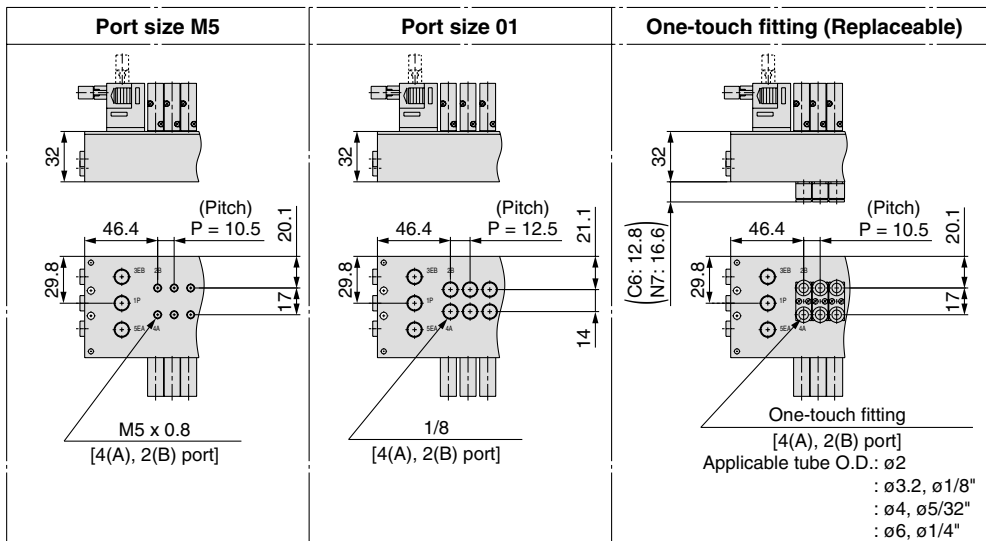
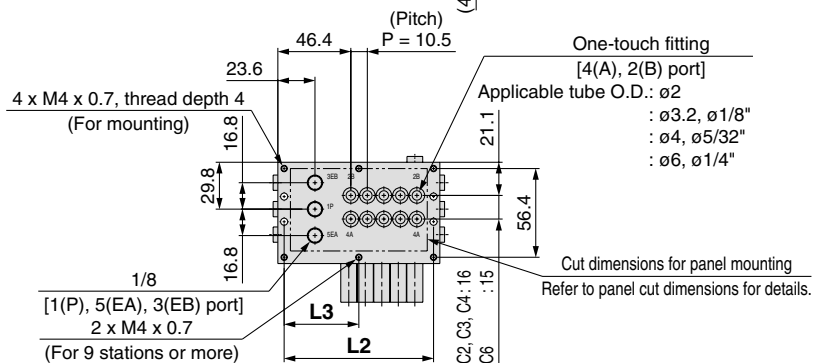
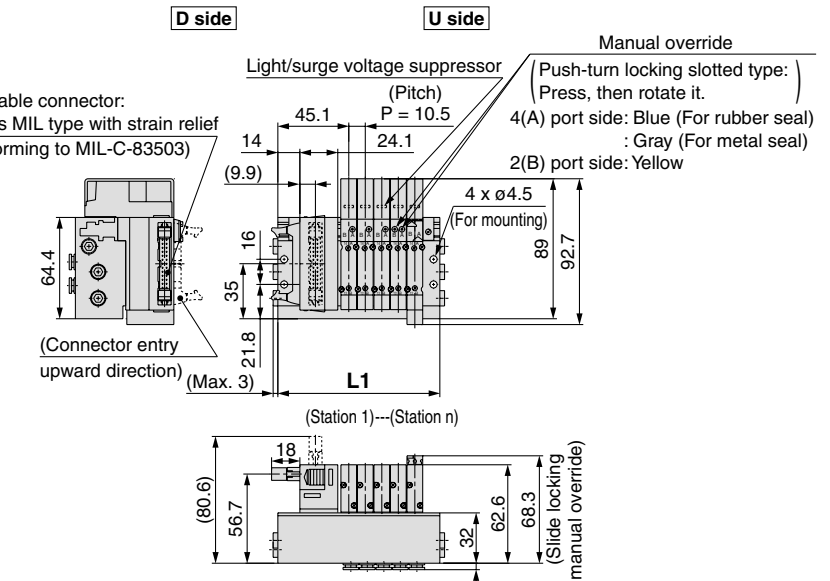
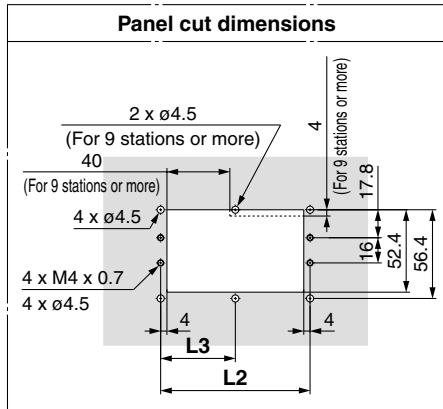
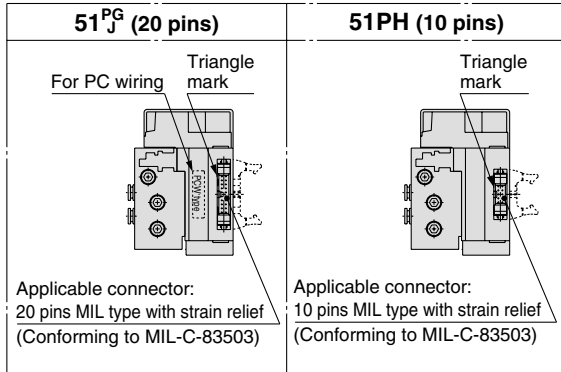
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	—	—	—	—	—	—	—	100.5	109.3	118	126.8

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
**EX500**  
**EX600**  
**EX250**  
**EX260**  
**EX126**  
**EX120**  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Series SY3000/5000

## Dimensions: Type 51/Flat Ribbon Cable/Series SY3000

SS5Y3-51  $\begin{matrix} P \\ PG \\ PH \\ J \end{matrix}$  1 - Stations  $\begin{matrix} D- \\ C \\ N \\ KC \\ KN \end{matrix}$   $\begin{matrix} M5, 01 \\ \square \\ \square \\ \square \\ \square \end{matrix}$



Note) These figures show the "SS5Y3-51P2-05D-C6".

### Port Size M5, C□, N□, KC□, KN□

n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	—	—	—	—	—	—	—	68.5	73.8	79	84.3

### Port Size 01

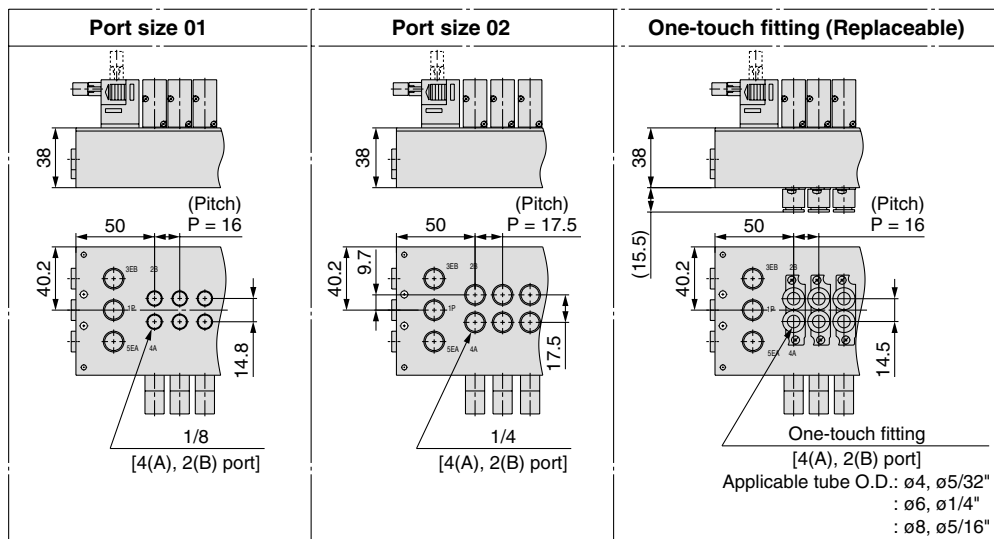
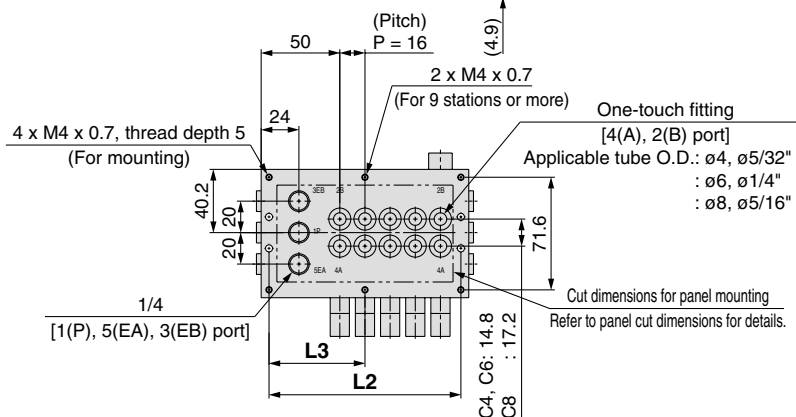
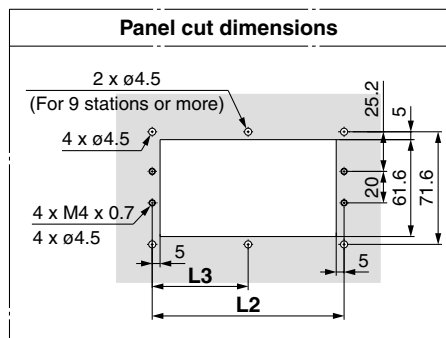
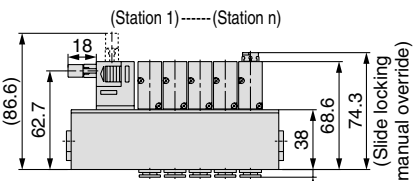
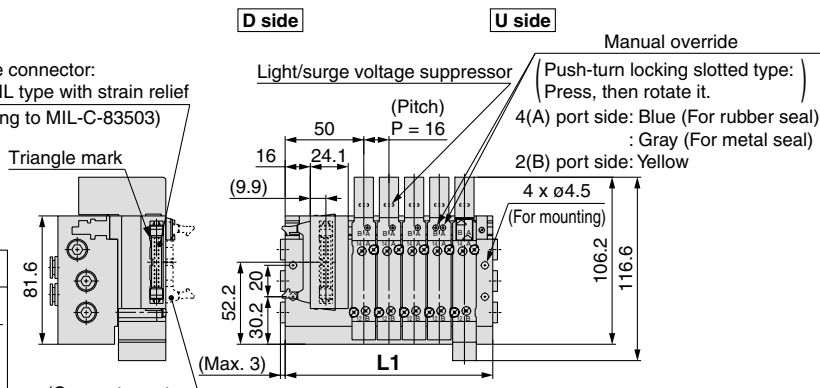
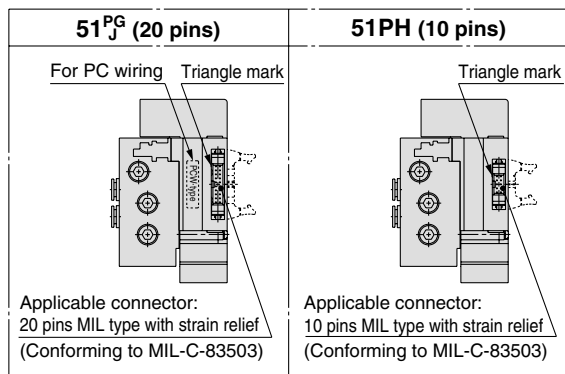
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
L2	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
L3	—	—	—	—	—	—	—	77.8	84	90.3	96.5



## Dimensions: Type 51/Flat Ribbon Cable/Series SY5000

SS5Y5-51 <sup>P</sup>PG 1 - Stations D- <sup>01, 02</sup>C□, N□, KC□, KN□

Applicable connector:  
26 pins MIL type with strain relief  
(Conforming to MIL-C-83503)



### Port Size 01, C□, N□, KC□, KN□

n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	—	—	—	—	—	—	—	93	101	109	117

### Port Size 02

n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	—	—	—	—	—	—	—	100.5	109.3	118	126.8

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
**EX500**  
**EX600**  
**EX250**  
**EX260**  
**EX126**  
**EX120**  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Plug-in Metal Base

D-sub Connector

Flat Ribbon Cable

PC Wiring

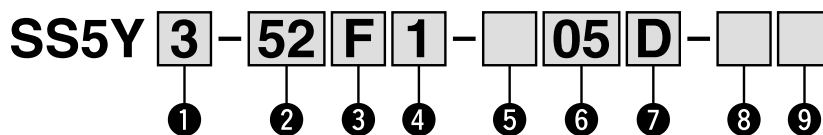
Type 52  
Top Ported

# Series SY3000/5000



RoHS

## How to Order Manifold



### 1 Series

3	SY3000
5	SY5000

### 2 Type

52	Top ported
52R	Top ported, External pilot

### 3 Connector type

<b>F:</b> D-sub connector (25 pins) 	<b>P:</b> Flat ribbon cable (26 pins) 	<b>PG:</b> Flat ribbon cable (20 pins) 
<b>PH:</b> Flat ribbon cable (10 pins) 	<b>J:</b> PC wiring (20 pins) 	

### 4 Connector entry direction

<b>1: Upward</b> 	<b>2: Lateral</b> 
----------------------	-----------------------

### 5 Wiring type

Nil	All double wiring <small>Note 1)</small>
S	All single wiring <small>Note 2)</small>

Note 1) All double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Note 2) All single wiring: Available only for the manifold which has 2-position single for all stations.

Note that 2-position double, 3- or 4-position valves cannot be used.

Note 3) Please contact SMC if a mixture of single wiring and double wiring is required.

### 6 Valve stations

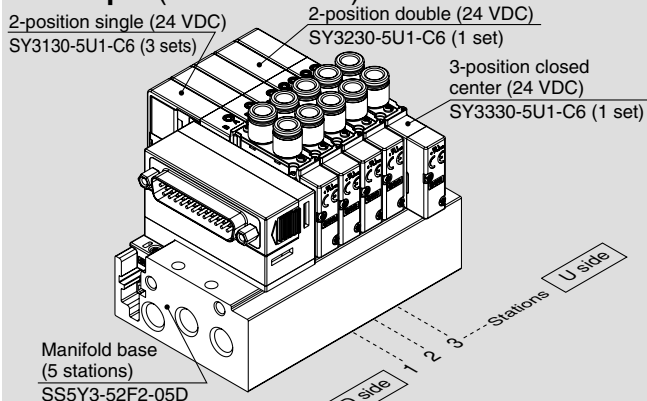
F: D-sub connector (25 pins)			P: Flat ribbon cable (26 pins)			PG: Flat ribbon cable (20 pins)		
Symbol	Stations	Note	Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	All	02	2 stations	All	02	2 stations	All
:	:	double wiring	:	:	double wiring	:	:	double wiring
12	12 stations	All	12	12 stations	All	09	9 stations	All
:	:	single wiring	:	:	single wiring	:	:	single wiring
02	2 stations	All	02	2 stations	All	02	2 stations	All
:	:	single wiring	:	:	single wiring	:	:	single wiring
12	12 stations	All	12	12 stations	All	12	12 stations	All

PH: Flat ribbon cable (10 pins)			J: PC wiring (20 pins)		
Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	All	02	2 stations	All
:	:	double wiring	:	:	double wiring
04	4 stations	All	08	8 stations	All
:	:	single wiring	:	:	single wiring
02	2 stations	All	02	2 stations	All
:	:	single wiring	:	:	single wiring
08	8 stations	All	12	12 stations	All

\* This also includes the number of blanking plate assembly.

## How to Order Manifold Assembly

### Example (SS5Y3-52F2-□)



- SS5Y3-52F2-05D ..... 1 set (Type 52 5-station manifold base part no.)
- \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)
- \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)
- \*SY3330-5U1-C6 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### 7 P, E port entry

U	U side <small>Note)</small>
D	D side <small>Note)</small>
B	Both sides

Note) Plugs are mounted on the opposite side of the selected ports.

### 8 Thread type

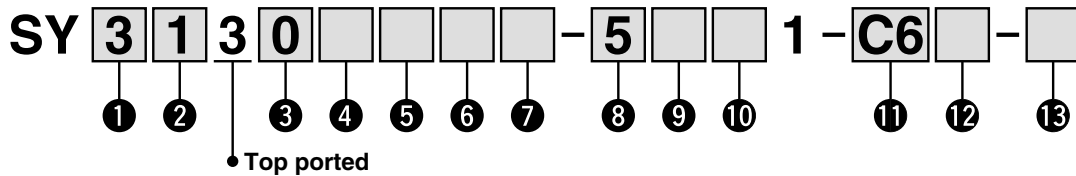
Nil	Rc
00F	G
00N	NPT
00T	NPTF

### 9 Mounting

Nil	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a longer rail than the standard length.
:	:	
D12	For 12 stations	

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

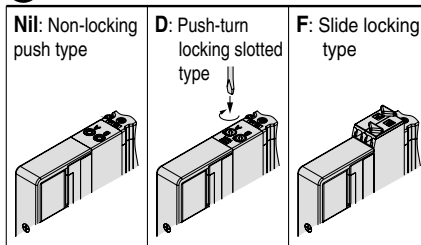
5	24 VDC
6	12 VDC

### 9 Light/surge voltage suppressor and common specification

Nil	Without light/surge voltage suppressor (Non-polar)
R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override



### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

#### One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

### 12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

### 13 Type of mounting screw

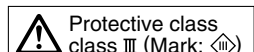
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 47 for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.

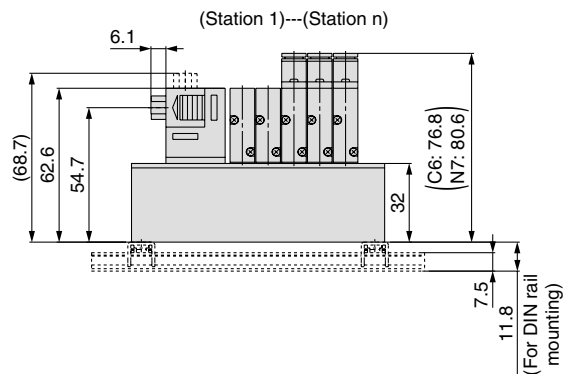
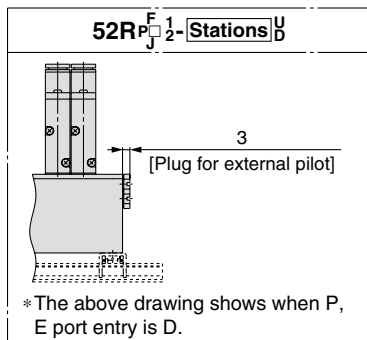
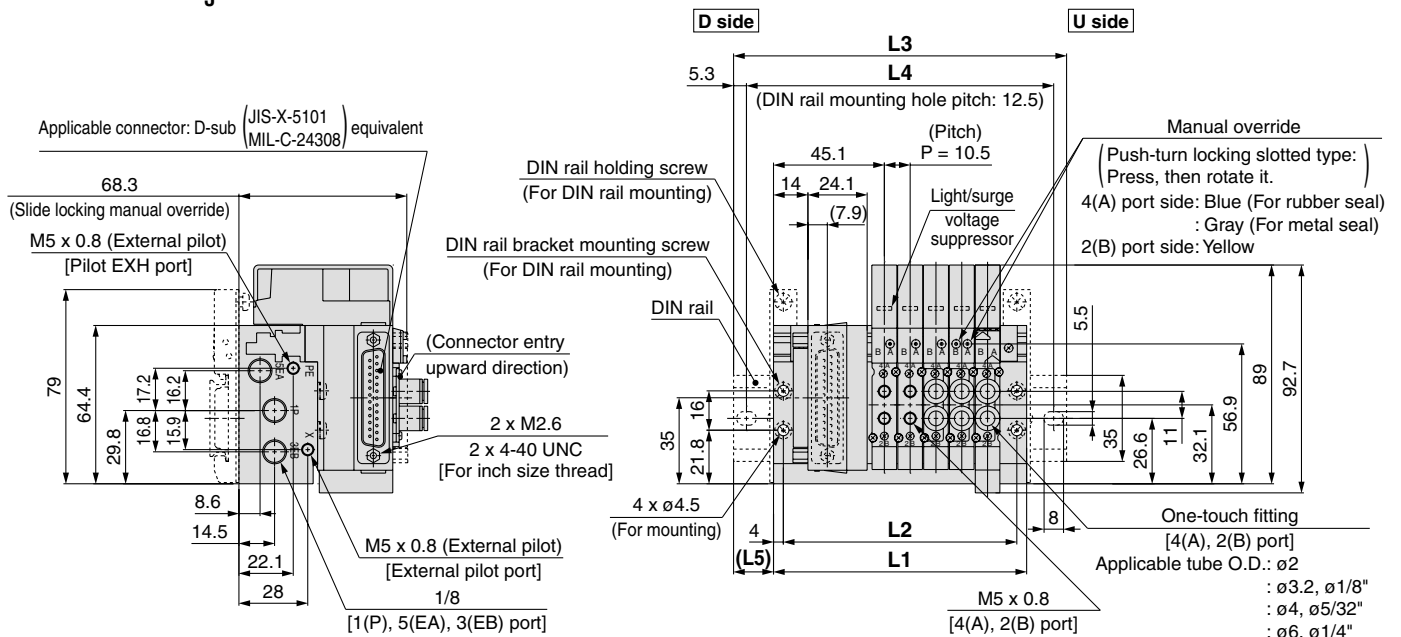


Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 EX510  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500 EX500  
 EX600 EX600  
 EX250 EX250  
 EX260 EX260  
 EX126 EX126  
 EX120 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

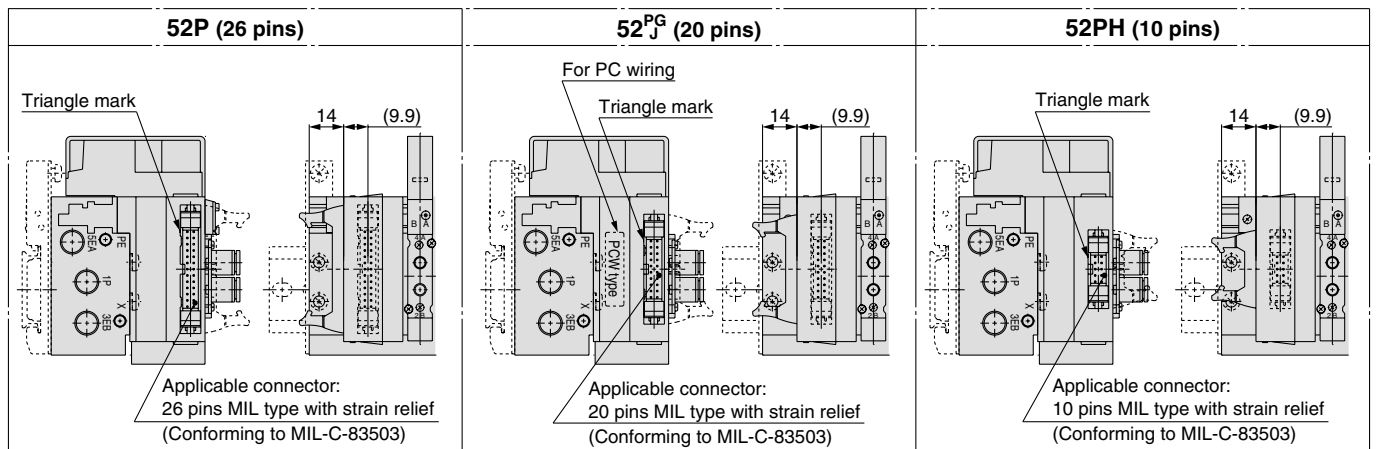
# Series SY3000/5000

## Dimensions: Type 52/D-sub Connector, Flat Ribbon Cable/Series SY3000

SS5Y3-52(R)  $\begin{matrix} F \\ P \\ PH \\ J \end{matrix} \begin{matrix} 1 \\ 2 \end{matrix}$  - Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$  - □ (D)

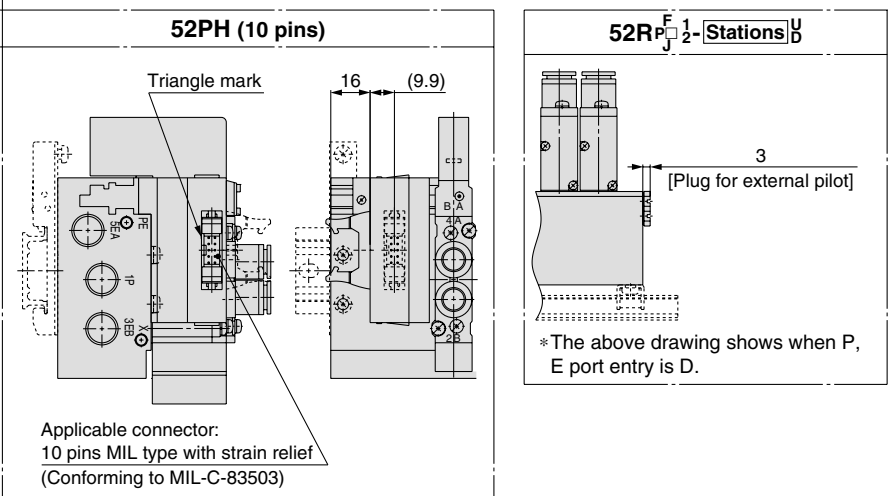
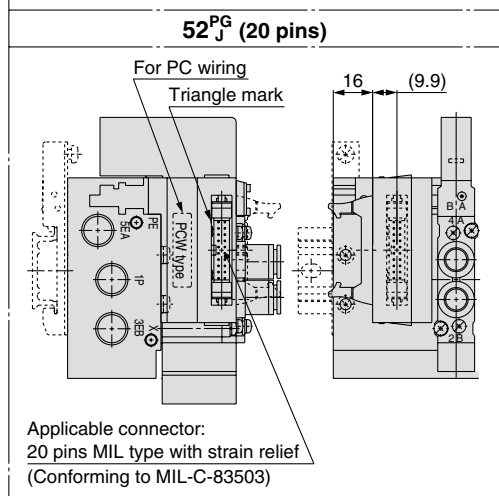
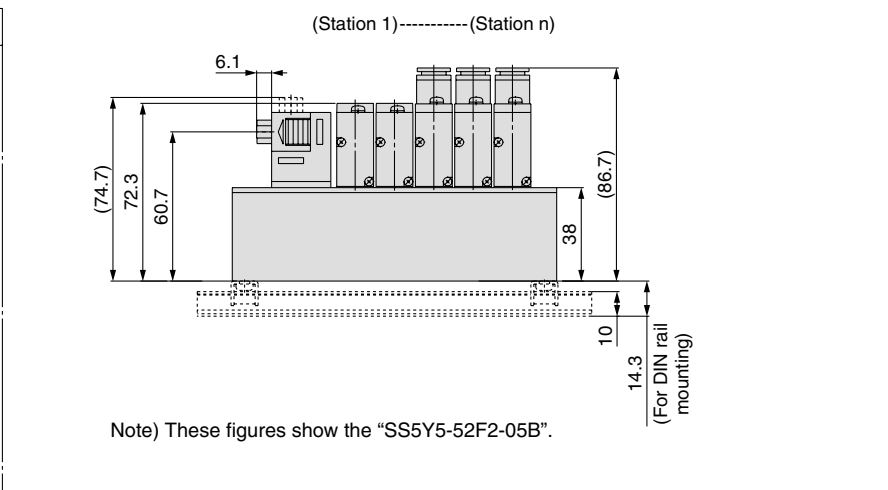
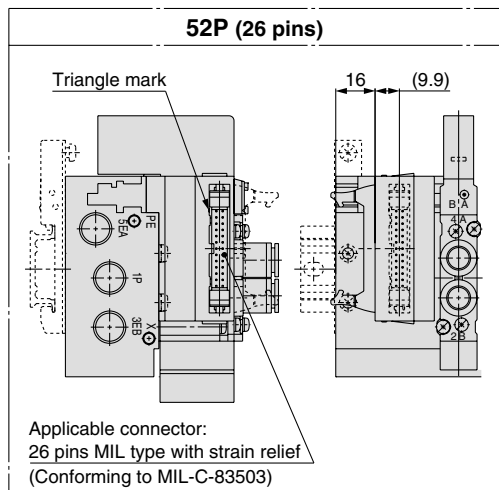
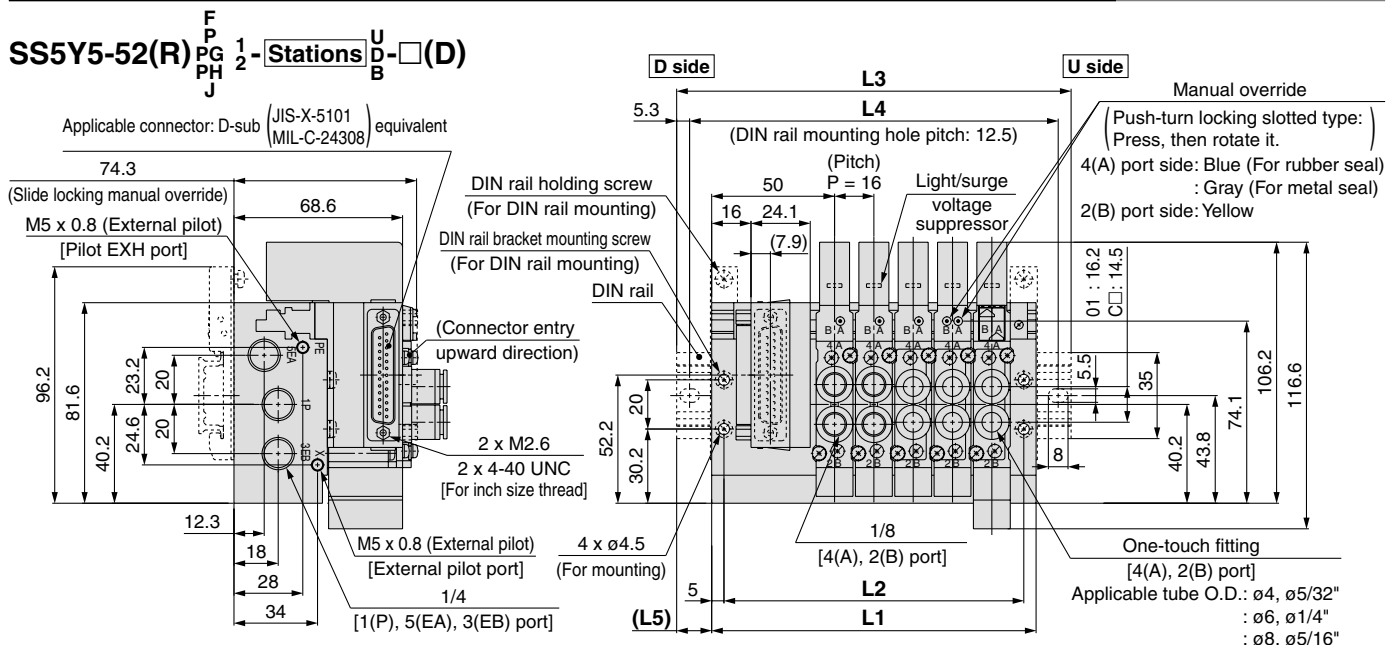


Note) These figures show the "SS5Y3-52F2-05B".



n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14	15	16	17

## Dimensions: Type 52/D-sub Connector, Flat Ribbon Cable/Series SY5000



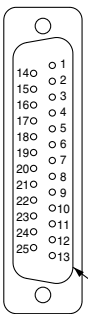
n: Stations	2	3	4	5	6	7	8	9	10	11	12
<b>L1</b>	84	100	116	132	148	164	180	196	212	228	244
<b>L2</b>	74	90	106	122	138	154	170	186	202	218	234
<b>L3</b>	110.5	135.5	148	160.5	173	198	210.5	223	248	260.5	273
<b>L4</b>	100	125	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5
<b>L5</b>	13.5	18	16	14.5	12.5	17	15.5	13.5	18	16.5	14.5

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
**EX500 EX600 EX250 EX260 EX126 EX120**  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Series SY3000/5000

## Electrical Wiring Specifications

**D-sub connector**



Connector terminal no.

**Lead wire color for D-sub connector assembly (AXT100-DS25-015, 030, 050)**

<All single wiring>    <All double wiring>

Station	Terminal no.	Terminal no.	Polarity	Lead wire color	Dot marking
Station 1	SOL.a 1	Station 1	(-) (+)	Black	None
Station 2	SOL.a 14	Station 1	(-) (+)	Yellow	Black
Station 3	SOL.a 2	Station 2	(-) (+)	Brown	None
Station 4	SOL.a 15	Station 2	(-) (+)	Pink	Black
Station 5	SOL.a 3	Station 3	(-) (+)	Red	None
Station 6	SOL.a 16	Station 3	(-) (+)	Blue	White
Station 7	SOL.a 4	Station 4	(-) (+)	Orange	None
Station 8	SOL.a 17	Station 4	(-) (+)	Purple	None
Station 9	SOL.a 5	Station 5	(-) (+)	Yellow	None
Station 10	SOL.a 18	Station 5	(-) (+)	Gray	None
Station 11	SOL.a 6	Station 6	(-) (+)	Pink	None
Station 12	SOL.a 19	Station 6	(-) (+)	Orange	Black
	7	Station 7	(-) (+)	Blue	None
	20	Station 7	(-) (+)	Red	White
	8	Station 8	(-) (+)	Purple	White
	21	Station 8	(-) (+)	Brown	White
	9	Station 9	(-) (+)	Gray	Black
	22	Station 9	(-) (+)	Pink	Red
	10	Station 10	(-) (+)	White	Black
	23	Station 10	(-) (+)	Gray	Red
	11	Station 11	(-) (+)	White	Red
	24	Station 11	(-) (+)	Black	White
	12	Station 12	(-) (+)	Yellow	Red
	25	Station 12	(-) (+)	White	None
	COM. 13		(+) (-)	Orange	Red

Positive common    Negative common

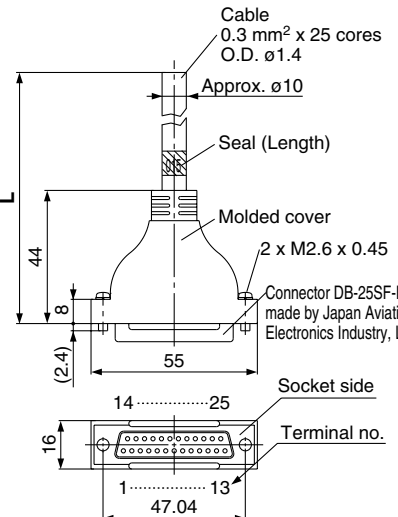
Note) When using a valve with no polarity, either positive common or negative common can be used.

## Cable Assembly

**015  
AXT100-DS25-030  
050**

**Lead wire color for D-sub connector cable assembly by terminal number**

Terminal no.	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Gray	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	None



**D-sub connector cable assembly**

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-DS25-015	Cable 0.3 mm² x 25 cores
3 m	AXT100-DS25-030	
5 m	AXT100-DS25-050	

\* When using a standard commercial connector, use a 25-pin type female connector conforming to MIL-C-24308.  
\* Cannot be used for movable wiring.  
\* Lengths other than the above are also available. Please contact SMC for details.

**Electrical characteristics**

Item	Property
Conductor resistance Ω/km, 20°C	65 or less
Voltage limit V, 1 minute, AC	1000
Insulation resistance MΩ/km, 20°C	5 or more

**Connector Manufacturers' Example**

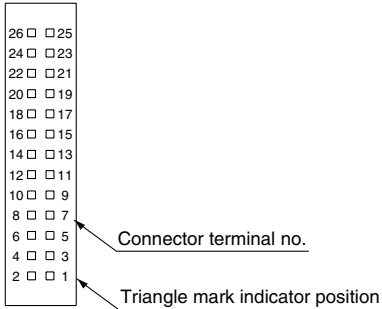
- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Hirose Electric Co., Ltd.

Note) The minimum bending radius of the D-sub connector cable is 20 mm.

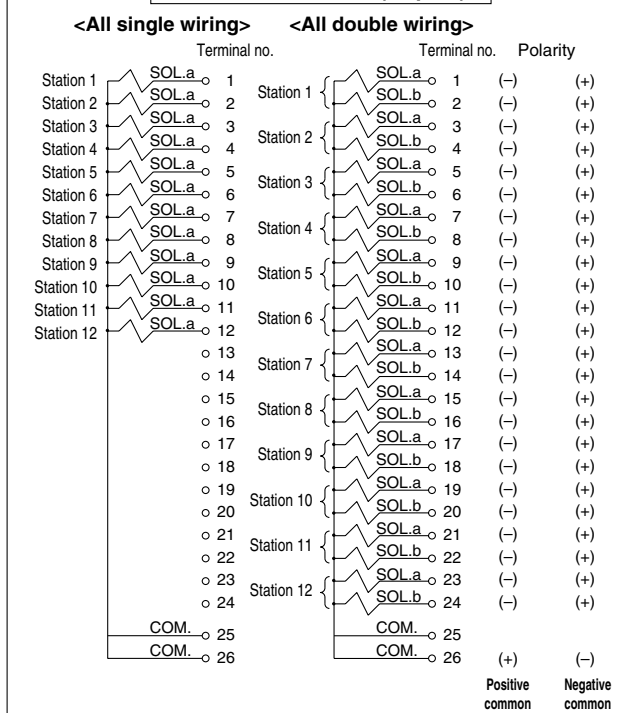


## Electrical Wiring Specifications

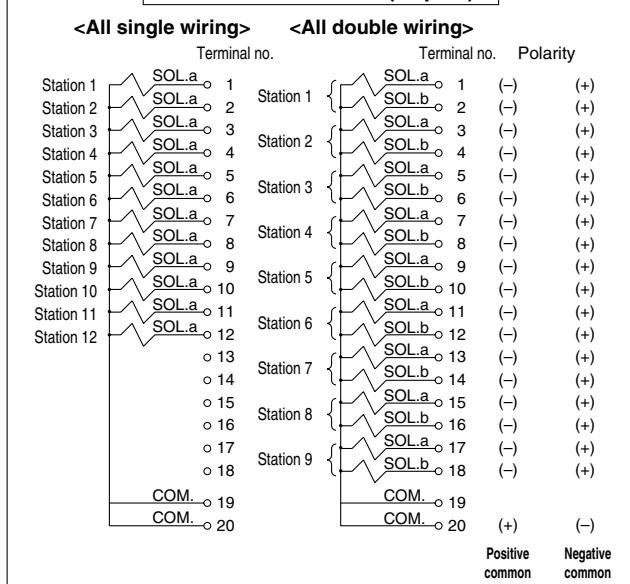
### Flat ribbon cable connector



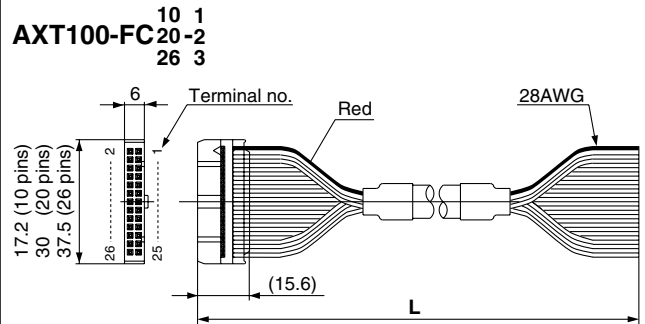
### P: Flat ribbon cable (26 pins)



### PG: Flat ribbon cable (20 pins)



## Cable Assembly



### Flat ribbon cable connector assembly

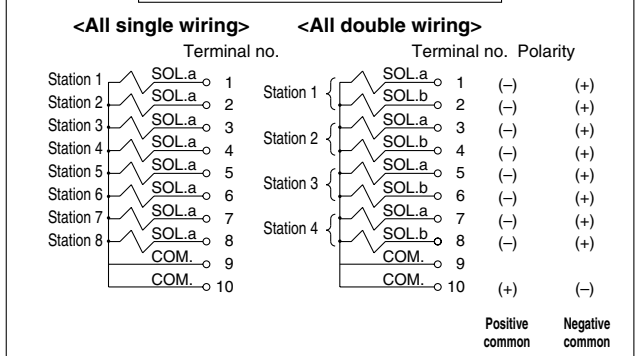
Cable length (L)	Assembly part no.		
	26 pins	20 pins	10 pins
1.5 m	AXT100-FC26-1	AXT100-FC20-1	AXT100-FC10-1
3 m	AXT100-FC26-2	AXT100-FC20-2	AXT100-FC10-2
5 m	AXT100-FC26-3	AXT100-FC20-3	AXT100-FC10-3

- \* When using a standard commercial connector, use a 26-pin, 20-pin or 10-pin type connector conforming to MIL-C-83503 with strain relief.
- \* Cannot be used for movable wiring.
- \* Lengths other than the above are also available. Please contact SMC for details.

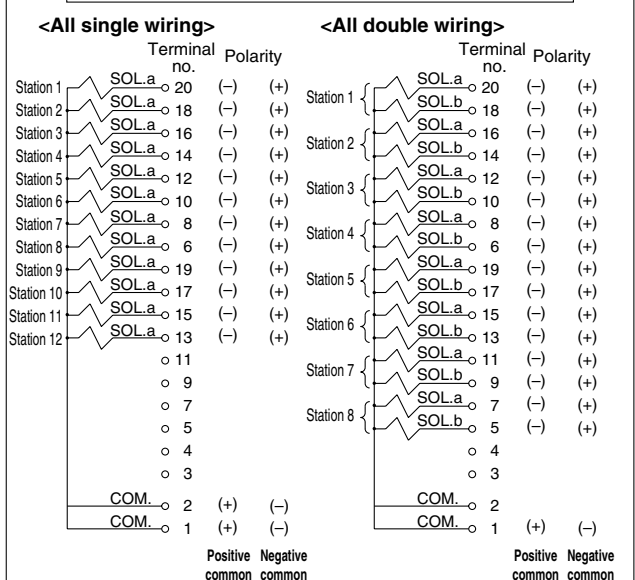
### Connector Manufacturers' Example

- Hirose Electric Co., Ltd.
- Sumitomo 3M Limited
- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

### PH: Flat ribbon cable (10 pins)



### J: Flat ribbon cable (20 pins) PC wiring



Note) When using a valve with no polarity, either positive common or negative common can be used.

Specifications  
Construction  
Replacement Parts  
Plug-in Metal Base  
D-sub Connector Flat Ribbon Cable PC Wiring  
EX510  
Plug-in Connector Connecting Base  
Terminal Block Box  
Lead Wire  
Circular Connector  
EX500  
EX600  
EX250  
EX260  
EX126  
EX120  
One-touch Filings and Plug Assembly Part No.  
Manifold Options  
Specific Product Precautions

Type 50  
Side Ported

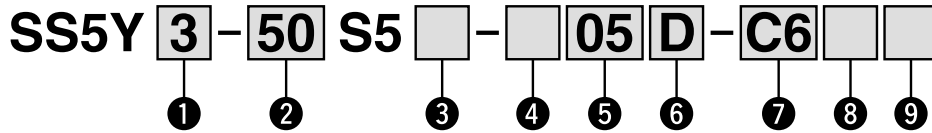
Type 51  
Bottom Ported

# Plug-in Metal Base

EX510

# Series SY3000/5000 C €

## How to Order Manifold



### 1 Series

3	SY3000
5	SY5000

### 3 SI unit output polarity

Nil	Positive common
N	Negative common

### 4 Wiring type

Nil	All double wiring Note 1)
S	All single wiring Note 2)

Note 1) All double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Note 2) All single wiring: Available only for the manifold which has 2-position single for all stations.

Note that 2-position double, 3- or 4-position valves cannot be used.

Note 3) Please contact SMC if a mixture of single wiring and double wiring is required.

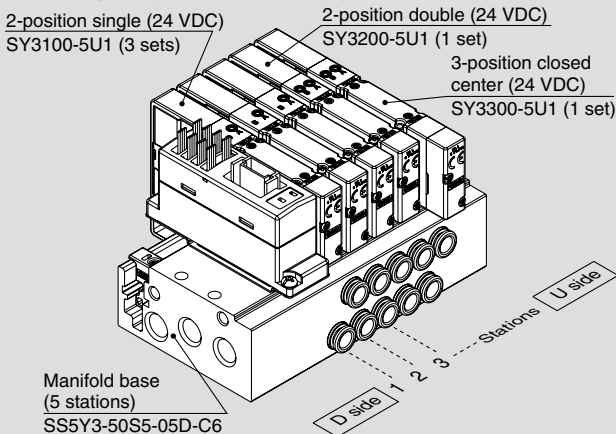
### 5 Valve stations

Symbol	Stations	Note	Symbol	Stations	Note
02	2 stations	All double wiring	02	2 stations	All single wiring
⋮	⋮		⋮	⋮	
08	8 stations		12	12 stations	

\* This also includes the number of blanking plate assembly.

## How to Order Manifold Assembly

### Example (SS5Y3-50S5-□)



SS5Y3-50S5-05D-C6 ... 1 set (Type 50 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note) When mixing top ported configurations, select from page 44.  
 In this case, use caution as there is also output on the A and B port on base side.  
 Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 2 Type

50	Side ported
51	Bottom ported
50R	Side ported, External pilot

\* External pilot is not available for the bottom ported type.

### 6 P, E port entry

U	U side Note 1)
D	D side Note 1) Note 2)
B	Both sides

Note 1) Plugs are mounted on the opposite side of the selected ports.

Note 2) Only D side is available for Type 51 (Bottom ported).

### 8 Thread type

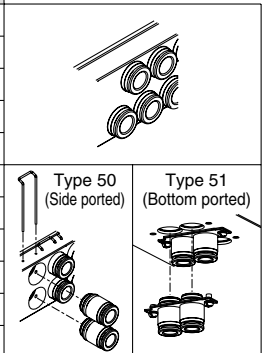
Nil	Rc
F	G
N	NPT
T	NPTF

### 7 A, B port size (Thread piping)

Symbol	A, B port	SY3000	SY5000
M5	M5 x 0.8	●	—
01	1/8	●	●
02	1/4	—	●

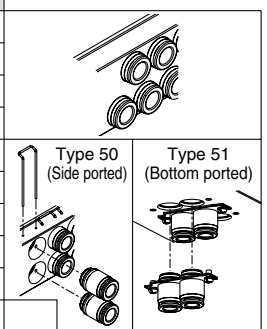
### A, B port size (Metric)

Symbol	A, B port	SY3000	SY5000	
Fixed	C2	ø2 One-touch fitting	●	—
	C3	ø3.2 One-touch fitting	●	—
	C4	ø4 One-touch fitting	●	●
	C6	ø6 One-touch fitting	●	●
	C8	ø8 One-touch fitting	—	●
Replaceable	KC2	ø2 One-touch fitting	●	—
	KC3	ø3.2 One-touch fitting	●	—
	KC4	ø4 One-touch fitting	●	●
	KC6	ø6 One-touch fitting	●	●
	KC8	ø8 One-touch fitting	—	●
M*	Mixed sizes	●	●	
P, E port size (Thread piping)		1/8	1/4	



### A, B port size (Inch)

Symbol	A, B port	SY3000	SY5000	
Fixed	N1	ø1/8" One-touch fitting	●	—
	N3	ø5/32" One-touch fitting	●	●
	N7	ø1/4" One-touch fitting	●	●
	N9	ø5/16" One-touch fitting	—	●
Replaceable	KN1	ø1/8" One-touch fitting	●	—
	KN3	ø5/32" One-touch fitting	●	●
	KN7	ø1/4" One-touch fitting	●	●
	KN9	ø5/16" One-touch fitting	—	●
M*	Mixed sizes	●	●	
P, E port size (Thread piping)		1/8	1/4	



\* When ports are mixed sizes, indicate the piping specifications on the manifold specification sheet.

### 9 Mounting

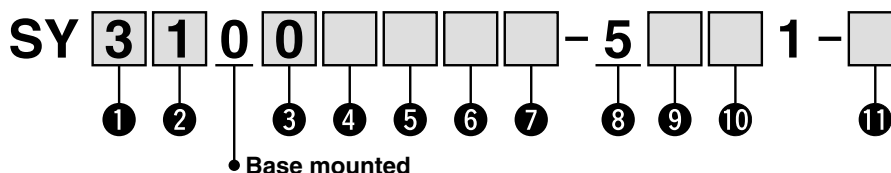
Nil	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a longer rail than the standard length.
⋮	⋮	
D12	For 12 stations	

\* Only direct mounting is available for Type 51 (Bottom ported).

Refer to Reduced Wiring Fieldbus System (Serial Transmission) in Electric Products (CAT.E150) for details on the EX510 Gateway-type Serial Transmission System.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type  
\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.  
\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

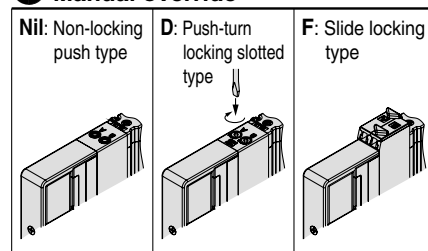
5	24 VDC
---	--------

### 9 Light/surge voltage suppressor and common specification

R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	Without light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit. Select a valve from R, U, S or Z when the SI unit output polarity is Nil (Positive common). Select a valve from R, U, NS or NZ when the SI unit output polarity is N (Negative common).

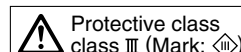
### 10 Manual override



### 11 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.  
\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.  
Refer to page 47 for part numbers of the base gasket and mounting screw.  
\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

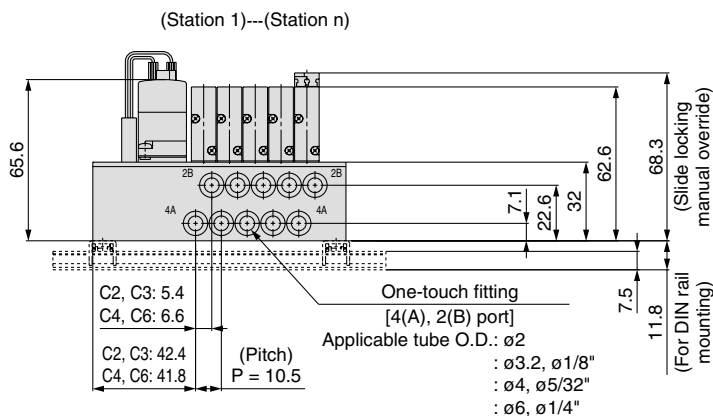
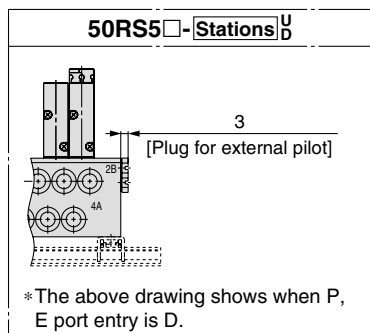
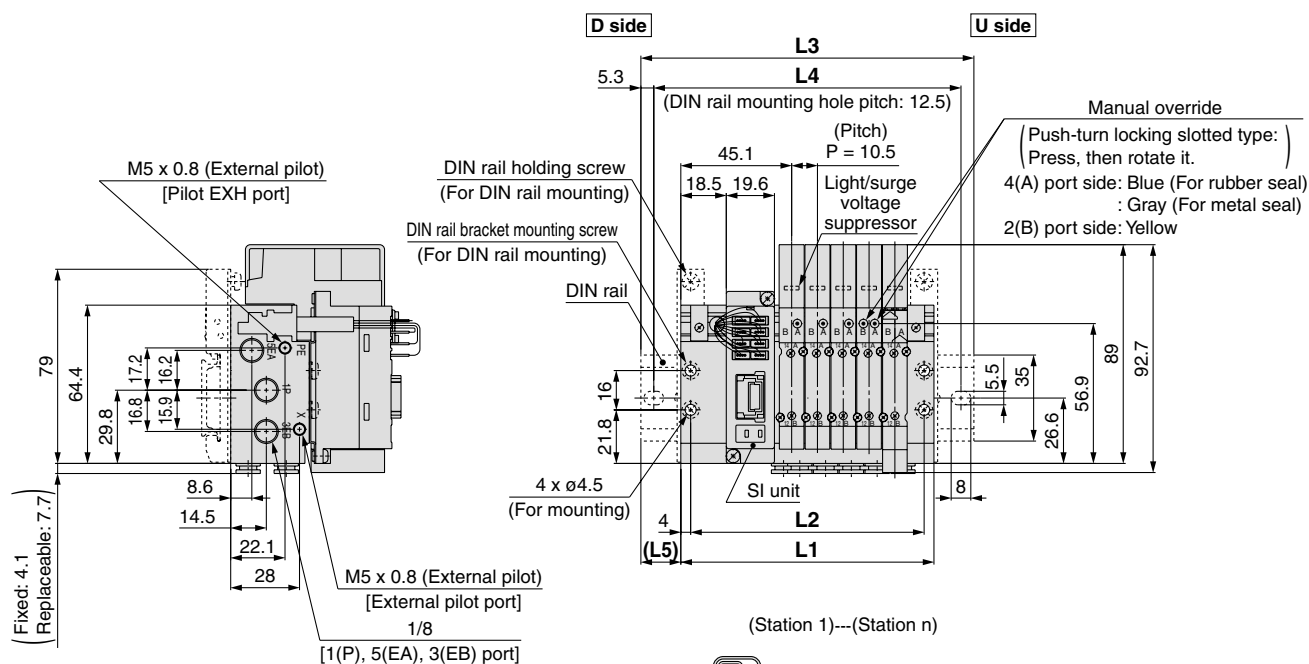


Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500  
 EX600  
 EX250  
 EX260  
 EX126  
 EX120  
 One-touch Filings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

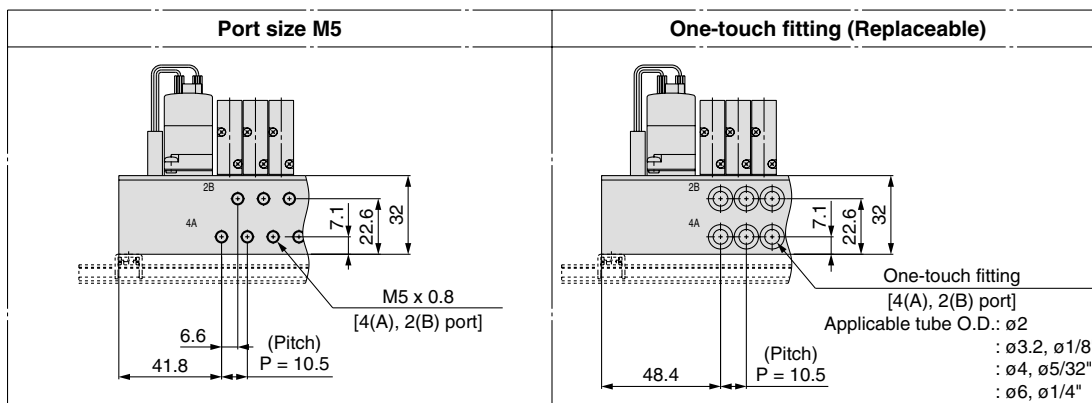
# Series SY3000/5000

## Dimensions: Type 50/EX510/Series SY3000

SS5Y3-50(R)S5□-Stations  $\begin{matrix} U \\ D \end{matrix}$   $\begin{matrix} M5 \\ C \square, N \square \\ B \\ KC \square, KN \square \end{matrix}$  □(D)



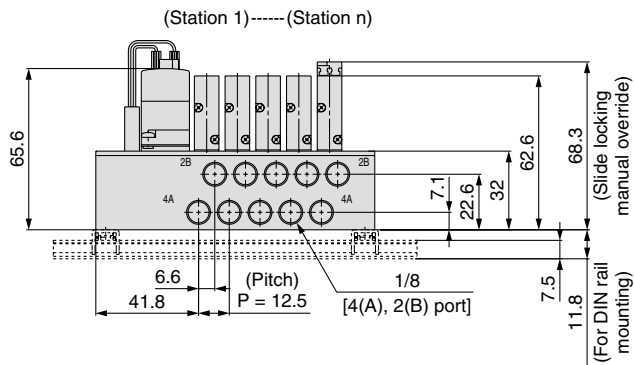
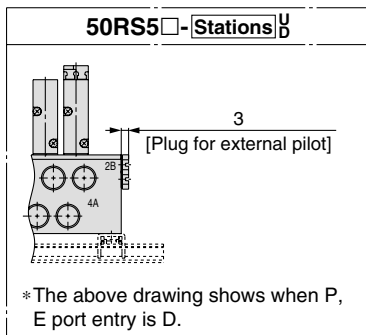
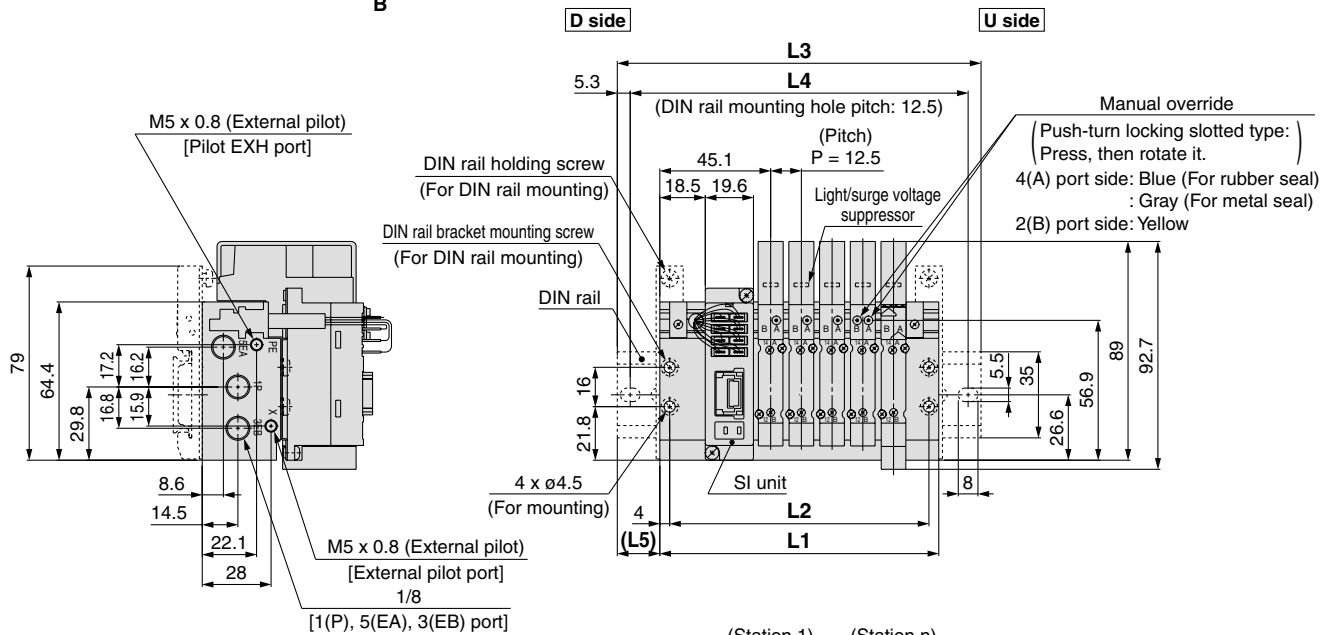
Note) These figures show the "SS5Y3-50S5-05B-C6".



n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14	15	16	17

## Dimensions: Type 50/EX510/Series SY3000

SS5Y3-50(R)S5□-Stations<sup>U</sup><sub>D</sub>-01□(D)



Note) These figures show the "SS5Y3-50S5-05B-01".

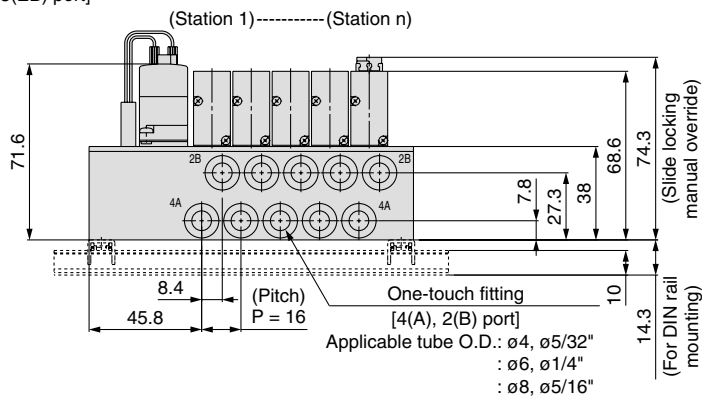
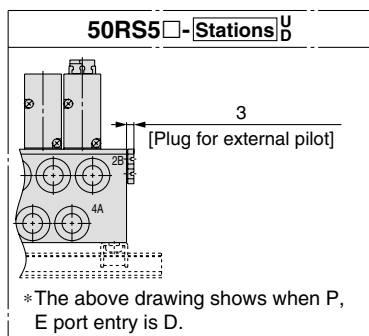
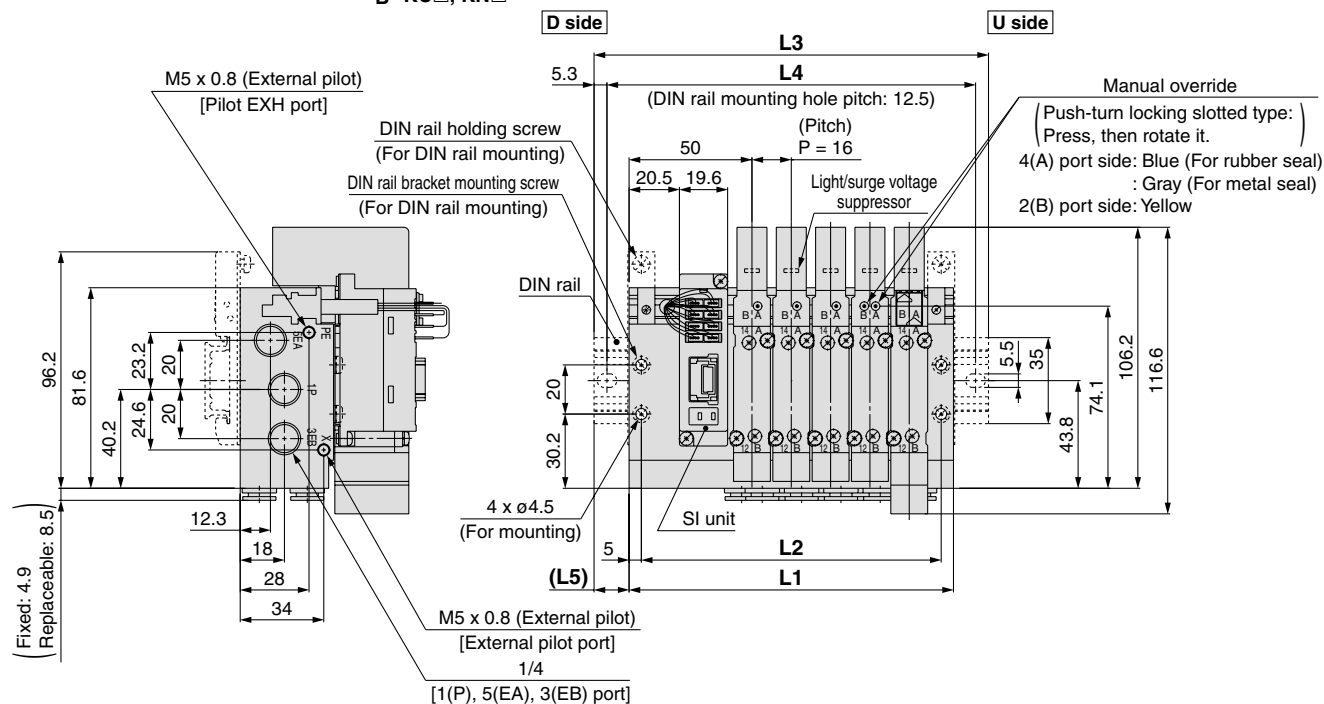
n: Stations	2	3	4	5	6	7	8	9	10	11	12
<b>L1</b>	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
<b>L2</b>	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
<b>L3</b>	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5
<b>L4</b>	100	112.5	125	137.5	150	162.5	175	187.5	200	212.5	225
<b>L5</b>	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5	17.5

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
**EX500**  
**EX600**  
**EX250**  
**EX260**  
**EX126**  
**EX120**  
 One-touch Filings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

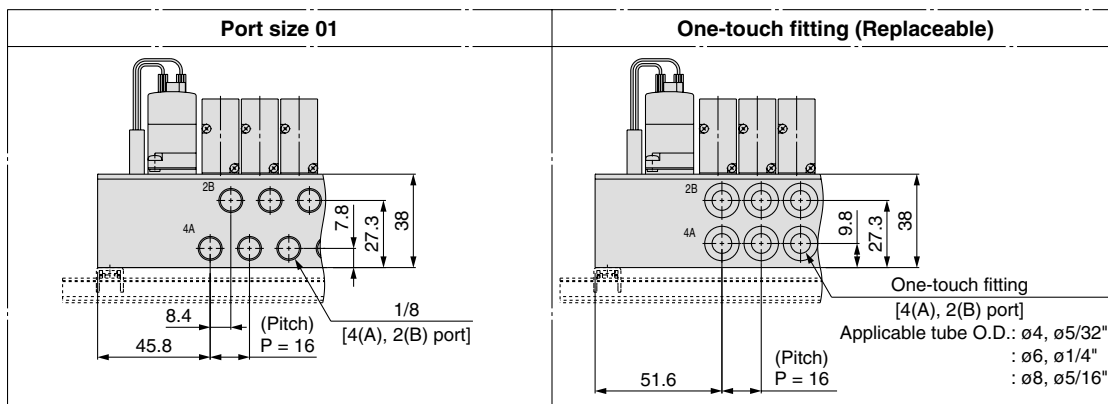
# Series SY3000/5000

## Dimensions: Type 50/EX510/Series SY5000

SS5Y5-50(R)S5□-Stations  $\begin{matrix} U \\ D \end{matrix}$   $\begin{matrix} 01 \\ C \\ B \end{matrix}$  □  $\begin{matrix} N \\ KC \\ KN \end{matrix}$  □ (D)



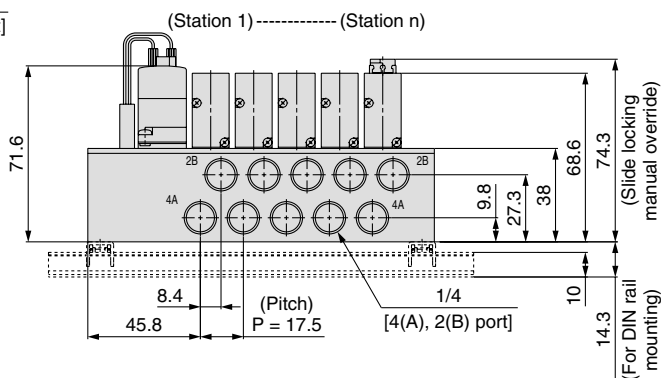
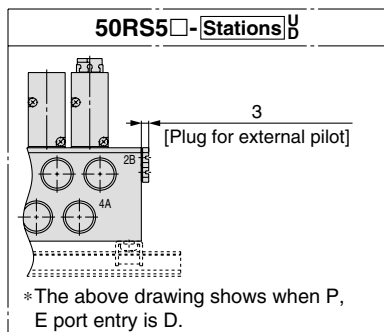
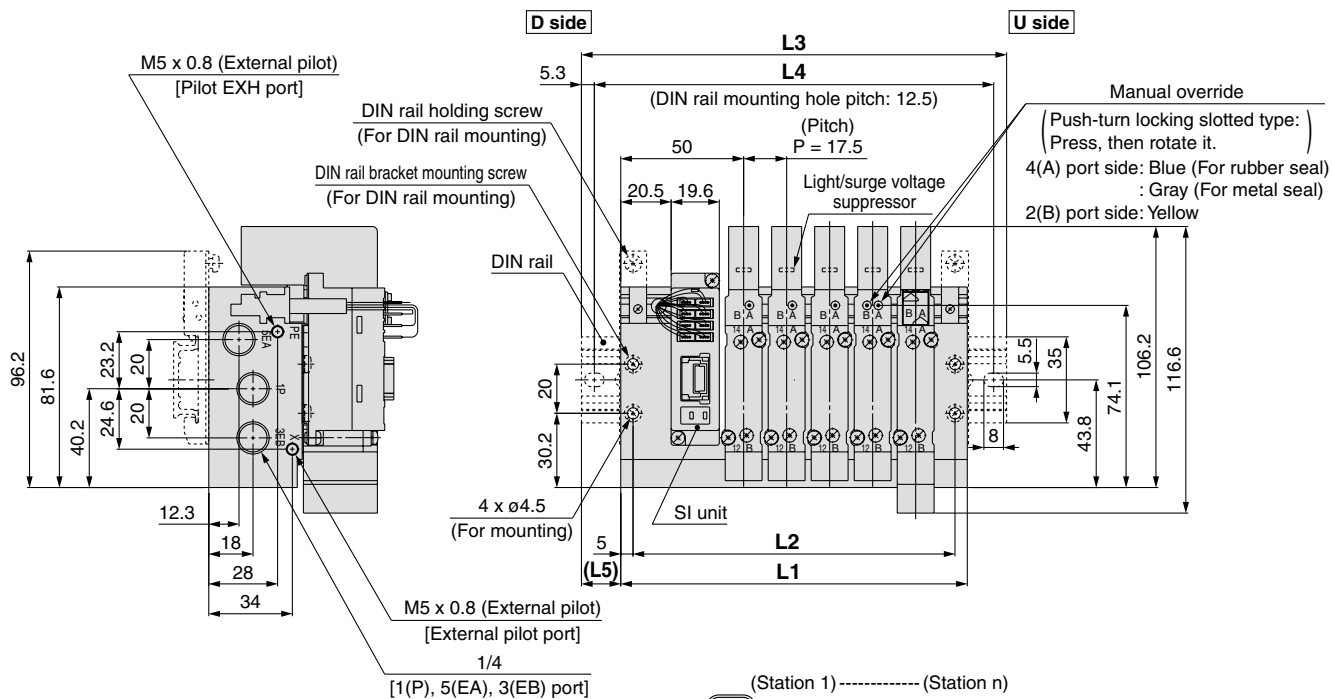
Note) These figures show the "SS5Y5-50S5-05B-C8".



n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	110.5	135.5	148	160.5	173	198	210.5	223	248	260.5	273
L4	100	125	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5
L5	13.5	18	16	14.5	12.5	17	15.5	13.5	18	16.5	14.5

## Dimensions: Type 50/EX510/Series SY5000

SS5Y5-50(R)S5□-Stations<sup>U</sup><sub>D</sub>-02□(D)



Note) These figures show the "SS5Y5-50S5-05B-02".

n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	123	135.5	148	173	185.5	210.5	223	235.5	260.5	273	298
L4	112.5	125	137.5	162.5	175	200	212.5	225	250	262.5	287.5
L5	17.5	15	12.5	16	13.5	17.5	15	12.5	16	13.5	17.5

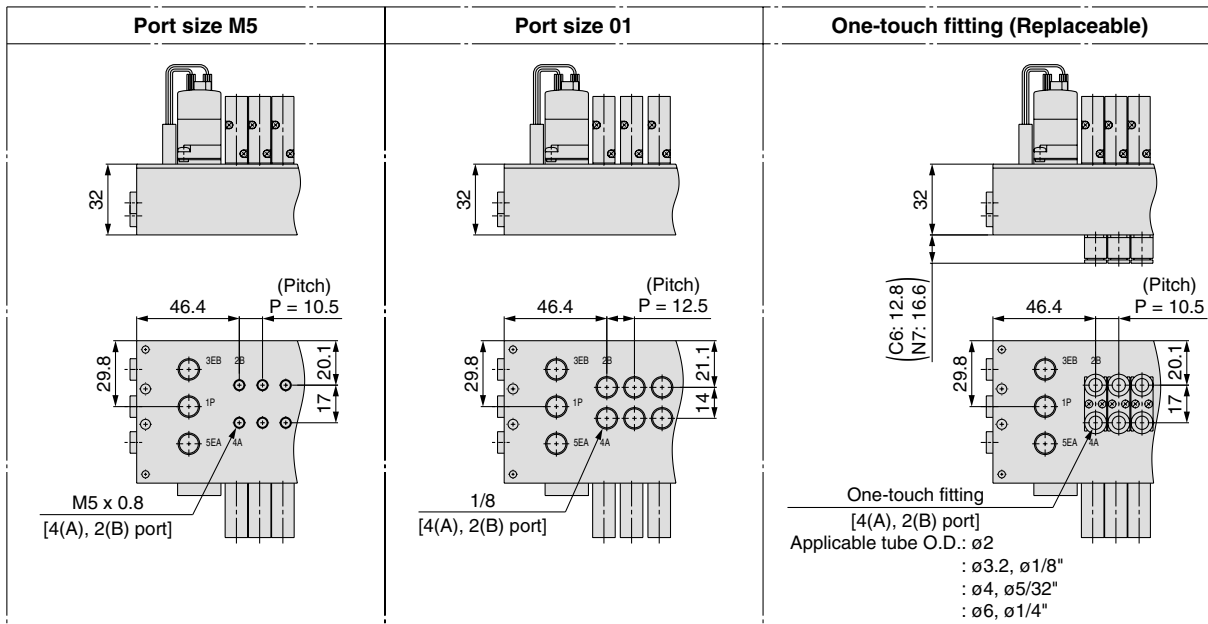
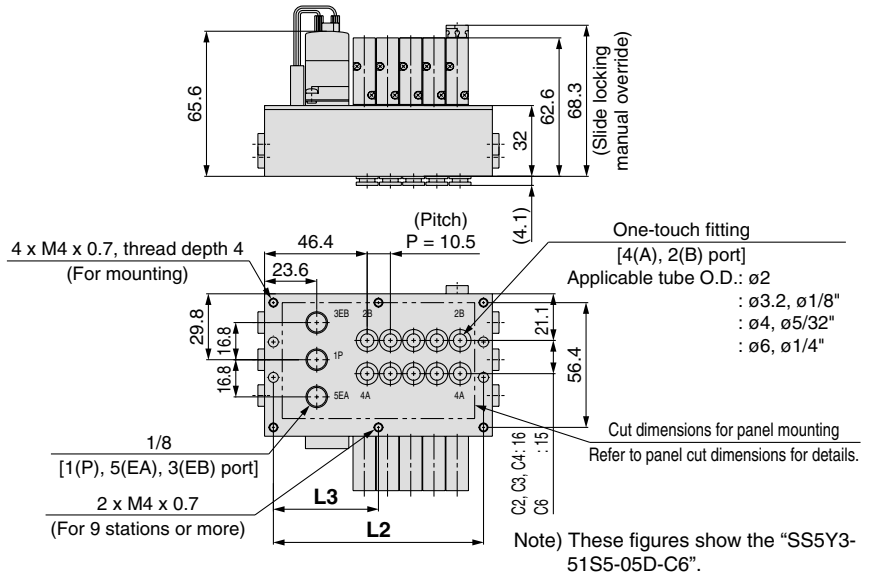
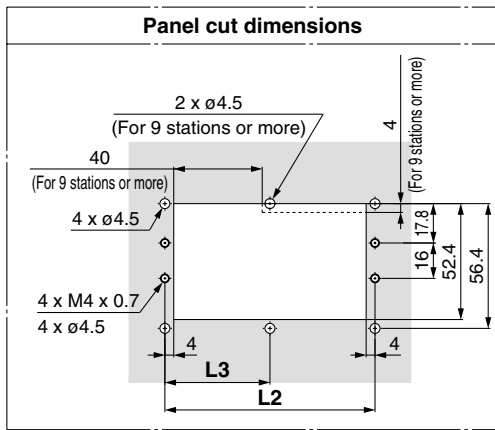
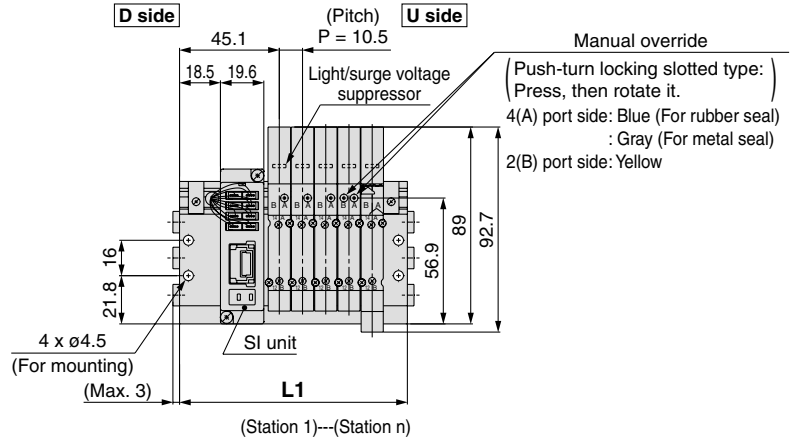
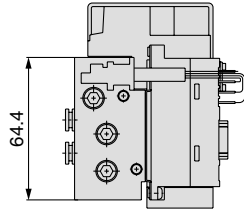
Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
**EX500 EX600 EX250 EX260 EX126 EX120**  
 One-touch Filings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions



# Series SY3000/5000

## Dimensions: Type 51/EX510/Series SY3000

SS5Y3-51S5□ - Stations D-<sup>M5, 01</sup>C□, N□  
KC□, KN□



### Port Size M5, C□, N□, KC□, KN□

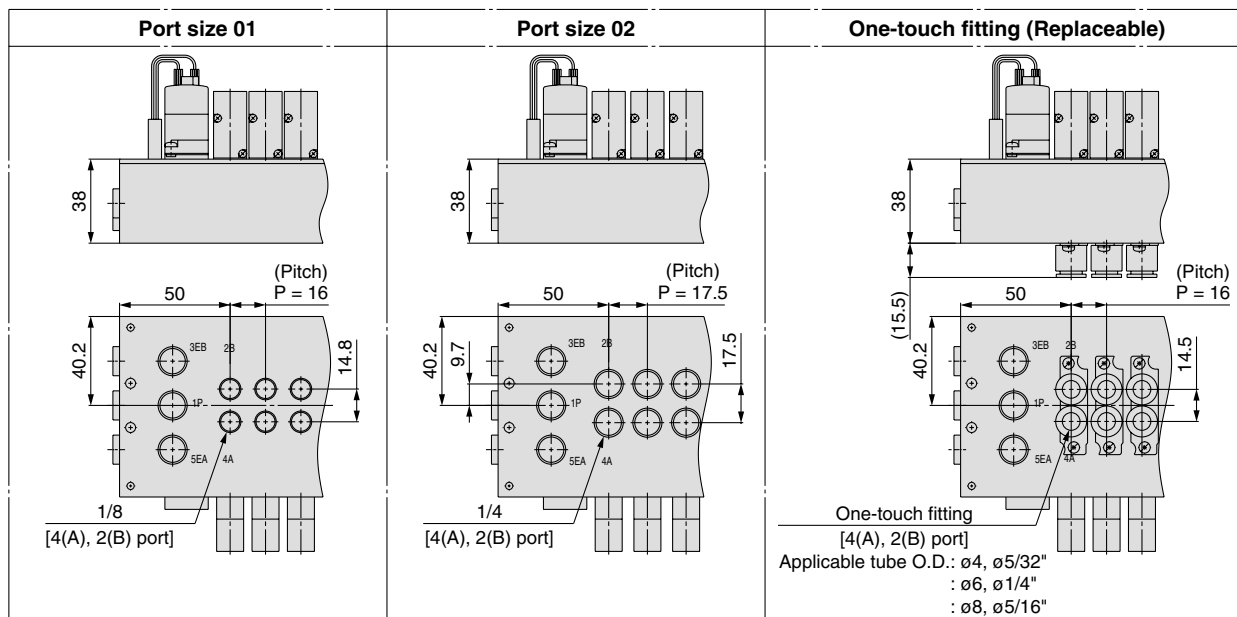
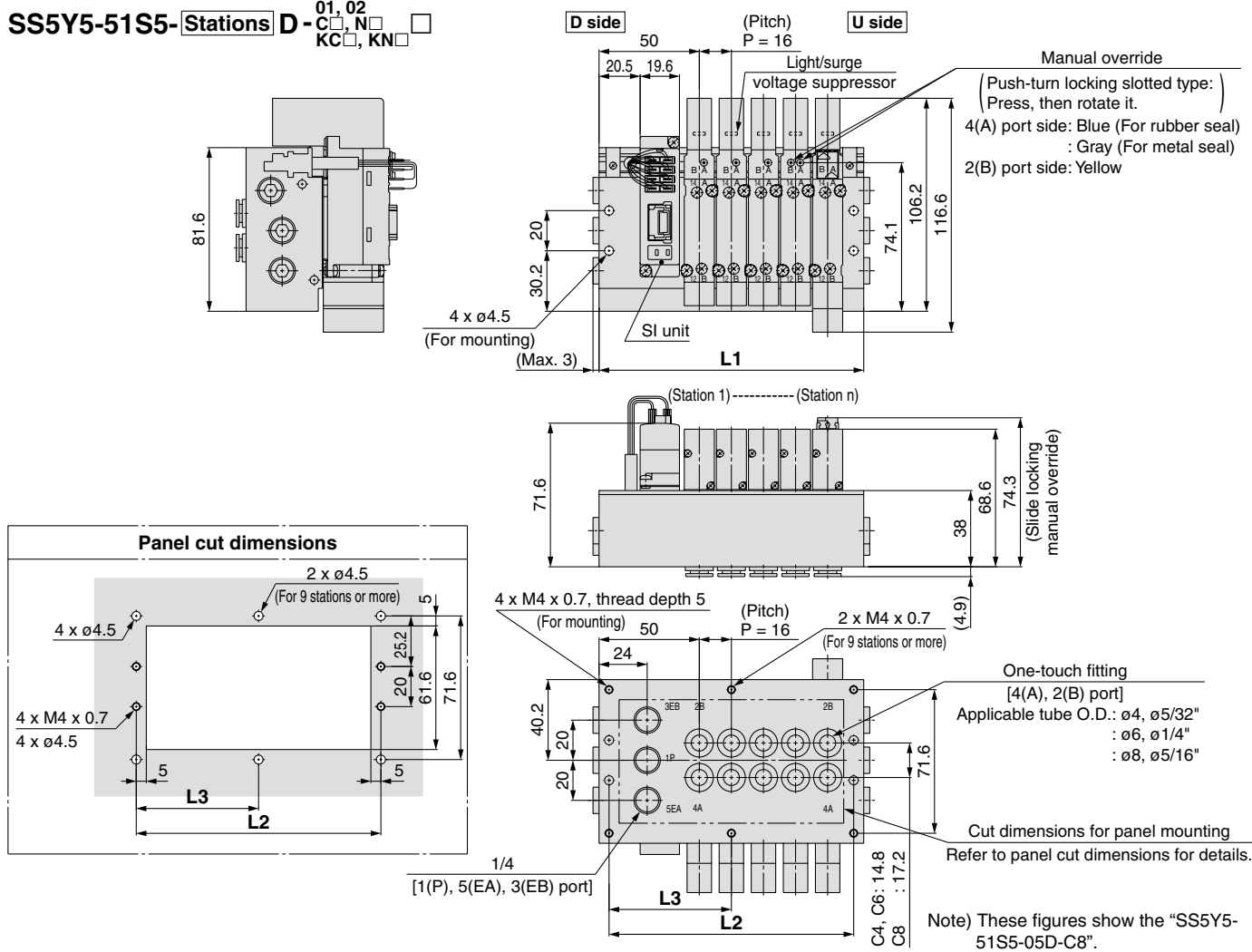
n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	—	—	—	—	—	—	—	68.5	73.8	79	84.3

### Port Size 01

n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	76	88.5	101	113.5	126	138.5	151	163.5	176	188.5	201
L2	68	80.5	93	105.5	118	130.5	143	155.5	168	180.5	193
L3	—	—	—	—	—	—	—	77.8	84	90.3	96.5

## Dimensions: Type 51/EX510/Series SY5000

SS5Y5-51S5- Stations **D** -  $\square_{01, 02}$ ,  $\square_{N}$ ,  $\square_{KC}$ ,  $\square_{KN}$



### Port Size 01, $\square_{C}$ , $\square_{N}$ , $\square_{KC}$ , $\square_{KN}$

n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	84	100	116	132	148	164	180	196	212	228	244
L2	74	90	106	122	138	154	170	186	202	218	234
L3	—	—	—	—	—	—	—	93	101	109	117

### Port Size 02

n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	88.5	106	123.5	141	158.5	176	193.5	211	228.5	246	263.5
L2	78.5	96	113.5	131	148.5	166	183.5	201	218.5	236	253.5
L3	—	—	—	—	—	—	—	100.5	109.3	118	126.8

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire Connector  
 Circular Connector  
**EX500**  
**EX600**  
**EX250**  
**EX260**  
**EX126**  
**EX120**  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

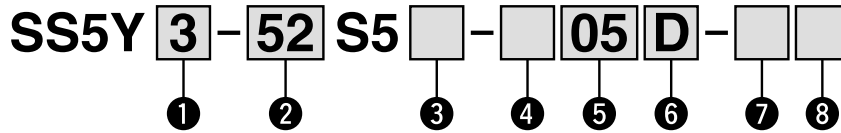
# Plug-in Metal Base

EX510

Type 52  
Top Ported

# Series SY3000/5000 C €

## How to Order Manifold



### 1 Series

3	SY3000
5	SY5000

### 2 Type

52	Top ported
52R	Top ported, External pilot

### 3 SI unit output polarity

Nil	Positive common
N	Negative common

### 4 Wiring type

Nil	All double wiring <small>Note 1)</small>
S	All single wiring <small>Note 2)</small>

Note 1) All double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Note 2) All single wiring: Available only for the manifold which has 2-position single for all stations.

Note that 2-position double, 3- or 4-position valves cannot be used.

Note 3) Please contact SMC if a mixture of single wiring and double wiring is required.

### 5 Valve stations

Symbol	Stations	Note
02	2 stations	All double wiring
⋮	⋮	
08	8 stations	All single wiring
02	2 stations	
⋮	⋮	
12	12 stations	

\* This also includes the number of blanking plate assembly.

### 6 P, E port entry

U	U side <small>Note)</small>
D	D side <small>Note)</small>
B	Both sides

Note) Plugs are mounted on the opposite side of the selected ports.

### 7 Thread type

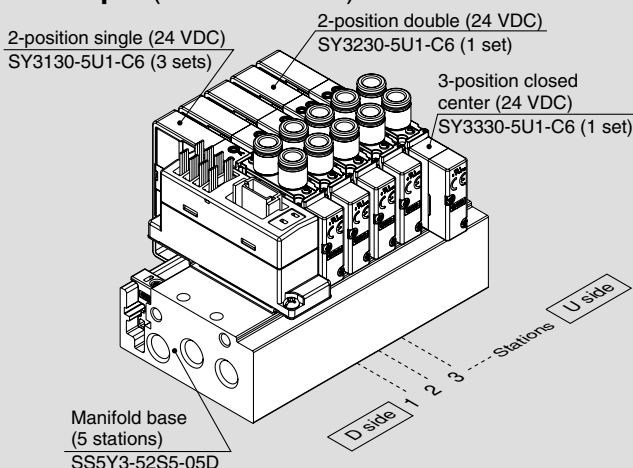
Nil	Rc
00F	G
00N	NPT
00T	NPTF

### 8 Mounting

Nil	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a longer rail than the standard length.
⋮	⋮	
D12	For 12 stations	

## How to Order Manifold Assembly

### Example (SS5Y3-52S5-□)



- SS5Y3-52S5-05D ..... 1 set (Type 52 5-station manifold base part no.)
- \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)
- \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)
- \*SY3330-5U1-C6 ..... 1 set (3-position closed center part no.)

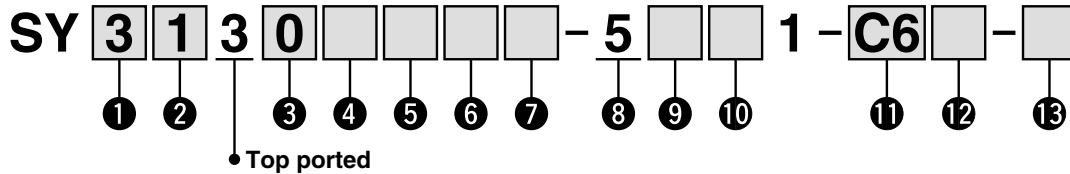
→ The asterisk denotes the symbol for assembly.  
Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Refer to Reduced Wiring Fieldbus System (Serial Transmission) in Electric Products (CAT.E150) for details on the EX510 Gateway-type Serial Transmission System.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

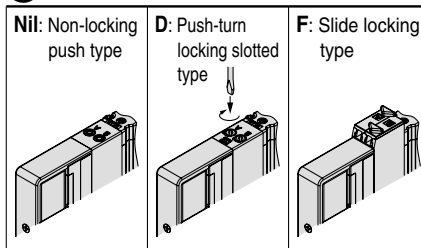
5	24 VDC
---	--------

### 9 Light/surge voltage suppressor and common specification

R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit. Select a valve from R, U, S or Z when the SI unit polarity is Nil (Positive common). Select a valve from R, U, NS or NZ when the SI unit output polarity is N (Negative common).

### 10 Manual override



### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

#### One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

### 12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

### 13 Type of mounting screw

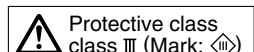
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 47 for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.

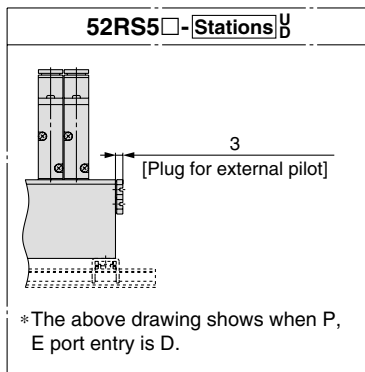
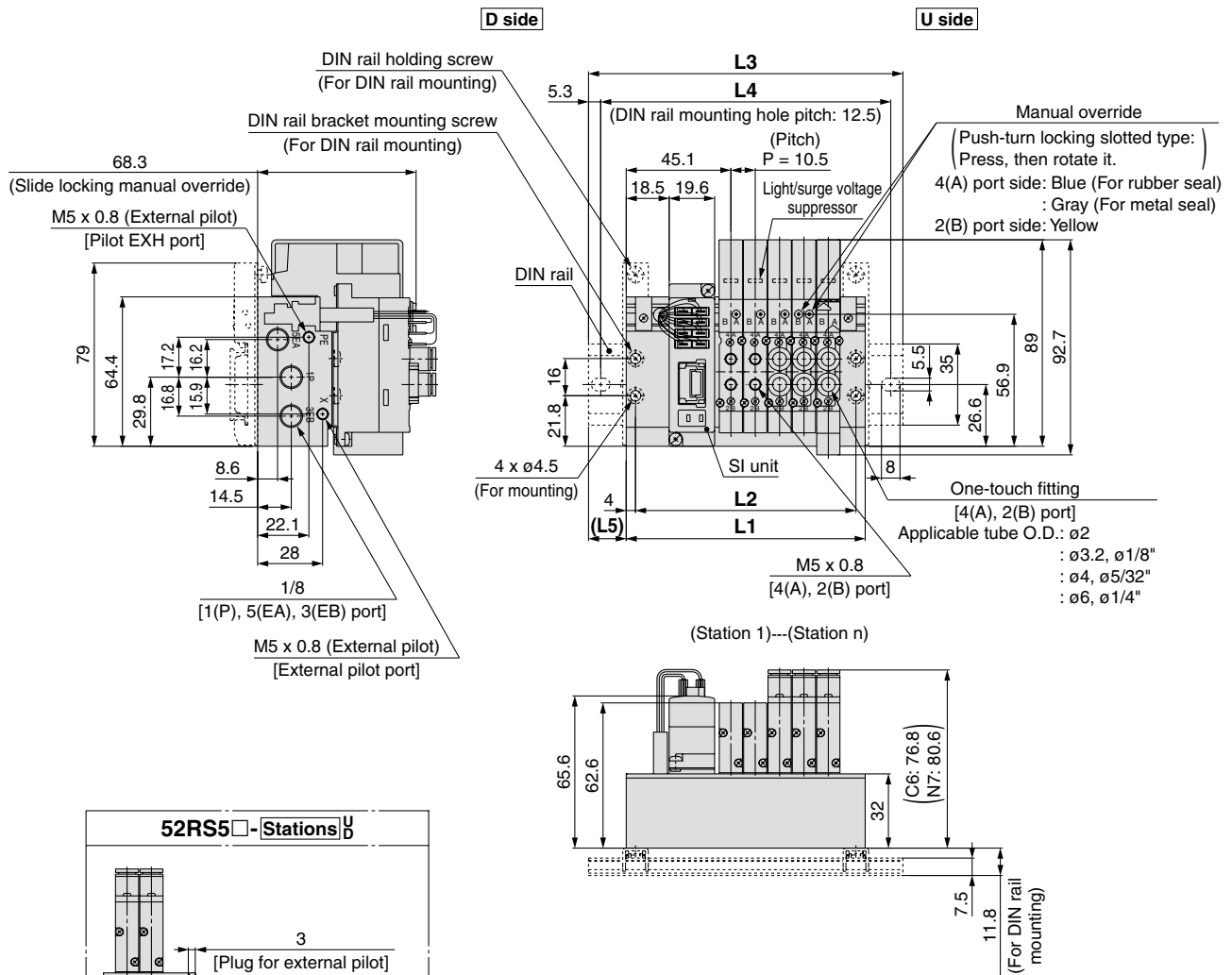


Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
**EX500 EX600 EX250 EX260 EX126 EX120**  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Series SY3000/5000

## Dimensions: Type 52/EX510/Series SY3000

SS5Y3-52(R)S5□-Stations<sup>U</sup><sub>D</sub>-□(D)

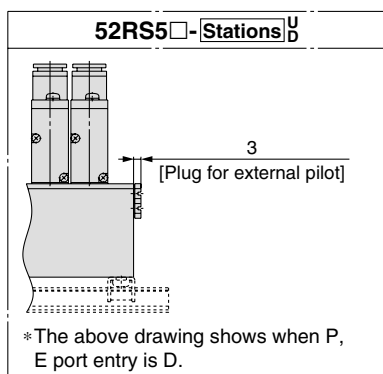
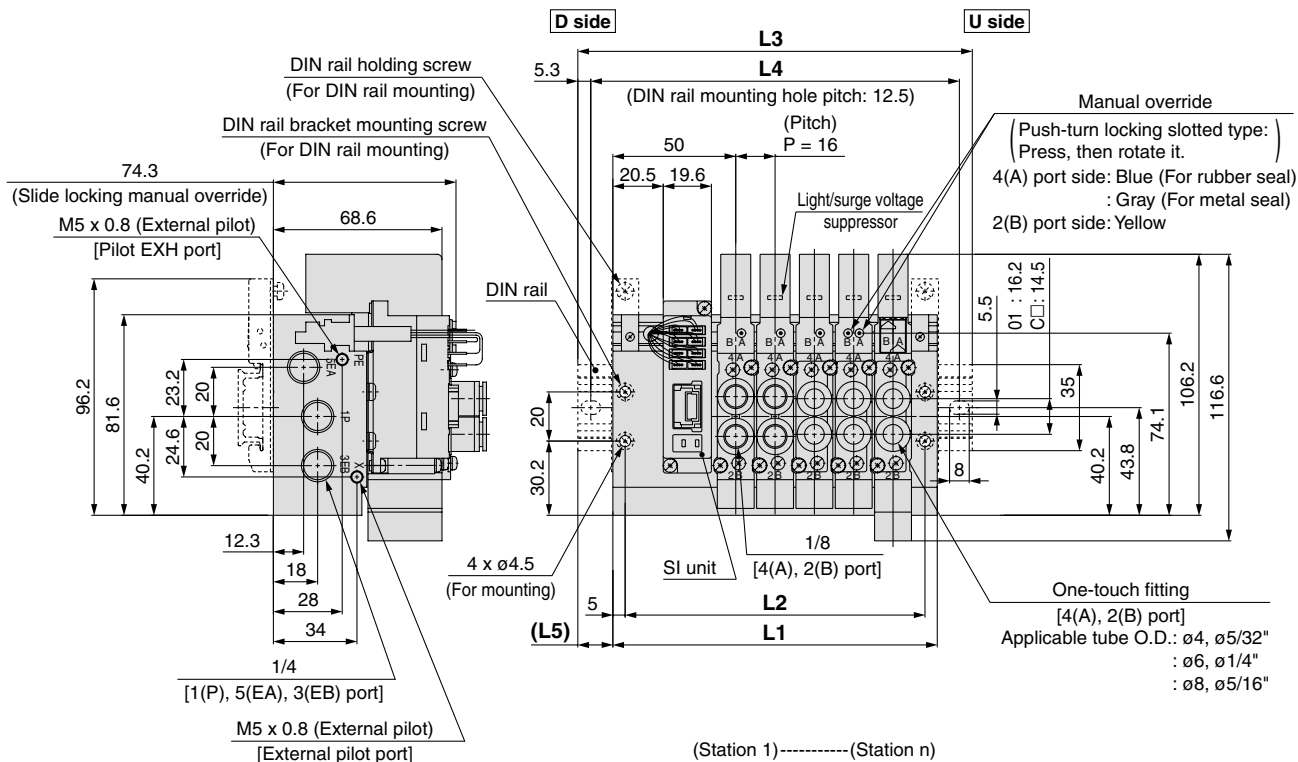


Note) These figures show the "SS5Y3-52S5-05B".

n: Stations	2	3	4	5	6	7	8	9	10	11	12
L1	71.5	82	92.5	103	113.5	124	134.5	145	155.5	166	176.5
L2	63.5	74	84.5	95	105.5	116	126.5	137	147.5	158	168.5
L3	98	110.5	123	135.5	148	160.5	160.5	173	185.5	198	210.5
L4	87.5	100	112.5	125	137.5	150	150	162.5	175	187.5	200
L5	13.5	14.5	15.5	16.5	17.5	18.5	13	14	15	16	17

## Dimensions: Type 52/EX510/Series SY5000

SS5Y5-52(R)S5□-Stations  $\frac{U}{D}$ -□(D)



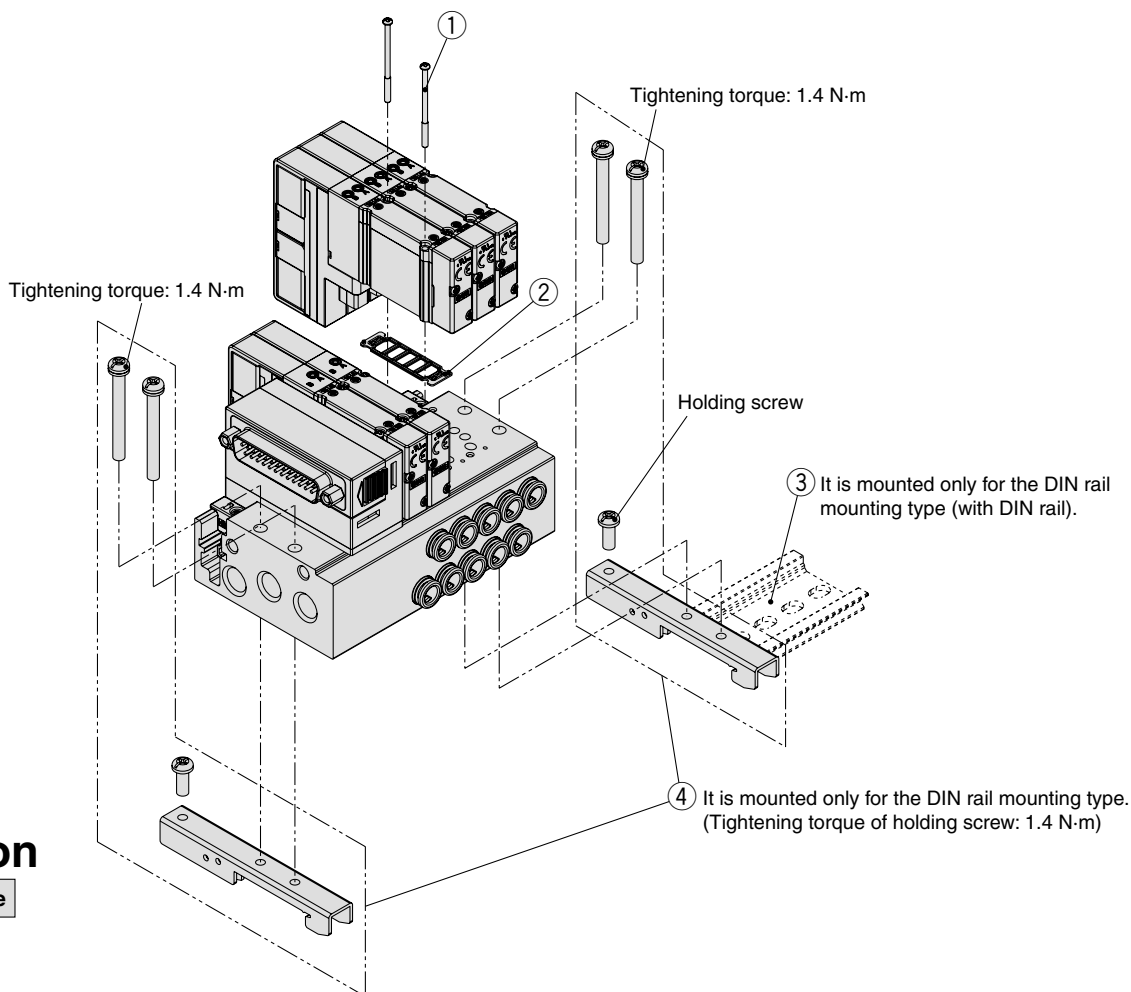
Note) These figures show the "SS5Y5-52S5-05B".

n: Stations	2	3	4	5	6	7	8	9	10	11	12
<b>L1</b>	84	100	116	132	148	164	180	196	212	228	244
<b>L2</b>	74	90	106	122	138	154	170	186	202	218	234
<b>L3</b>	110.5	135.5	148	160.5	173	198	210.5	223	248	260.5	273
<b>L4</b>	100	125	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5
<b>L5</b>	13.5	18	16	14.5	12.5	17	15.5	13.5	18	16.5	14.5

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 EX510  
 Plug-in Connector  
 Connecting Base  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500  
 EX600  
 EX250  
 EX260  
 EX126  
 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Series SY3000/5000 Type 50, 51, 52

## Plug-in Metal Base Manifold Exploded View



### ⚠ Caution

#### Tightening torque

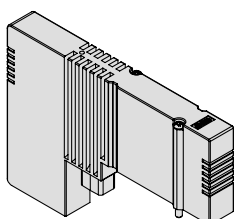
M2: 0.16 N·m  
M3: 0.8 N·m

### Manifold Parts No.

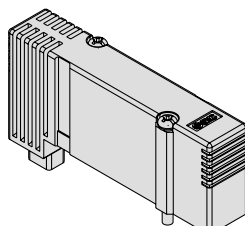
No.	Description	Part no.		Note	
		SY3000	SY5000		
①	Valve mounting screw	Round head combination screw	SY3000-23-24A (M2 x 32)	SY5000-221-1A (M3 x 32.5)	Part numbers shown on the left are for 10 valves (20 pcs.).
		Hexagon socket head cap screw	SY3000-222-1A (M2 x 32)	SY5000-222-1A (M3 x 32.5)	Part numbers shown on the left are for 10 valves (20 pcs.).
②	Base gasket (for plug-in metal base)	SY30M-11-1A	SY50M-11-1A	Part numbers shown on the left are for 10 valves (10 pcs.).	
③	DIN rail	VZ1000-11-1-□	VZ1000-11-4-□	Refer to page 140.	
④	Clamp bracket assembly (for plug-in metal base)	SY30M-15-2A	SY50M-15-2A	Part numbers shown on the left are for the clamp bracket assembly for one manifold (two sets of clamp brackets).	

### ■ Blanking plate assembly (With two mounting screws)

Used when expecting valve additions, or for maintenance. A structure to prevent screws falling out is in place on the blanking plate, making it much harder for the mounting screws to fall out.



SY30M-26-2A(-B)



SY50M-26-2A(-B)

Refer to pages 149 and 151 for dimensions.

Refer to pages 141 to 148 for individual SUP/EXH and other options.

### How to Order Blanking Plate Assembly

SY □ OM - 26 - 2 A - □

#### ● Series

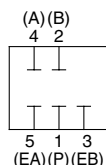
3	SY3000
5	SY5000

#### ● Option for mounting

Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)

#### ● Base type

2	For plug-in metal base
---	------------------------



Circuit diagram

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

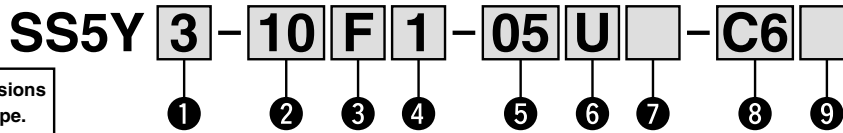
D-sub Connector Flat Ribbon Cable PC Wiring

# Series SY3000/5000



RoHS

## How to Order Manifold



Refer to page 123 for dimensions of Type 11/Bottom ported type.

### 1 Series

3	SY3000
5	SY5000

### 2 Type

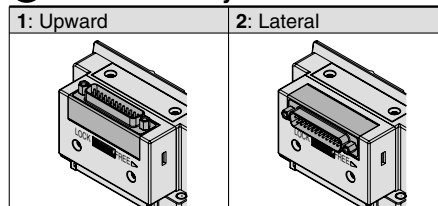
10	Side ported
11	Bottom ported*

\* The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to Plug-in Mixed Mounting Type Manifold (from page 127).

### 3 Connector type

<b>F:</b> D-sub connector (25 pins) 	<b>P:</b> Flat ribbon cable (26 pins) 	<b>PG:</b> Flat ribbon cable (20 pins) 
<b>PH:</b> Flat ribbon cable (10 pins) 	<b>J:</b> PC wiring (20 pins) 	<b>Yellow ink</b>

### 4 Connector entry direction



### 5 Valve stations

#### F: D-sub connector (25 pins)

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
12	12 stations	Specified layout Note 2) (Available up to 24 solenoids)
⋮	⋮	
24	24 stations	

#### P: Flat ribbon cable (26 pins)

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
12	12 stations	Specified layout Note 2) (Available up to 24 solenoids)
⋮	⋮	
24	24 stations	

#### PG: Flat ribbon cable (20 pins)

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
09	9 stations	Specified layout Note 2) (Available up to 18 solenoids)
⋮	⋮	
18	18 stations	

#### PH: Flat ribbon cable (10 pins)

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
04	4 stations	Specified layout Note 2) (Available up to 8 solenoids)
⋮	⋮	
08	8 stations	

#### J: PC wiring (20 pins)

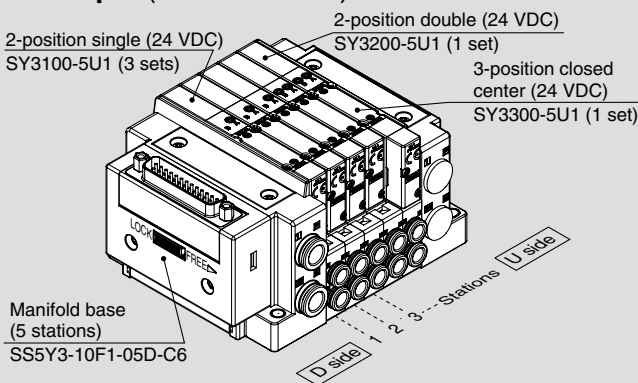
Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	Specified layout Note 2) (Available up to 16 solenoids)
⋮	⋮	
16	16 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)  
Note 3) This also includes the number of blanking plate assembly.

## How to Order Manifold Assembly

### Example (SS5Y3-10F1-□)



SS5Y3-10F1-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note) When mixing top ported configurations, select from page 56. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 6 P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

Refer to the page on the right for 8.

### 7 SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* 3/5(E) port is plugged for the built-in silencer type.

### 9 Mounting and Option

Symbol	Mounting	Option
Nil	Direct mounting	None
AA		Name plate (With station number)
BA		Name plate (Without station number)
D□	DIN rail mounting	Without name plate
A□		Name plate (With station number)
B□		Name plate (Without station number)

#### DIN Rail Option

Symbol	Option
Nil	Direct mounting
0	Without DIN rail (with bracket)
3	For 3 stations Specify a longer rail than the total length of specified stations.
⋮	⋮
24	For 24 stations

Note 1) Enter the number of stations inside □. (Refer to "DIN Rail Option" below.)  
Note 2) Only direct mounting is available for Type 11 (Bottom ported).



## 8 A, B port size (Metric)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported	
		SY3000	SY5000	SY5000	
<b>C2</b>	ø2 One-touch fitting	●	—	—	
<b>C3</b>	ø3.2 One-touch fitting	●	—	—	
<b>C4</b>	ø4 One-touch fitting	●	●	●	
<b>C6</b>	ø6 One-touch fitting	●	●	●	
<b>C8</b>	ø8 One-touch fitting	—	●	●	
<b>CM*</b>	Straight port, mixed sizes	●	●	●	
<b>L4</b>	ø4 One-touch fitting	●	●	—	
<b>L6</b>		●	●	—	
<b>L8</b>	ø8 One-touch fitting	—	●	—	
<b>B4</b>	ø4 One-touch fitting	●	●	—	
<b>B6</b>	ø6 One-touch fitting	●	●	—	
<b>B8</b>	ø8 One-touch fitting	—	●	—	
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—	
P, E port size (One-touch fittings)		ø8	ø10	ø10	

## A, B port size (Inch)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported	
		SY3000	SY5000	SY5000	
<b>N1</b>	ø1/8" One-touch fitting	●	—	—	
<b>N3</b>	ø5/32" One-touch fitting	●	●	●	
<b>N7</b>	ø1/4" One-touch fitting	●	●	●	
<b>N9</b>	ø5/16" One-touch fitting	—	●	●	
<b>CM*</b>	Straight port, mixed sizes	●	●	●	
<b>LN3</b>	ø5/32" One-touch fitting	●	—	—	
<b>LN7</b>		●	●	—	
<b>LN9</b>	ø5/16" One-touch fitting	—	●	—	
<b>BN3</b>	ø5/32" One-touch fitting	●	—	—	
<b>BN7</b>	ø1/4" One-touch fitting	●	●	—	
<b>BN9</b>	ø5/16" One-touch fitting	—	●	—	
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—	
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø3/8"	

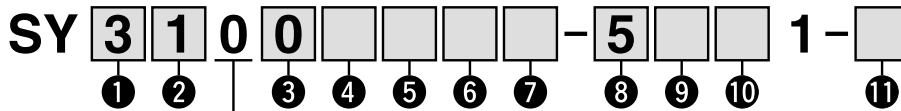
Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 141 to 143).

\* Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

\* The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Base mounted

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

5	24 VDC
6	12 VDC

### 9 Light/surge voltage suppressor and common specification

Nil	Without light/surge voltage suppressor (Non-polar)
R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override

<b>Nil:</b> Non-locking push type	<b>D:</b> Push-turn locking slotted type	<b>F:</b> Slide locking type
--------------------------------------	---	---------------------------------

### 11 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to page 136 for part numbers of the base gasket and mounting screw.

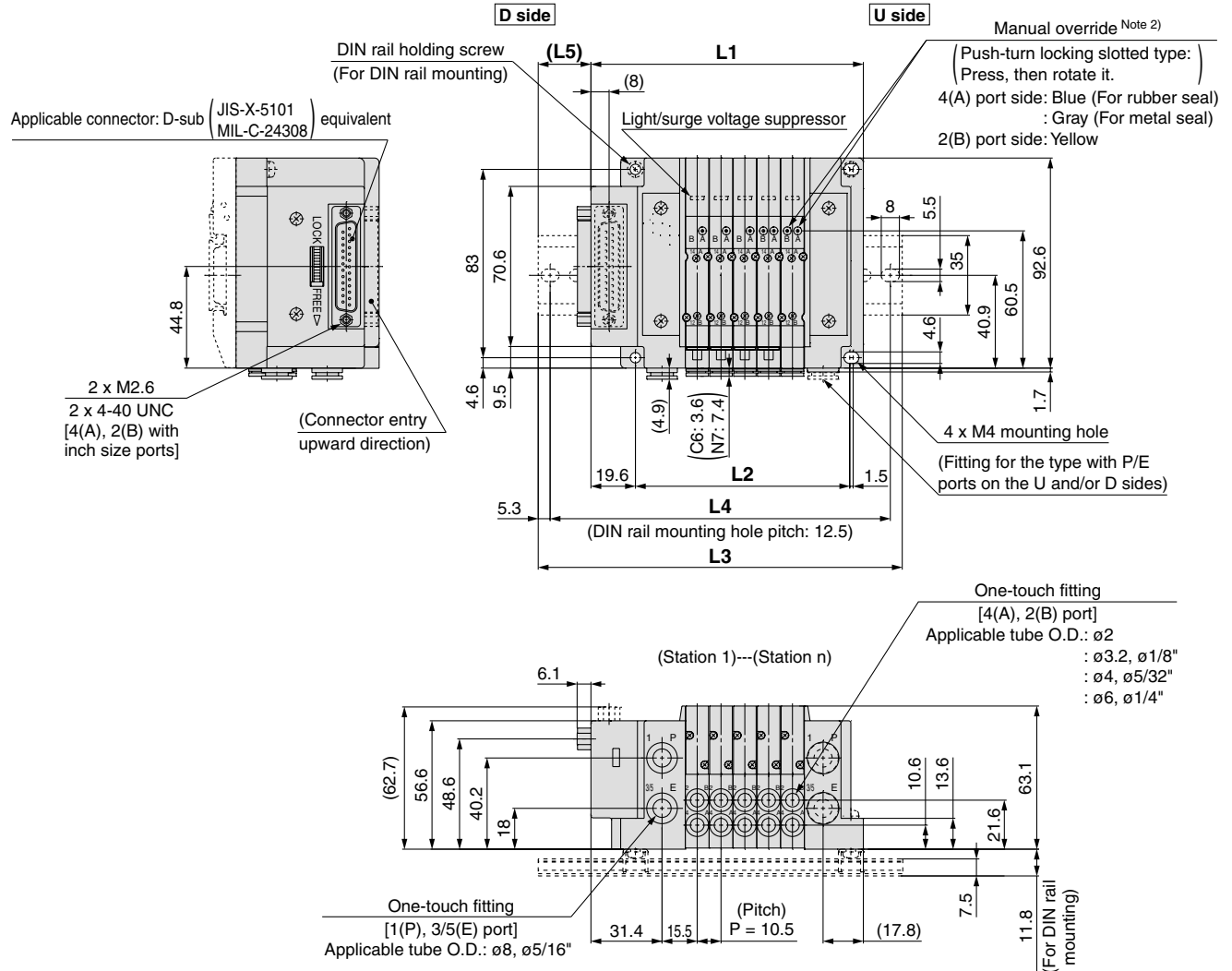
\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

Protective class class III (Mark: )

# Series SY3000/5000

## Dimensions: Type 10/D-sub Connector/Series SY3000

SS5Y3-10F<sub>2</sub> - Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$  -  $\begin{matrix} C2 \\ C3 \\ C4 \\ C6, N7 \end{matrix}$  N1 (D)  
N3



Note 1) These figures show the "SS5Y3-10F2-05D-C6".

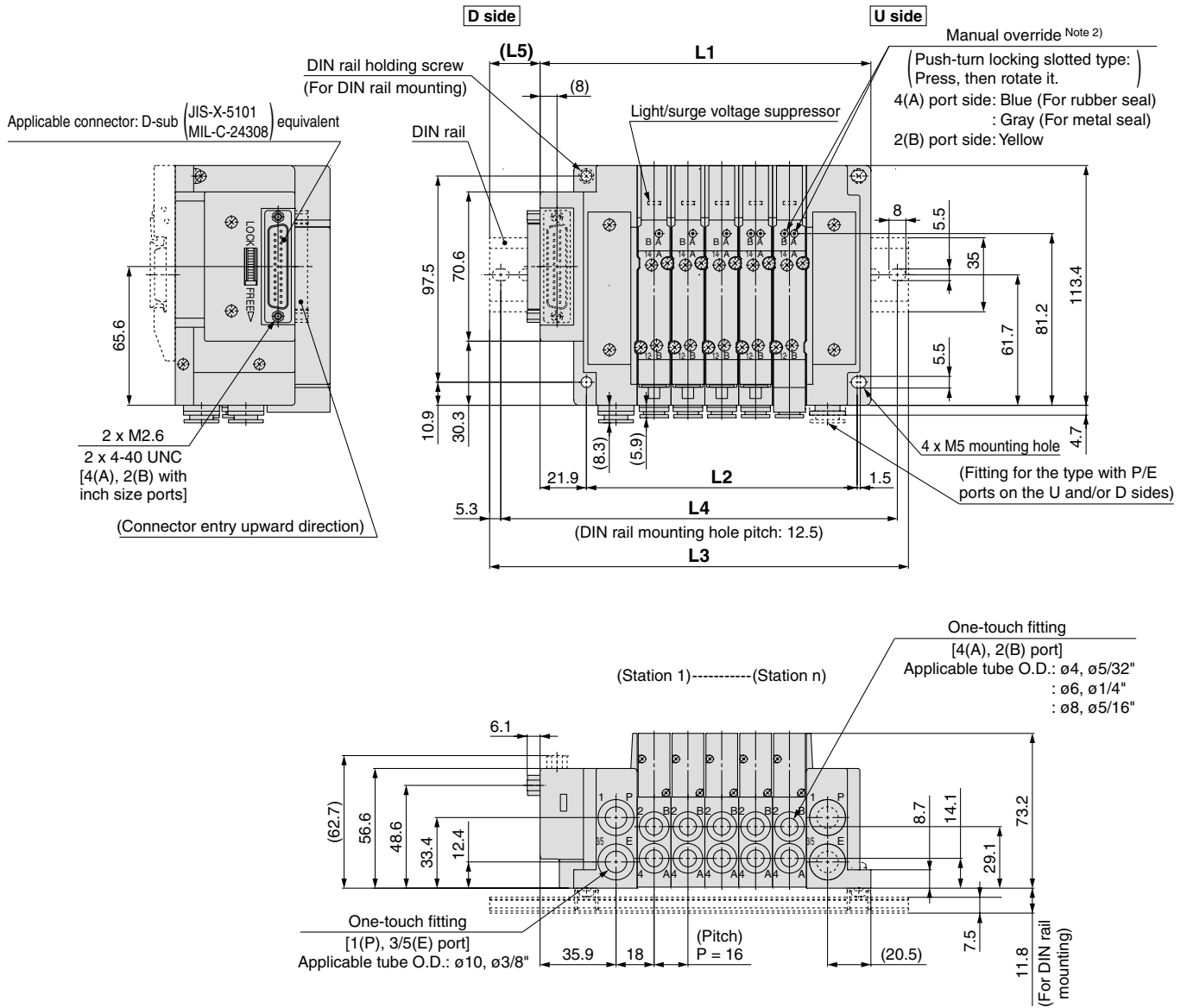
Note 2) Refer to page 121 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 124 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>L1</b>	88.6	99.1	109.6	120.1	130.6	141.1	151.6	162.1	172.6	183.1	193.6	204.1	214.6	225.1	235.6	246.1	256.6	267.1	277.6	288.1	298.6	309.1	319.6
<b>L2</b>	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5	294
<b>L3</b>	123	135.5	148	160.5	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5	298	298	310.5	323	335.5	348	360.5
<b>L4</b>	112.5	125	137.5	150	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5	275	287.5	287.5	300	312.5	325	337.5	350
<b>L5</b>	20.5	21.5	22.5	23.5	18	19	20	21	22	23	18	19	20	21	22	23	23.5	18.5	19.5	20.5	21.5	22.5	23.5

## Dimensions: Type 10/D-sub Connector/Series SY5000

SS5Y5-10F<sub>2</sub>- Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$



Note 1) These figures show the "SS5Y5-10F2-05D-C8".

Note 2) Refer to page 122 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 125 for dimensions of A or B port top-ported type.

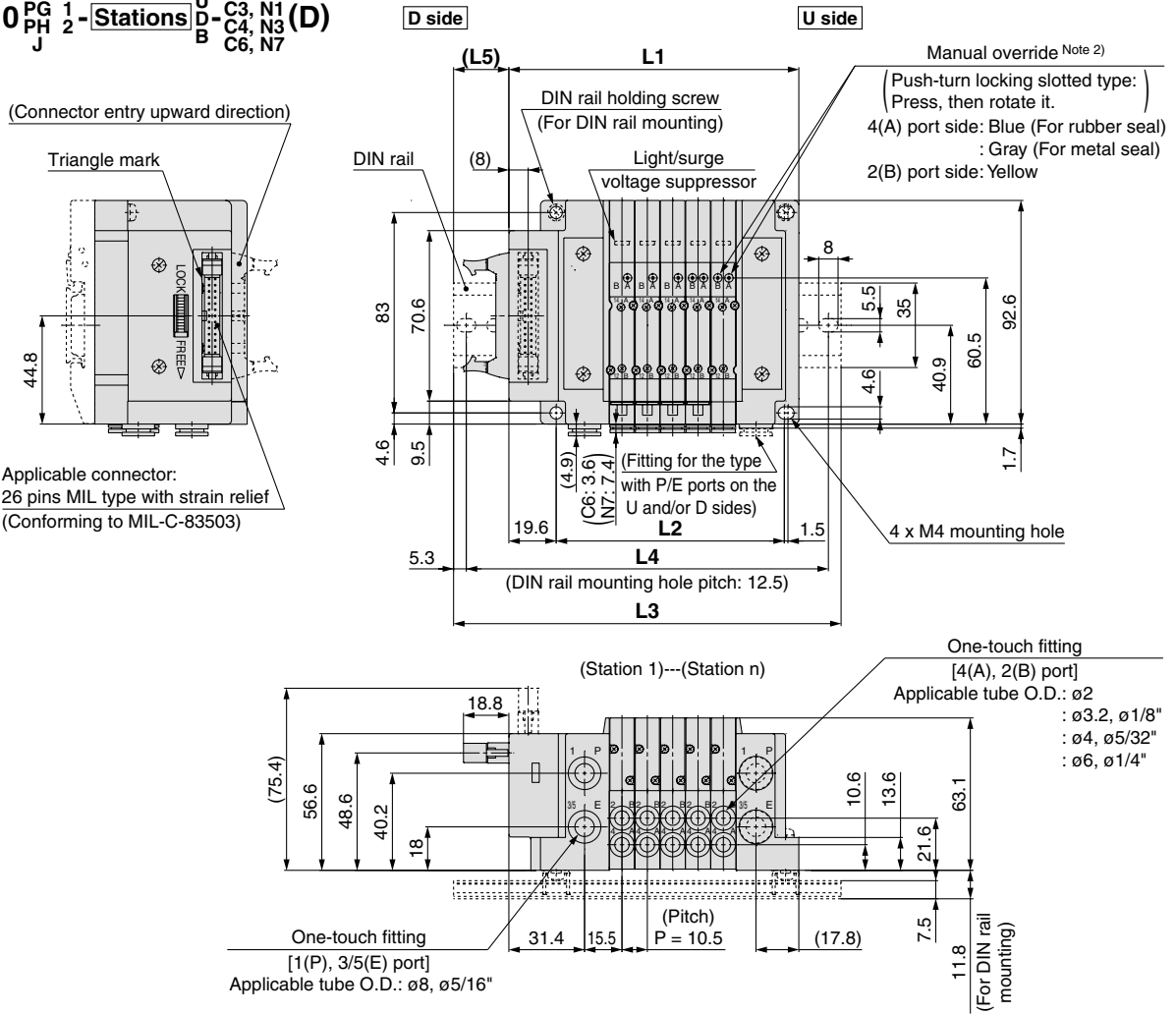
n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>L1</b>	108.4	124.4	140.4	156.4	172.4	188.4	204.4	220.4	236.4	252.4	268.4	284.4	300.4	316.4	332.4	348.4	364.4	380.4	396.4	412.4	428.4	444.4	460.4
<b>L2</b>	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
<b>L3</b>	148	160.5	173	198	210.5	223	235.5	260.5	273	285.5	298	323	335.5	348	373	385.5	398	410.5	435.5	448	460.5	485.5	498
<b>L4</b>	137.5	150	162.5	187.5	200	212.5	225	250	262.5	275	287.5	312.5	325	337.5	362.5	375	387.5	400	425	437.5	450	475	487.5
<b>L5</b>	23	21	19.5	24	22	20.5	18.5	23	21.5	19.5	18	22.5	20.5	19	23.5	21.5	20	18	22.5	21	19	23.5	22

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
**EX500 EX600 EX250 EX260 EX126 EX120**  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

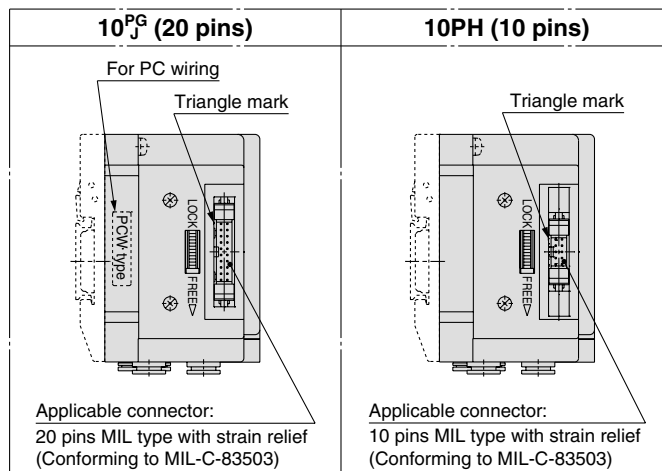
# Series SY3000/5000

## Dimensions: Type 10/Flat Ribbon Cable/Series SY3000

SS5Y3-10 <sup>P</sup>PG 1 - Stations <sup>U</sup>D - <sup>C2</sup>C3, N1 (D)  
<sup>J</sup>PH 2 - <sup>B</sup>C4, N3  
<sup>C6, N7</sup>

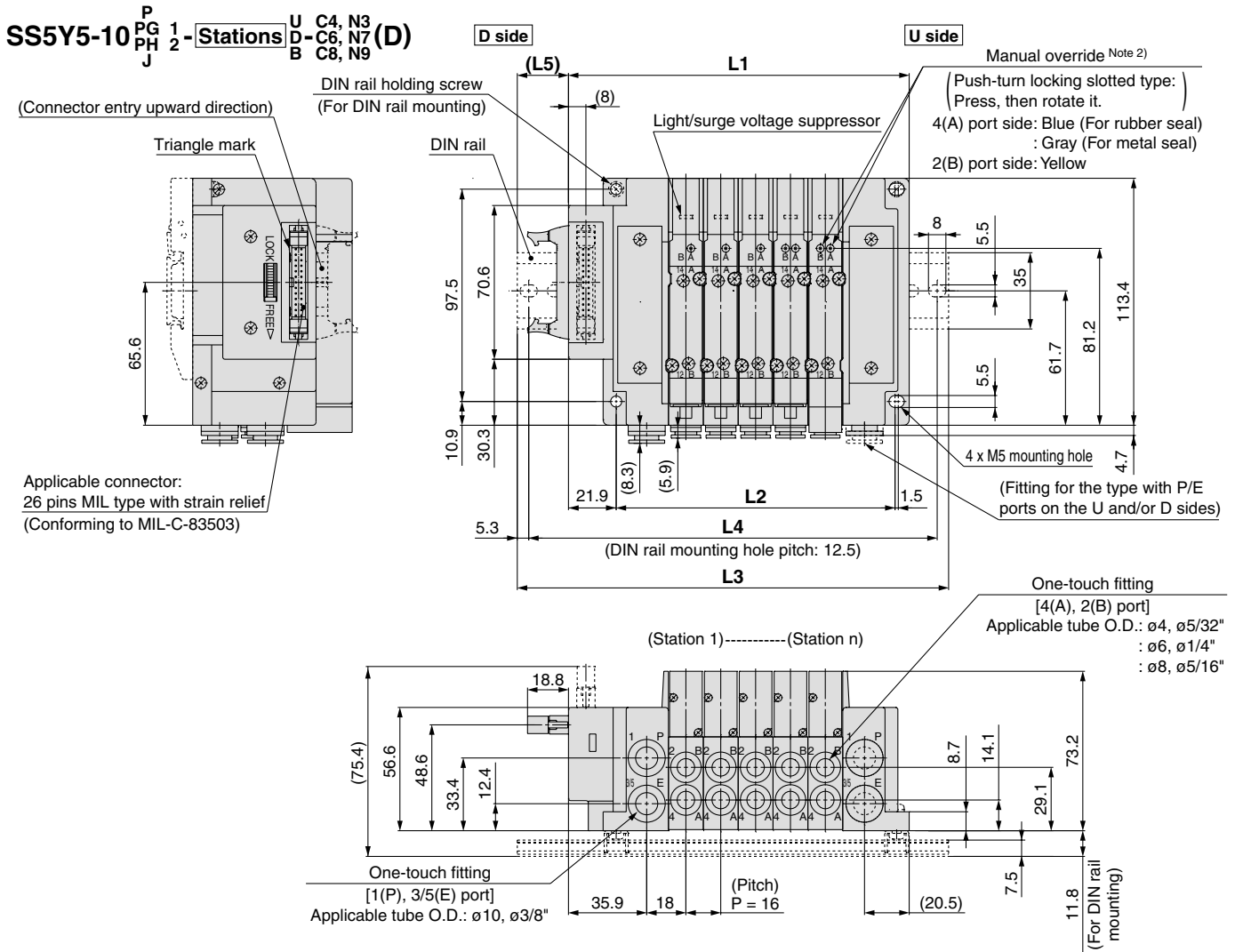


Note 1) These figures show the "SS5Y3-10P2-05D-C6".  
 Note 2) Refer to page 121 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 Note 3) Refer to page 124 for dimensions of A or B port top-ported type.  
 Note 4) Only connectors are different for 10PG, 10PH and 10J. L1 to L5 dimensions are the same as 10P type.

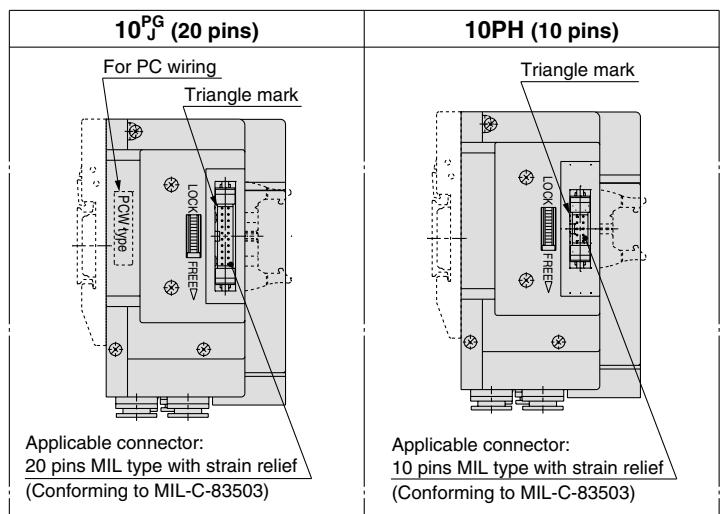


n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>L1</b>	88.6	99.1	109.6	120.1	130.6	141.1	151.6	162.1	172.6	183.1	193.6	204.1	214.6	225.1	235.6	246.1	256.6	267.1	277.6	288.1	298.6	309.1	319.6
<b>L2</b>	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5	294
<b>L3</b>	123	135.5	148	160.5	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5	298	298	310.5	323	335.5	348	360.5
<b>L4</b>	112.5	125	137.5	150	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5	275	287.5	287.5	300	312.5	325	337.5	350
<b>L5</b>	20.5	21.5	22.5	23.5	18	19	20	21	22	23	18	19	20	21	22	23	23.5	18.5	19.5	20.5	21.5	22.5	23.5

## Dimensions: Type 10/Flat Ribbon Cable/Series SY5000



Note 1) These figures show the "SS5Y5-10P2-05D-C8".  
 Note 2) Refer to page 122 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 Note 3) Refer to page 125 for dimensions of A or B port top-ported type.  
 Note 4) Only connectors are different for 10PG, 10PH and 10J.  
 L1 to L5 dimensions are the same as 10P type.



n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>L1</b>	108.4	124.4	140.4	156.4	172.4	188.4	204.4	220.4	236.4	252.4	268.4	284.4	300.4	316.4	332.4	348.4	364.4	380.4	396.4	412.4	428.4	444.4	460.4
<b>L2</b>	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
<b>L3</b>	148	160.5	173	198	210.5	223	235.5	260.5	273	285.5	298	323	335.5	348	373	385.5	398	410.5	435.5	448	460.5	485.5	498
<b>L4</b>	137.5	150	162.5	187.5	200	212.5	225	250	262.5	275	287.5	312.5	325	337.5	362.5	375	387.5	400	425	437.5	450	475	487.5
<b>L5</b>	23	21	19.5	24	22	20.5	18.5	23	21.5	19.5	18	22.5	20.5	19	23.5	21.5	20	18	22.5	21	19	23.5	22

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Base  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
**EX500**  
**EX600**  
**EX250**  
**EX260**  
**EX126**  
**EX120**  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Plug-in Connector Connecting Base

D-sub Connector

Flat Ribbon Cable

PC Wiring

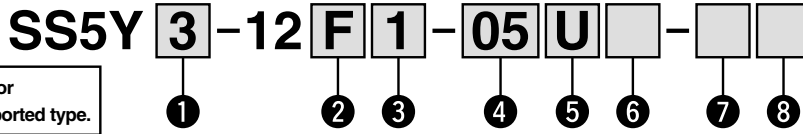
Type 12  
Top Ported

# Series SY3000/5000



RoHS

## How to Order Manifold

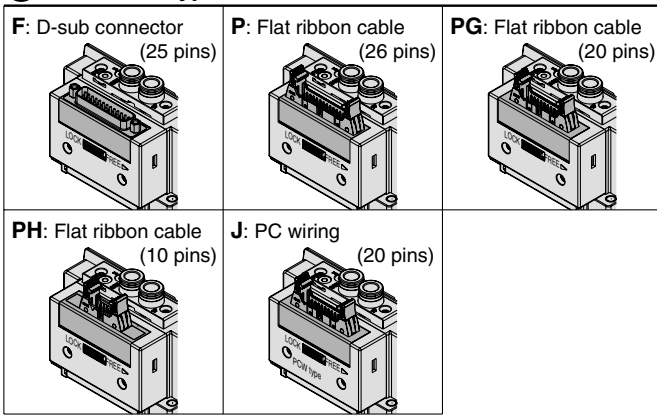


Refer to pages 124 and 125 for dimensions of Type 12/Top ported type.

### 1 Series

3	SY3000
5	SY5000

### 2 Connector type

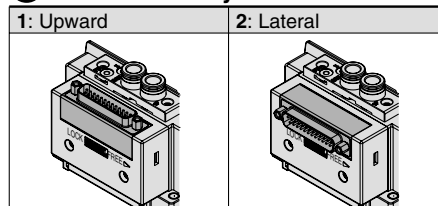


### 5 P, E port entry

U Note)	U side (2 to 10 stations)
D Note)	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

Note) 6 For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### 3 Connector entry direction



### 4 Valve stations

#### F: D-sub connector (25 pins)

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
12	12 stations	Specified layout Note 2) (Available up to 24 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

#### P: Flat ribbon cable (26 pins)

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
12	12 stations	Specified layout Note 2) (Available up to 24 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

#### PG: Flat ribbon cable (20 pins)

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
09	9 stations	Specified layout Note 2) (Available up to 18 solenoids)
02	2 stations	
⋮	⋮	
18	18 stations	

#### PH: Flat ribbon cable (10 pins)

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
04	4 stations	Specified layout Note 2) (Available up to 8 solenoids)
02	2 stations	
⋮	⋮	
08	8 stations	

#### J: PC wiring (20 pins)

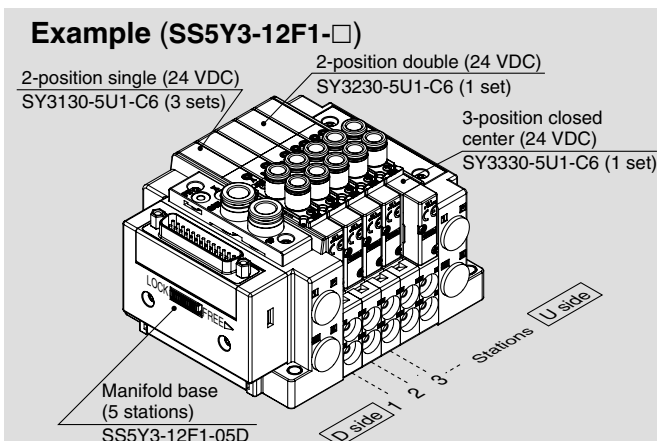
Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	Specified layout Note 2) (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

## How to Order Manifold Assembly



SS5Y3-12F1-05D ..... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### 6 SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

### 7 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

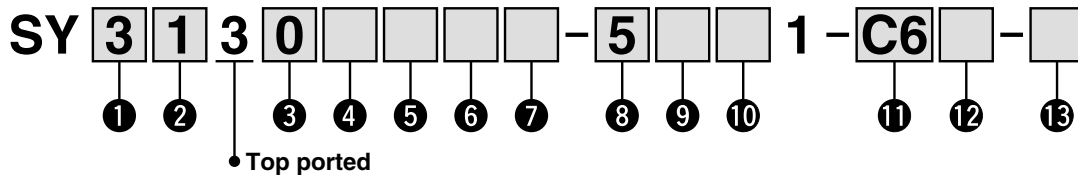
\* For N, sizes are in inches.

### 8 Mounting

Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations Specify a longer rail than the
⋮	⋮
D24	For 24 stations standard length.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

5	24 VDC
6	12 VDC

### 9 Light/surge voltage suppressor and common specification

Nil	Without light/surge voltage suppressor (Non-polar)
R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override

Nil: Non-locking push type	D: Push-turn locking slotted type	F: Slide locking type
----------------------------	-----------------------------------	-----------------------

### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

#### One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

### 12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

### 13 Type of mounting screw

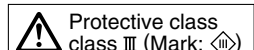
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 136 for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.

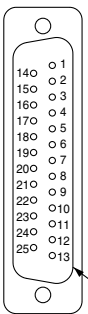


Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 EX510  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500 EX500  
 EX600 EX600  
 EX250 EX250  
 EX260 EX260  
 EX126 EX126  
 EX120 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Series SY3000/5000

## Electrical Wiring Specifications

**D-sub connector**



If alignment is not specified, the internal wiring is double wiring (connected to SOL. a and SOL. b) regardless of number of stations, valve and option types.

**Lead wire color for D-sub connector assembly (AXT100-DS25-015, 030, 050)**

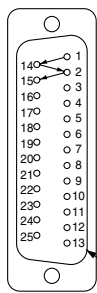
Terminal no.	Polarity	Lead wire color	Dot marking
Station 1 SOL.a	(-) (+)	Black	None
Station 1 SOL.b	(-) (+)	Yellow	Black
Station 2 SOL.a	(-) (+)	Brown	None
Station 2 SOL.b	(-) (+)	Pink	Black
Station 3 SOL.a	(-) (+)	Red	None
Station 3 SOL.b	(-) (+)	Blue	White
Station 4 SOL.a	(-) (+)	Orange	None
Station 4 SOL.b	(-) (+)	Purple	None
Station 5 SOL.a	(-) (+)	Yellow	None
Station 5 SOL.b	(-) (+)	Gray	None
Station 6 SOL.a	(-) (+)	Pink	None
Station 6 SOL.b	(-) (+)	Orange	Black
Station 7 SOL.a	(-) (+)	Blue	None
Station 7 SOL.b	(-) (+)	Purple	White
Station 8 SOL.a	(-) (+)	Red	White
Station 8 SOL.b	(-) (+)	Brown	White
Station 9 SOL.a	(-) (+)	Gray	Black
Station 9 SOL.b	(-) (+)	Pink	Red
Station 10 SOL.a	(-) (+)	White	Black
Station 10 SOL.b	(-) (+)	Gray	Red
Station 11 SOL.a	(-) (+)	White	Red
Station 11 SOL.b	(-) (+)	Black	White
Station 12 SOL.a	(-) (+)	Yellow	Red
Station 12 SOL.b	(-) (+)	White	None
COM.	(+) (-)	Orange	Red

Positive common Negative common

Note) When using a valve with no polarity, either positive common or negative common can be used.

## Specified Layout

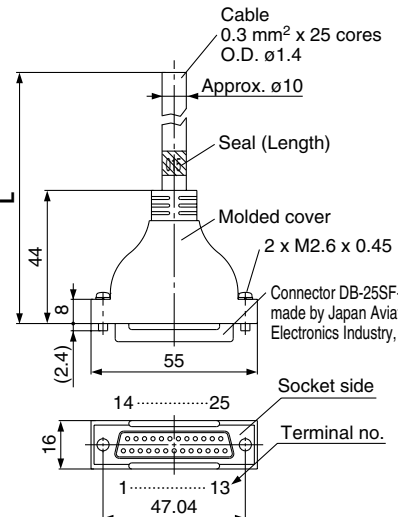
(25 pins)



Mixed wiring of single and double wiring can be specified on the manifold specification sheet. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 24 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.

## Cable Assembly

**015  
AXT100-DS25-030  
050**



**Lead wire color for D-sub connector cable assembly by terminal number**

Terminal no.	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Gray	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	None

**D-sub connector cable assembly**

Cable length (L)	Assembly part no.	Note
1.5 m	AXT100-DS25-015	Cable 0.3 mm <sup>2</sup> x 25 cores
3 m	AXT100-DS25-030	
5 m	AXT100-DS25-050	

\* When using a standard commercial connector, use a 25-pin type female connector conforming to MIL-C-24308.  
\* Cannot be used for movable wiring.  
\* Lengths other than the above are also available. Please contact SMC for details.

**Electrical characteristics**

Item	Property
Conductor resistance Ω/km, 20°C	65 or less
Voltage limit V, 1 minute, AC	1000
Insulation resistance MΩ/km, 20°C	5 or more

**Connector Manufacturers' Example**

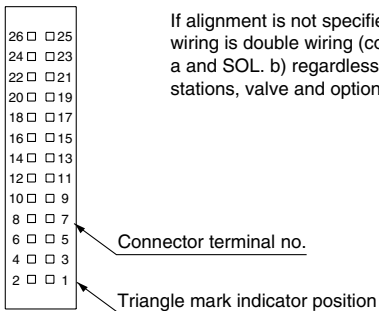
- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Hirose Electric Co., Ltd.

Note) The minimum bending radius of the D-sub connector cable is 20 mm.



## Electrical Wiring Specifications

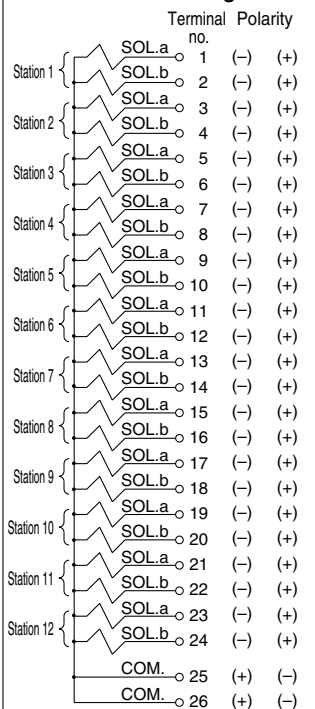
### Flat ribbon cable connector



If alignment is not specified, the internal wiring is double wiring (connected to SOL.a and SOL.b) regardless of number of stations, valve and option types.

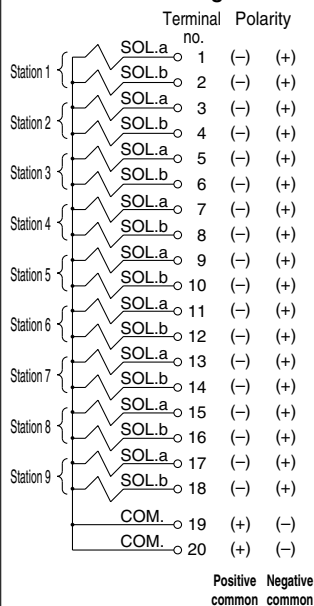
### P: Flat ribbon cable (26 pins)

#### <Double wiring>



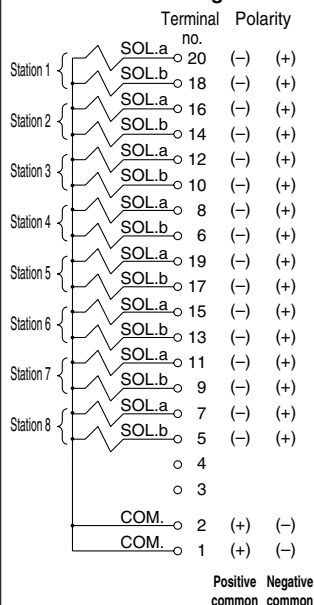
### PG: Flat ribbon cable (20 pins)

#### <Double wiring>



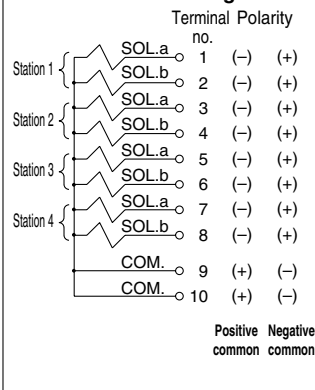
### J: Flat ribbon cable (20 pins) PC wiring

#### <Double wiring>



### PH: Flat ribbon cable (10 pins)

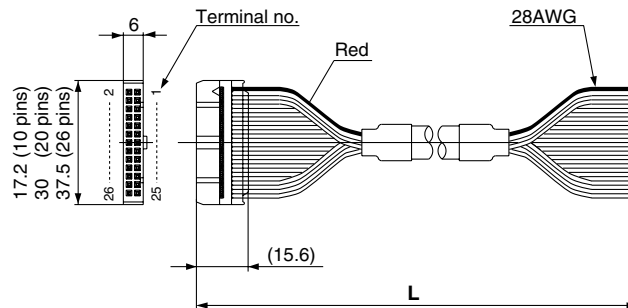
#### <Double wiring>



Note) When using a valve with no polarity, either positive common or negative common can be used.

## Cable Assembly

10 1  
AXT100-FC20-2  
26 3



### Flat ribbon cable connector assembly

Cable length (L)	Assembly part no.		
	26 pins	20 pins	10 pins
1.5 m	AXT100-FC26-1	AXT100-FC20-1	AXT100-FC10-1
3 m	AXT100-FC26-2	AXT100-FC20-2	AXT100-FC10-2
5 m	AXT100-FC26-3	AXT100-FC20-3	AXT100-FC10-3

\* When using a standard commercial connector, use a 26-pin, 20-pin or 10-pin type connector conforming to MIL-C-83503 with strain relief.

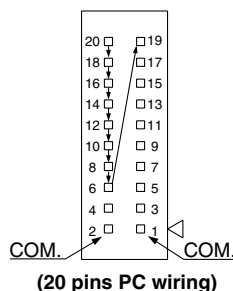
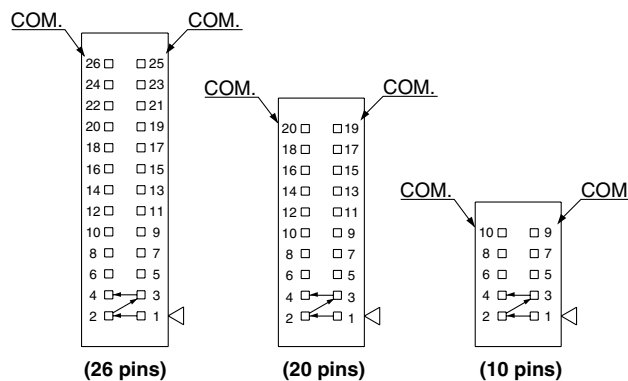
\* Cannot be used for movable wiring.

\* Lengths other than the above are also available. Please contact SMC for details.

### Connector Manufacturers' Example

- Hirose Electric Co., Ltd.
- Sumitomo 3M Limited
- Fujitsu, Ltd.
- Japan Aviation Electronics Industry, Ltd.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

## Specified Layout



Mixed wiring of single and double wiring can be specified on the manifold specification. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 24 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.

Type 10  
Side Ported

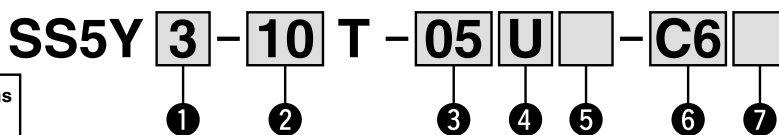
Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

Terminal Block Box

# Series SY3000/5000 C €

## How to Order Manifold



Refer to page 123 for dimensions of Type 11/Bottom ported type.

### 1 Series

3	SY3000
5	SY5000

### 2 Type

10	Side ported
11	Bottom ported*

\* The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to Plug-in Mixed Mounting Type Manifold (from page 127).

### 3 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
10	10 stations	
02	2 stations	Specified layout Note 2) (Available up to 20 solenoids)
⋮	⋮	
20	20 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications with the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

### 4 P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 20 stations)

### 5 SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

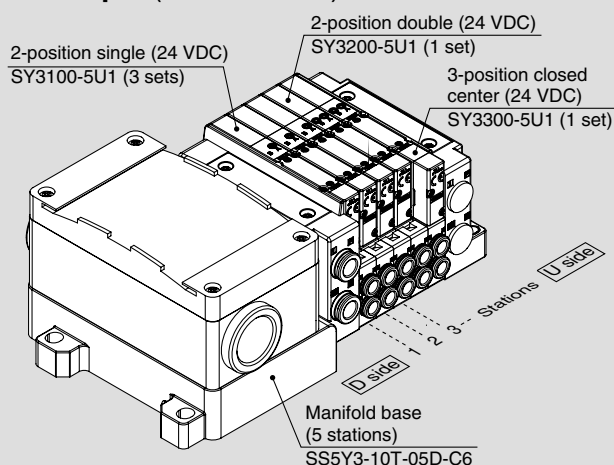
\* 3/5(E) port is plugged for the built-in silencer type.

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for 6.

## How to Order Manifold Assembly

### Example (SS5Y3-10T-□)



SS5Y3-10T-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)

\*SY3100-5U1 ..... 3 sets (2-position single part no.)

\*SY3200-5U1 ..... 1 set (2-position double part no.)

\*SY3300-5U1 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note) When mixing top ported configurations, select from page 64. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 7 Mounting and Option

Symbol	Mounting	Option
Nil	Direct mounting	None
AA		Name plate (With station number)
BA		Name plate (Without station number)
D□	DIN rail mounting	Without name plate
A□		Name plate (With station number)
B□		Name plate (Without station number)

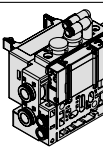
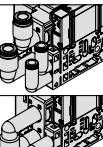
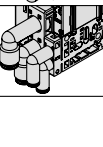
Note 1) Enter the number of stations inside □. (Refer to "DIN Rail Option" below.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

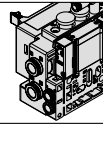
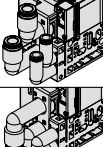
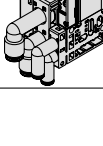
#### DIN Rail Option

Nil	Direct mounting	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
⋮	⋮	
24	For 24 stations	

## 6 A, B port size (Metric)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported	
		SY3000	SY5000	SY5000	
<b>C2</b>	ø2 One-touch fitting	●	—	—	
<b>C3</b>	ø3.2 One-touch fitting	●	—	—	
<b>C4</b>	ø4 One-touch fitting	●	●	●	
<b>C6</b>	ø6 One-touch fitting	●	●	●	
<b>C8</b>	ø8 One-touch fitting	—	●	●	
<b>CM*</b>	Straight port, mixed sizes	●	●	●	
<b>L4</b>	Upward ø4 One-touch fitting	●	●	—	
<b>L6</b>		●	●	—	
<b>L8</b>		—	●	—	
<b>B4</b>		●	●	—	
<b>B6</b>	Downward ø6 One-touch fitting	●	●	—	
<b>B8</b>	ø8 One-touch fitting	—	●	—	
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—	
P, E port size (One-touch fittings)		ø8	ø10	ø10	

## A, B port size (Inch)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported	
		SY3000	SY5000	SY5000	
<b>N1</b>	ø1/8" One-touch fitting	●	—	—	
<b>N3</b>	ø5/32" One-touch fitting	●	●	●	
<b>N7</b>	ø1/4" One-touch fitting	●	●	●	
<b>N9</b>	ø5/16" One-touch fitting	—	●	●	
<b>CM*</b>	Straight port, mixed sizes	●	●	●	
<b>LN3</b>	Upward ø5/32" One-touch fitting	●	—	—	
<b>LN7</b>		●	●	—	
<b>LN9</b>		—	●	—	
<b>BN3</b>	Downward ø5/32" One-touch fitting	●	—	—	
<b>BN7</b>		●	●	—	
<b>BN9</b>		—	●	—	
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—	
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø3/8"	

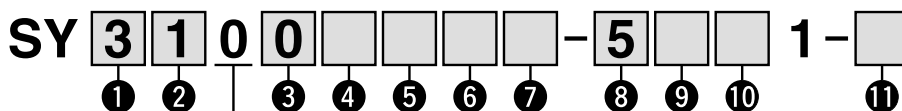
Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 141 to 143).

\* Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

\* The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Base mounted

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

5	24 VDC
6	12 VDC

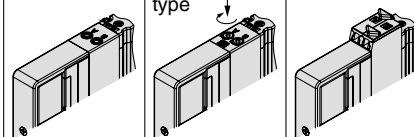
### 9 Light/surge voltage suppressor and common specification

Nil	Without light/surge voltage suppressor (Non-polar)
R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override

Nil:	Non-locking push type	D:	Push-turn locking slotted type	F:	Slide locking type
------	-----------------------	----	--------------------------------	----	--------------------



### 11 Type of mounting screw

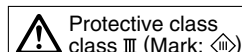
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 136 for part numbers of the base gasket and mounting screw.

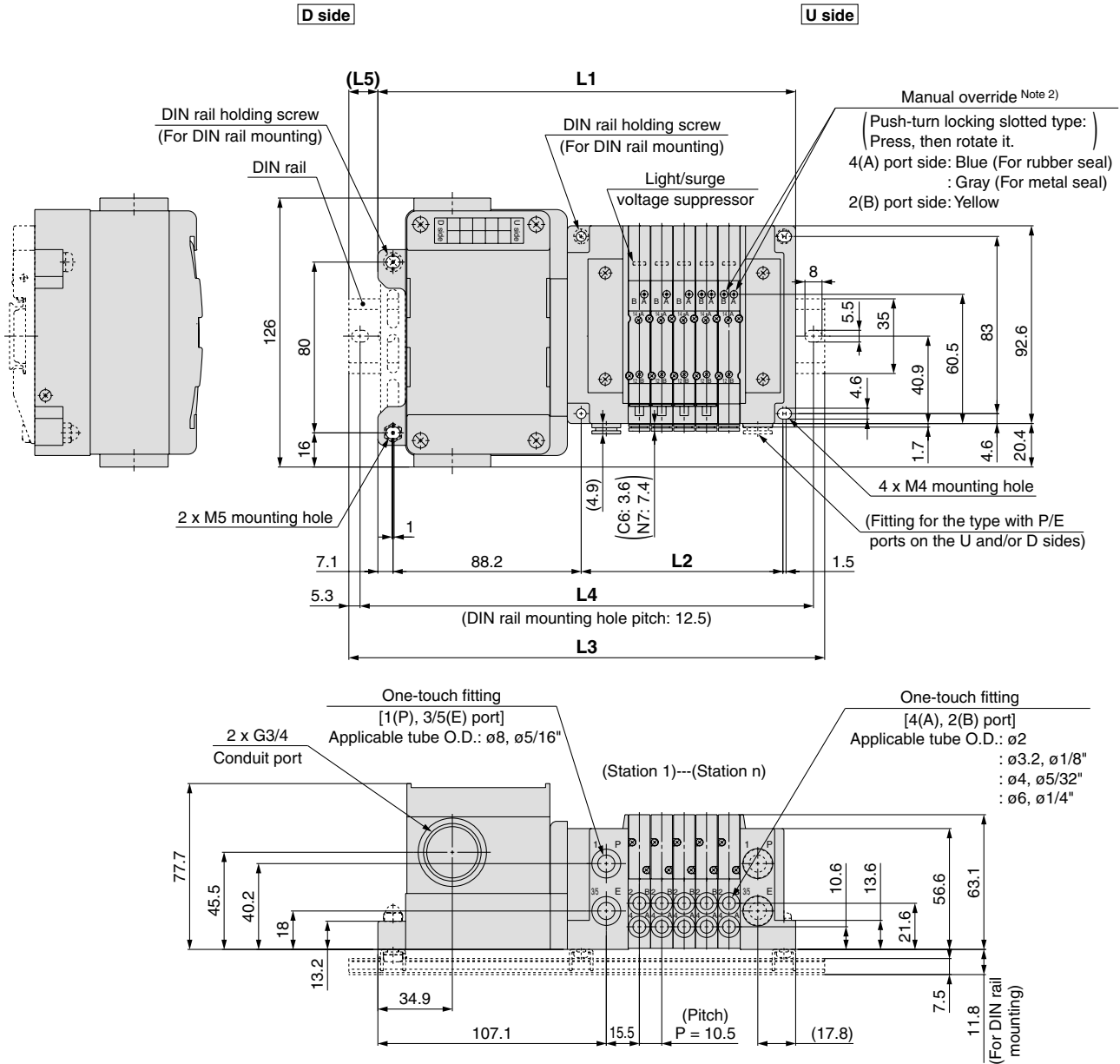
\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.



# Series SY3000/5000

## Dimensions: Type 10/Terminal Block Box/Series SY3000

SS5Y3-10T- Stations  $\begin{matrix} \text{U} & \text{C2} \\ \text{D} & \text{C3, N1} \\ \text{B} & \text{C4, N3} \\ & \text{C6, N7} \end{matrix}$  (D)



Note 1) These figures show the "SS5Y3-10T-05D-C6".

Note 2) Refer to page 121 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 124 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b>L1</b>	164.3	174.8	185.3	195.8	206.3	216.8	227.3	237.8	248.3	258.8	269.3	279.8	290.3	300.8	311.3	321.8	332.3	342.8	353.3
<b>L2</b>	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252
<b>L3</b>	198	198	210.5	223	235.5	248	260.5	273	273	285.5	298	310.5	323	335.5	335.5	348	360.5	373	385.5
<b>L4</b>	187.5	187.5	200	212.5	225	237.5	250	262.5	262.5	275	287.5	300	312.5	325	325	337.5	350	362.5	375
<b>L5</b>	17	11.5	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13	14	15	16



# Plug-in Connector Connecting Base

## Terminal Block Box

Type 12  
Top Ported

# Series SY3000/5000 C €

### How to Order Manifold

SS5Y **3** - 12T - **05** **U** **□** - **□** **□**

①
②
③
④
⑤
⑥

Refer to pages 124 and 125 for dimensions of Type 12/Top ported type.

#### ① Series

<b>3</b>	SY3000
<b>5</b>	SY5000

#### ③ P, E port entry

<b>U</b> Note)	U side (2 to 10 stations)
<b>D</b> Note)	D side (2 to 10 stations)
<b>B</b>	Both sides (2 to 20 stations)

Note) ④ For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

#### ② Valve stations

Symbol	Stations	Note
<b>02</b>	2 stations	Double wiring Note 1)
⋮	⋮	
<b>10</b>	10 stations	
<b>02</b>	2 stations	Specified layout Note 2) (Available up to 20 solenoids)
⋮	⋮	
<b>20</b>	20 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

#### ④ SUP/EXH block assembly

<b>Nil</b>	Internal pilot
<b>S</b>	Internal pilot, Built-in silencer
<b>R</b>	External pilot

\* For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

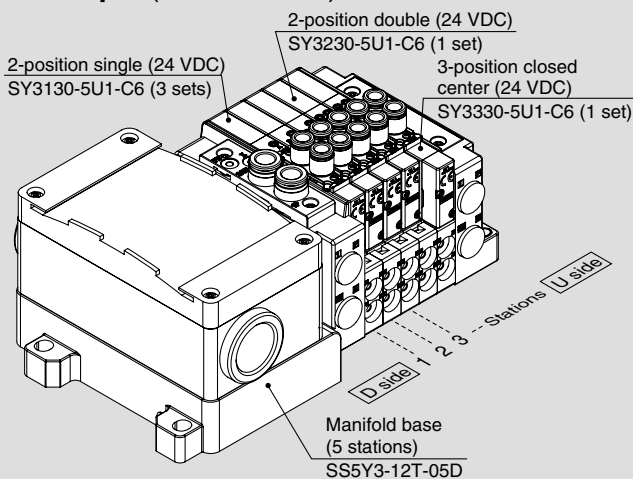
#### ⑤ P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
<b>Nil</b>	ø8	ø10
<b>N</b>	ø5/16"	ø3/8"

\* For N, sizes are in inches.

### How to Order Manifold Assembly

#### Example (SS5Y3-12T-□)



SS5Y3-12T-05D ..... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

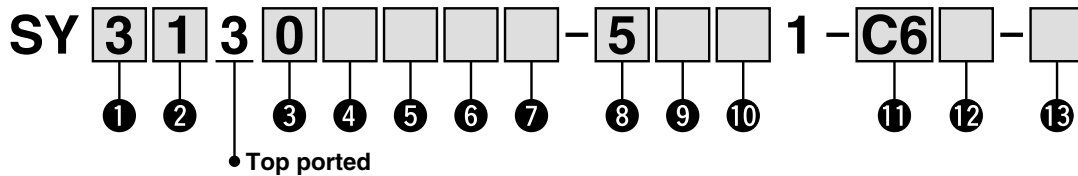
#### ⑥ Mounting

<b>Nil</b>	Direct mounting
<b>D</b>	DIN rail mounting (With DIN rail)
<b>D0</b>	DIN rail mounting (Without DIN rail)
<b>D3</b>	For 3 stations
⋮	⋮
<b>D20</b>	For 20 stations

Specify a longer rail than the standard length.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

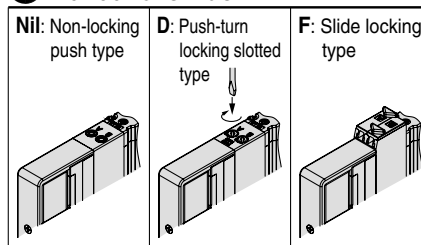
5	24 VDC
6	12 VDC

### 9 Light/surge voltage suppressor and common specification

Nil	Without light/surge voltage suppressor (Non-polar)
R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override



### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

#### One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

### 12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

### 13 Type of mounting screw

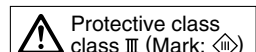
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 136 for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.



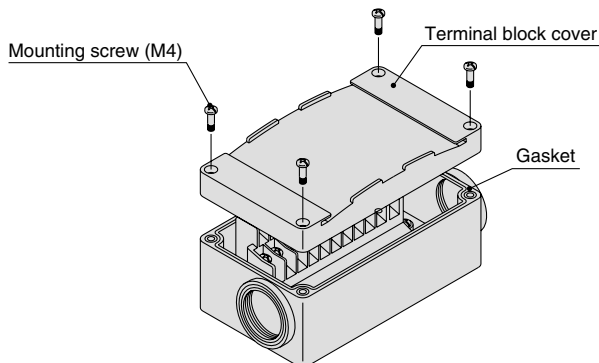
Specifications  
 Construction  
 Replacement Parts  
 Plug-in Base  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 EX510  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500  
 EX600  
 EX250  
 EX260  
 EX126  
 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Series SY3000/5000

## Terminal Block Connection

### Step 1. Removing the terminal block cover

Loosen the 4 mounting screws (M4) to remove the terminal block cover.



### Step 3. Mounting the terminal block cover

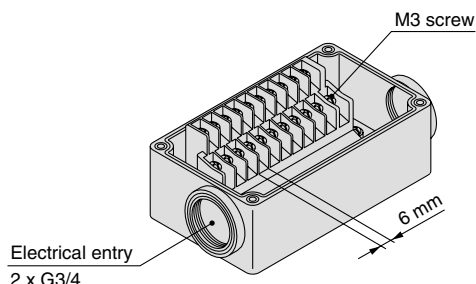
Securely tighten the screws to the torque shown in the below table only after confirming that the gasket is installed correctly.

Proper tightening torque N·m
0.7 to 1.2

### Step 2. The below diagram shows the terminal block wiring.

**All stations are provided with double wiring regardless of the mounted valves.**

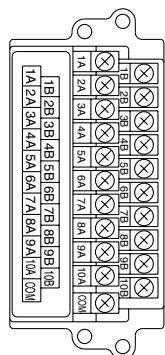
Connect each wire to the power supply side, according to the markings provided inside the terminal block.



- Applicable crimped terminal: 1.25-3S, 1.25Y-3, 1.25Y-3N, 1.25Y-3.5
- Name plate: VVQ5000-N-T
- Drip-proof plug assembly (for G3/4): AXT100-B06A

## Electrical Wiring Specifications (IP67 compatible)

### Standard wiring



If alignment is not specified, the internal wiring is double wiring (connected to SOL. a and SOL. b) regardless of number of stations, valve and option types.



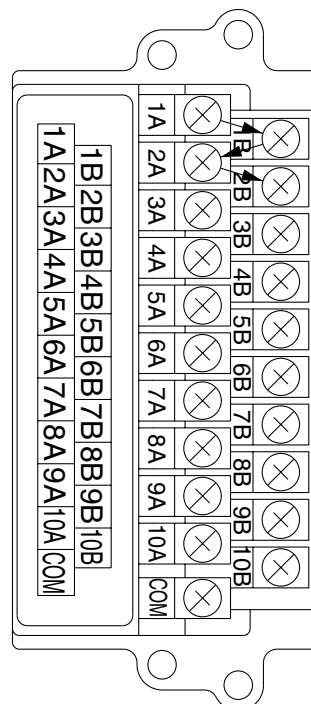
Note) When using a valve with no polarity, either positive common or negative common can be used.

	Terminal no.	Polarity
Station 1	SOL.a 1A	(-) (+)
	SOL.b 1B	(-) (+)
Station 2	SOL.a 2A	(-) (+)
	SOL.b 2B	(-) (+)
Station 3	SOL.a 3A	(-) (+)
	SOL.b 3B	(-) (+)
Station 4	SOL.a 4A	(-) (+)
	SOL.b 4B	(-) (+)
Station 5	SOL.a 5A	(-) (+)
	SOL.b 5B	(-) (+)
Station 6	SOL.a 6A	(-) (+)
	SOL.b 6B	(-) (+)
Station 7	SOL.a 7A	(-) (+)
	SOL.b 7B	(-) (+)
Station 8	SOL.a 8A	(-) (+)
	SOL.b 8B	(-) (+)
Station 9	SOL.a 9A	(-) (+)
	SOL.b 9B	(-) (+)
Station 10	SOL.a 10A	(-) (+)
	SOL.b 10B	(-) (+)
	COM.	(+) (-)

Positive common Negative common

### Specified Layout

Mixed wiring of single and double wiring can be specified on the manifold specification sheet. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 20 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.





Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

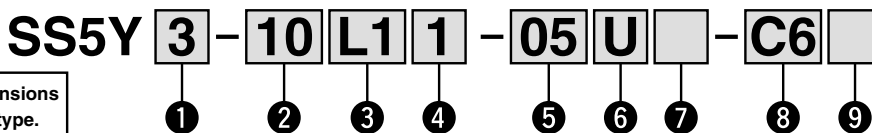
Lead Wire

# Series SY3000/5000



RoHS

## How to Order Manifold



Refer to page 123 for dimensions of Type 11/Bottom ported type.

### 1 Series

3	SY3000
5	SY5000

### 2 Type

10	Side ported
11	Bottom ported*

\* The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to Plug-in Mixed Mounting Type Manifold (from page 127).

### 3 Number of cores (Lead wire)

L1	34 cores
L2	17 cores
L3	9 cores

### 4 Lead wire length

1	0.6 m
2	1.5 m
3	3 m

### 5 Valve stations

#### (L1□)

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
16	16 stations	Specified layout Note 2) (Available up to 32 solenoids)
⋮	⋮	
24	24 stations	

#### (L3□)

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
04	4 stations	Specified layout Note 2) (Available up to 8 solenoids)
⋮	⋮	
08	8 stations	

#### (L2□)

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	Specified layout Note 2) (Available up to 16 solenoids)
⋮	⋮	
16	16 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

### 6 P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

### 7 SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* 3/5(E) port is plugged for the built-in silencer type.

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for 8.

### 9 Mounting and Option

Symbol	Mounting	Option
Nil	Direct mounting	None
AA		Name plate (With station number)
BA		Name plate (Without station number)
D□	DIN rail mounting	Without name plate
A□		Name plate (With station number)
B□		Name plate (Without station number)

Note 1) Enter the number of stations inside □. (Refer to "DIN Rail Option" below.)

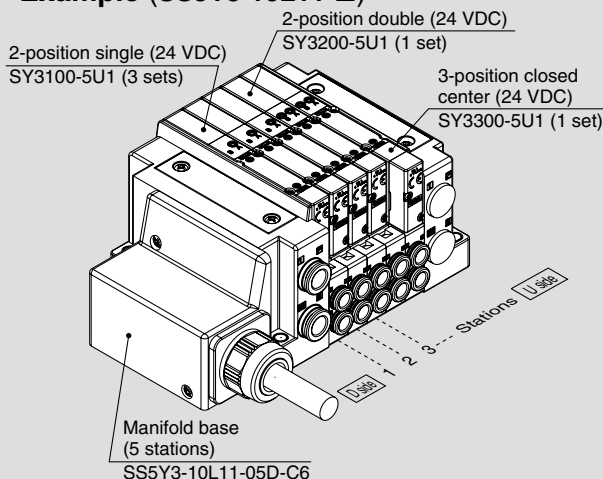
Note 2) Only direct mounting is available for Type 11 (Bottom ported).

#### DIN Rail Option

Symbol	Mounting	Option	
Nil	Direct mounting	Without DIN rail (with bracket)	
0			
3	For 3 stations	Specify a longer rail than the total length of specified stations.	
⋮			
24			For 24 stations

## How to Order Manifold Assembly

### Example (SS5Y3-10L11-□)



SS5Y3-10L11-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note) When mixing top ported configurations, select from page 72. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

## 8 A, B port size (Metric)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported	Image
		SY3000	SY5000	SY5000	
<b>C2</b>	ø2 One-touch fitting	●	—	—	
<b>C3</b>	ø3.2 One-touch fitting	●	—	—	
<b>C4</b>	ø4 One-touch fitting	●	●	●	
<b>C6</b>	ø6 One-touch fitting	●	●	●	
<b>C8</b>	ø8 One-touch fitting	—	●	●	
<b>CM*</b>	Straight port, mixed sizes	●	●	●	
<b>L4</b>	ø4 One-touch fitting	●	●	—	
<b>L6</b>		●	●	—	
<b>L8</b>		—	●	—	
<b>B4</b>		●	●	—	
<b>B6</b>	ø6 One-touch fitting	●	●	—	
<b>B8</b>		—	●	—	
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—	
P, E port size (One-touch fittings)		ø8	ø10	ø10	

## A, B port size (Inch)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported	Image
		SY3000	SY5000	SY5000	
<b>N1</b>	ø1/8" One-touch fitting	●	—	—	
<b>N3</b>	ø5/32" One-touch fitting	●	●	●	
<b>N7</b>	ø1/4" One-touch fitting	●	●	●	
<b>N9</b>	ø5/16" One-touch fitting	—	●	●	
<b>CM*</b>	Straight port, mixed sizes	●	●	●	
<b>LN3</b>	ø5/32" One-touch fitting	●	—	—	
<b>LN7</b>		●	●	—	
<b>LN9</b>	ø5/16" One-touch fitting	—	●	—	
<b>BN3</b>	ø5/32" One-touch fitting	●	—	—	
<b>BN7</b>	ø1/4" One-touch fitting	●	●	—	
<b>BN9</b>	ø5/16" One-touch fitting	—	●	—	
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—	
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø3/8"	

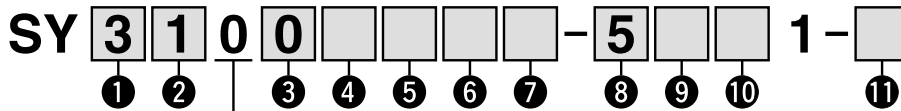
(Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 141 to 143).

\* Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

\* The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Base mounted

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

5	24 VDC
6	12 VDC

### 9 Light/surge voltage suppressor and common specification

Nil	Without light/surge voltage suppressor (Non-polar)
R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override

<b>Nil:</b> Non-locking push type	<b>D:</b> Push-turn locking slotted type	<b>F:</b> Slide locking type
--------------------------------------	---	---------------------------------

### 11 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

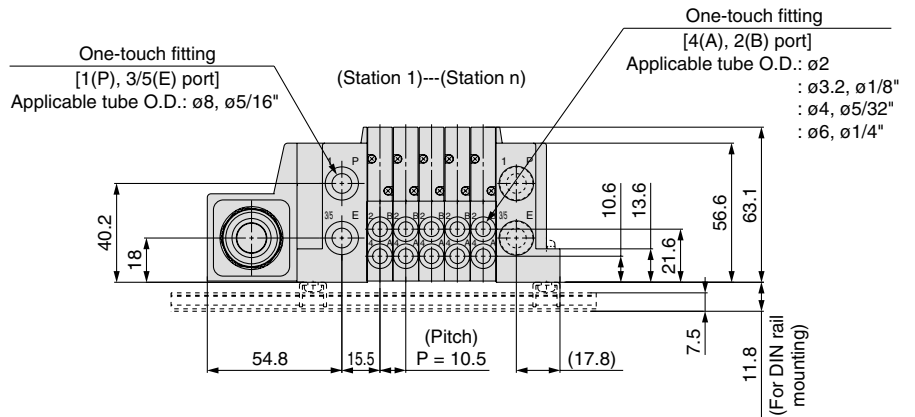
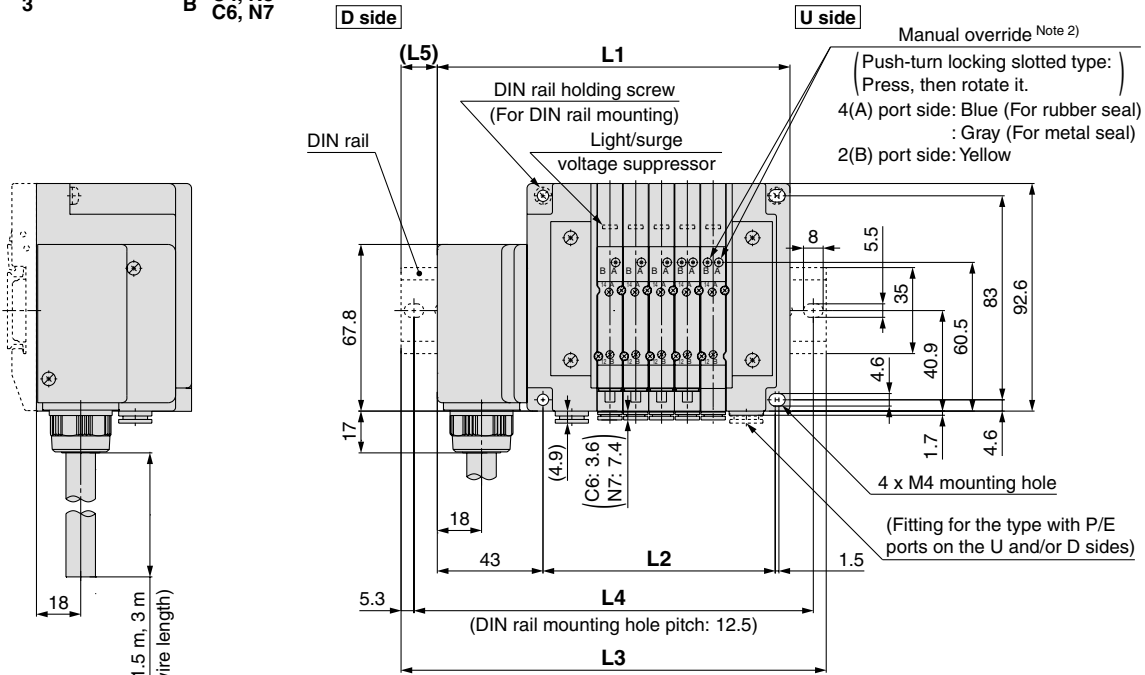
\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to page 136 for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

# Series SY3000/5000

## Dimensions: Type 10/Lead Wire/Series SY3000

SS5Y3-10L<sub>1</sub><sub>2</sub><sub>3</sub>□-Stations<sub>U</sub><sub>D</sub><sub>B</sub>-C<sub>2</sub><sub>3</sub><sub>4</sub><sub>N1</sub><sub>N3</sub><sub>(D)</sub>  
C<sub>6</sub><sub>N7</sub>

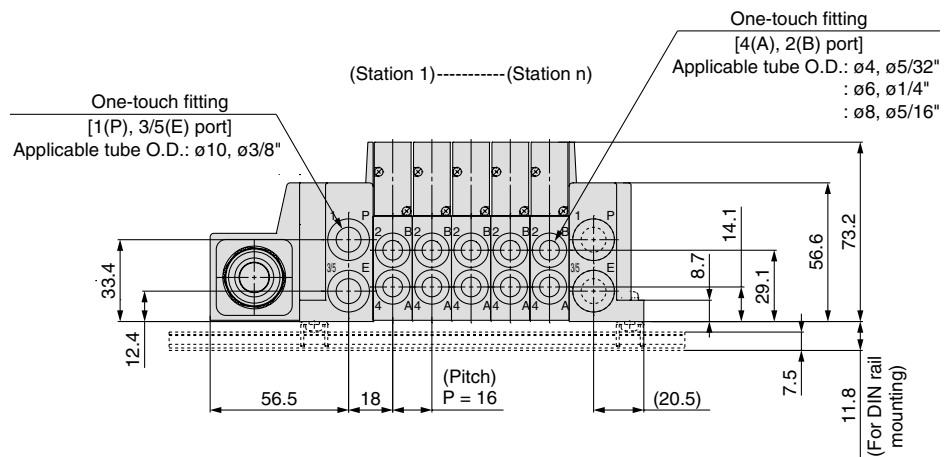
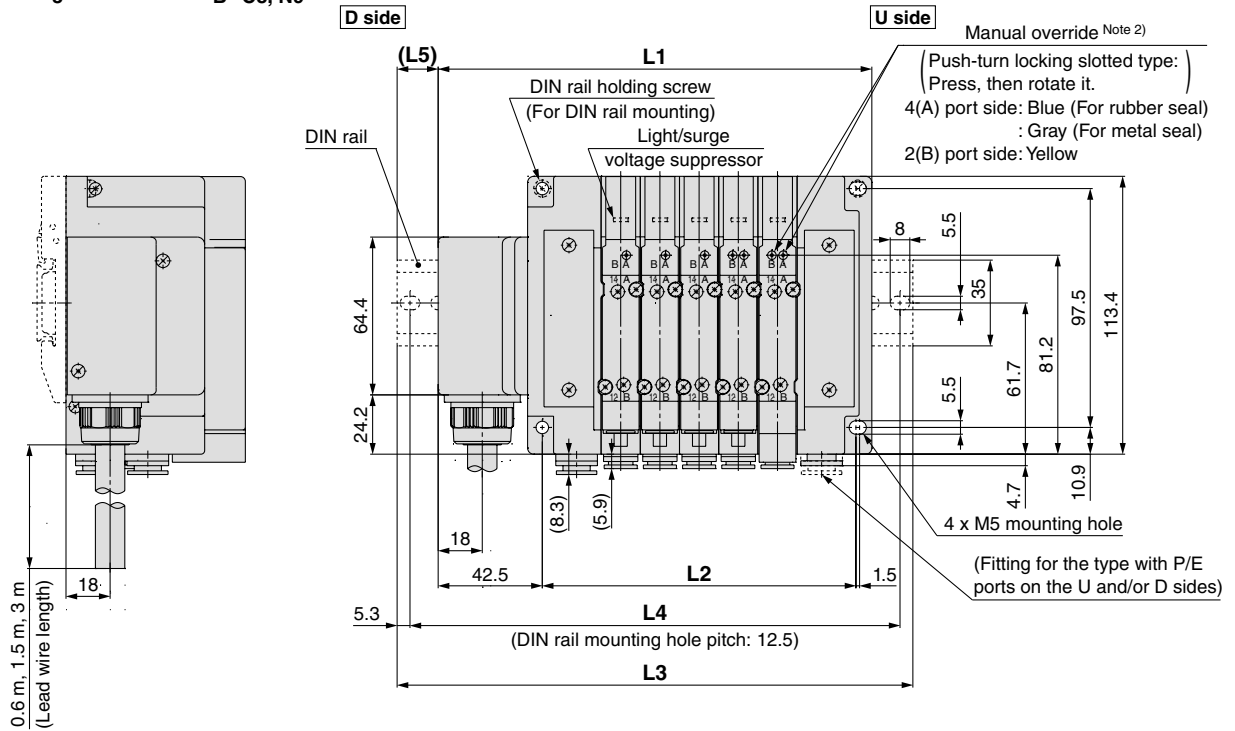


Note 1) These figures show the "SS5Y3-10L1□-05D-C6".  
 Note 2) Refer to page 121 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 Note 3) Refer to page 124 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>L1</b>	112	122.5	133	143.5	154	164.5	175	185.5	196	206.5	217	227.5	238	248.5	259	269.5	280	290.5	301	311.5	322	332.5	343
<b>L2</b>	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5	294
<b>L3</b>	135.5	148	160.5	173	185.5	198	210.5	210.5	223	235.5	248	260.5	273	273	285.5	298	310.5	323	335.5	335.5	348	360.5	373
<b>L4</b>	125	137.5	150	162.5	175	187.5	200	200	212.5	225	237.5	250	262.5	262.5	275	287.5	300	312.5	325	325	337.5	350	362.5
<b>L5</b>	12	13	14	15	16	17	18	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13	14	15

## Dimensions: Type 10/Lead Wire/Series SY5000

SS5Y5-10L<sub>1</sub><sup>1</sup>□-Stations<sub>2</sub><sup>2</sup> U C4, N3  
 D-C6, N7 (D)  
 B C8, N9



Note 1) These figures show the "SS5Y5-10L1□-05D-C8".

Note 2) Refer to page 122 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 125 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>L1</b>	129	145	161	177	193	209	225	241	257	273	289	305	321	337	353	369	385	401	417	433	449	465	481
<b>L2</b>	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
<b>L3</b>	160.5	173	185.5	210.5	223	235.5	260.5	273	285.5	298	323	335.5	348	360.5	385.5	398	410.5	435.5	448	460.5	473	498	510.5
<b>L4</b>	150	162.5	175	200	212.5	225	250	262.5	275	287.5	312.5	325	337.5	350	375	387.5	400	425	437.5	450	462.5	487.5	500
<b>L5</b>	16	14	12.5	17	15	13.5	18	16	14.5	12.5	17	15.5	13.5	12	16.5	14.5	13	17.5	15.5	14	12	16.5	15

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
**Lead Wire**  
 Circular Connector  
**EX500 EX600 EX250 EX260 EX126 EX120**  
 One-touch Fittings and Plug Assembly Part No.  
**Manifold Options**  
 Specific Product Precautions

# Plug-in Connector Connecting Base

Lead Wire

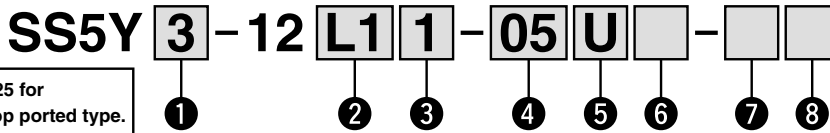
Type 12  
Top Ported

# Series SY3000/5000



RoHS

## How to Order Manifold



Refer to pages 124 and 125 for dimensions of Type 12/Top ported type.

### 1 Series

3	SY3000
5	SY5000

### 2 Number of cores (Lead wire)

L1	34 cores
L2	17 cores
L3	9 cores

### 3 Lead wire length

1	0.6 m
2	1.5 m
3	3 m

### 5 P, E port entry

U (Note)	U side (2 to 10 stations)
D (Note)	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

Note) 6 For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### 4 Valve stations

#### (L1□)

Symbol	Stations	Note
02	2 stations	Double wiring (Note 1)
⋮	⋮	
16	16 stations	Specified layout (Note 2) (Available up to 32 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

#### (L3□)

Symbol	Stations	Note
02	2 stations	Double wiring (Note 1)
⋮	⋮	
04	4 stations	Specified layout (Note 2) (Available up to 8 solenoids)
02	2 stations	
⋮	⋮	
08	8 stations	

#### (L2□)

Symbol	Stations	Note
02	2 stations	Double wiring (Note 1)
⋮	⋮	
08	8 stations	Specified layout (Note 2) (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

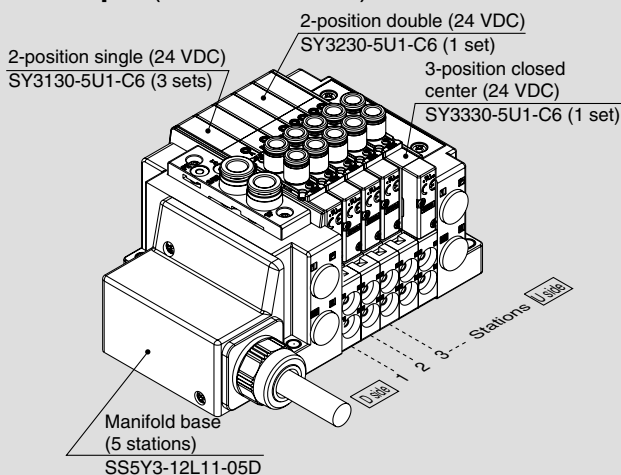
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

## How to Order Manifold Assembly

### Example (SS5Y3-12L11-□)



SS5Y3-12L11-05D ... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### 6 SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### 7 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

\* For N, sizes are in inches.

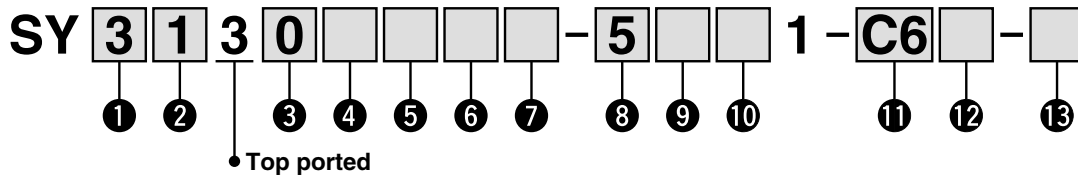
### 8 Mounting

Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	⋮
D24	For 24 stations

Specify a longer rail than the standard length.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

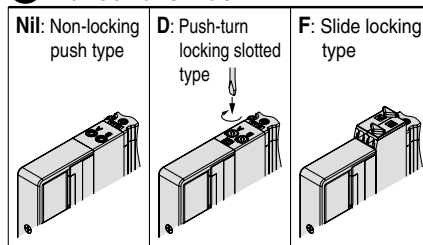
5	24 VDC
6	12 VDC

### 9 Light/surge voltage suppressor and common specification

Nil	Without light/surge voltage suppressor (Non-polar)
R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override



### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

#### One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

### 12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

### 13 Type of mounting screw

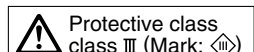
Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 136 for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.

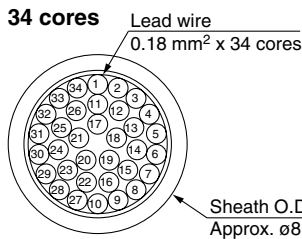


Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 EX510  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500 EX600 EX250 EX260 EX126 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Series SY3000/5000

## Electrical Wiring Specifications

### Lead wire



If alignment is not specified, the internal wiring is double wiring (connected to SOL. a and SOL. b) regardless of number of stations, valve and option types.

### Electrical characteristics

Item	Property
Conductor resistance Ω/km, 20°C	143 or less
Voltage limit V, 1 minute, AC	2000
Insulation resistance MΩ/km, 20°C	10 or more

Note) Cannot be used for movable wiring.  
The minimum bending radius of the cable is 55 mm.

Station	Lead wire no.	Polarity	Lead wire color	Printed mark (Both sides)	
				Type	Color
Station 1	SOL.a 1	(-) (+)	Orange	---	Red
	SOL.b 2	(-) (+)			Black
Station 2	SOL.a 3	(-) (+)	Light gray	---	Red
	SOL.b 4	(-) (+)			Black
Station 3	SOL.a 5	(-) (+)	White	---	Red
	SOL.b 6	(-) (+)			Black
Station 4	SOL.a 7	(-) (+)	Yellow	---	Red
	SOL.b 8	(-) (+)			Black
Station 5	SOL.a 9	(-) (+)	Pink	---	Red
	SOL.b 10	(-) (+)			Black
Station 6	SOL.a 11	(-) (+)	Orange	---	Red
	SOL.b 12	(-) (+)			Black
Station 7	SOL.a 13	(-) (+)	Light gray	---	Red
	SOL.b 14	(-) (+)			Black
Station 8	SOL.a 15	(-) (+)	White	---	Red
	SOL.b 16	(-) (+)			Black
Station 9	SOL.a 17	(-) (+)	Yellow	---	Red
	SOL.b 18	(-) (+)			Black
Station 10	SOL.a 19	(-) (+)	Pink	---	Red
	SOL.b 20	(-) (+)			Black
Station 11	SOL.a 21	(-) (+)	Orange	---	Red
	SOL.b 22	(-) (+)			Black
Station 12	SOL.a 23	(-) (+)	Light gray	---	Red
	SOL.b 24	(-) (+)			Black
Station 13	SOL.a 25	(-) (+)	White	---	Red
	SOL.b 26	(-) (+)			Black
Station 14	SOL.a 27	(-) (+)	Yellow	---	Red
	SOL.b 28	(-) (+)			Black
Station 15	SOL.a 29	(-) (+)	Pink	---	Red
	SOL.b 30	(-) (+)			Black
Station 16	SOL.a 31	(-) (+)	Orange	---	Red
	SOL.b 32	(-) (+)			Black
	COM. 33	(+) (-)	Light gray	---	Red
	COM. 34	(+) (-)			Black

Positive common      Negative common

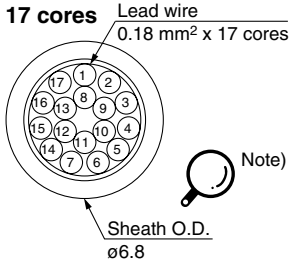
Note) For negative common specification, a valve for negative common or a valve without polarity should be used.

### Specified Layout

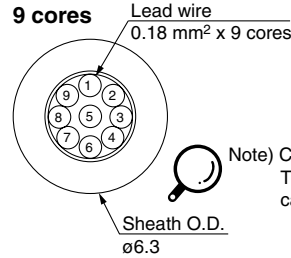
Mixed wiring of single and double wiring can be specified on the manifold specification. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 32 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.

## Electrical Wiring Specifications

### Lead wire



Note) Cannot be used for movable wiring.  
The minimum bending radius of the cable is 45 mm.



Note) Cannot be used for movable wiring.  
The minimum bending radius of the cable is 40 mm.

### Electrical characteristics

Item	Property
Conductor resistance $\Omega/\text{km}, 20^\circ\text{C}$	143 or less
Voltage limit V, 1 minute, AC	2000
Insulation resistance $\text{M}\Omega/\text{km}, 20^\circ\text{C}$	10 or more

Station	Lead wire no.	Polarity	Lead wire color	Printed mark (Both sides)	
				Type	Color
Station 1	SOL.a 1	(-) (+)	Orange	—	Red
	SOL.b 2	(-) (+)		—	Black
Station 2	SOL.a 3	(-) (+)	Light gray	—	Red
	SOL.b 4	(-) (+)		—	Black
Station 3	SOL.a 5	(-) (+)	White	—	Red
	SOL.b 6	(-) (+)		—	Black
Station 4	SOL.a 7	(-) (+)	Yellow	—	Red
	SOL.b 8	(-) (+)		—	Black
Station 5	SOL.a 9	(-) (+)	Pink	—	Red
	SOL.b 10	(-) (+)		—	Black
Station 6	SOL.a 11	(-) (+)	Orange	---	Red
	SOL.b 12	(-) (+)		---	Black
Station 7	SOL.a 13	(-) (+)	Light gray	---	Red
	SOL.b 14	(-) (+)		---	Black
Station 8	SOL.a 15	(-) (+)	White	---	Red
	SOL.b 16	(-) (+)		---	Black
	COM. 17	(+) (-)	Yellow	---	Red

Positive common      Negative common

Station	Lead wire no.	Polarity	Lead wire color	Printed mark (Both sides)	
				Type	Color
Station 1	SOL.a 1	(-) (+)	Orange	—	Red
	SOL.b 2	(-) (+)		—	Black
Station 2	SOL.a 3	(-) (+)	Light gray	—	Red
	SOL.b 4	(-) (+)		—	Black
Station 3	SOL.a 5	(-) (+)	White	—	Red
	SOL.b 6	(-) (+)		—	Black
Station 4	SOL.a 7	(-) (+)	Yellow	—	Red
	SOL.b 8	(-) (+)		—	Black
	COM. 9	(+) (-)	Pink	---	Red

Positive common      Negative common

Note) For negative common specification, a valve for negative common or a valve without polarity should be used.

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
**Lead Wire**  
 Circular Connector  
**EX500**  
**EX600**  
**EX250**  
**EX260**  
**EX126**  
**EX120**  
 One-touch Filings and Plug Assembly Part No.  
**Manifold Options**  
 Specific Product Precautions



Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

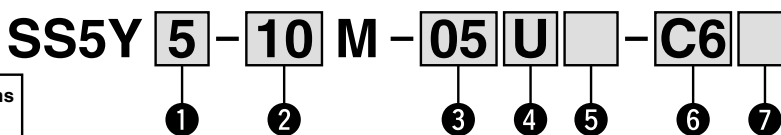
Circular Connector

# Series SY3000/5000



RoHS

## How to Order Manifold



Refer to page 123 for dimensions of Type 11/Bottom ported type.

### 1 Series

3	SY3000
5	SY5000

### 2 Type

10	Side ported
11	Bottom ported*

\* The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to Plug-in Mixed Mounting Type Manifold (from page 127).

### 3 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
12	12 stations	Specified layout Note 2) (Available up to 24 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

### 4 P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

### 5 SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

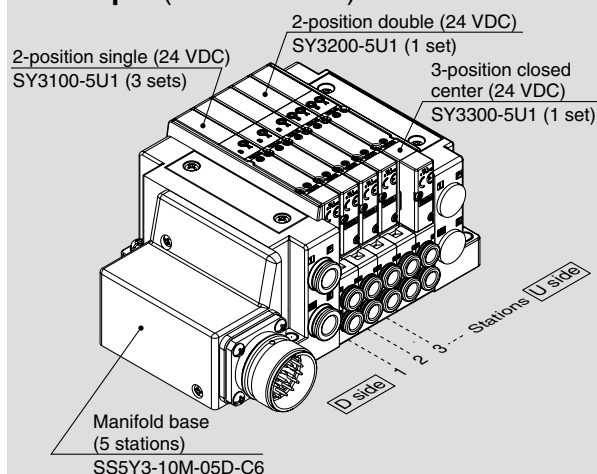
\* 3/5(E) port is plugged for the built-in silencer type.

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for 6.

## How to Order Manifold Assembly

### Example (SS5Y3-10M-□)



SS5Y3-10M-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note) When mixing top ported configurations, select from page 80. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 7 Mounting and Option

Symbol	Mounting	Option
Nil	Direct mounting	None
AA		Name plate (With station number)
BA		Name plate (Without station number)
D□	DIN rail mounting	Without name plate
A□		Name plate (With station number)
B□		Name plate (Without station number)

Note 1) Enter the number of stations inside □. (Refer to "DIN Rail Option" below.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

#### DIN Rail Option

Nil	Direct mounting	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
⋮	⋮	
24	For 24 stations	

## 6 A, B port size (Metric)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported	
		SY3000	SY5000	SY5000	
<b>C2</b>	ø2 One-touch fitting	●	—	—	
<b>C3</b>	ø3.2 One-touch fitting	●	—	—	
<b>C4</b>	ø4 One-touch fitting	●	●	●	
<b>C6</b>	ø6 One-touch fitting	●	●	●	
<b>C8</b>	ø8 One-touch fitting	—	●	●	
<b>CM*</b>	Straight port, mixed sizes	●	●	●	
<b>L4</b>	Upward Downward Elbow (Note) (Including upward and downward piping)	ø4 One-touch fitting	●	●	—
<b>L6</b>		ø6 One-touch fitting	●	●	—
<b>L8</b>		ø8 One-touch fitting	—	●	—
<b>B4</b>		ø4 One-touch fitting	●	●	—
<b>B6</b>		ø6 One-touch fitting	●	●	—
<b>B8</b>		ø8 One-touch fitting	—	●	—
<b>LM*</b>		Elbow port, mixed sizes	●	●	—
P, E port size (One-touch fittings)		ø8	ø10	ø10	

## A, B port size (Inch)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported	
		SY3000	SY5000	SY5000	
<b>N1</b>	ø1/8" One-touch fitting	●	—	—	
<b>N3</b>	ø5/32" One-touch fitting	●	●	●	
<b>N7</b>	ø1/4" One-touch fitting	●	●	●	
<b>N9</b>	ø5/16" One-touch fitting	—	●	●	
<b>CM*</b>	Straight port, mixed sizes	●	●	●	
<b>LN3</b>	Upward Downward Elbow (Note) (Including upward and downward piping)	ø5/32" One-touch fitting	●	—	—
<b>LN7</b>		ø1/4" One-touch fitting	●	●	—
<b>LN9</b>		ø5/16" One-touch fitting	—	●	—
<b>BN3</b>		ø5/32" One-touch fitting	●	—	—
<b>BN7</b>		ø1/4" One-touch fitting	●	●	—
<b>BN9</b>		ø5/16" One-touch fitting	—	●	—
<b>LM*</b>		Elbow port, mixed sizes	●	●	—
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø3/8"	

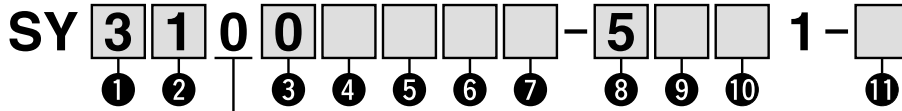
Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 141 to 143).

\* Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

\* The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Base mounted

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

5	24 VDC
6	12 VDC

### 9 Light/surge voltage suppressor and common specification

Nil	Without light/surge voltage suppressor (Non-polar)
R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override

<b>Nil:</b> Non-locking push type 	<b>D:</b> Push-turn locking slotted type 	<b>F:</b> Slide locking type 
--	---	-------------------------------------

### 11 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 136 for part numbers of the base gasket and mounting screw.

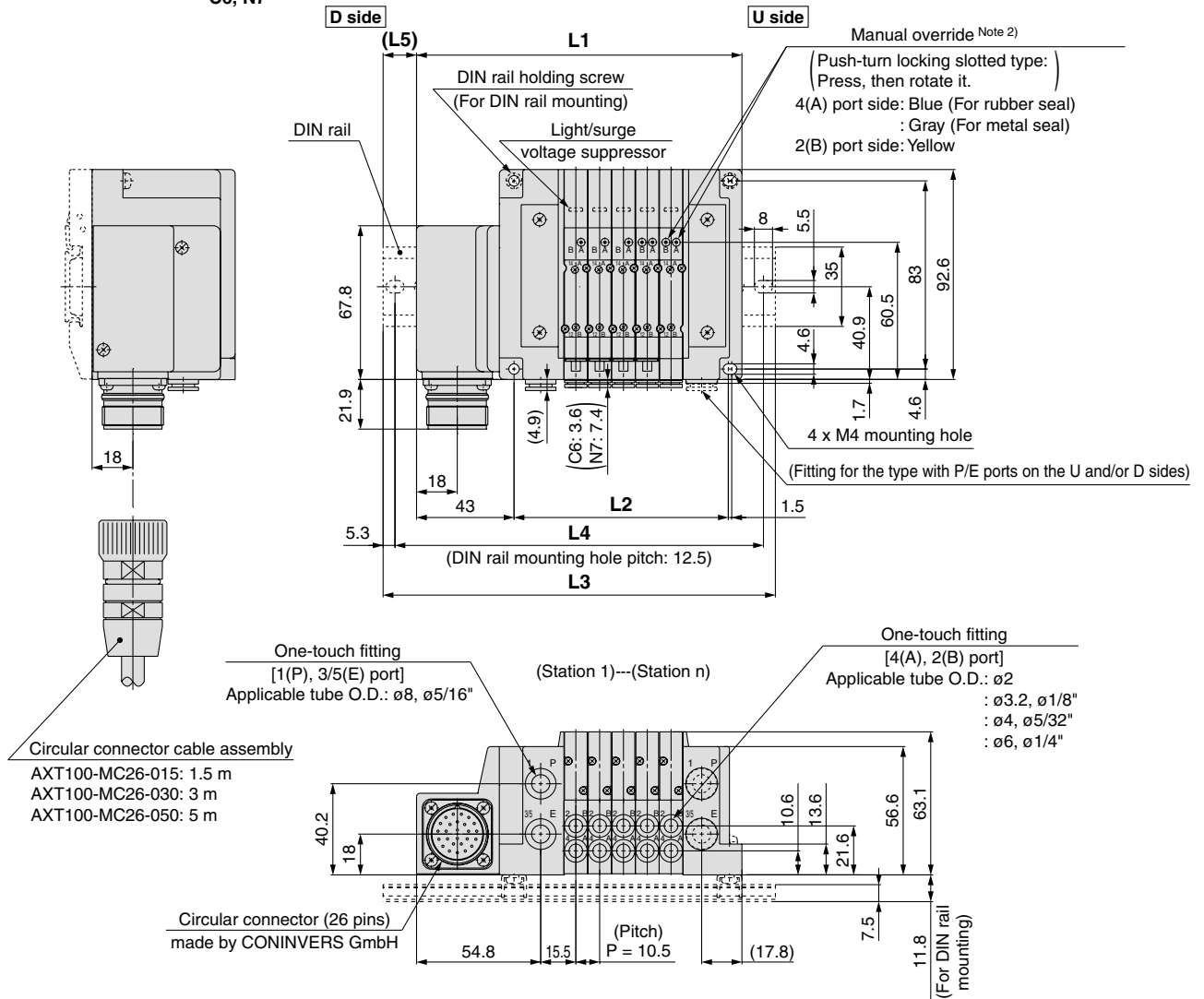
\* "B" and "H" cannot be selected for the individual SUP/ EXH spacer assembly or double check spacer assembly with residual pressure release valve.

Protective class class III (Mark: ⚠)

# Series SY3000/5000

## Dimensions: Type 10/Circular Connector/Series SY3000

SS5Y3-10M-Stations U  
D-  
B C2  
C3, N1  
C4, N3  
C6, N7 (D)



Note 1) These figures show the "SS5Y3-10M-05D-C6".

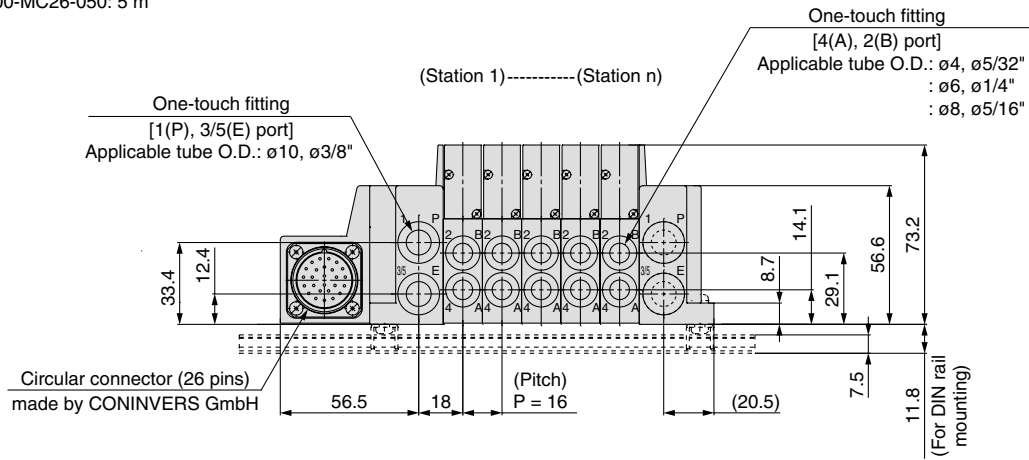
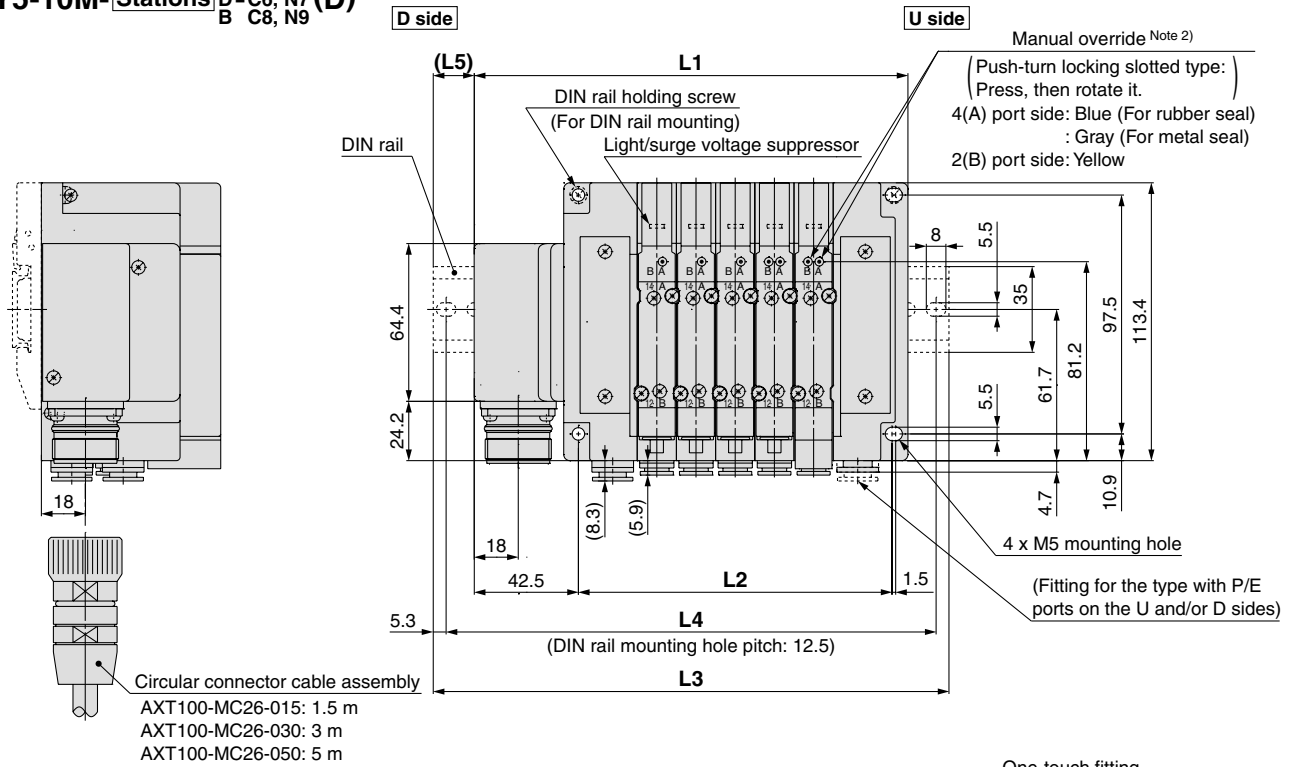
Note 2) Refer to page 121 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 124 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>L1</b>	112	122.5	133	143.5	154	164.5	175	185.5	196	206.5	217	227.5	238	248.5	259	269.5	280	290.5	301	311.5	322	332.5	343
<b>L2</b>	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5	294
<b>L3</b>	135.5	148	160.5	173	185.5	198	210.5	210.5	223	235.5	248	260.5	273	273	285.5	298	310.5	323	335.5	335.5	348	360.5	373
<b>L4</b>	125	137.5	150	162.5	175	187.5	200	200	212.5	225	237.5	250	262.5	262.5	275	287.5	300	312.5	325	325	337.5	350	362.5
<b>L5</b>	12	13	14	15	16	17	18	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13	14	15

## Dimensions: Type 10/Circular Connector/Series SY5000

**SS5Y5-10M-** Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7} \\ \text{B} & \text{C8, N9} \end{matrix}$  (D)



Note 1) These figures show the "SS5Y5-10M-05D-C8".

Note 2) Refer to page 122 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 125 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>L1</b>	129	145	161	177	193	209	225	241	257	273	289	305	321	337	353	369	385	401	417	433	449	465	481
<b>L2</b>	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
<b>L3</b>	160.5	173	185.5	210.5	223	235.5	260.5	273	285.5	298	323	335.5	348	360.5	385.5	398	410.5	435.5	448	460.5	473	498	510.5
<b>L4</b>	150	162.5	175	200	212.5	225	250	262.5	275	287.5	312.5	325	337.5	350	375	387.5	400	425	437.5	450	462.5	487.5	500
<b>L5</b>	16	14	12.5	17	15	13.5	18	16	14.5	12.5	17	15.5	13.5	12	16.5	14.5	13	17.5	15.5	14	12	16.5	15

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
**Circular Connector**  
**EX500**  
**EX600**  
**EX250**  
**EX260**  
**EX126**  
**EX120**  
 One-touch Fittings and Plug Assembly Part No.  
**Manifold Options**  
 Specific Product Precautions

# Plug-in Connector Connecting Base

## Circular Connector

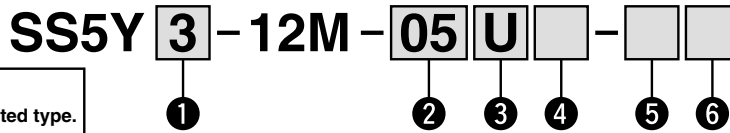
Type 12  
Top Ported

# Series SY3000/5000



RoHS

### How to Order Manifold



Refer to pages 124 and 125 for dimensions of Type 12/Top ported type.

#### 1 Series

3	SY3000
5	SY5000

#### 2 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
12	12 stations	
02	2 stations	Specified layout Note 2) (Available up to 24 solenoids)
⋮	⋮	
24	24 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

#### 3 P, E port entry

U Note)	U side (2 to 10 stations)
D Note)	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

Note) For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

#### 4 SUP/EXH block assembly

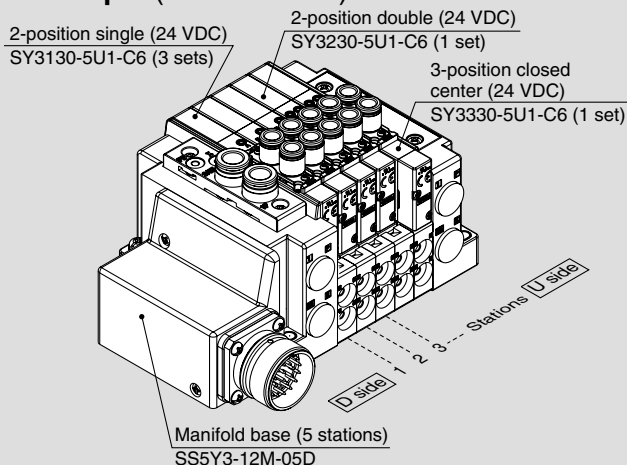
Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### How to Order Manifold Assembly

#### Example (SS5Y3-12M-□)



SS5Y3-12M-05D ..... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

#### 5 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

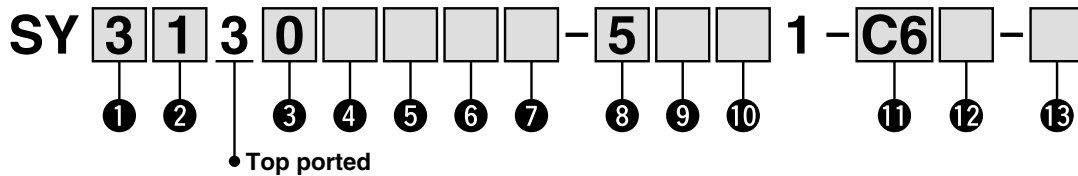
\* For N, sizes are in inches.

#### 6 Mounting

Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	⋮
D24	For 24 stations

Specify a longer rail than the standard length.

## How to Order Valves (With two mounting screws) Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

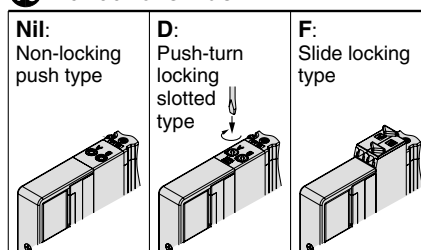
5	24 VDC
6	12 VDC

### 9 Light/surge voltage suppressor and common specification

Nil	Without light/surge voltage suppressor (Non-polar)
R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override



### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

#### One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

### 12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

### 13 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

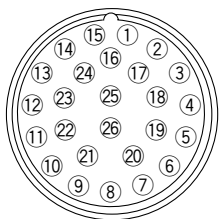
Refer to page 136 for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.

# Series SY3000/5000

## Electrical Wiring Specifications

### Circular connector



If alignment is not specified, the internal wiring is double wiring (connected to SOL. a and SOL. b) regardless of number of stations, valve and option types.

	Terminal no.	Polarity
Station 1	SOL.a 1	(-) (+)
	SOL.b 2	(-) (+)
Station 2	SOL.a 3	(-) (+)
	SOL.b 4	(-) (+)
Station 3	SOL.a 5	(-) (+)
	SOL.b 6	(-) (+)
Station 4	SOL.a 7	(-) (+)
	SOL.b 8	(-) (+)
Station 5	SOL.a 9	(-) (+)
	SOL.b 10	(-) (+)
Station 6	SOL.a 11	(-) (+)
	SOL.b 12	(-) (+)
Station 7	SOL.a 13	(-) (+)
	SOL.b 14	(-) (+)
Station 8	SOL.a 15	(-) (+)
	SOL.b 16	(-) (+)
Station 9	SOL.a 17	(-) (+)
	SOL.b 18	(-) (+)
Station 10	SOL.a 19	(-) (+)
	SOL.b 20	(-) (+)
Station 11	SOL.a 21	(-) (+)
	SOL.b 22	(-) (+)
Station 12	SOL.a 23	(-) (+)
	SOL.b 24	(-) (+)
	COM. 25	(+) (-)
	COM. 26	(+) (-)

Positive common      Negative common



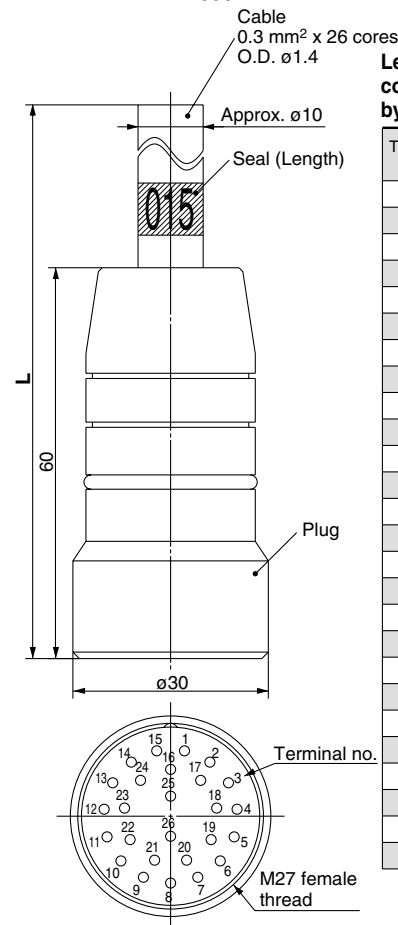
Note) When using a valve with no polarity, either positive common or negative common can be used.

### Specified Layout

Mixed wiring of single and double wiring can be specified on the manifold specification sheet. The maximum number of stations is determined according to the number of solenoids. The total number of solenoids should be 24 or less. 1 solenoid is required for 2-position single, and 2 solenoids for 2-position double, 3-position and 4-position.

## Cable Assembly

015  
AXT100-MC26-030  
050



### Lead wire color for circular connector cable assembly by terminal number

Terminal no.	Lead wire color	Dot marking
1	Black	None
2	Brown	None
3	Red	None
4	Orange	None
5	Yellow	None
6	Pink	None
7	Blue	None
8	Purple	White
9	Gray	Black
10	White	Black
11	White	Red
12	Yellow	Red
13	Orange	Red
14	Yellow	Black
15	Pink	Black
16	Blue	White
17	Purple	None
18	Gray	None
19	Orange	Black
20	Red	White
21	Brown	White
22	Pink	Red
23	Gray	Red
24	Black	White
25	White	None
26	White	None

### Electrical characteristics

Item	Property
Conductor resistance $\Omega/\text{km}$ , 20°C	65 or less
Voltage limit V, 1 minute, AC	1000
Insulation resistance $\text{M}\Omega/\text{km}$ , 20°C	5 or more



Note) The minimum bending radius of the circular connector cable is 20 mm.

### Circular connector cable assembly

Cable length (L)	Assembly part no.
	26 pins
1.5 m	AXT100-MC26-015
3 m	AXT100-MC26-030
5 m	AXT100-MC26-050

\* Cannot be used for movable wiring.

\* Lengths other than the above is also available. Please contact SMC for details.

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

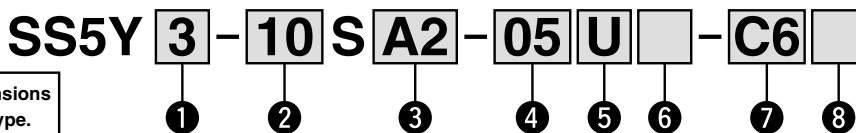
EX500

# Series SY3000/5000



RoHS

## How to Order Manifold



Refer to page 123 for dimensions of Type 11/Bottom ported type.

### 1 Series

3	SY3000
5	SY5000

### 2 Type

10	Side ported
11	Bottom ported*

\* The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to Plug-in Mixed Mounting Type Manifold (from page 127).

### 5 P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

### 3 SI unit

0	Without SI unit
A2	DeviceNet™/PROFIBUS DP/ CC-Link/EtherNet/IP™ (Positive common)
A2N	DeviceNet™/PROFIBUS DP/ CC-Link/EtherNet/IP™ (Negative common)

Note) Ensure that the valve's common specifications match.

### 6 SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* 3/5(E) port is plugged for the built-in silencer type.

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### 4 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	Specified layout Note 2) (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

Note 4) For the product without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

Refer to the page on the right for 7.

### 8 Mounting and Option

Symbol	Mounting	Option
Nil	Direct mounting	None
AA		Name plate (With station number)
BA		Name plate (Without station number)
D□	DIN rail mounting	Without name plate
A□		Name plate (With station number)
B□		Name plate (Without station number)

Note 1) Enter the number of stations inside □. (Refer to "DIN Rail Option" below.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

#### DIN Rail Option

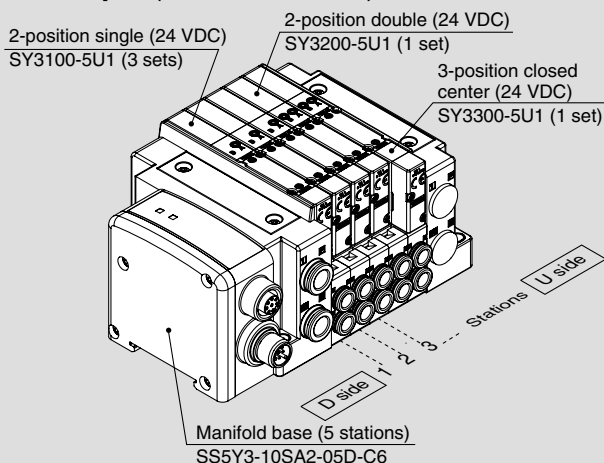
Nil	Direct mounting
0	Without DIN rail (with bracket)
3	For 3 stations
⋮	⋮
16	For 16 stations

Specify a longer rail than the total length of specified stations.

\* If the DIN rail must be mounted without an SI unit, select D0. Then, refer to L3 of the dimensions for the DIN rail length and order separately. (Refer to page 140 for the DIN rail part number.)

## How to Order Manifold Assembly

### Example (SS5Y3-10SA2-□)



SS5Y3-10SA2-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note) When mixing top ported configurations, select from page 88. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

Refer to Reduced Wiring Fieldbus System (Serial Transmission) in Electric Products (CAT.E150) for details on the EX500 Gateway-type Serial Transmission System.



## 7 A, B port size (Metric)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported
		SY3000	SY5000	SY5000
<b>C2</b>	ø2 One-touch fitting	●	—	—
<b>C3</b>	ø3.2 One-touch fitting	●	—	—
<b>C4</b>	ø4 One-touch fitting	●	●	●
<b>C6</b>	ø6 One-touch fitting	●	●	●
<b>C8</b>	ø8 One-touch fitting	—	●	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●
<b>L4</b>	ø4 One-touch fitting	●	●	—
<b>L6</b>		●	●	—
<b>L8</b>		—	●	—
<b>B4</b>	ø4 One-touch fitting	●	●	—
<b>B6</b>		●	●	—
<b>B8</b>		—	●	—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—
P, E port size (One-touch fittings)		ø8	ø10	ø10

## A, B port size (Inch)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported
		SY3000	SY5000	SY5000
<b>N1</b>	ø1/8" One-touch fitting	●	—	—
<b>N3</b>	ø5/32" One-touch fitting	●	●	●
<b>N7</b>	ø1/4" One-touch fitting	●	●	●
<b>N9</b>	ø5/16" One-touch fitting	—	●	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●
<b>LN3</b>	ø5/32" One-touch fitting	●	—	—
<b>LN7</b>		●	●	—
<b>LN9</b>		—	●	—
<b>BN3</b>	ø5/32" One-touch fitting	●	—	—
<b>BN7</b>		●	●	—
<b>BN9</b>		—	●	—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø3/8"

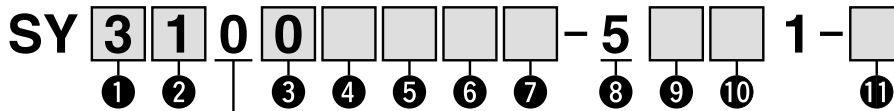
Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 141 to 143).

\* Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

\* The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Base mounted

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

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

### 9 Light/surge voltage suppressor and common specification

R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit. Select a valve from R, U, S or Z when the SI unit specification is A2 (Positive common). Select a valve from R, U, NS or NZ when the SI unit specification is A2N (Negative common).

### 10 Manual override

<b>Nil:</b> Non-locking push type	<b>D:</b> Push-turn locking slotted type	<b>F:</b> Slide locking type
--------------------------------------	---	---------------------------------

### 11 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 136 for part numbers of the base gasket and mounting screw.

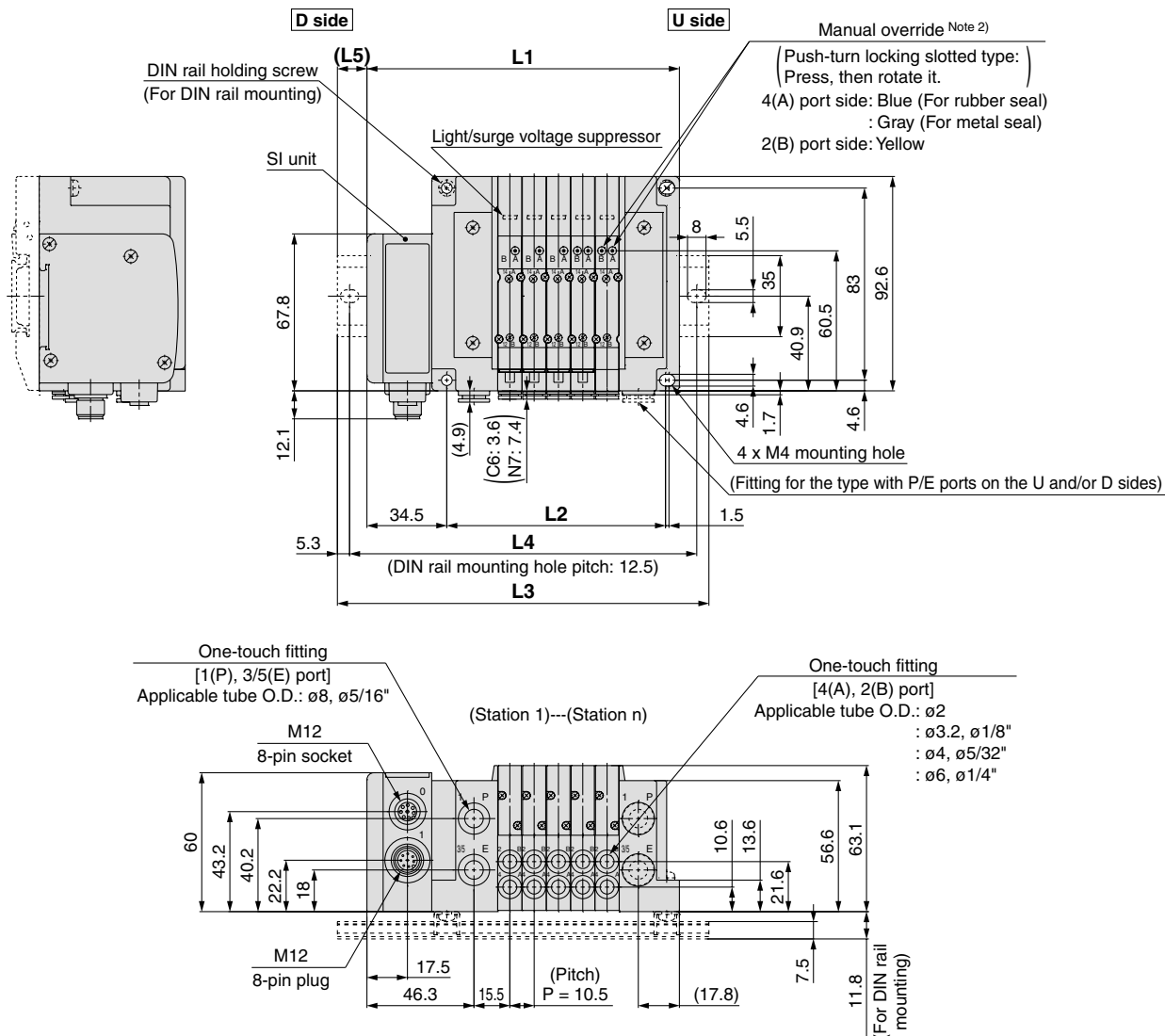
\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

Protective class class III (Mark: )

# Series SY3000/5000

## Dimensions: Type 10/EX500/Series SY3000

SS5Y3-10SA2-**Stations**  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$   $\begin{matrix} \text{C2} \\ \text{C3}, \text{N1} \\ \text{C4}, \text{N3} \\ \text{C6}, \text{N7} \end{matrix}$  (D)



Note 1) These figures show the "SS5Y3-10SA2-05D-C6".

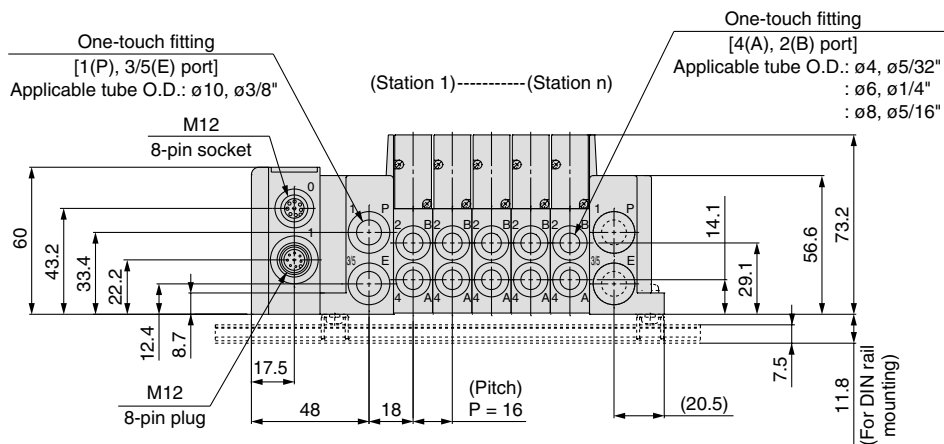
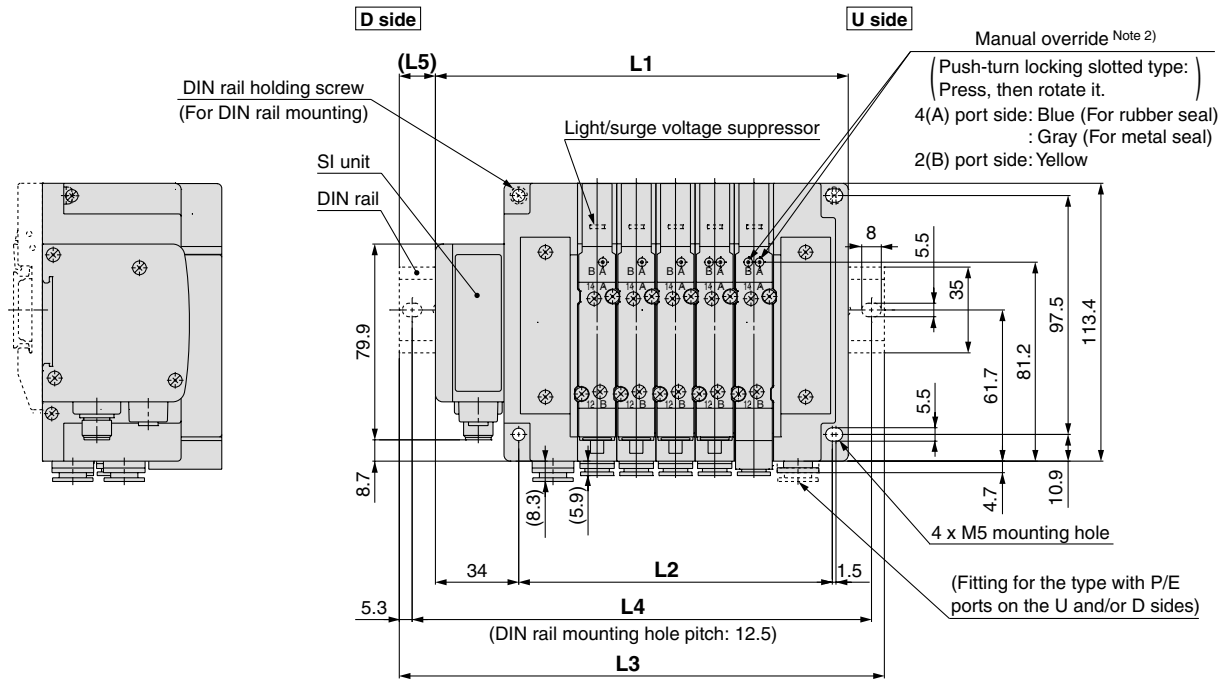
Note 2) Refer to page 121 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 124 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>L1</b>	103.5	114	124.5	135	145.5	156	166.5	177	187.5	198	208.5	219	229.5	240	250.5
<b>L2</b>	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210
<b>L3</b>	135.5	148	148	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5
<b>L4</b>	125	137.5	137.5	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5	275
<b>L5</b>	16	17	12	13	14	15	16	17	18	12.5	13.5	14.5	15.5	16.5	17.5

## Dimensions: Type 10/EX500/Series SY5000

SS5Y5-10SA2-**Stations** U C4, N3  
D C6, N7 (D)  
B C8, N9



Note 1) These figures show the "SS5Y5-10SA2-05D-C8".

Note 2) Refer to page 122 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 125 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>L1</b>	120.5	136.5	152.5	168.5	184.5	200.5	216.5	232.5	248.5	264.5	280.5	296.5	312.5	328.5	344.5
<b>L2</b>	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
<b>L3</b>	148	160.5	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373
<b>L4</b>	137.5	150	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5
<b>L5</b>	14	12	16.5	15	13	17.5	16	14	12.5	17	15	13.5	18	16	14.5

# Plug-in Connector Connecting Base

EX500

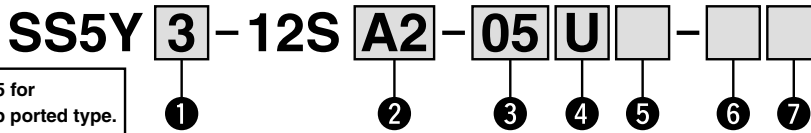
Type 12  
Top Ported

# Series SY3000/5000



RoHS

## How to Order Manifold



Refer to pages 124 and 125 for dimensions of Type 12/Top ported type.

### 1 Series

3	SY3000
5	SY5000

### 2 SI unit

0	Without SI unit
A2	DeviceNet™/PROFIBUS DP/ CC-Link/EtherNet/IP™ (Positive common)
A2N	DeviceNet™/PROFIBUS DP/ CC-Link/EtherNet/IP™ (Negative common)

Note) Ensure that the valve's common specifications match.

### 4 P, E port entry

U Note)	U side (2 to 10 stations)
D Note)	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

Note) For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### 5 SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot/Built-in silencer
R	External pilot

\* For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)  
\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### 3 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	Specified layout Note 2) (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

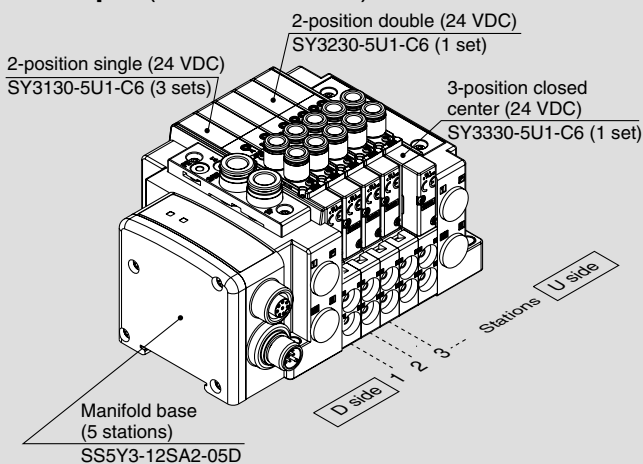
Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

Note 4) For the product without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

## How to Order Manifold Assembly

### Example (SS5Y3-12SA2-□)



SS5Y3-12SA2-05D ... 1 set (Type 12 5-station manifold base part no.)  
\*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
\*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
\*SY3330-5U1-C6 ..... 1 set (3-position closed center part no.)  
→ The asterisk denotes the symbol for assembly.  
Prefix it to the part nos. of the valve, etc.

• The valve arrangement is numbered as the 1st station from the D side.  
• Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### 6 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

\* For N, sizes are in inches.

### 7 Mounting

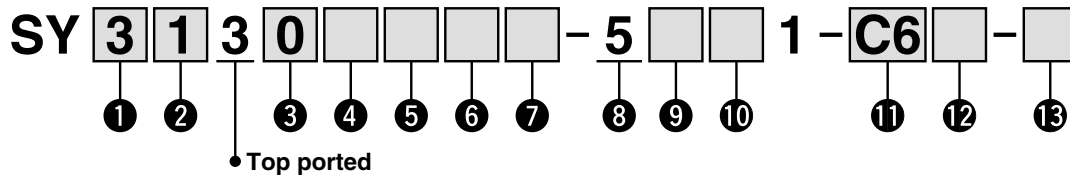
Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	⋮
D16	For 16 stations

Specify a longer rail than the standard length.

\* When mounted on the DIN rail without the SI unit, please select D0 and refer to L3 of the dimensions for the DIN rail length, then order separately. (Refer to page 140 for the DIN rail part number.)

Refer to Reduced Wiring Fieldbus System (Serial Transmission) in Electric Products (CAT.E150) for details on the EX500 Gateway-type Serial Transmission System.

## How to Order Valves (With two mounting screws) Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

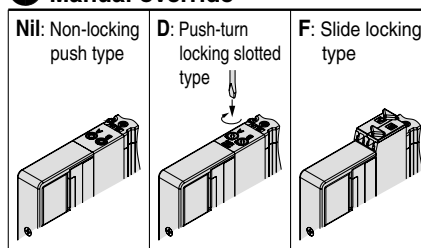
5	24 VDC
---	--------

### 9 Light/surge voltage suppressor and common specification

R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	Without light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit. Select a valve from R, U, S or Z when the SI unit specification is A2 (Positive common). Select a valve from R, U, NS or NZ when the SI unit specification is A2N (Negative common).

### 10 Manual override



### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

#### One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

### 12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

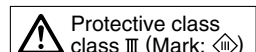
### 13 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to page 136 for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.



Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 EX510  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500  
 EX600  
 EX250  
 EX260  
 EX126  
 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

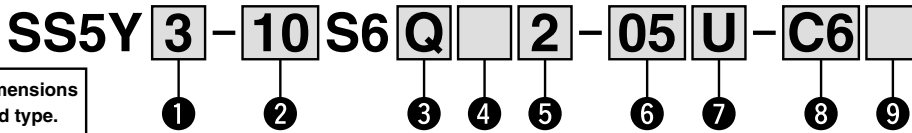
EX600

# Series SY3000/5000



RoHS

## How to Order Manifold



Refer to page 123 for dimensions of Type 11/Bottom ported type.

### 1 Series

3	SY3000
5	SY5000

### 2 Type

10	Side ported
11	Bottom ported*

\* The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to Plug-in Mixed Mounting Type Manifold (from page 127).

### 3 SI unit

0	Without SI unit
Q	DeviceNet™
N	PROFIBUS DP
V	CC-Link
ZE	EtherNet/IP™
D	EtherCAT

Note 1) I/O unit cannot be mounted without SI unit.

Note 2) Valve plate which connects manifold and SI unit is not mounted to a valve without SI unit. Refer to the EX600 catalog (CAT.E02-24) for mounting.

### 4 SI unit output polarity, end plate type

SI unit output polarity	Power supply with M12 connector	Power supply with 7/8 inch connector
Without SI unit	Nil	
SI unit positive common	2	3
SI unit negative common	4	5

Note 1) Ensure a match with the common specifications of the value to be used.

Note 2) Without SI unit, the symbol is nil.

### 5 I/O unit stations

Nil	None
1	1 station
:	:
9	9 stations

Note 1) Without SI unit, the symbol is nil.

Note 2) SI unit is not included in I/O unit stations.

Note 3) When I/O unit is selected, it is shipped separately, and assembled by customer. Refer to the attached operation manual for mounting.

### 6 Valve stations

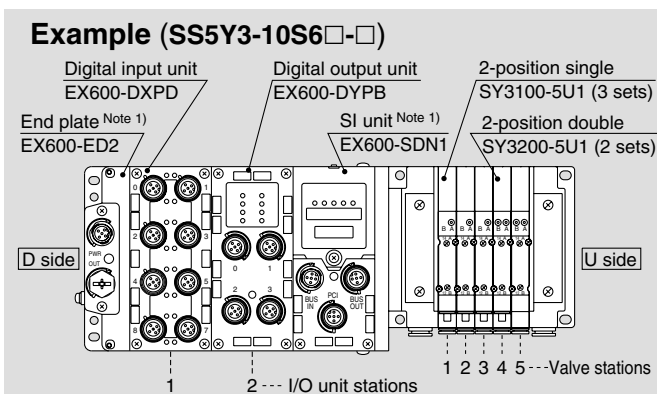
Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
:	:	
16	16 stations	
02	2 stations	Specified layout Note 2) (Available up to 32 solenoids)
:	:	
24	24 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

## How to Order Manifold Assembly



SS5Y3-10S6Q42-05B-C6... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 2 sets (2-position double part no.)  
 \*EX600-DXPD ..... 1 set I/O unit part number (Station 1)  
 \*EX600-DYPB ..... 1 set I/O unit part number (Station 2)

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

• The valve arrangement is numbered as the 1st station from the D side.  
 • Under the manifold part number, state the valves to be mounted, then the I/O units in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note 1) Do not enter the SI unit part number and the end plate part number together.  
 Note 2) When mixing top ported configurations, select from page 96.

In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 7 P, E port entry, SUP/EXH block assembly

	Internal pilot	Internal pilot, Built-in silencer	External pilot
P, E port entry U side (2 to 10 stations)	U	C	G
P, E port entry D side (2 to 10 stations)	D	E	H
P, E port entry both sides (2 to 24 stations)	B	F	J

\* 3/5(E) port is plugged for the built-in silencer type.

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for 8.

### 9 Mounting and Option

Symbol	Mounting	Option
Nil	Direct mounting	None
AA		Name plate (With station number)
BA		Name plate (Without station number)
D□	DIN rail mounting	Without name plate
A□		Name plate (With station number)
B□		Name plate (Without station number)

Note 1) Enter the number of stations inside □. (Refer to "DIN Rail Option" below.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

#### DIN Rail Option

Symbol	Mounting	Option
Nil	Direct mounting	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
:	:	
24	For 24 stations	

\* If the DIN rail must be mounted without an SI unit, select D0. Then, refer to L3 of the dimensions for the DIN rail length and order separately. (Refer to page 140 for the DIN rail part number.)

Refer to Series EX600 Fieldbus System (For Input/Output) (CAT.E02-24) for details on the EX600 Integrated-type (For I/O) Serial Transmission System. (IP40 specifications apply depending on the selected I/O unit.)

## 8 A, B port size (Metric)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported	Image
		SY3000	SY5000	SY5000	
<b>C2</b>	ø2 One-touch fitting	●	—	—	
<b>C3</b>	ø3.2 One-touch fitting	●	—	—	
<b>C4</b>	ø4 One-touch fitting	●	●	●	
<b>C6</b>	ø6 One-touch fitting	●	●	●	
<b>C8</b>	ø8 One-touch fitting	—	●	●	
<b>CM*</b>	Straight port, mixed sizes	●	●	●	
<b>L4</b>	ø4 One-touch fitting	●	●	—	
<b>L6</b>					
<b>L8</b>					
<b>B4</b>					
<b>B6</b>					
<b>B8</b>	ø8 One-touch fitting	—	●	—	
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—	
P, E port size (One-touch fittings)		ø8	ø10	ø10	

## A, B port size (Inch)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported	Image
		SY3000	SY5000	SY5000	
<b>N1</b>	ø1/8" One-touch fitting	●	—	—	
<b>N3</b>	ø5/32" One-touch fitting	●	●	●	
<b>N7</b>	ø1/4" One-touch fitting	●	●	●	
<b>N9</b>	ø5/16" One-touch fitting	—	●	●	
<b>CM*</b>	Straight port, mixed sizes	●	●	●	
<b>LN3</b>	ø5/32" One-touch fitting	●	—	—	
<b>LN7</b>					
<b>LN9</b>					
<b>BN3</b>					
<b>BN7</b>					
<b>BN9</b>	ø5/16" One-touch fitting	—	●	—	
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—	
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø3/8"	

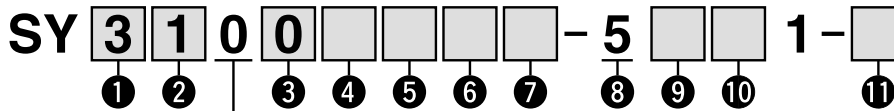
Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 141 to 143).

\* Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

\* The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Base mounted

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

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

### 9 Light/surge voltage suppressor and common specification

R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Select a valve from R, U, S or Z when the SI unit polarity is positive common. Select a valve from R, U, NS or NZ when the SI unit output polarity is negative common.

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override

<b>Nil:</b> Non-locking push type	<b>D:</b> Push-turn locking slotted type	<b>F:</b> Slide locking type
--------------------------------------	---	---------------------------------

### 11 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

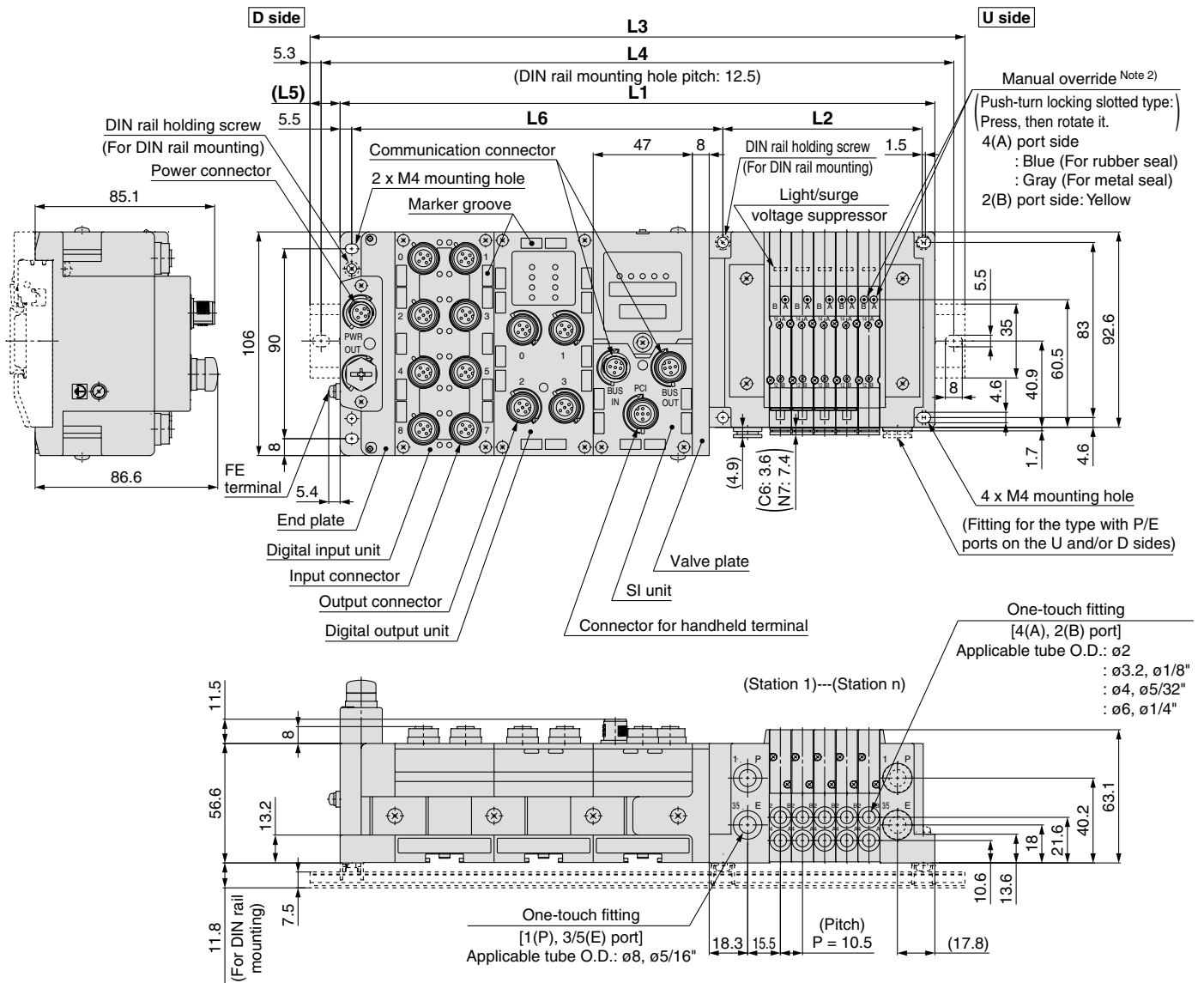
Refer to page 136 for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

# Series SY3000/5000

## Dimensions: Type 10/EX600 (M12 Connector)/Series SY3000

SS5Y3-10S6□ $\frac{2}{4}$ □-Stations  $\begin{matrix} U \\ D \\ B \end{matrix}$   $\begin{matrix} C2 \\ C3, N1 (D) \\ C4, N3 \\ C6, N7 \end{matrix}$



$L1 = 10.5 \times n1 + 135.5 + 47 \times n2$   
 $L2 = 10.5 \times n1 + 42$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1)/2$   
 $L6 = 47 \times n2 + 82$

Note 1) These figures show the "SS5Y3-10S6Q22-05D-C6".  
 Note 2) Refer to page 121 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 Note 3) Refer to page 124 for dimensions of A or B port top-ported type.

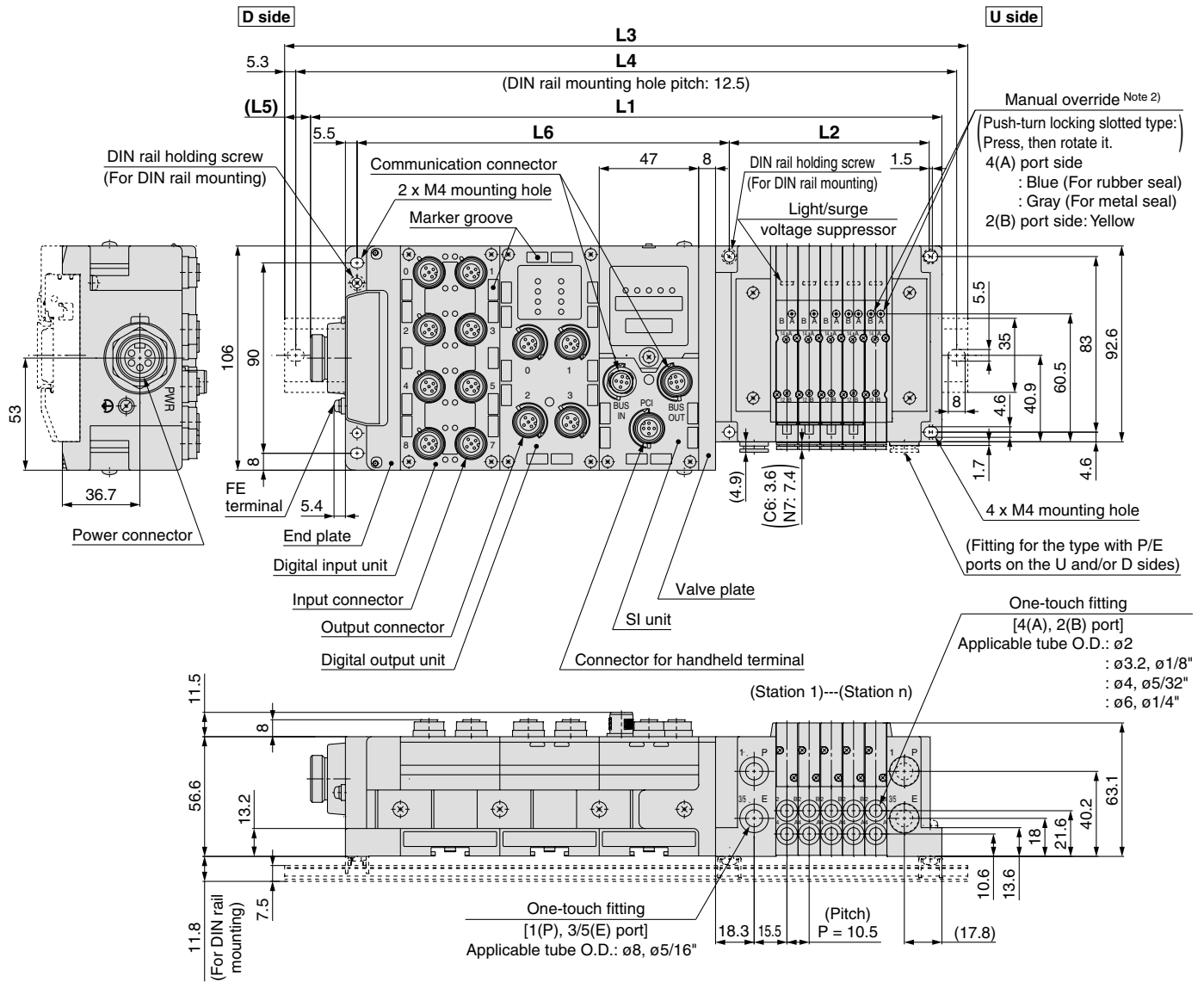
### L3: DIN Rail Overall Length

Valve stations (n1) / I/O unit stations (n2)	Valve stations (n1)																							
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
0	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	
1	235.5	248	248	260.5	273	285.5	298	310.5	323	323	335.5	348	360.5	373	385.5	385.5	398	410.5	423	435.5	448	448	460.5	
2	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	410.5	423	435.5	448	460.5	473	485.5	485.5	498	510.5	
3	323	335.5	348	360.5	373	385.5	385.5	398	410.5	423	435.5	448	448	460.5	473	485.5	498	510.5	510.5	523	535.5	548	560.5	
4	373	385.5	398	410.5	410.5	423	435.5	448	460.5	473	473	485.5	498	510.5	523	535.5	548	548	560.5	573	585.5	598	610.5	
5	423	435.5	448	448	460.5	473	485.5	498	510.5	510.5	523	535.5	548	560.5	573	573	585.5	598	610.5	623	635.5	635.5	648	
6	473	473	485.5	498	510.5	523	535.5	535.5	548	560.5	573	585.5	598	610.5	610.5	623	635.5	648	660.5	673	673	685.5	698	
7	510.5	523	535.5	548	560.5	573	573	585.5	598	610.5	623	635.5	635.5	648	660.5	673	685.5	698	698	710.5	723	735.5	748	
8	560.5	573	585.5	598	598	610.5	623	635.5	648	660.5	673	673	685.5	698	710.5	723	735.5	735.5	748	760.5	773	785.5	798	
9	610.5	623	635.5	635.5	648	660.5	673	685.5	698	698	710.5	723	735.5	748	760.5	760.5	773	785.5	798	810.5	823	835.5	835.5	



## Dimensions: Type 10/EX600 (7/8 Inch Connector)/Series SY3000

SS5Y3-10S6□<sub>5</sub>□<sub>3</sub>□<sub>5</sub> - Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$  -  $\begin{matrix} \text{C2} \\ \text{C3, N1 (D)} \\ \text{C4, N3} \\ \text{C6, N7} \end{matrix}$



L1 = 10.5 x n1 + 152 + 47 x n2  
 L2 = 10.5 x n1 + 42  
 L4 = L3 - 10.5  
 L5 = (L3 - L1)/2  
 L6 = 47 x n2 + 82

Note 1) These figures show the "SS5Y3-10S6Q32-05D-C6".  
 Note 2) Refer to page 121 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 Note 3) Refer to page 124 for dimensions of A or B port top-ported type.

### L3: DIN Rail Overall Length

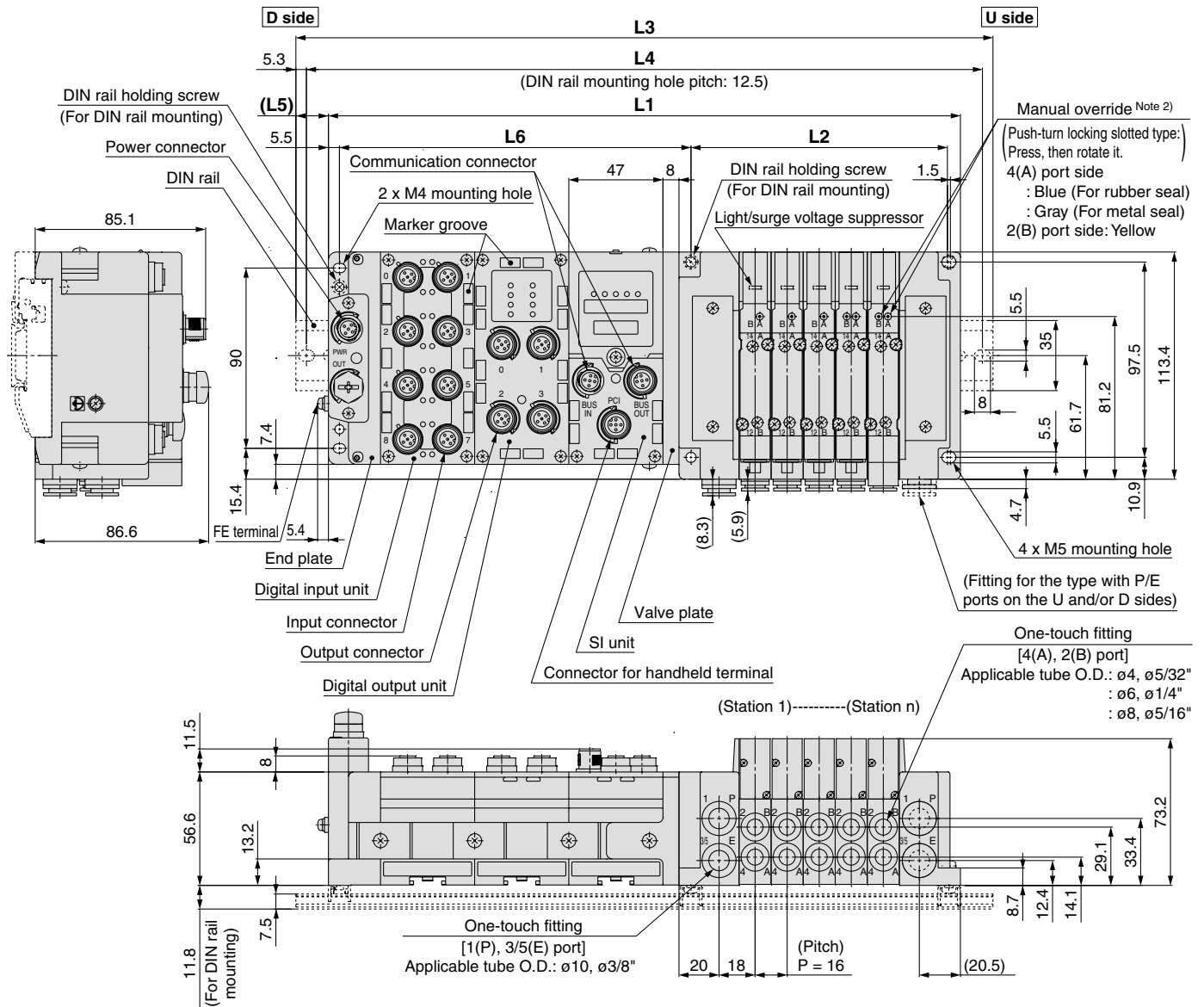
Valve stations (n1) I/O unit stations (n2)	Valve stations (n1)																							
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
0	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.5	323	323	335.5	348	360.5	373	385.5	385.5	398	410.5	423	435.5	
1	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	360.5	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	
2	298	310.5	323	323	335.5	348	360.5	373	385.5	385.5	398	410.5	423	435.5	448	448	460.5	473	485.5	498	510.5	523	523	
3	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548	548	560.5	573	
4	385.5	398	410.5	423	435.5	448	448	460.5	473	485.5	498	510.5	510.5	523	535.5	548	560.5	573	585.5	598	598	610.5	623	
5	435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548	548	560.5	573	585.5	598	610.5	610.5	623	635.5	648	660.5	673	
6	485.5	498	510.5	510.5	523	535.5	548	560.5	573	573	585.5	598	610.5	623	635.5	648	648	660.5	673	685.5	698	710.5	710.5	
7	535.5	548	548	560.5	573	585.5	598	610.5	610.5	623	635.5	648	660.5	673	673	685.5	698	710.5	723	735.5	735.5	748	760.5	
8	573	585.5	598	610.5	623	635.5	635.5	648	660.5	673	685.5	698	710.5	710.5	723	735.5	748	760.5	773	773	785.5	798	810.5	
9	623	635.5	648	660.5	673	673	685.5	698	710.5	723	735.5	735.5	748	760.5	773	785.5	798	798	810.5	823	835.5	848	860.5	

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 Plug-in Connector  
 Terminal Block Box  
 Lead Wire Connector  
 Circular Connector  
 EX500  
 EX600  
 EX250  
 EX260  
 EX126  
 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Series SY3000/5000

## Dimensions: Type 10/EX600 (M12 Connector)/Series SY5000

SS5Y5-10S6□□□-Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$



$L1 = 16 \times n1 + 141.5 + 47 \times n2$   
 $L2 = 16 \times n1 + 48$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1)/2$   
 $L6 = 47 \times n2 + 81.5$

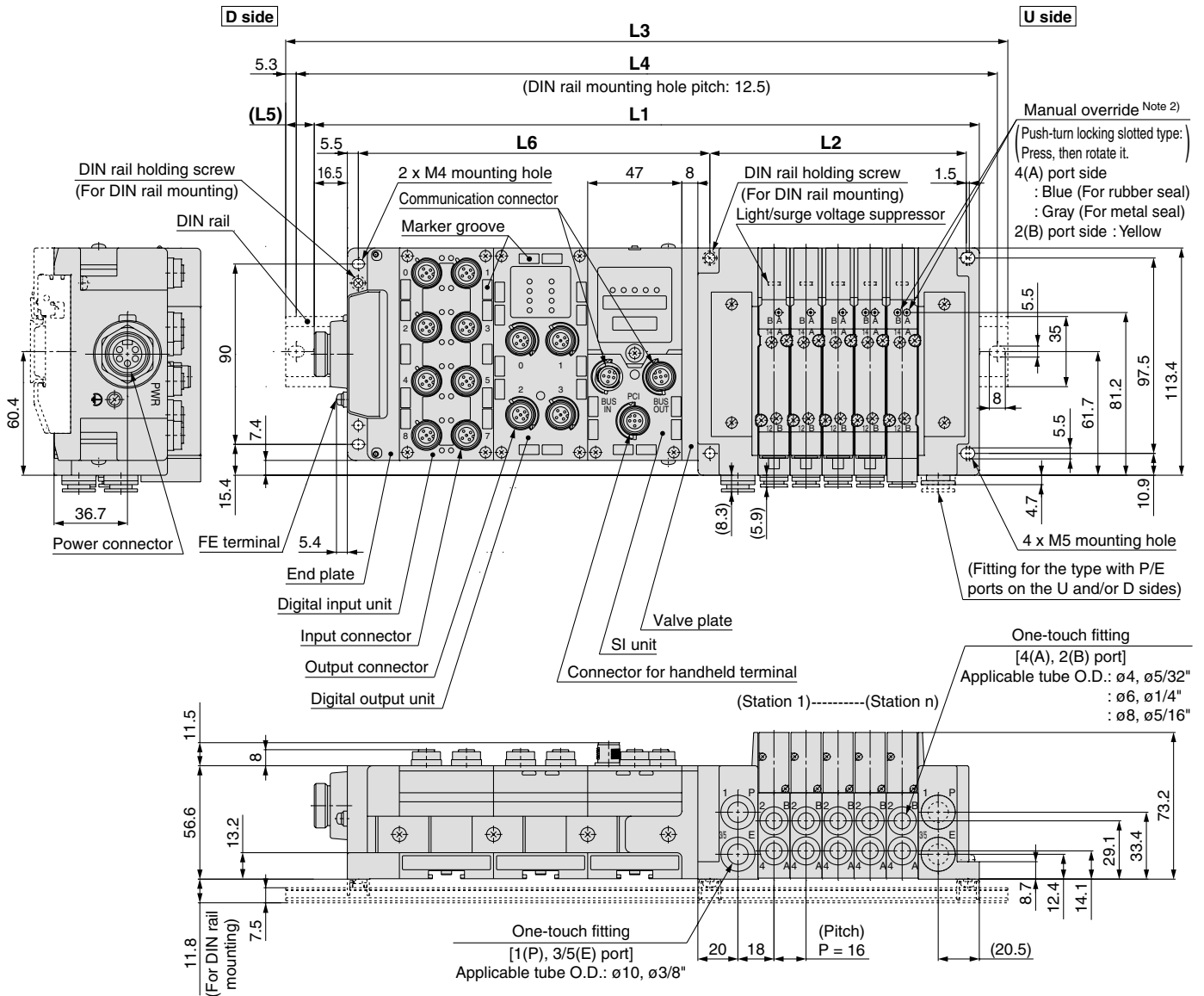
Note 1) These figures show the "SS5Y5-10S6Q22-05D-C8".  
 Note 2) Refer to page 122 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 Note 3) Refer to page 122 for dimensions of A or B port top-ported type.

### L3: DIN Rail Overall Length

Valve stations (n1) / I/O unit stations (n2)	Valve stations (n1)																							
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
0	198	223	235.5	248	273	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	560.5	
1	248	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	
2	298	310.5	323	348	360.5	373	398	410.5	423	435.5	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	623	635.5	648	
3	348	360.5	373	398	410.5	423	435.5	460.5	473	485.5	498	523	535.5	548	573	585.5	598	610.5	635.5	648	660.5	685.5	698	
4	385.5	410.5	423	435.5	460.5	473	485.5	498	523	535.5	548	573	585.5	598	610.5	635.5	648	660.5	673	698	710.5	723	748	
5	435.5	448	473	485.5	498	523	535.5	548	560.5	585.5	598	610.5	635.5	648	660.5	673	698	710.5	723	748	760.5	773	785.5	
6	485.5	498	523	535.5	548	560.5	585.5	598	610.5	623	648	660.5	673	698	710.5	723	735.5	760.5	773	785.5	810.5	823	835.5	
7	535.5	548	560.5	585.5	598	610.5	623	648	660.5	673	698	710.5	723	735.5	760.5	773	785.5	798	823	835.5	848	873	885.5	
8	573	598	610.5	623	648	660.5	673	685.5	710.5	723	735.5	760.5	773	785.5	798	823	835.5	848	873	885.5	898	910.5	935.5	
9	623	648	660.5	673	685.5	710.5	723	735.5	748	773	785.5	798	823	835.5	848	860.5	885.5	898	910.5	935.5	948	960.5	973	

## Dimensions: Type 10/EX600 (7/8 Inch Connector)/Series SY5000

SS5Y5-10S6□<sub>3</sub>□<sub>5</sub>-Stations  $\begin{matrix} U \\ D \\ B \end{matrix} \begin{matrix} C4, N3 \\ C6, N7 \\ C8, N9 \end{matrix} (D)$



$$\begin{aligned} L1 &= 16 \times n1 + 158 + 47 \times n2 \\ L2 &= 16 \times n1 + 48 \\ L4 &= L3 - 10.5 \\ L5 &= (L3 - L1)/2 \\ L6 &= 47 \times n2 + 81.5 \end{aligned}$$

### L3: DIN Rail Overall Length

Valve stations (n1) / I/O unit stations (n2)	Valve stations (n1)																							
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
0	223	235.5	248	273	285.5	298	310.5	335.5	348	360.5	385.5	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	560.5	573	
1	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	560.5	573	585.5	598	623	
2	310.5	335.5	348	360.5	373	398	410.5	423	435.5	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	623	635.5	648	660.5	
3	360.5	373	398	410.5	423	435.5	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	610.5	635.5	648	660.5	685.5	698	710.5	
4	410.5	423	435.5	460.5	473	485.5	498	523	535.5	548	573	585.5	598	610.5	635.5	648	660.5	685.5	698	710.5	723	748	760.5	
5	460.5	473	485.5	498	523	535.5	548	560.5	585.5	598	610.5	635.5	648	660.5	673	698	710.5	723	748	760.5	773	785.5	810.5	
6	498	523	535.5	548	560.5	585.5	598	610.5	635.5	648	660.5	673	698	710.5	723	735.5	760.5	773	785.5	810.5	823	835.5	848	
7	548	560.5	585.5	598	610.5	623	648	660.5	673	698	710.5	723	735.5	760.5	773	785.5	810.5	823	835.5	848	873	885.5	898	
8	598	610.5	623	648	660.5	673	685.5	710.5	723	735.5	760.5	773	785.5	798	823	835.5	848	873	885.5	898	910.5	935.5	948	
9	648	660.5	673	685.5	710.5	723	735.5	760.5	773	785.5	798	823	835.5	848	860.5	885.5	898	910.5	935.5	948	960.5	973	-	

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 Plug-in Connector  
 Terminal Block Box  
 Lead Wire Connector  
 Circular Connector  
 EX500  
 EX600  
 EX250  
 EX260  
 EX126  
 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Plug-in Connector Connecting Base

EX600

Type 12  
Top Ported

# Series SY3000/5000



RoHS

## How to Order Manifold

SS5Y **3** - 12S6 **Q** **2** - 05 **U** - **9** **9**

1 2 3 4 5 6 7 8

Refer to pages 124 and 125 for dimensions of Type 12/Top ported type.

### 1 Series

3	SY3000
5	SY5000

### 2 SI unit

0	Without SI unit
Q	DeviceNet™
N	PROFIBUS DP
V	CC-Link
ZE	EtherNet/IP™
D	EtherCAT

Note 1) I/O unit cannot be mounted without SI unit.

Note 2) Valve plate which connects manifold and SI unit is not mounted to a valve without SI unit. Refer to the EX600 catalog (CAT.E02-24) for mounting.

### 3 SI unit output polarity, end plate type

SI unit output polarity	Power supply with M12 connector	Power supply with 7/8 inch connector
Without SI unit	Nil	
SI unit positive common	2	3
SI unit negative common	4	5

Note 1) Without SI unit, the symbol is nil.

Note 2) Ensure a match with the common specifications of the value to be used.

### 4 I/O unit stations

Nil	None
1	1 stations
⋮	⋮
9	9 stations

Note 1) Without SI unit, the symbol is nil.

Note 2) SI unit is not included in I/O unit stations.

Note 3) When I/O unit is selected, it is shipped separately, and assembled by customer. Refer to the attached operation manual for mounting.

### 5 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
16	16 stations	Specified layout Note 2) (Available up to 32 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

### 6 P, E port entry, SUP/EXH block assembly

	Internal pilot	Internal pilot, Built-in silencer	External pilot
P, E port entry U side (2 to 10 stations)	U	C Note)	G
P, E port entry D side (2 to 10 stations)	D	E Note)	H
P, E port entry both sides (2 to 24 stations)	B	—	J

\* For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Note) For SUP/EXH block assembly specifications, built-in silencer types will have P port entry stipulated.

### 7 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

\* For N, sizes are in inches.

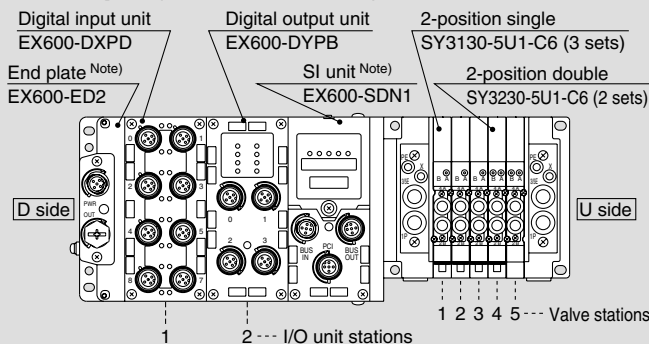
### 8 Mounting

Symbol	Mounting
Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	⋮
D24	For 24 stations

\* If the DIN rail must be mounted without an SI unit, select D0. Then, refer to L3 of the dimensions for the DIN rail length and order separately. (Refer to page 140 for the DIN rail part number.)

## How to Order Manifold Assembly

### Example (SS5Y3-12S6□-□)



SS5Y3-12S6Q42-05B ..... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 2 sets (2-position double part no.)  
 \*EX600-DXPD ..... 1 set I/O unit part number (Station 1)  
 \*EX600-DYPB ..... 1 set I/O unit part number (Station 2)

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

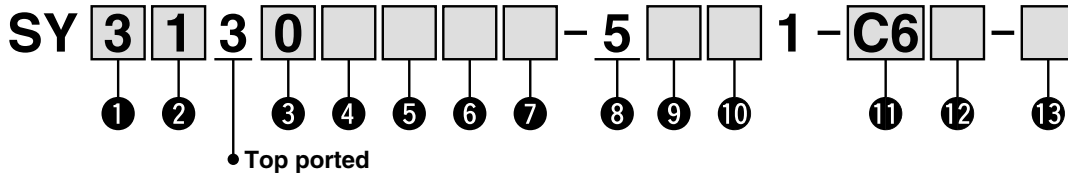
• The valve arrangement is numbered as the 1st station from the D side.  
 • Under the manifold part number, state the valves to be mounted, then the I/O units in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note) Do not enter the SI unit part number and the end plate part number together.

Refer to Series EX600 Fieldbus System (For Input/Output) (CAT.E02-24) for details on the EX600 Integrated-type (For I/O) Serial Transmission System. (IP40 specifications apply depending on the selected I/O unit.)

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

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

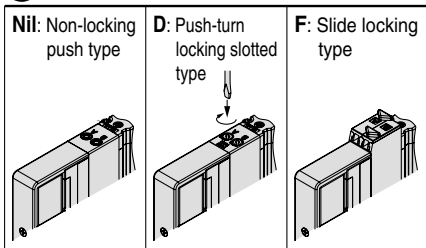
### 9 Light/surge voltage suppressor and common specification

R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Select a valve from R, U, S or Z when the SI unit polarity is positive common. Select a valve from R, U, NS or NZ when the SI unit output polarity is negative common.

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override



### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

#### One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

### 12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

### 13 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 136 for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.

Type 10  
Side Ported

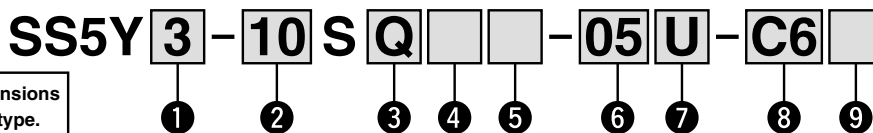
Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

EX250

# Series SY3000/5000 C €

## How to Order Manifold



Refer to page 123 for dimensions of Type 11/Bottom ported type.

### 1 Series

3	SY3000
5	SY5000

### 3 SI unit

0	Without SI unit
Q	DeviceNet™ (Negative common)
N	PROFIBUS DP (Negative common)
V	CC-Link (Positive common)
TA	AS-Interface, (Negative common) (8 in/8 out, 31 slave modes, 2 isolated common type)
TB	AS-Interface, (Negative common) (4 in/4 out, 31 slave modes, 2 isolated common type)
TC	AS-Interface, (Negative common) (8 in/8 out, 31 slave modes, 1 common type)
TD	AS-Interface, (Negative common) (4 in/4 out, 31 slave modes, 1 common type)
Y	CANopen (Negative common)
ZE	EtherNet/IP™ (Negative common)

Note 1) Ensure that the specifications match those of the common specifications of the valve to be used.

Note 2) Input block cannot be mounted without SI unit.

Note 3) The supply current from the SI unit of AS-Interface applicable 1 power supply system specification to the input block and valve is limited.

### 2 Type

10	Side ported
11	Bottom ported*

\* The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to Plug-in Mixed Mounting Type Manifold (from page 127).

### 4 Input block stations

Nil	None
1	1 station
⋮	⋮
8	8 stations

Note) Without SI unit, the symbol is nil. The maximum number of stations is limited for the AS-Interface applicable SI unit.

### 5 Input block type

	PNP input (Positive common)	NPN input (Negative common)
Without input block	Nil	
M12, 2 inputs	A	D
M12, 4 inputs	B	E
M8, 4 inputs	C	F

Note) Without SI unit, the symbol is nil.

### 6 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
16	16 stations	Specified layout Note 2) (Available up to 32 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

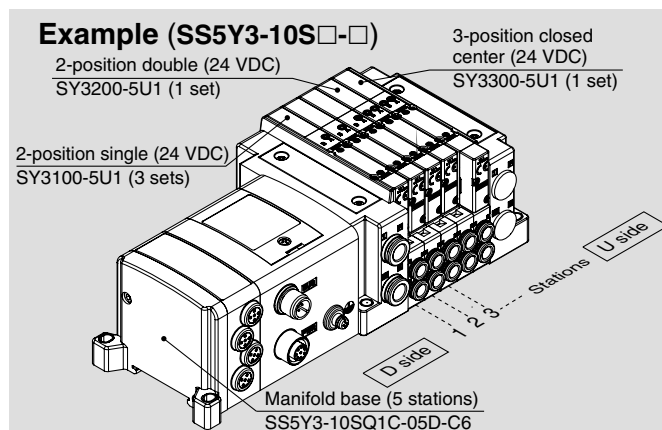
When determining the number of valve stations, note that the maximum number of solenoids for the AS-Interface applicable SI unit specification is as follows.

- 8 in/8 out specification: Max. 8 solenoids
- 4 in/4 out specification: Max. 4 solenoids

Note 3) This also includes the number of blanking plate assembly.

Note 4) For the product without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

## How to Order Manifold Assembly



SS5Y3-10SQ1C-05D-C6... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note) When mixing top ported configurations, select from page 102. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### 7 P, E port entry, SUP/EXH block assembly

	Internal pilot	Internal pilot, Built-in silencer	External pilot
P, E port entry U side (2 to 10 stations)	U	C	G
P, E port entry D side (2 to 10 stations)	D	E	H
P, E port entry both sides (2 to 24 stations)	B	F	J

\* 3/5(E) port is plugged for the built-in silencer type.

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for 8.

### 9 Mounting and Option

Symbol	Mounting	Option
Nil		None
AA	Direct mounting	Name plate (With station number)
BA		Name plate (Without station number)
D□	DIN rail mounting	Without name plate
A□		Name plate (With station number)
B□		Name plate (Without station number)

#### DIN Rail Option

Nil	Direct mounting
0	Without DIN rail (with bracket)
3	For 3 stations
⋮	⋮
24	For 24 stations

Note 1) Enter the number of stations inside □. (Refer to "DIN Rail Option" below.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

\* When it is necessary to mount a DIN rail without an SI unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. Refer to page 140 for part numbers of DIN rail.

Refer to Reduced Wiring Fieldbus System (Serial Transmission) in Electric Products (CAT.E150) for details on the EX250 Integrated-type (For Input/Output) Serial Transmission System.

## 8 A, B port size (Metric)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported
		SY3000	SY5000	SY5000
<b>C2</b>	ø2 One-touch fitting	●	—	—
<b>C3</b>	ø3.2 One-touch fitting	●	—	—
<b>C4</b>	ø4 One-touch fitting	●	●	●
<b>C6</b>	ø6 One-touch fitting	●	●	●
<b>C8</b>	ø8 One-touch fitting	—	●	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●
<b>L4</b>	ø4 One-touch fitting	●	●	—
<b>L6</b>	ø6 One-touch fitting	●	●	—
<b>L8</b>	ø8 One-touch fitting	—	●	—
<b>B4</b>	ø4 One-touch fitting	●	●	—
<b>B6</b>	ø6 One-touch fitting	●	●	—
<b>B8</b>	ø8 One-touch fitting	—	●	—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—
P, E port size (One-touch fittings)		ø8	ø10	ø10

## A, B port size (Inch)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported
		SY3000	SY5000	SY5000
<b>N1</b>	ø1/8" One-touch fitting	●	—	—
<b>N3</b>	ø5/32" One-touch fitting	●	●	●
<b>N7</b>	ø1/4" One-touch fitting	●	●	●
<b>N9</b>	ø5/16" One-touch fitting	—	●	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●
<b>LN3</b>	ø5/32" One-touch fitting	●	—	—
<b>LN7</b>	ø1/4" One-touch fitting	●	●	—
<b>LN9</b>	ø5/16" One-touch fitting	—	●	—
<b>BN3</b>	ø5/32" One-touch fitting	●	—	—
<b>BN7</b>	ø1/4" One-touch fitting	●	●	—
<b>BN9</b>	ø5/16" One-touch fitting	—	●	—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø3/8"

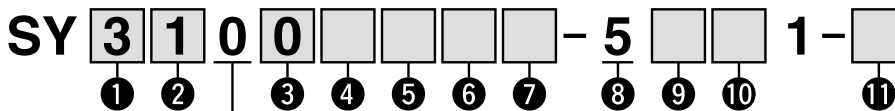
(Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 141 to 143).

\* Indicate the size on the manifold specification sheet in the case of "CM", "LM".

\* The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Base mounted

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

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

### 9 Light/surge voltage suppressor and common specification

R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* "R" and "U" are applicable for every SI unit. However, "S" and "Z" can be used only for CC-Link applicable unit and "NS" and "NZ" are for units which are not CC-Link applicable.

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override

Nil:	D:	F:
Non-locking push type	Push-turn locking slotted type	Slide locking type

### 11 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

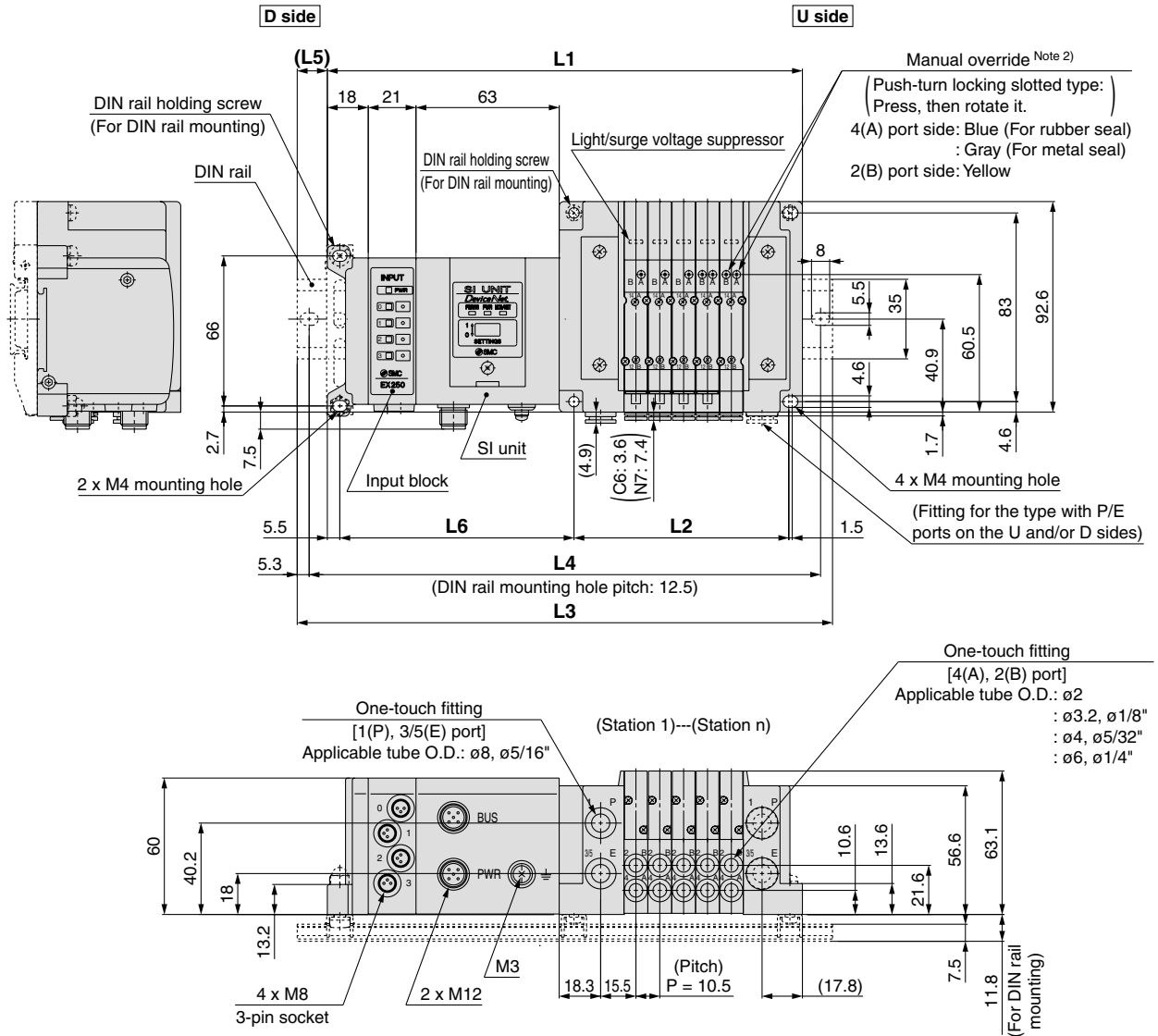
Refer to page 136 for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

# Series SY3000/5000

## Dimensions: Type 10/EX250/Series SY3000

SS5Y3-10S□-Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$   $\begin{matrix} \text{C2} \\ \text{C3}, \text{N1} \\ \text{C4}, \text{N3} \\ \text{C6}, \text{N7} \end{matrix}$  (D)



Note 1) These figures show the "SS5Y3-10SQ1A-05D-C6".

Note 2) Refer to page 121 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 124 for dimensions of A or B port top-ported type.

$L1 = 10.5 \times n1 + 135.5 + 21 \times n2$   
 $L2 = 10.5 \times n1 + 42$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1)/2$   
 $L6 = 21 \times n2 + 82$

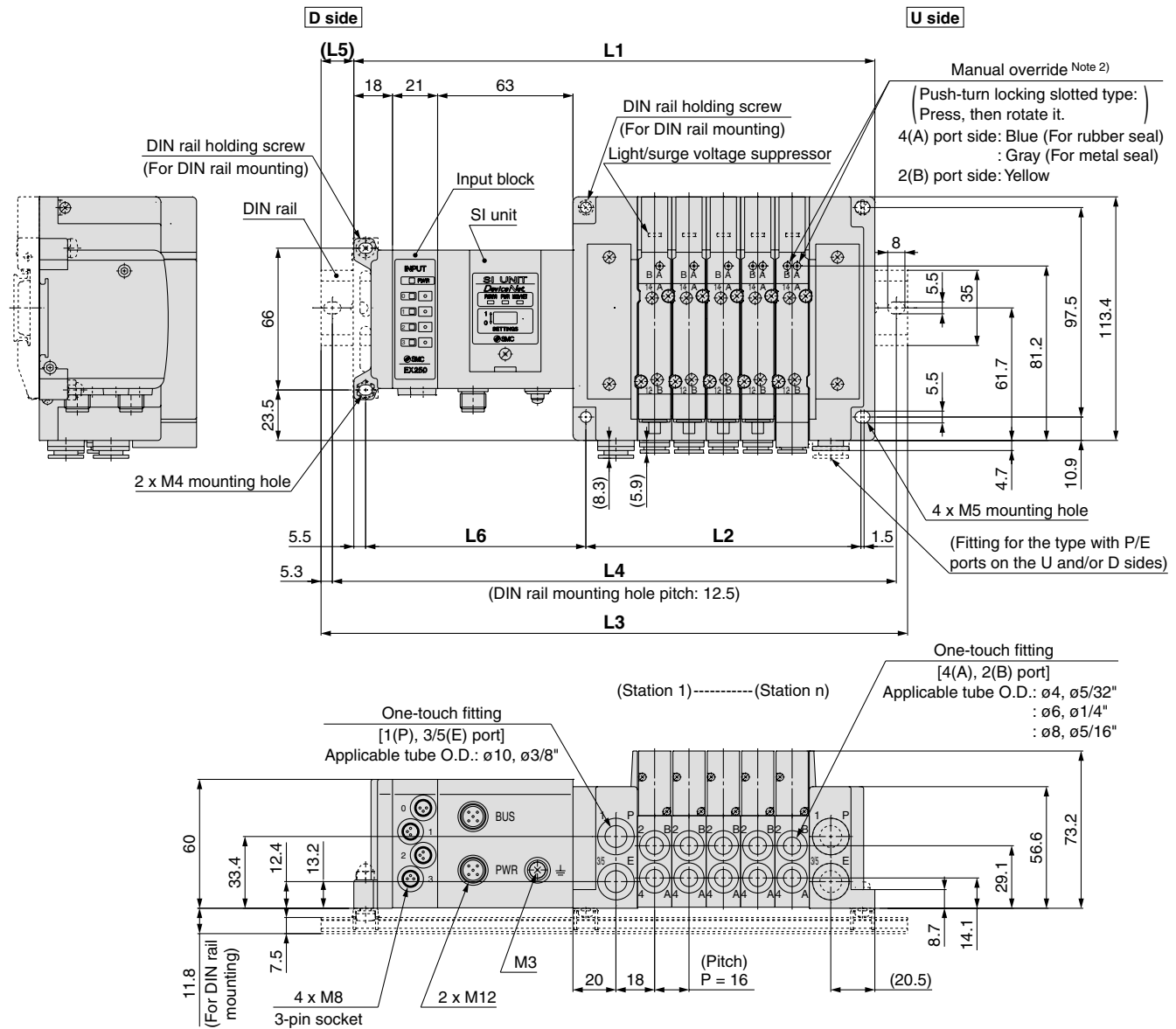
### L3: DIN Rail Overall Length

Valve stations (n1) / Input block stations (n2)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423
1	210.5	223	223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5
2	223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5
3	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5
4	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498
5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523
6	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548
7	335.5	348	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548	548	560.5
8	348	360.5	373	385.5	398	410.5	423	423	435.5	448	460.5	473	485.5	485.5	498	510.5	523	535.5	548	548	560.5	573	585.5



## Dimensions: Type 10/EX250/Series SY5000

SS5Y5-10S□-Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$



$$\begin{aligned} L1 &= 16 \times n1 + 141.5 + 21 \times n2 \\ L2 &= 16 \times n1 + 48 \\ L4 &= L3 - 10.5 \\ L5 &= (L3 - L1)/2 \\ L6 &= 21 \times n2 + 81.5 \end{aligned}$$

Note 1) These figures show the "SS5Y5-10SQ1A-05D-C8".  
 Note 2) Refer to page 122 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 Note 3) Refer to page 125 for dimensions of A or B port top-ported type.

### L3: DIN Rail Overall Length

Input block stations (n2)	Valve stations (n1)																							
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
0	198	223	235.5	248	273	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	560.5	
1	223	235.5	260.5	273	285.5	298	323	335.5	348	373	385.5	398	410.5	435.5	448	460.5	485.5	498	510.5	523	548	560.5	573	
2	248	260.5	273	298	310.5	323	335.5	360.5	373	385.5	410.5	423	435.5	448	473	485.5	498	523	535.5	548	560.5	585.5	598	
3	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	623	
4	285.5	298	323	335.5	348	373	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	548	560.5	573	585.5	610.5	623	635.5	
5	310.5	323	335.5	360.5	373	385.5	398	423	435.5	448	473	485.5	498	510.5	535.5	548	560.5	585.5	598	610.5	623	648	660.5	
6	323	348	360.5	373	398	410.5	423	435.5	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598	623	635.5	648	660.5	685.5	
7	348	360.5	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	548	560.5	573	585.5	610.5	623	635.5	648	673	685.5	698	
8	373	385.5	398	423	435.5	448	473	485.5	498	510.5	535.5	548	560.5	573	598	610.5	623	648	660.5	673	685.5	710.5	723	

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 Plug-in Connector  
 Terminal Block Box  
 Lead Wire Connector  
 Circular Connector  
 EX500 EX600 EX250 EX260 EX126 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

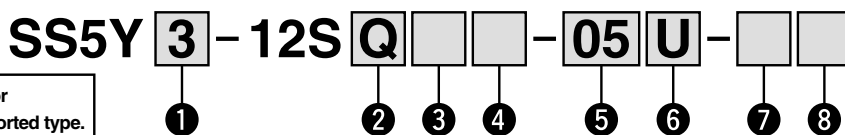
# Plug-in Connector Connecting Base

EX250

Type 12  
Top Ported

# Series SY3000/5000 C €

## How to Order Manifold



Refer to pages 124 and 125 for dimensions of Type 12/Top ported type.

### 1 Series

3	SY3000
5	SY5000

### 3 Input block stations

Nil	None
1	1 station
⋮	⋮
8	8 stations

Note) Without SI unit, the symbol is nil. The maximum number of stations is limited for the AS-Interface applicable SI unit.

### 4 Input block type

	PNP input (Positive common)	NPN input (Negative common)
Without input block	Nil	
M12, 2 inputs	A	D
M12, 4 inputs	B	E
M8, 4 inputs	C	F

Note) Without SI unit, the symbol is nil.

### 2 SI unit

0	Without SI unit
Q	DeviceNet™ (Negative common)
N	PROFIBUS DP (Negative common)
V	CC-Link (Positive common)
TA	AS-Interface, (Negative common) (8 in/8 out, 31 slave modes, 2 isolated common type)
TB	AS-Interface, (Negative common) (4 in/4 out, 31 slave modes, 2 isolated common type)
TC	AS-Interface, (Negative common) (8 in/8 out, 31 slave modes, 1 common type)
TD	AS-Interface, (Negative common) (4 in/4 out, 31 slave modes, 1 common type)
Y	CANopen (Negative common)
ZE	EtherNet/IP™ (Negative common)

Note 1) Ensure a match with the common specifications of the value to be used.

Note 2) Input block cannot be mounted without SI unit.

Note 3) The supply current from the SI unit of AS-Interface applicable 1 power supply system specification to the input block and valve is limited.

### 5 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
16	16 stations	Specified layout Note 2) (Available up to 32 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

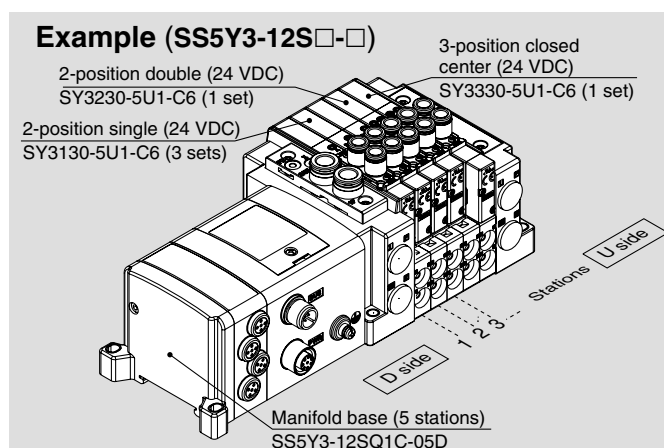
When determining the number of valve stations, note that the maximum number of solenoids for the AS-Interface applicable SI unit specification is as follows.

- 8 in/8 out specification: Max. 8 solenoids
- 4 in/4 out specification: Max. 4 solenoids

Note 3) This also includes the number of blanking plate assembly.

Note 4) For the product without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

## How to Order Manifold Assembly



SS5Y3-12SQ1C-05D ... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

### 6 P, E port entry, SUP/EXH block assembly

	Internal pilot	Internal pilot, Built-in silencer	External pilot
P, E port entry U side (2 to 10 stations)	U	C Note)	G
P, E port entry D side (2 to 10 stations)	D	E Note)	H
P, E port entry both sides (2 to 24 stations)	B	—	J

\* For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Note) For SUP/EXH block assembly specifications, built-in silencer types will have P port entry stipulated.

### 7 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

\* For N, sizes are in inches.

### 8 Mounting

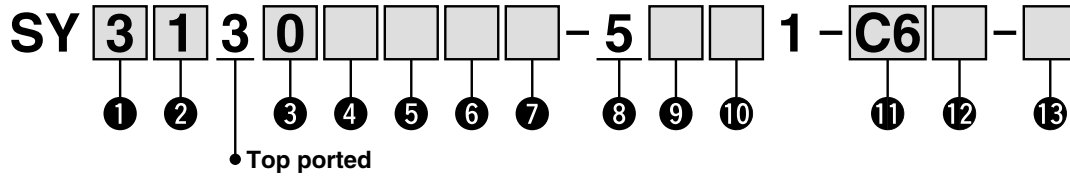
Symbol	Mounting
Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	⋮
D24	For 24 stations

\* If the DIN rail must be mounted without an SI unit, select D0. Then, refer to L3 of the dimensions for the DIN rail length and order separately. (Refer to page 140 for the DIN rail part number.) (Refer to page 140 for the DIN rail part number.)

Refer to Reduced Wiring Fieldbus System (Serial Transmission) in Electric Products (CAT.E150) for details on the EX250 Integrated-type (For Input/Output) Serial Transmission System.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Metal seal
1	Rubber seal

### 4 Pilot type

Nil	Rubber seal
R	Metal seal

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

5	24 VDC
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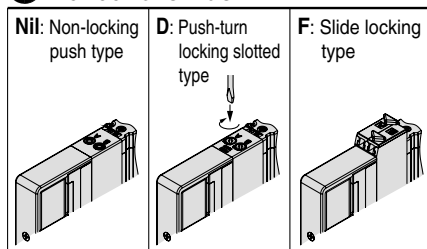
### 9 Light/surge voltage suppressor and common specification

R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* "R" and "U" are applicable for every SI unit. However, "S" and "Z" can be used only for CC-Link applicable unit and "NS" and "NZ" are for units which are not CC-Link applicable.

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override



### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

#### One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

### 12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

### 13 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 136 for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 EX510  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500 EX500  
 EX600 EX250  
 EX260 EX126 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

EX260

# Series SY3000/5000

RoHS

## How to Order Manifold

Refer to page 123 for Type 11/Bottom ported dimensions.

SS5Y **3** - **10** S **NA** **N** - **05** **U** - **C6**

### 1 Series

3	SY3000
5	SY5000

### 2 Type

10	Side ported
11	Bottom ported

\* The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to Plug-in Mixed Type Manifold (from page 127).

### 3 SI unit specifications

Symbol	Protocol	Number of outputs	Communication connector
0	Without SI unit		
QA	DeviceNet™	32	M12
QB		16	
NA	PROFIBUS DP	32	M12
NB		16	
NC		32	D-sub Note)
ND		16	
VA	CC-Link	32	M12
VB		16	
DA	EtherCAT	32	M12
DB		16	
FA	PROFINET	32	M12
FB		16	

Note) IP40 for the D-sub applicable communication connector specification.  
For SI unit part number, refer to page 136.  
DIN rail cannot be mounted without SI unit.

### 4 SI unit output polarity

Nil	Positive common
N	Negative common

Note 1) Ensure a match with the common specifications of the value to be used.

Note 2) Without SI unit, the symbol is nil.

### 8 A, B port size (Metric)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported		
		SY3000	SY5000	SY5000		
C2 C3 C4 C6 C8 CM*	Straight	ø2 One-touch fitting	●	—	—	
		ø3.2 One-touch fitting	●	—	—	
		ø4 One-touch fitting	●	●	●	
		ø6 One-touch fitting	●	●	●	
		ø8 One-touch fitting	—	●	●	
		Straight port, mixed sizes	●	●	●	
L4 L6 L8 B4 B6 B8 LM*	Elbow	Upward	ø4 One-touch fitting	●	●	—
			ø6 One-touch fitting	●	●	—
			ø8 One-touch fitting	—	●	—
		Downward	ø4 One-touch fitting	●	●	—
			ø6 One-touch fitting	●	●	—
			ø8 One-touch fitting	—	●	—
Elbow port, mixed sizes (including upward and downward piping)	●	●	—			
P, E port size (One-touch fittings)		ø8	ø10	ø10		

Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 141 to 143).

\* Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

### 5 Valve stations

In the case of the 32-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
16	16 stations	
02	2 stations	Specified layout Note 2) (Available up to 32 solenoids)
⋮	⋮	
24	24 stations	

In the case of the 16-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
08	16 stations	
02	2 stations	Specified layout Note 2) (Available up to 16 solenoids)
⋮	⋮	
16	24 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.  
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet.  
(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

Note 4) For the model without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

### 6 P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

### 7 SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* 3/5(E) port is plugged for the built-in silencer type.  
\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### 9 Mounting and Option

Symbol	Mounting	Option
Nil	Direct mounting	None
AA		Name plate (With station number)
BA		Name plate (Without station number)
D□	DIN rail mounting	Without name plate
A□		Name plate (With station number)
B□		Name plate (Without station number)

Note 1) Enter the number of stations inside □.  
(Refer to "DIN Rail Option" below.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

#### DIN Rail Option

Nil	Direct mounting	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
⋮	⋮	
24	For 24 stations	

\* When it is necessary to mount a DIN rail without an SI unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. Refer to page 140 for part numbers of DIN rail.

### A, B port size (Inch)

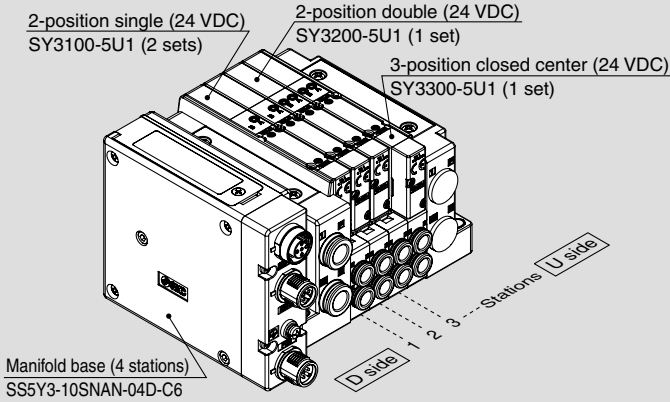
Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported		
		SY3000	SY5000	SY5000		
N1 N3 N7 N9 CM*	Straight	ø1/8" One-touch fitting	●	—	—	
		ø5/32" One-touch fitting	●	●	●	
		ø1/4" One-touch fitting	●	●	●	
		ø5/16" One-touch fitting	—	●	●	
		Straight port, mixed sizes	●	●	●	
LN3 LN7 LN9 BN3 BN7 BN9 LM*	Elbow	Upward	ø5/32" One-touch fitting	●	—	—
			ø1/4" One-touch fitting	●	●	—
			ø5/16" One-touch fitting	—	●	—
		Downward	ø5/32" One-touch fitting	●	—	—
			ø1/4" One-touch fitting	●	●	—
Elbow port, mixed sizes (including upward and downward piping)	—	●	—			
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø3/8"		

\* The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

Refer to Fieldbus System (CAT.E02-25) for details on the EX260 Integrated-type (For Output) Serial Transmission System.

## How to Order Manifold Assembly

### Example (SS5Y3-10SNAN-□)



SS5Y3-10SNAN-04D-C6...1 set (Type 10 4-station manifold base part no.)  
 \*SY3100-5U1.....2 sets (2-position single part no.)  
 \*SY3200-5U1.....1 set (2-position double part no.)  
 \*SY3300-5U1.....1 set (3-position closed center part no.)

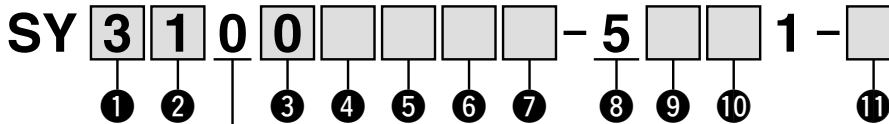
→The asterisk denotes the symbol for assembly. Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note) When mixing top ported configurations, select from page 108. Specify on a manifold specification sheet if plugs are required on the A and B port on the manifold.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



• Base mounted

### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

- \* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for details. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.
- \* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

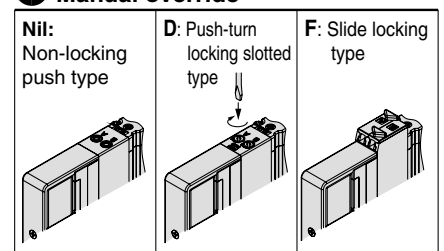
5	24 VDC
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### 9 Light/surge voltage suppressor and common specification

R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

- \* Select a valve from R, U, S or Z when the SI unit output polarity is Nil (Positive common). Select a valve from R, U, NS or NZ when the SI unit output polarity is N (Negative common).
- \* Only "Z" and "NZ" types are available for the product with power saving circuit.

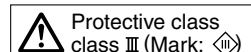
### 10 Manual override



### 11 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

- \* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.
- \* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to page 136 for part numbers of the base gasket and mounting screw.
- \* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

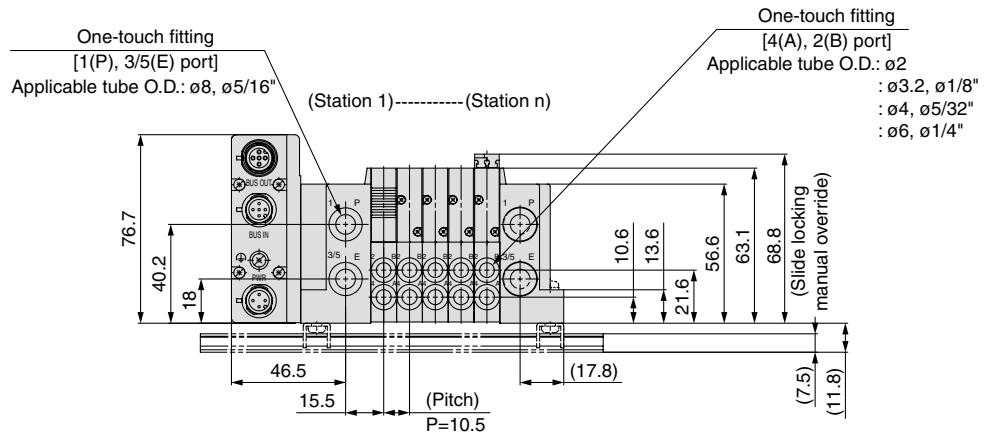
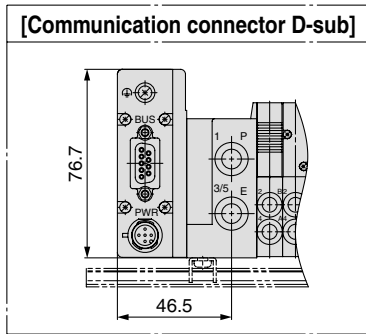
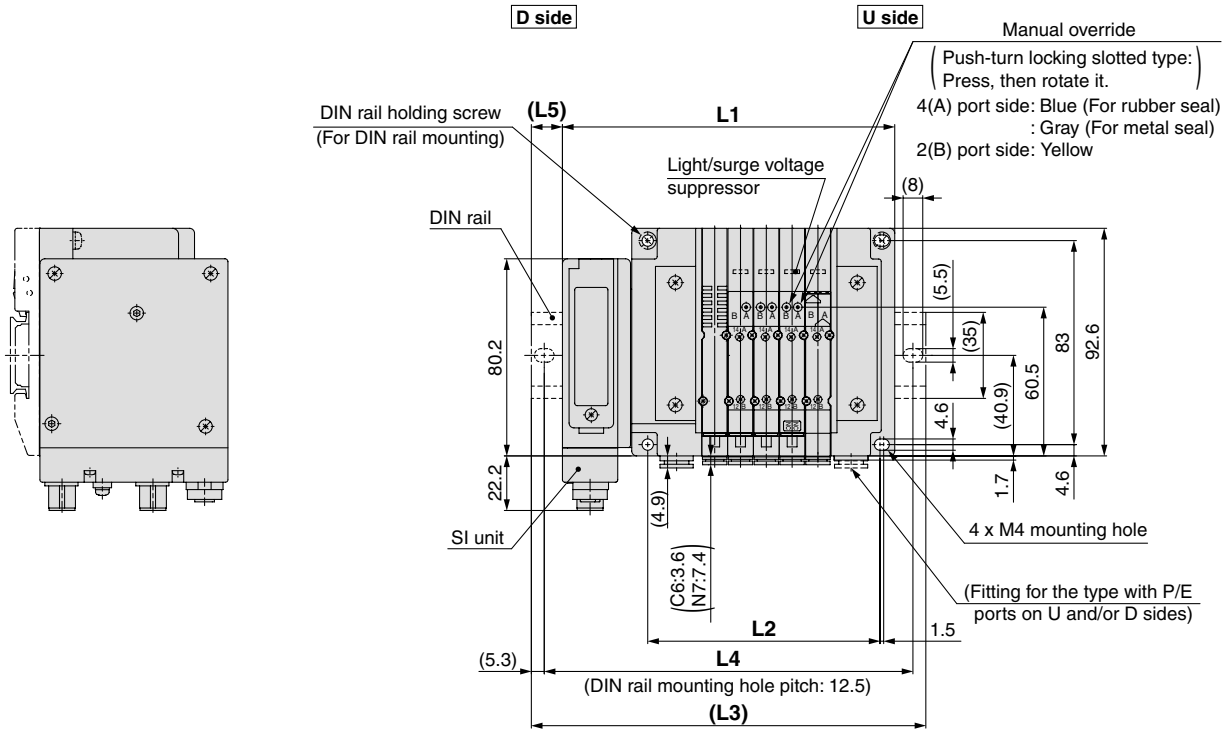


Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 EX510  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500 EX600 EX250 EX260  
 EX126 EX120  
 One-touch Filings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Series SY3000/5000

## Dimensions: Type 10/For EX260/Series SY3000

SS5Y3-10S□□-Stations  $\begin{matrix} U \\ D \end{matrix}$  -  $\begin{matrix} C2 \\ C3, N1 \\ C4, N3 \\ C6, N7 \end{matrix}$  (D)



Note 1) These figures show the "SS5Y3-10SQA-05D-C6".

Note 2) Refer to page 121 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

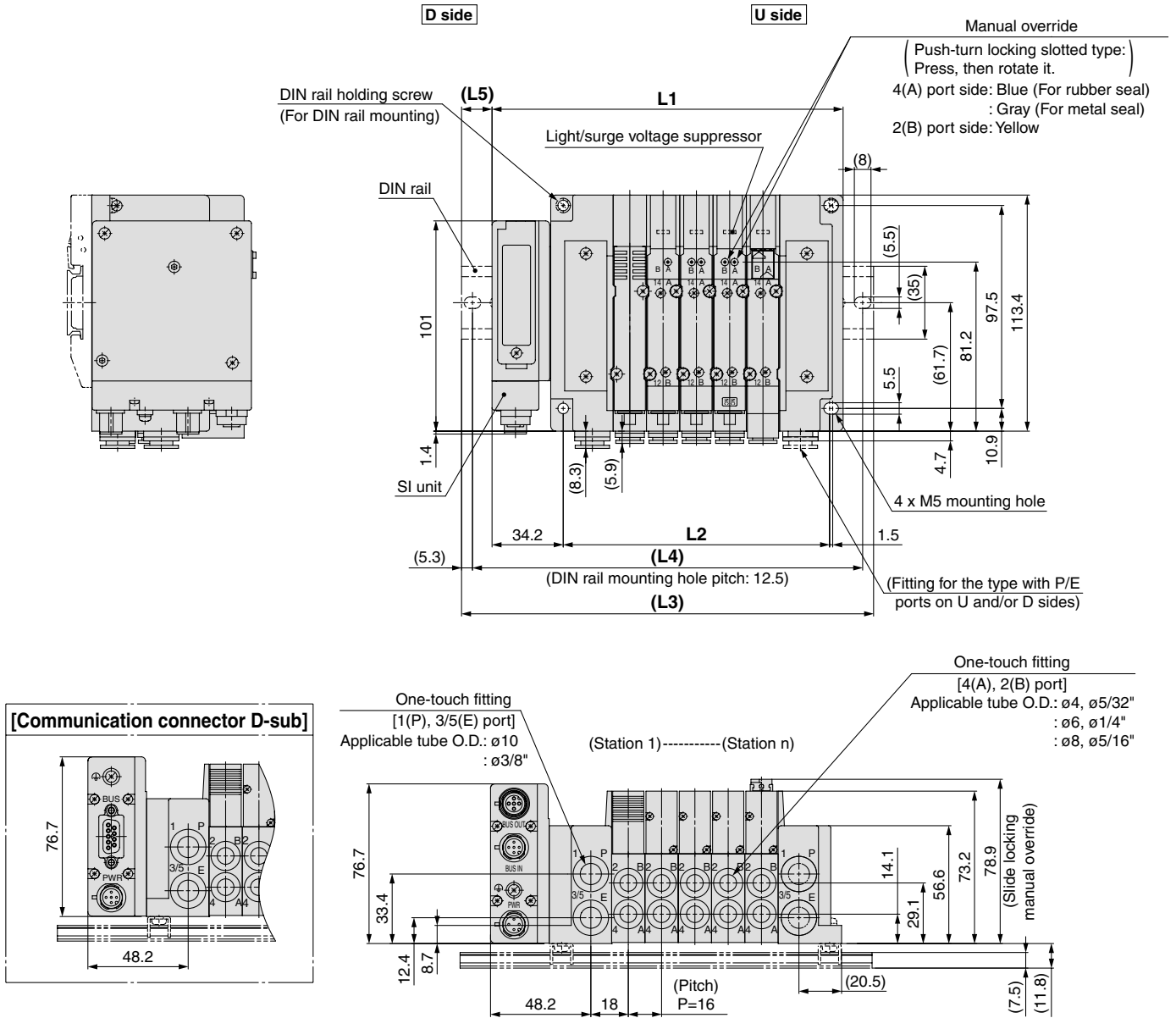
Note 3) Refer to page 124 for dimensions of A or B port top-ported type.

n: stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
L1	103.7	114.2	124.7	135.2	145.7	156.2	166.7	177.2	187.7	198.2	208.7	219.2	229.7	240.2	250.7	261.2
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5
L3	135.5	148	148	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5	285.5
L4	125	137.5	137.5	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5	275	275
L5	16	17	11.5	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12

n: stations	18	19	20	21	22	23	24
L1	271.7	282.2	292.7	303.2	313.7	324.2	334.7
L2	231	241.5	252	262.5	273	283.5	294
L3	298	310.5	323	335.5	348	348	360.5
L4	287.5	300	312.5	325	337.5	337.5	350
L5	13	14	15	16	17	12	13

## Dimensions: Type 10/For EX260/Series SY5000

SS5Y5-10S□□-Stations  $\begin{matrix} U \\ D \end{matrix}$  -  $\begin{matrix} C4, N3 \\ C6, N7 \\ C8, N9 \end{matrix}$  (D)



Note 1) These figures show the "SS5Y5-10SQA-05D-C8".  
 Note 2) Refer to page 122 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.  
 Note 3) Refer to page 125 for dimensions of A or B port top-ported type.

n: stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
L1	120.7	136.7	152.7	168.7	184.7	200.7	216.7	232.7	248.7	264.7	280.7	296.7	312.7	328.7	344.7	360.7
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320
L3	148	160.5	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373	385.5
L4	137.5	150	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5	375
L5	13.5	12	16.5	14.5	13	17.5	15.5	14	12	16.5	15	13	17.5	16	14	12.5

n: stations	18	19	20	21	22	23	24
L1	376.7	392.7	408.7	424.7	440.7	456.7	472.7
L2	336	352	368	384	400	416	432
L3	410.5	423	435.5	448	473	485.5	498
L4	400	412.5	425	437.5	462.5	475	487.5
L5	17	15	13.5	11.5	16	14.5	12.5

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
**EX500 EX600 EX250 EX260**  
 EX126  
 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Plug-in Connector Connecting Base

EX260

Type 12  
Top Ported

# Series SY3000/5000

RoHS

## How to Order Manifold

Refer to pages 124, 125 for Type 12/Top ported dimensions.

SS5Y **3** - 12S **NA N** - **05 U**   -    

①
②
③
④
⑤
⑥
⑦
⑧

### ① Series

<b>3</b>	SY3000
<b>5</b>	SY5000

### ② SI unit specifications

Symbol	Protocol	Number of outputs	Communication connector
<b>0</b>	Without SI unit		
<b>QA</b>	DeviceNet™	32	M12
<b>QB</b>		16	
<b>NA</b>	PROFIBUS DP	32	M12
<b>NB</b>		16	
<b>NC</b>		32	
<b>ND</b>		16	D-sub <sup>Note)</sup>
<b>VA</b>	CC-Link	32	M12
<b>VB</b>		16	
<b>DA</b>	EtherCAT	32	M12
<b>DB</b>		16	
<b>FA</b>	PROFINET	32	M12
<b>FB</b>		16	

Note) IP40 for the D-sub applicable communication connector specification.

For SI unit part number, refer to page 136. DIN rail cannot be mounted without SI unit.

### ③ SI unit output polarity

<b>Nil</b>	Positive common (NPN)
<b>N</b>	Negative common (PNP)

Note 1) Ensure a match with the common specifications of the value to be used.

Note 2) Without SI unit, the symbol is nil.

### ④ Valve stations

#### In the case of the 32-output SI unit

Symbol	Stations	Note
<b>02</b>	2 stations	Double wiring <sup>Note 1)</sup>
⋮	⋮	
<b>16</b>	16 stations	Specified layout <sup>Note 2)</sup> (Available up to 32 solenoids)
<b>02</b>	2 stations	
⋮	⋮	
<b>24</b>	24 stations	

#### In the case of the 16-output SI unit

Symbol	Stations	Note
<b>02</b>	2 stations	Double wiring <sup>Note 1)</sup>
⋮	⋮	
<b>08</b>	8 stations	Specified layout <sup>Note 2)</sup> (Available up to 16 solenoids)
<b>02</b>	2 stations	
⋮	⋮	
<b>16</b>	16 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet.

(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

Note 4) For the model without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

### ⑤ P, E port entry

<b>U</b> <sup>Note)</sup>	U side (2 to 10 stations)
<b>D</b> <sup>Note)</sup>	D side (2 to 10 stations)
<b>B</b>	Both sides (2 to 24 stations)

Note) **⑥** For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### ⑥ SUP/EXH block assembly

<b>Nil</b>	Internal pilot
<b>S</b>	Internal pilot, Built-in silencer
<b>R</b>	External pilot

\* For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### ⑦ P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
<b>Nil</b>	ø8	ø10
<b>N</b>	ø5/16"	ø3/8"

\* For N, sizes are in inches.

### ⑧ Mounting

Nil	Direct mounting	
<b>D</b>	DIN rail mounting (With DIN rail)	
<b>D0</b>	DIN rail mounting (Without DIN rail)	
<b>D3</b>	For 3 stations	Specify a longer rail than the standard length.
⋮	⋮	
<b>D24</b>	For 24 stations	

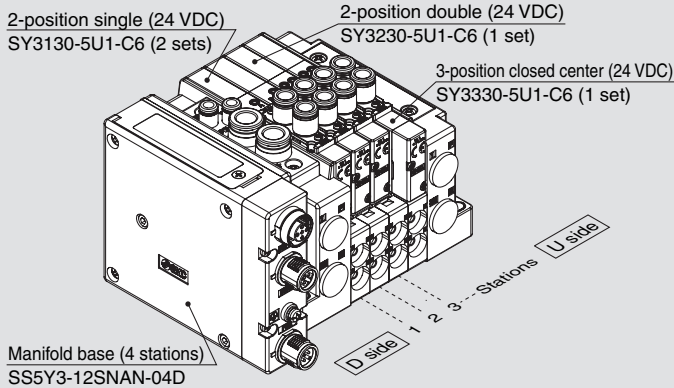
\* When it is necessary to mount a DIN rail without an SI unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. Refer to page 140 for part numbers of DIN rail.

Refer to Fieldbus System (CAT.E02-25) for details on the EX260 Integrated-type (For Output) Serial Transmission System.



## How to Order Manifold Assembly

### Example (SS5Y3-12SNAN-□)



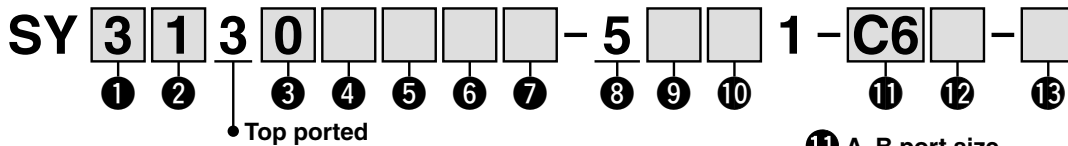
**SS5Y3-12SNAN-04D** ..... 1 set (Type 12 4-station manifold base part no.)  
 \***SY3130-5U1-C6** ..... 2 sets (2-position single part no.)  
 \***SY3230-5U1-C6** ..... 1 set (2-position double part no.)  
 \***SY3330-5U1-C6** ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

- \* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for details. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.
- \* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

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

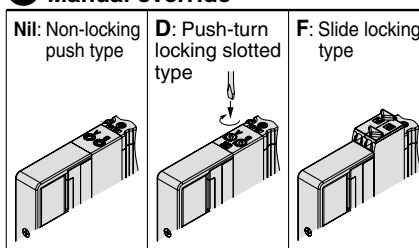
### 9 Light/surge voltage suppressor and common specification

R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Select a valve from R, U, S or Z when the SI unit output polarity is Nil (Positive common). Select a valve from R, U, NS or NZ when the SI unit output polarity is N (Negative common).

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override



### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

Symbol	A and B port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

#### One-touch fitting (Inch)

Symbol	A and B port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

### 12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

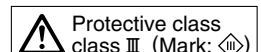
### 13 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to page 136 for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.



Specifications  
Construction  
Replacement Parts  
Plug-in Metal Base  
D-sub Connector Flat Ribbon Cable PC Wiring  
EX510  
Plug-in Connector Connecting Base  
D-sub Connector Flat Ribbon Cable PC Wiring  
Terminal Block Box  
Lead Wire  
Circular Connector  
EX500  
EX600  
EX250  
EX260  
EX126  
EX120  
One-touch Fittings and Plug Assembly Part No.  
Manifold Options  
Specific Product Precautions

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

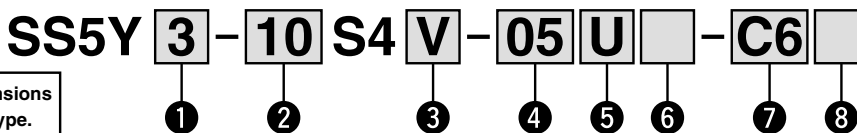
EX126

# Series SY3000/5000



RoHS

## How to Order Manifold



Refer to page 123 for dimensions of Type 11/Bottom ported type.

### 1 Series

3	SY3000
5	SY5000

### 2 Type

10	Side ported
11	Bottom ported*

\* The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to Plug-in Mixed Mounting Type Manifold (from page 127).

### 3 SI unit

0	Without SI unit
V	CC-Link (Positive common NPN)

\* Only a terminal block plate is mounted for the valve without SI unit.

### 4 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	
02	2 stations	Specified layout Note 2) (Available up to 16 solenoids)
⋮	⋮	
16	16 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications with the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

### 5 P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

### 6 SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* 3/5(E) port is plugged for the built-in silencer type.

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for 7.

### 8 Mounting and Option

Symbol	Mounting	Option
Nil	Direct mounting	None
AA		Name plate (With station number)
BA		Name plate (Without station number)
D□	DIN rail mounting	Without name plate
A□		Name plate (With station number)
B□		Name plate (Without station number)

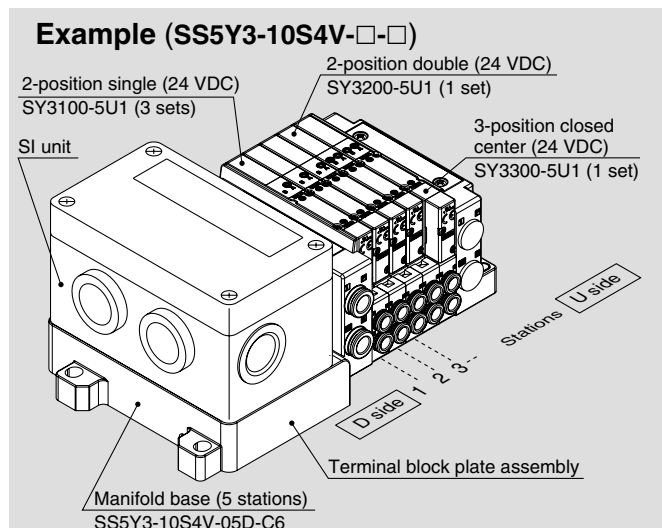
Note 1) Enter the number of stations inside □. (Refer to "DIN Rail Option" below.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

#### DIN Rail Option

Nil	Direct mounting	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
⋮	⋮	
16	For 16 stations	

## How to Order Manifold Assembly



**Example (SS5Y3-10S4V-□-□)**

SS5Y3-10S4V-05D-C6... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed center part no.)

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

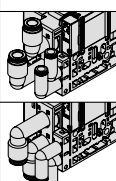
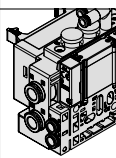
- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note) When mixing top ported configurations, select from page 114. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

Refer to Reduced Wiring Fieldbus System (Serial Transmission) in Electric Products (CAT.E150) for details on the EX126 Integrated-type (For Output) Serial Transmission System.

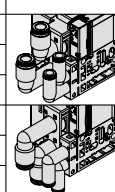
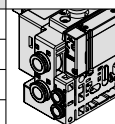
## 7 A, B port (Metric)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported
		SY3000	SY5000	SY5000
<b>C2</b>	ø2 One-touch fitting	●	—	—
<b>C3</b>	ø3.2 One-touch fitting	●	—	—
<b>C4</b>	ø4 One-touch fitting	●	●	●
<b>C6</b>	ø6 One-touch fitting	●	●	●
<b>C8</b>	ø8 One-touch fitting	—	●	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●
<b>L4</b>	Upward ø4 One-touch fitting	●	●	—
<b>L6</b>		●	●	—
<b>L8</b>		—	●	—
<b>B4</b>	Downward ø4 One-touch fitting	●	●	—
<b>B6</b>		●	●	—
<b>B8</b>		—	●	—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—
P, E port size (One-touch fittings)		ø8	ø10	ø10



## A, B port (Inch)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported
		SY3000	SY5000	SY5000
<b>N1</b>	ø1/8" One-touch fitting	●	—	—
<b>N3</b>	ø5/32" One-touch fitting	●	●	●
<b>N7</b>	ø1/4" One-touch fitting	●	●	●
<b>N9</b>	ø5/16" One-touch fitting	—	●	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●
<b>LN3</b>	Upward ø5/32" One-touch fitting	●	—	—
<b>LN7</b>		●	●	—
<b>LN9</b>		—	●	—
<b>BN3</b>	Downward ø5/32" One-touch fitting	●	—	—
<b>BN7</b>		●	●	—
<b>BN9</b>		—	●	—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø3/8"



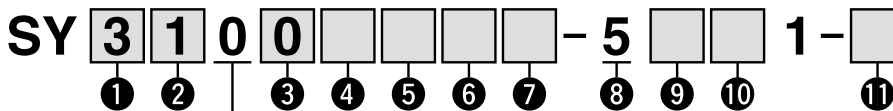
(Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 141 to 143).

\* Indicate the size on the manifold specification sheet in the case of "CM", "LM".

\* The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### Base mounted

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

5	24 VDC
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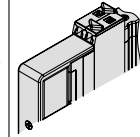
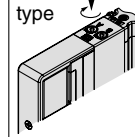
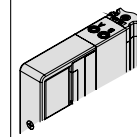
### 9 Light/surge voltage suppressor and common specification

R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)

\* Only "Z" type is available for the product with power saving circuit.

### 10 Manual override

<b>Nil:</b> Non-locking push type	<b>D:</b> Push-turn locking slotted type	<b>F:</b> Slide locking type
--------------------------------------	---	---------------------------------



### 11 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

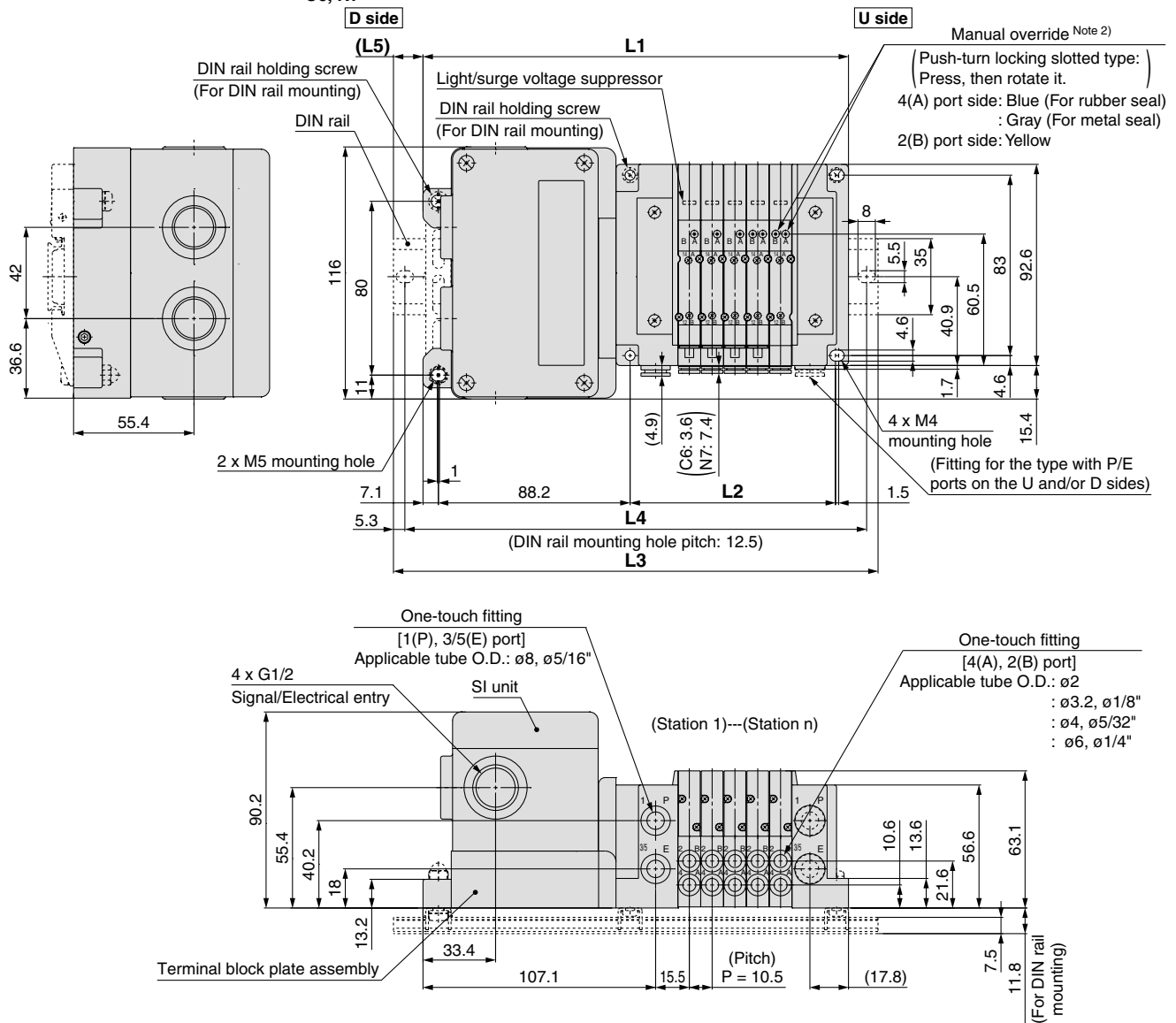
Refer to page 136 for part numbers of base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

# Series SY3000/5000

## Dimensions: Type 10/EX126/Series SY3000

SS5Y3-10S4□-Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$ - $\begin{matrix} \text{C}2 \\ \text{C}3, \text{N}1 \\ \text{C}4, \text{N}3 \\ \text{C}6, \text{N}7 \end{matrix}$  (D)



Note 1) These figures show the "SS5Y3-10S4□-05D-C6".

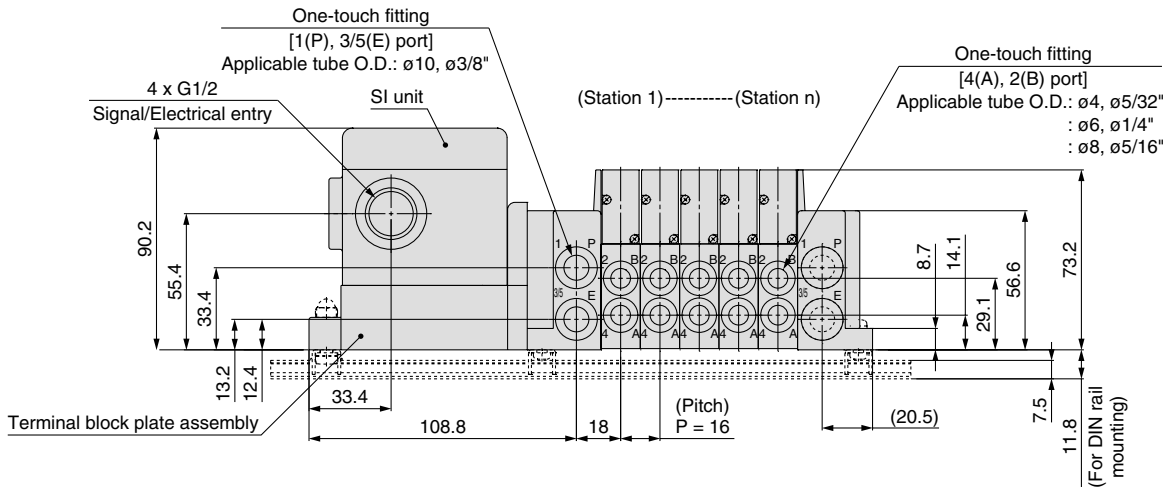
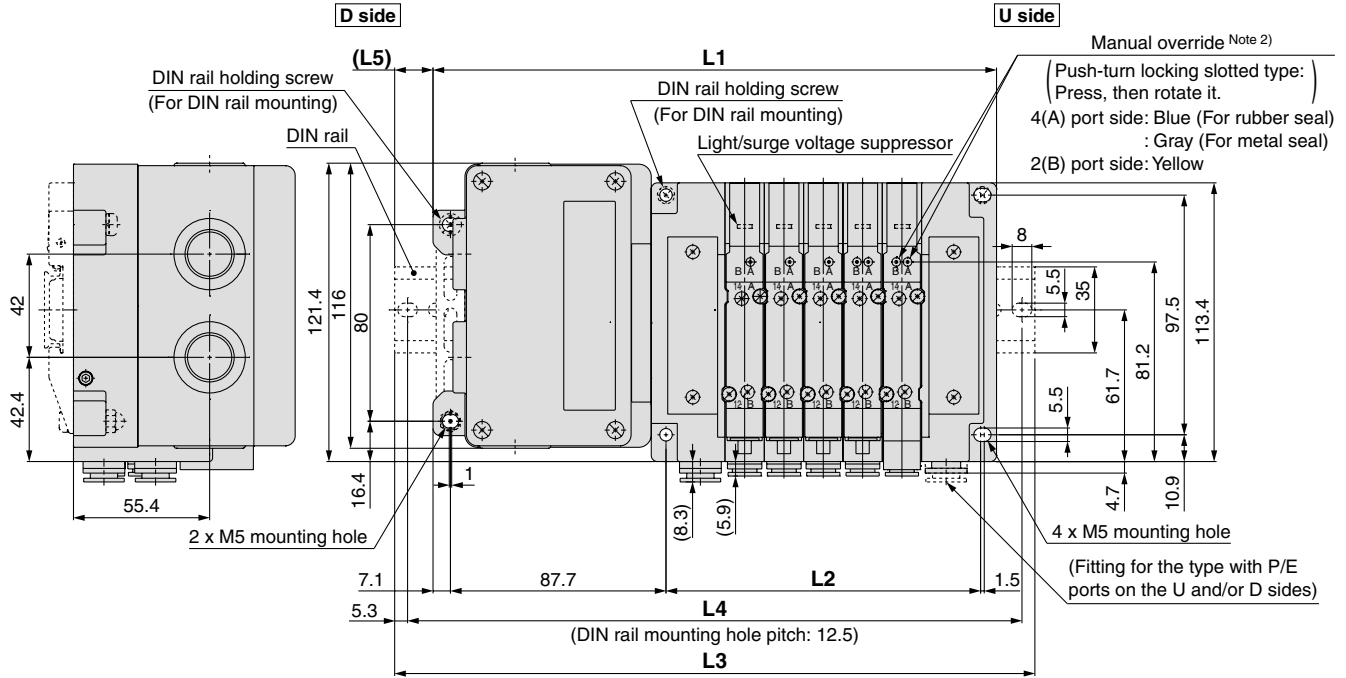
Note 2) Refer to page 121 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 124 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>L1</b>	164.3	174.8	185.3	195.8	206.3	216.8	227.3	237.8	248.3	258.8	269.3	279.8	290.3	300.8	311.3
<b>L2</b>	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210
<b>L3</b>	198	198	210.5	223	235.5	248	260.5	273	273	285.5	298	310.5	323	335.5	335.5
<b>L4</b>	187.5	187.5	200	212.5	225	237.5	250	262.5	262.5	275	287.5	300	312.5	325	325
<b>L5</b>	17	11.5	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12

## Dimensions: Type 10/EX126/Series SY5000

SS5Y5-10S4□ - Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$



Note 1) These figures show the "SS5Y5-10S4□-05D-C8".

Note 2) Refer to page 122 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 125 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>L1</b>	181.3	197.3	213.3	229.3	245.3	261.3	277.3	293.3	309.3	325.3	341.3	357.3	373.3	389.3	405.3
<b>L2</b>	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
<b>L3</b>	210.5	223	248	260.5	273	285.5	310.5	323	335.5	360.5	373	385.5	398	423	435.5
<b>L4</b>	200	212.5	237.5	250	262.5	275	300	312.5	325	350	362.5	375	387.5	412.5	425
<b>L5</b>	14.5	13	17.5	15.5	14	12	16.5	15	13	17.5	16	14	12.5	17	15

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
**EX500**  
**EX600**  
**EX250**  
**EX260**  
**EX126**  
**EX120**  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Plug-in Connector Connecting Base

EX126

Type 12  
Top Ported

# Series SY3000/5000

RoHS

## How to Order Manifold

SS5Y **3** - 12S4 **V** - **05** **U** - **□** - **□**

1 2 3 4 5 6 7

Refer to pages 124 and 125 for dimensions of Type 12/Top ported type.

### 1 Series

3	SY3000
5	SY5000

### 2 SI unit

0	Without SI unit
V	CC-Link (Positive common NPN)

\* Only a terminal block plate is mounted for the valve without SI unit.

### 3 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	
02	2 stations	Specified layout Note 2) (Available up to 16 solenoids)
⋮	⋮	
16	16 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

### 4 P, E port entry

U Note)	U side (2 to 10 stations)
D Note)	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

Note) 5 For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### 5 SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### 6 P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

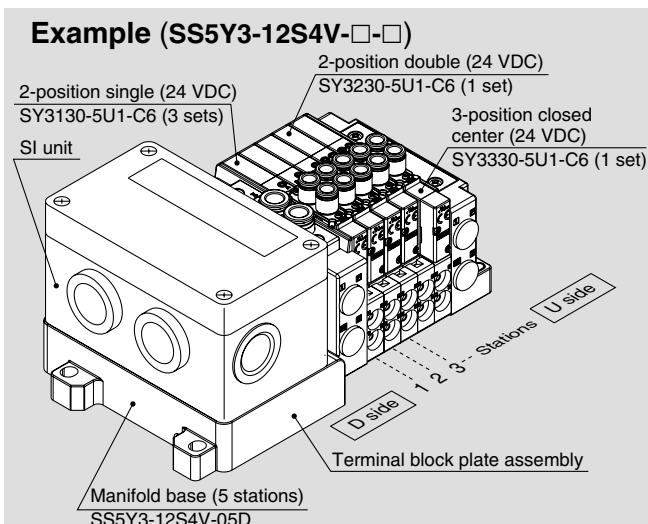
\* For N, sizes are in inches.

### 7 Mounting

Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	⋮
D16	For 16 stations

Specify a longer rail than the standard length.

## How to Order Manifold Assembly



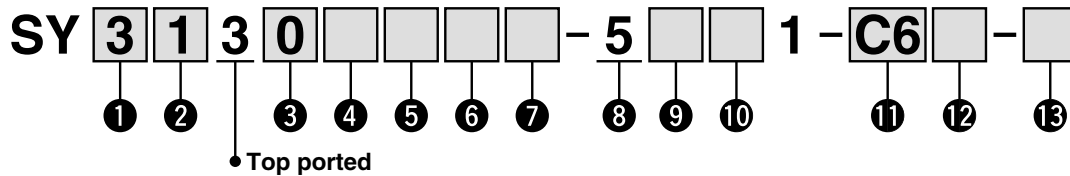
SS5Y3-12S4V-05D ... 1 set (Type 12 5-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 3 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Refer to Reduced Wiring Fieldbus System (Serial Transmission) in Electric Products (CAT.E150) for details on the EX126 Integrated-type (For Output) Serial Transmission System.

## How to Order Valves (With two mounting screws) Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

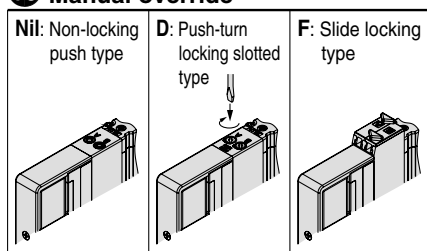
5	24 VDC
---	--------

### 9 Light/surge voltage suppressor and common specification

R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)

\* Only "Z" types are available for models with a power saving circuit.

### 10 Manual override



### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

#### One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

### 12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

### 13 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 136 for part numbers of base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Base  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 EX510  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500 EX500  
 EX600 EX600  
 EX250 EX250  
 EX260 EX260  
 EX126 EX126  
 EX120 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base

EX120

# Series SY3000/5000

RoHS

## How to Order Manifold

SS5Y **3** - **10** S3 **R1** - **05** **U** - **C6**

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

Refer to page 123 for dimensions of Type 11/Bottom ported type.

### ① Series

3	SY3000
5	SY5000

### ② Type

10	Side ported
11	Bottom ported*

\* The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to Plug-in Mixed Mounting Type Manifold (from page 127).

### ③ SI unit

0	Without SI unit
Q	DeviceNet™ (Positive common NPN)
R1	OMRON Corp.: CompoBus/S (16 outputs) (Positive common NPN)
R2	OMRON Corp.: CompoBus/S (8 outputs) (Positive common NPN)
V	CC-Link (Positive common NPN)
ZB	CompoNet™ (Positive common NPN)
ZBN	CompoNet™ (Negative common PNP)

Note) Ensure a match with the common specifications of the value to be used.

### ④ Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	
02	2 stations	Specified layout Note 2) (Available up to 16 solenoids)
⋮	⋮	
16	16 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) This also includes the number of blanking plate assembly.

Note 4) Since R2 type SI unit has 8 outputs, note that up to 8 solenoids can be accommodated.

### ⑤ P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

### ⑥ SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* 3/5(E) port is plugged for the built-in silencer type.

Refer to the page on the right for ⑦.

### ⑧ Mounting and Option

Symbol	Mounting	Option
Nil		None
AA	Direct mounting	Name plate (With station number)
BA		Name plate (Without station number)
D□	DIN rail mounting	Without name plate
A□		Name plate (With station number)
B□		Name plate (Without station number)

Note 1) Enter the number of stations inside □. (Refer to "DIN Rail Option" below.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

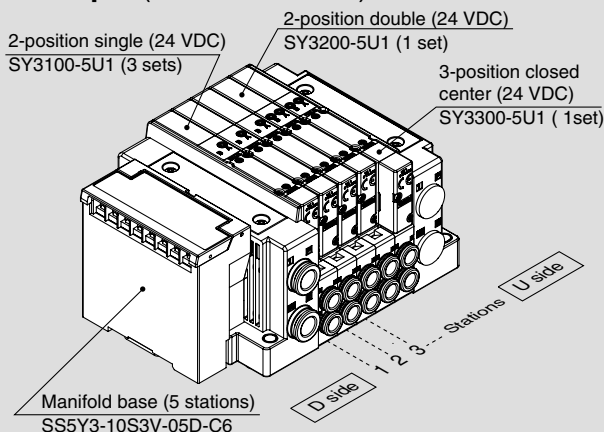
#### DIN Rail Option

Symbol	Mounting	Option
Nil		Direct mounting
0		Without DIN rail (with bracket)
3	For 3 stations	Specify a longer rail than the total length of specified stations.
⋮	⋮	
16	For 16 stations	

\* If the DIN rail must be mounted without an SI unit, select D0. Then, refer to L3 of the dimensions for the DIN rail length and order separately. (Refer to page 140 for the DIN rail part number.)

## How to Order Manifold Assembly

### Example (SS5Y3-10S3□-□)



SS5Y3-10S3V-05D-C6 ... 1 set (Type 10 5-station manifold base part no.)  
 \*SY3100-5U1 ..... 3 sets (2-position single part no.)  
 \*SY3200-5U1 ..... 1 set (2-position double part no.)  
 \*SY3300-5U1 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note) When mixing top ported configurations, select from page 120. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

Refer to Reduced Wiring Fieldbus System (Serial Transmission) in Electric Products (CAT.E150) for details on the EX120 Integrated-type (For Output) Serial Transmission System.



## 7 A, B port size (Metric)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported
		SY3000	SY5000	SY5000
<b>C2</b>	ø2 One-touch fitting	●	—	—
<b>C3</b>	ø3.2 One-touch fitting	●	—	—
<b>C4</b>	ø4 One-touch fitting	●	●	●
<b>C6</b>	ø6 One-touch fitting	●	●	●
<b>C8</b>	ø8 One-touch fitting	—	●	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●
<b>L4</b>	ø4 One-touch fitting	●	●	—
<b>L6</b>	ø6 One-touch fitting	●	●	—
<b>L8</b>	ø8 One-touch fitting	—	●	—
<b>B4</b>	ø4 One-touch fitting	●	●	—
<b>B6</b>	ø6 One-touch fitting	●	●	—
<b>B8</b>	ø8 One-touch fitting	—	●	—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—
P, E port size (One-touch fittings)		ø8	ø10	ø10

## A, B port size (Inch)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported
		SY3000	SY5000	SY5000
<b>N1</b>	ø1/8" One-touch fitting	●	—	—
<b>N3</b>	ø5/32" One-touch fitting	●	●	●
<b>N7</b>	ø1/4" One-touch fitting	●	●	●
<b>N9</b>	ø5/16" One-touch fitting	—	●	●
<b>CM*</b>	Straight port, mixed sizes	●	●	●
<b>LN3</b>	ø5/32" One-touch fitting	●	—	—
<b>LN7</b>	ø1/4" One-touch fitting	●	●	—
<b>LN9</b>	ø5/16" One-touch fitting	—	●	—
<b>BN3</b>	ø5/32" One-touch fitting	●	—	—
<b>BN7</b>	ø1/4" One-touch fitting	●	●	—
<b>BN9</b>	ø5/16" One-touch fitting	—	●	—
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø3/8"

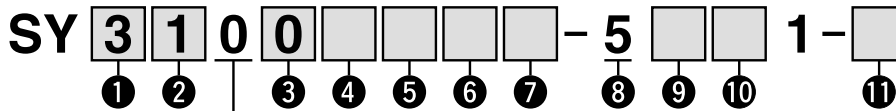
(Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 141 to 143).

\* Indicate the size on the manifold specification sheet in the case of "CM", "LM".

\* The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Base mounted

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

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

### 9 Light/surge voltage suppressor and common specification

R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Select a valve from R, U, S or Z unless the SI unit specification is ZBN (Negative common). Select a valve from R, U, NS or NZ when the SI unit specification is ZBN (Negative common).

\* Only "Z" and "NZ" types are available for the product with power saving circuit.

### 10 Manual override

<b>Nil:</b> Non-locking push type	<b>D:</b> Push-turn locking slotted type	<b>F:</b> Slide locking type
--------------------------------------	---	---------------------------------

### 11 Type of mounting screw

<b>Nil</b>	Round head combination screw
<b>B</b>	Hexagon socket head cap screw
<b>K</b>	Round head combination screw (Falling-out-prevention type)
<b>H</b>	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

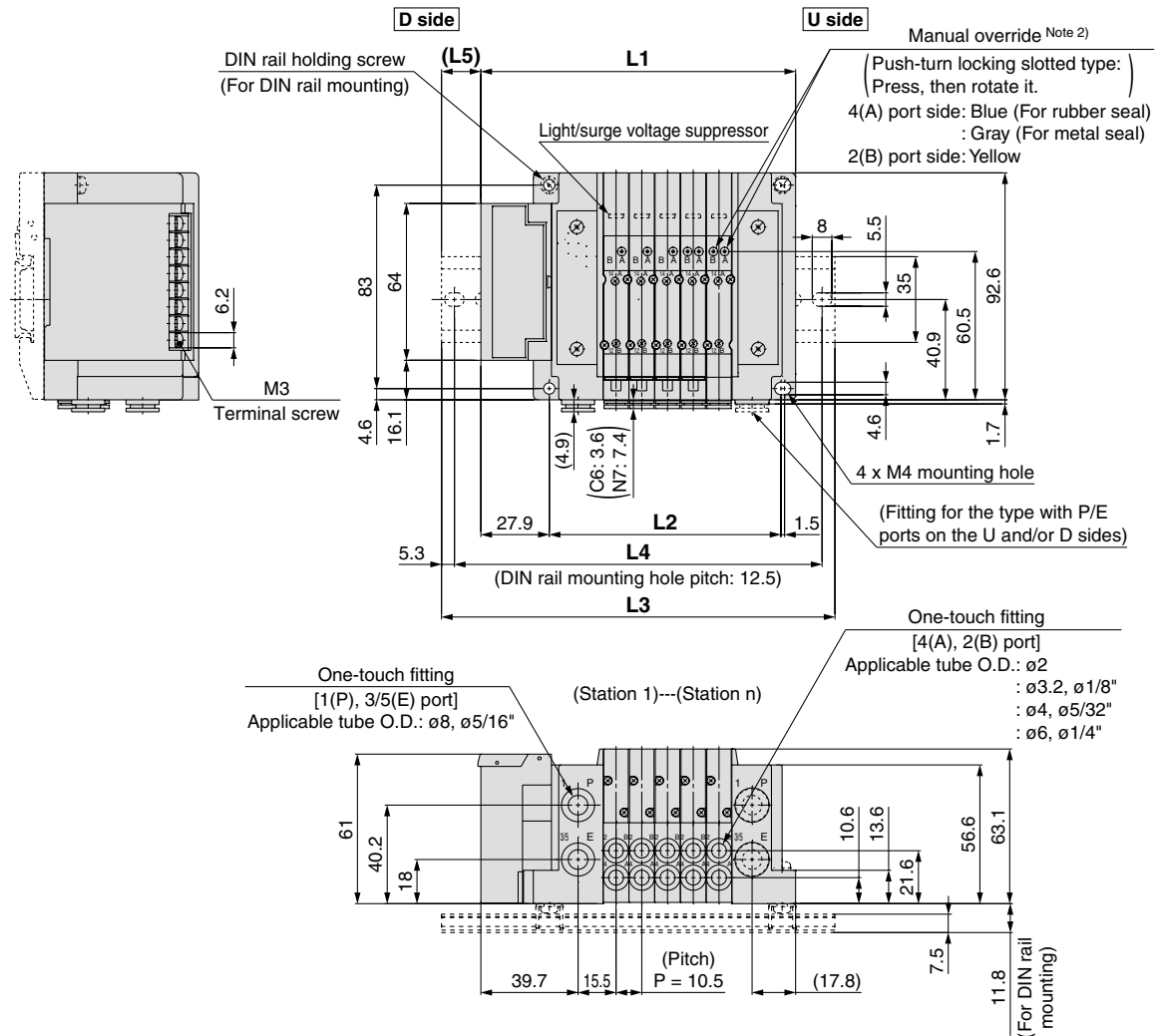
Refer to page 136 for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

# Series SY3000/5000

## Dimensions: Type 10/EX120/Series SY3000

SS5Y3-10S3□-Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$   $\begin{matrix} \text{C2} \\ \text{C3, N1 (D)} \\ \text{C4, N3} \\ \text{C6, N7} \end{matrix}$



Note 1) These figures show the "SS5Y3-10S3□-05D-C6".

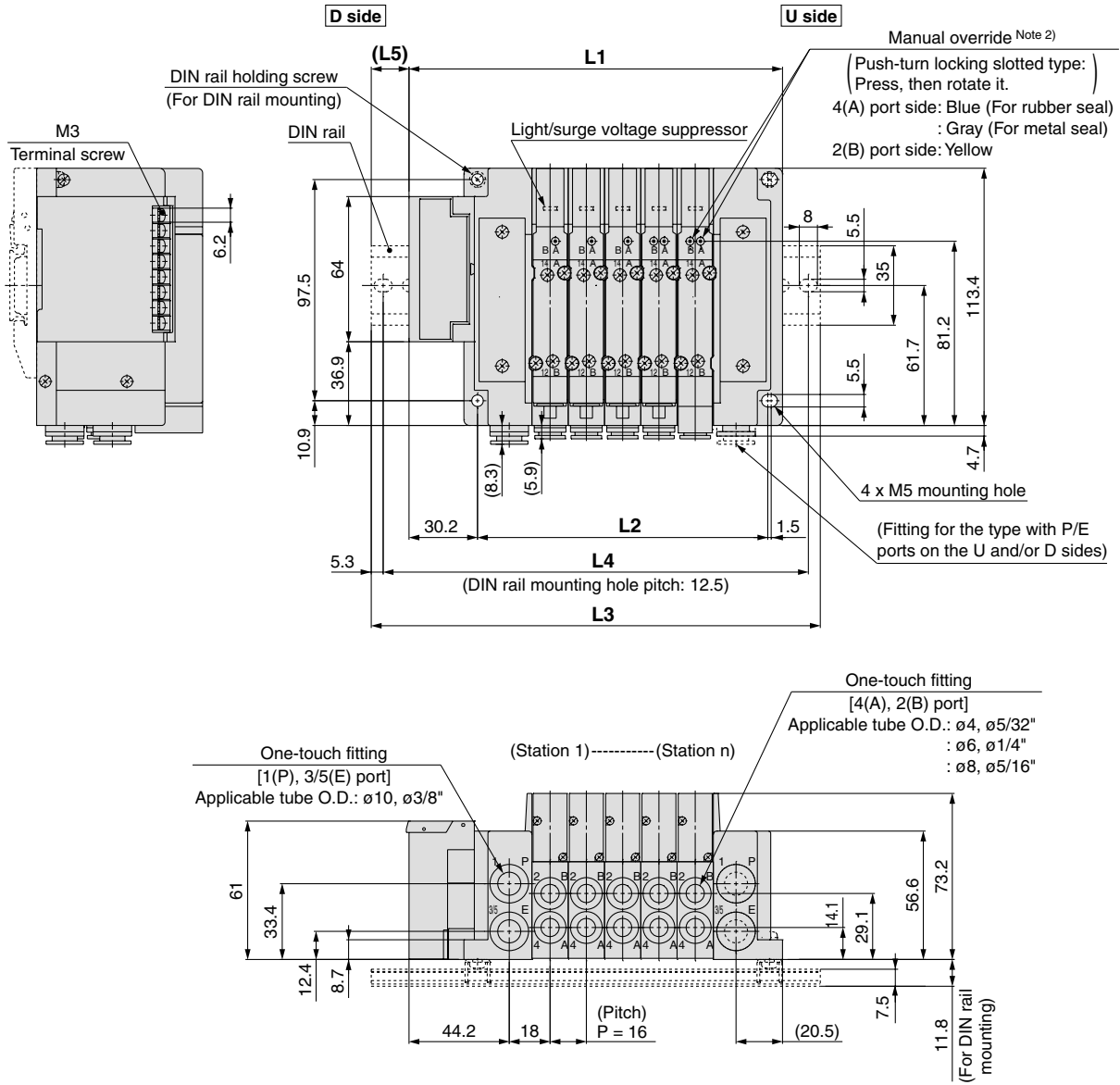
Note 2) Refer to page 121 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 124 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>L1</b>	96.9	107.4	117.9	128.4	138.9	149.4	159.9	170.4	180.9	191.4	201.9	212.4	222.9	233.4	243.9
<b>L2</b>	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210
<b>L3</b>	123	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	235.5	248	260.5	273
<b>L4</b>	112.5	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5
<b>L5</b>	13	14	15	16	17	12	13	14	15	16	17	11.5	12.5	13.5	14.5

## Dimensions: Type 10/EX120/Series SY5000

SS5Y5-10S3□ - Stations  $\begin{matrix} \text{U} & \text{C4, N3} \\ \text{D} & \text{C6, N7 (D)} \\ \text{B} & \text{C8, N9} \end{matrix}$



Note 1) These figures show the "SS5Y5-10S3□-05D-C8".

Note 2) Refer to page 122 for dimensions of external pilot, silencer, elbow fittings and slide locking manual override.

Note 3) Refer to page 125 for dimensions of A or B port top-ported type.

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<b>L1</b>	116.7	132.7	148.7	164.7	180.7	196.7	212.7	228.7	244.7	260.7	276.7	292.7	308.7	324.7	340.7
<b>L2</b>	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304
<b>L3</b>	148	160.5	173	198	210.5	223	248	260.5	273	285.5	310.5	323	335.5	348	373
<b>L4</b>	137.5	150	162.5	187.5	200	212.5	237.5	250	262.5	275	300	312.5	325	337.5	362.5
<b>L5</b>	15.5	14	12	16.5	15	13	17.5	16	14	12.5	17	15	13.5	11.5	16

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 Plug-in Connector Flat Ribbon Cable PC Wiring  
 EX510  
 Plug-in Connector Connecting Base  
 Plug-in Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500  
 EX600  
 EX250  
 EX260  
 EX126  
 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

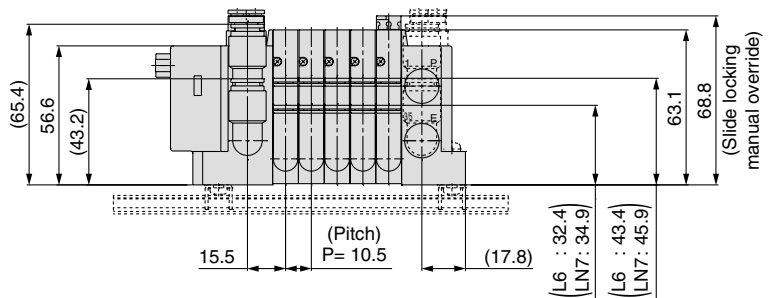
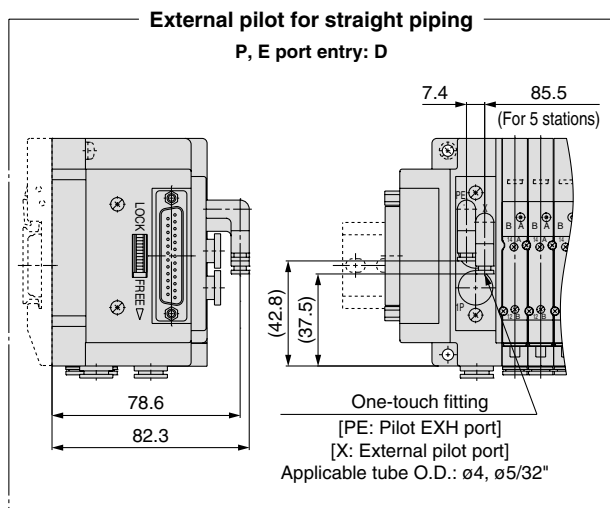
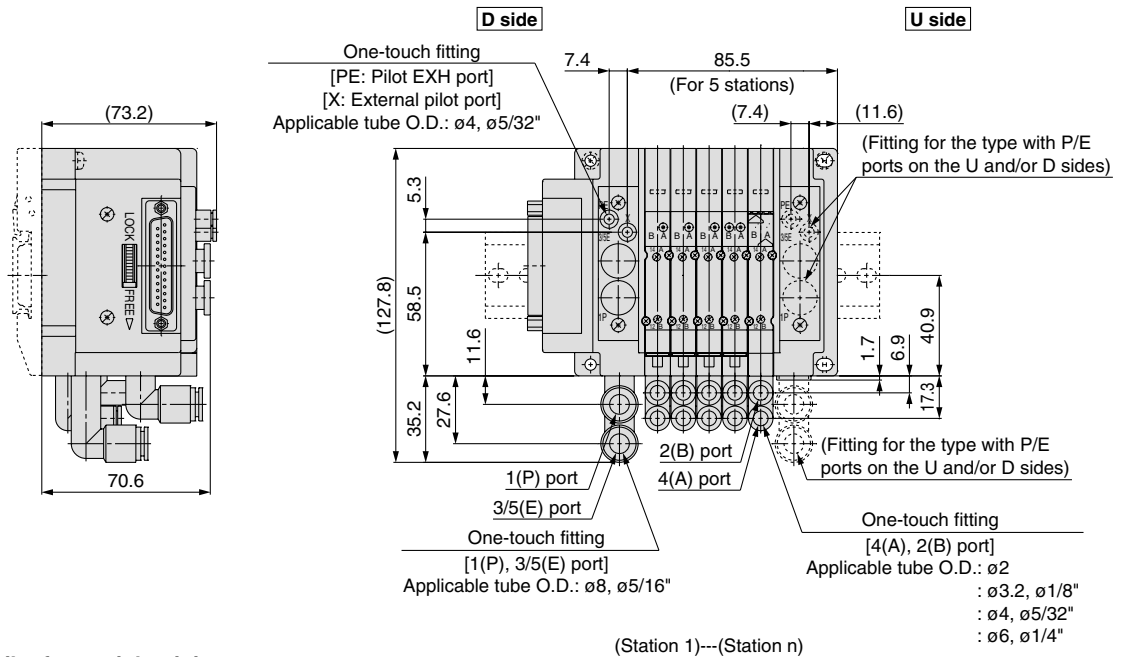




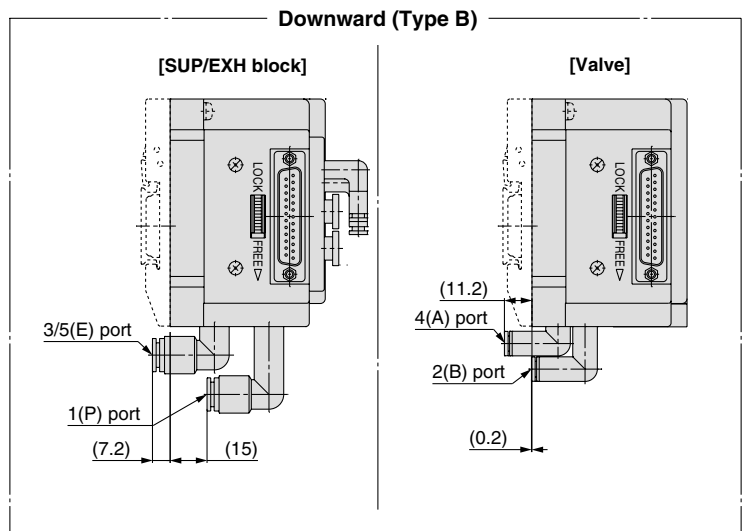
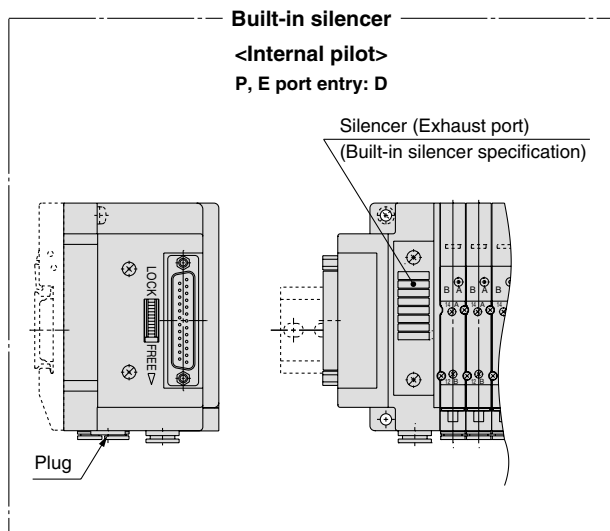
# Series SY3000/5000

Dimensions: Type 10/External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override/Series SY3000

SS5Y3-10□-Stations  $\frac{U}{D}$  (S, R)- $\frac{L}{B}$ □



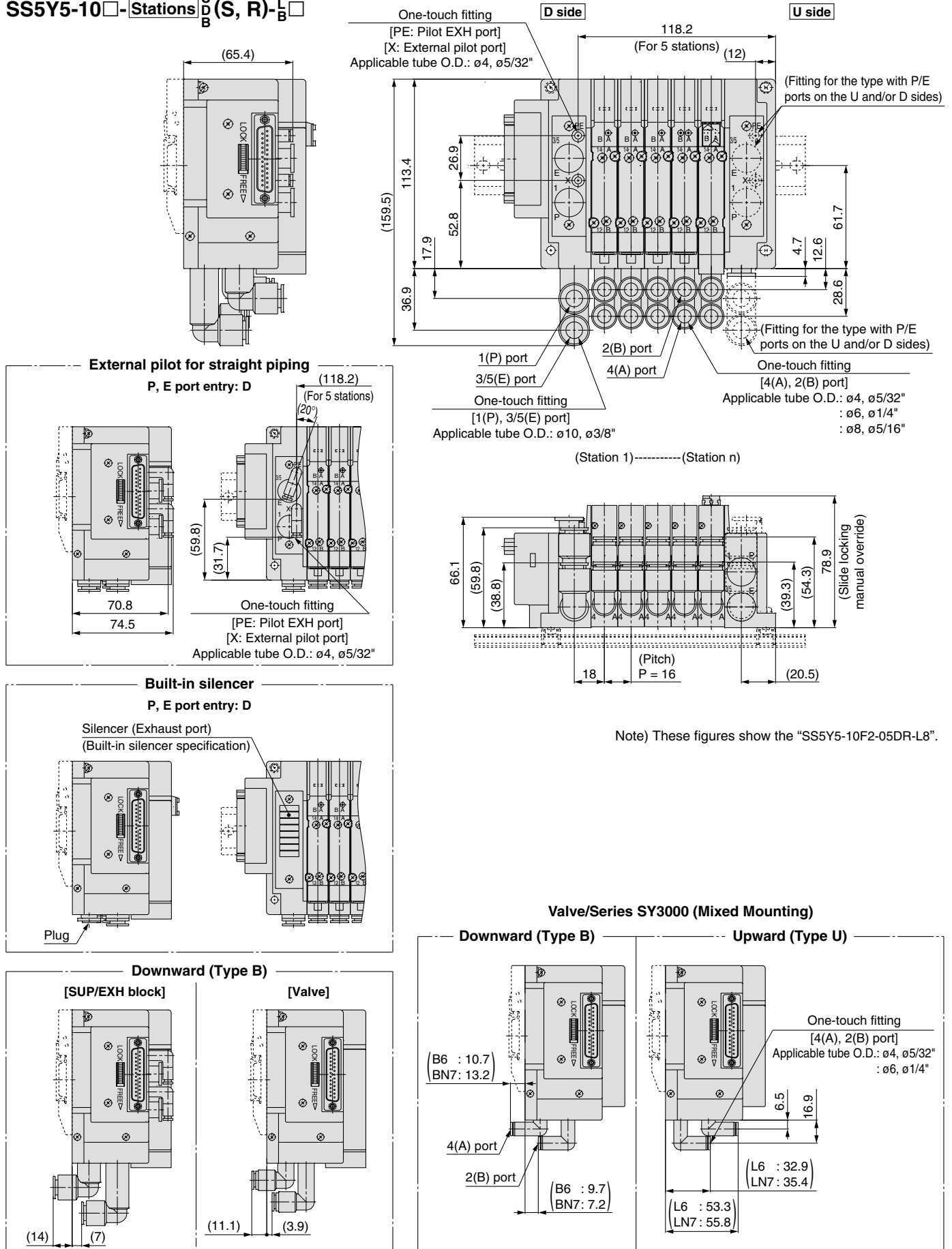
Note) These figures show the "SS5Y3-10F2-05DR-L6".



# Plug-in Connector Connecting Base *Series SY3000/5000*

Dimensions: Type 10/External Pilot, Silencer, Elbow Fittings, Slide Locking Manual Override/Series SY5000

SS5Y5-10□-Stations  $\frac{U}{D}$  (S, R)-L $\frac{B}{B}$



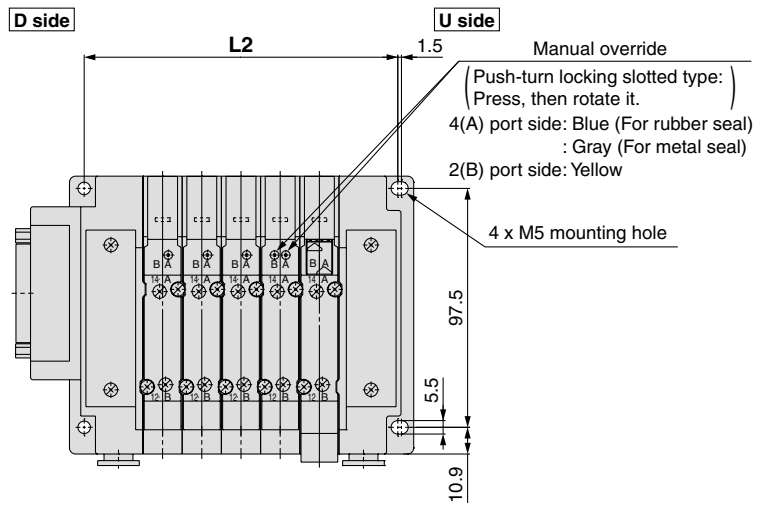
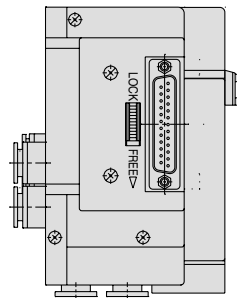
Note) These figures show the "SS5Y5-10F2-05DR-L8".

- Specifications
- Construction
- Replacement Parts
- Plug-in Base
- Plug-in Metal Base
- D-sub Connector Flat Ribbon Cable PC Wiring
- EX510
- Plug-in Connector Connecting Base
- D-sub Connector Flat Ribbon Cable PC Wiring
- Terminal Block Box
- Lead Wire
- Circular Connector
- EX500
- EX600
- EX250
- EX260
- EX126
- EX120
- One-touch Fittings and Plug Assembly Part No.
- Manifold Options
- Specific Product Precautions

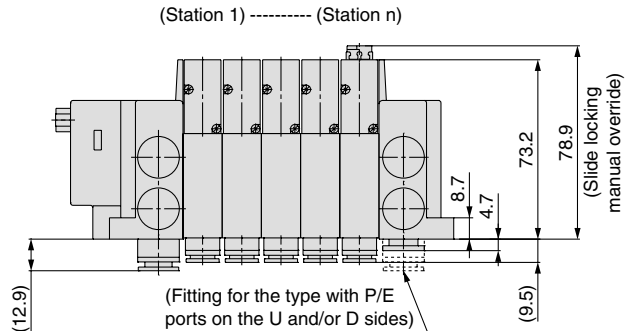
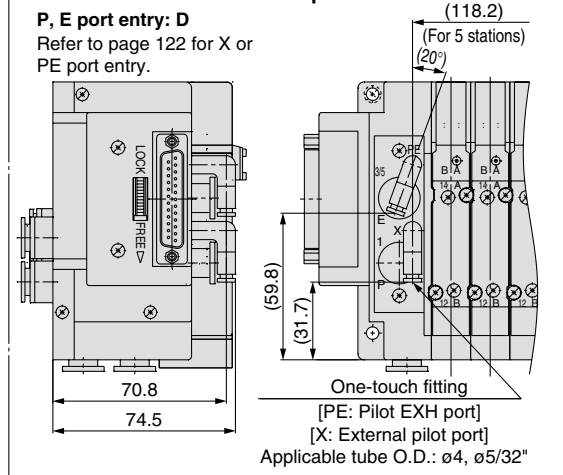
# Series SY3000/5000

## Dimensions: Type 11/All Wirings/Series SY5000

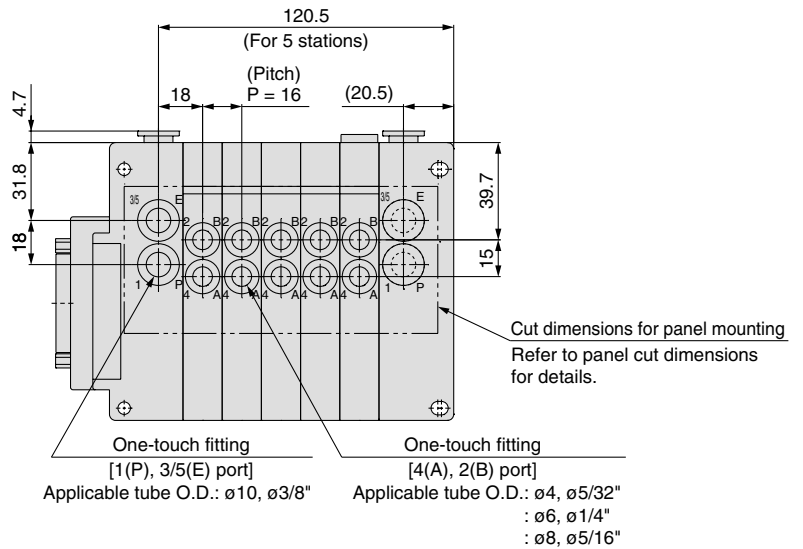
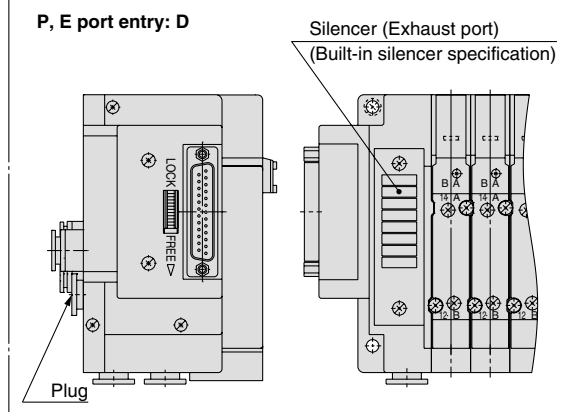
SS5Y5-11 □ - Stations  $\frac{U}{D}$



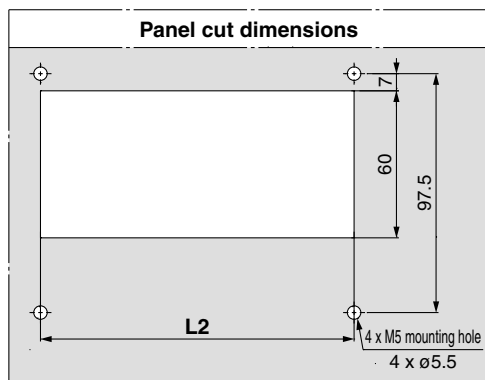
### External pilot



### Built-in silencer



### Panel cut dimensions



Note 1) These figures show the "SS5Y5-11F2-05D-C8".

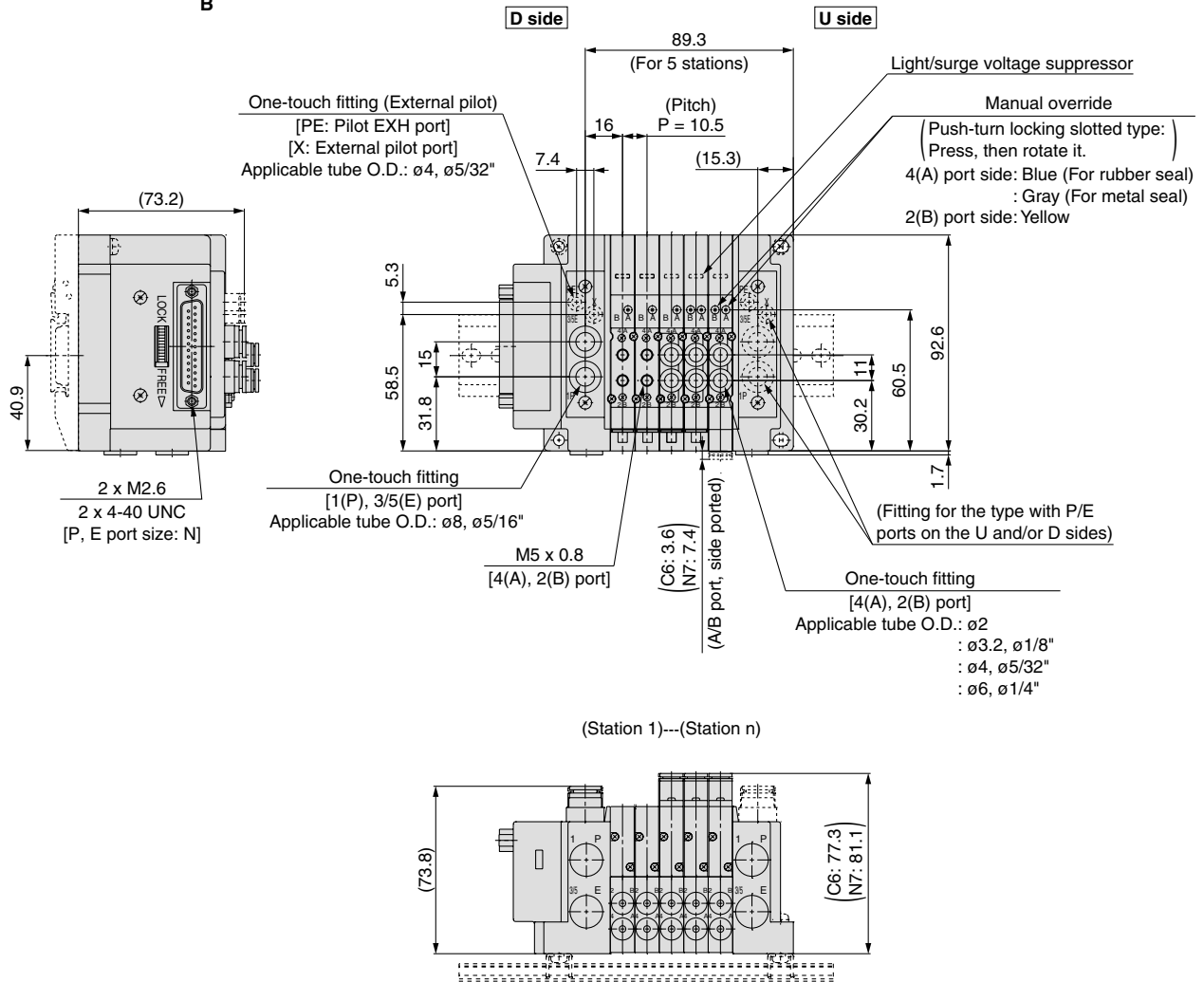
Note 2) Refer to the below pages for L2 dimensions and other dimensions that are not specified in each wiring specification.

D-sub connector	: P. 52
Flat ribbon cable	: P. 54
Terminal block box	: P. 62
Lead wire	: P. 70
Circular connector	: P. 78
EX500	: P. 86
EX600	: P. 93, 94
EX250	: P. 100
EX260	: P. 106
EX126	: P. 112
EX120	: P. 118



## Dimensions: Type 12/All Wirings/Series SY3000

SS5Y3-12□ - Stations  $\begin{matrix} U \\ D \\ B \\ R \end{matrix}$



Note 1) These figures show the "SS5Y3-12F2-05D".

Note 2) For built-in silencer type, a silencer is mounted on the opposite side of U or D side with P or E port. Refer to page 121 for dimensions of silencer.

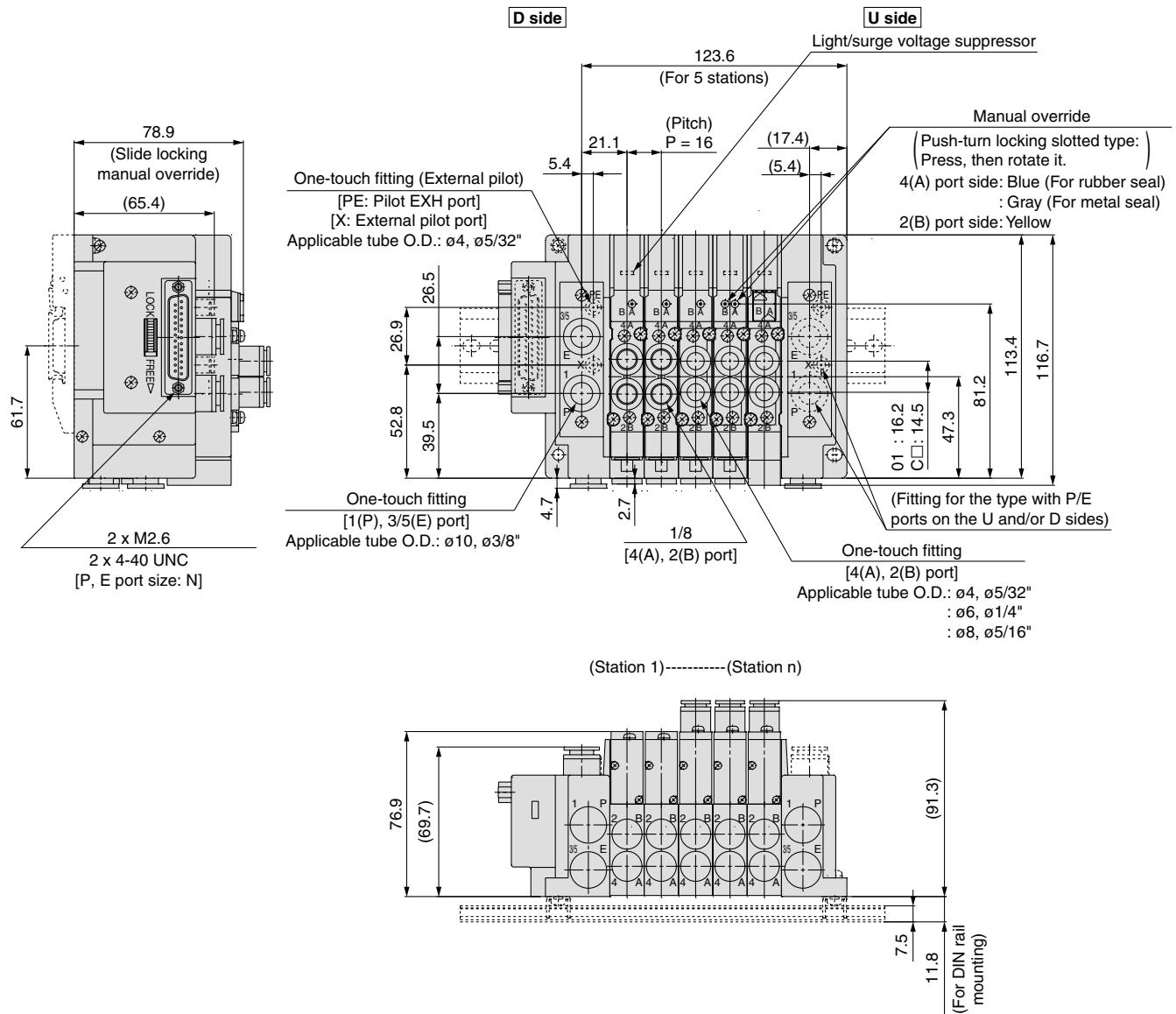
Note 3) Refer to the below pages for dimensions that are not specified in each wiring specification.

D-sub connector	: P. 51
Flat ribbon cable	: P. 53
Terminal block box:	P. 61
Lead wire	: P. 69
Circular connector	: P. 77
EX500	: P. 85
EX600	: P. 91, 92
EX250	: P. 99
EX260	: P. 105
EX126	: P. 111
EX120	: P. 117

# Series SY3000/5000

## Dimensions: Type 12/All Wirings/Series SY5000

SS5Y5-12□ - Stations  $\frac{U}{D}$  (R)



Note 1) These figures show the "SS5Y5-12F2-05D".

Note 2) For built-in silencer type, a silencer is mounted on the opposite side of U or D side with P or E port. Refer to page 122 for dimensions of silencer.

Note 3) Refer to the below pages for dimensions that are not specified in each wiring specification.

D-sub connector	: P. 52
Flat ribbon cable	: P. 54
Terminal block box	: P. 62
Lead wire	: P. 70
Circular connector	: P. 78
EX500	: P. 86
EX600	: P. 93, 94
EX250	: P. 100
EX260	: P. 106
EX126	: P. 112
EX120	: P. 118

# Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector Flat Ribbon Cable PC Wiring Terminal Block Box (IP67)

Lead Wire (IP67) Circular Connector (IP67) EX500 (IP67) EX600 (IP67)

EX250 (IP67) EX260 (IP67) EX126 (IP67) EX120

Type 10  
Side Ported

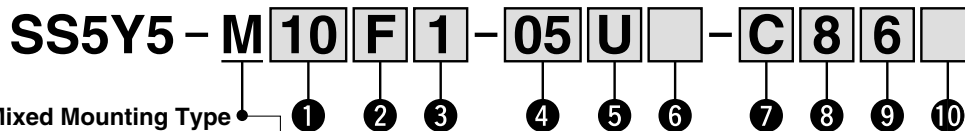
Type 11  
Bottom Ported

# Series SY3000/5000 C €

The SY3000 can be mounted onto the SY5000 size manifold.

## How to Order Manifold

Refer to page 130 for dimensions of Type 11/Bottom ported type.



Mixed Mounting Type

It is possible to mount the SY3000 size valves on all stations. In this case, there is no need to fill in part ③ in the order code. However, the manifold block width should be 12.5 mm.

### ① Type

10	Side ported
11	Bottom ported

### ② Connector type

Symbol	Type	Page
F	D-sub connector (25 pins)	P. 49
P	Flat ribbon cable (26 pins)	
PG	Flat ribbon cable (20 pins)	
PH	Flat ribbon cable (10 pins)	
J	PC wiring (20 pins)	P. 59
T	Terminal block box	
L1	Lead wire 34 cores	P. 67
L2	Lead wire 17 cores	
L3	Lead wire 9 cores	
M	Circular connector	P. 75
S□	Serial transmission: EX500	P. 83
S6□	Serial transmission: EX600	P. 89
S□	Serial transmission: EX250	P. 97
S□	Serial transmission: EX260	P. 103
S4□	Serial transmission: EX126	P. 109
S3□	Serial transmission: EX120	P. 115

\* Refer to the pages shown in the table above for details.

### ③

• With Lead wire

Lead wire length

1	0.6 m
2	1.5 m
3	3 m

• With D-sub connector, Flat ribbon cable and PC wiring

Connector entry direction

1	Upward
2	Lateral

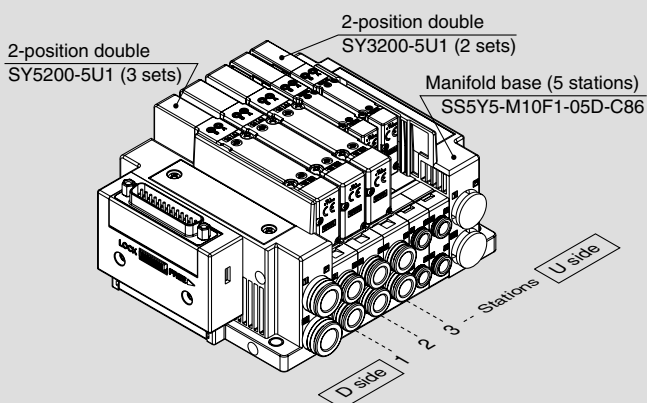
\* It is not necessary to select the items above for the valve with terminal block box or with circular connector or the serial transmission type.

### ④ Valve stations

Symbol	Stations	Note
02	2 stations	Some connectors have a limitation on the number of stations. Refer to the pages shown in the table "Connector type" for details.
⋮	⋮	
24	24 stations	

## How to Order Manifold Assembly

### Example (SS5Y5-M10F1-□)



SS5Y5-M10F1-05D-C86 ... 1 set (Type M10 5-station manifold base part no.)  
 \*SY5200-5U1 ..... 3 sets (2-position double part no.)  
 \*SY3200-5U1 ..... 2 sets (2-position double part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note) When mixing top ported configurations, select from page 132. In this case, use caution as there is also output on the A and B port on base side. Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

### ⑤ P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

\* Refer to page 89 for the EX600 and ⑦ on page 97 for the EX250.

### ⑥ SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* 3/5(E) port is plugged for the built-in silencer type.  
 \* Refer to page 89 for the EX600 and ⑦ on page 97 for the EX250.

Refer to the page on the right for ⑦, ⑧ and ⑨.

### ⑩ Mounting and Option

Symbol	Mounting	Option
Nil	Direct mounting	None
AA		Name plate (With station number)
BA	DIN rail mounting	Name plate (Without station number)
D□		Without name plate
A□		Name plate (With station number)
B□		Name plate (Without station number)

Note 1) Enter the number of stations inside □. (Refer to "DIN Rail Option" below.)  
 Note 2) Only direct mounting is available for Type 11 (Bottom ported).

#### DIN Rail Option

Nil	Direct mounting
0	Without DIN rail (with bracket)
3	For 3 stations
⋮	⋮
24	For 24 stations

Specify a longer rail than the total length of specified stations. [The SY5000 valve is now at a mountable length (manifold block length of 16 mm).]

\*Refer to page 129 to determine the L3 using "Calculation formula" for the DIN rail length.

## 7 Fitting type

Symbol	A, B port
<b>C</b>	Metric size: Straight One-touch fitting
<b>L</b>	Metric size: One-touch fitting with upward elbow <small>Note)</small>
<b>B</b>	Metric size: One-touch fitting with downward elbow <small>Note)</small>
<b>N</b>	Inch size: Straight One-touch fitting
<b>LN</b>	Inch size: One-touch fitting with upward elbow <small>Note)</small>
<b>BN</b>	Inch size: One-touch fitting with downward elbow <small>Note)</small>
<b>CM*</b>	Straight port, mixed sizes
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping)

Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (pages 141 to 143).  
 \* Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".  
 \* The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.  
 \* Elbow fittings:  $\phi 2$ ,  $\phi 3.2$  and  $\phi 1.8$ " are not available for the SY3000 series.  $\phi 2$ ,  $\phi 3.2$ ,  $\phi 1.8$ " and  $\phi 5/32$ " are not available for the SY5000 series.

## 8 SY5000: A, B port size

(Metric)		(Inch)	
Symbol	Port size	Symbol	Port size
<b>4</b>	$\phi 4$ One-touch fitting	<b>3</b>	$\phi 5/32$ " One-touch fitting
<b>6</b>	$\phi 6$ One-touch fitting	<b>7</b>	$\phi 1/4$ " One-touch fitting
<b>8</b>	$\phi 8$ One-touch fitting	<b>9</b>	$\phi 5/16$ " One-touch fitting
<b>Nil</b>	For all stations of SY3000	<b>Nil</b>	For all stations of SY3000

\* No symbol needs to be specified when fitting type "CM", "LM" is selected.

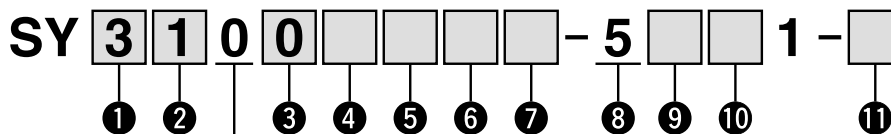
## 9 SY3000: A, B port size

(Metric)		(Inch)	
Symbol	Port size	Symbol	Port size
<b>2</b>	$\phi 2$ One-touch fitting	<b>1</b>	$\phi 1/8$ " One-touch fitting
<b>3</b>	$\phi 3.2$ One-touch fitting	<b>3</b>	$\phi 5/32$ " One-touch fitting
<b>4</b>	$\phi 4$ One-touch fitting	<b>7</b>	$\phi 1/4$ " One-touch fitting
<b>6</b>	$\phi 6$ One-touch fitting	<b>9</b>	$\phi 5/16$ " One-touch fitting <small>Note)</small>
<b>8</b>	$\phi 8$ One-touch fitting <small>Note)</small>		

Note) The valve pitch is the same as the SY5000.  
 \* No symbol needs to be specified when fitting type "CM", "LM" is selected.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

<b>3</b>	SY3000
<b>5</b>	SY5000

### 2 Type of actuation

<b>1</b>	2-position single
<b>2</b>	2-position double
<b>3</b>	3-position closed center
<b>4</b>	3-position exhaust center
<b>5</b>	3-position pressure center
<b>A*</b>	4-position dual 3-port valve (N.C./N.C.)
<b>B*</b>	4-position dual 3-port valve (N.O./N.O.)
<b>C*</b>	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

<b>0</b>	Rubber seal
<b>1</b>	Metal seal

### 4 Pilot type

<b>Nil</b>	Internal pilot
<b>R</b>	External pilot

### 5 Back pressure check valve (Built-in valve type)

<b>Nil</b>	None
<b>H</b>	Built-in

\* Only rubber seal type. Manifold installed type is available if back pressure check valve is required for the valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.  
 \* The built-in valve type back pressure check valve is not available for the 3-position type.

### Base mounted

### 6 Pilot valve option

<b>Nil</b>	Standard (0.7 MPa)
<b>B</b>	Quick response type (0.7 MPa)
<b>K*</b>	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

<b>Nil</b>	Standard
<b>T</b>	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when the valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

<b>5</b>	24 VDC
<b>6</b>	12 VDC

\* Only 24 VDC is available for the serial transmission type.

### 9 Light/surge voltage suppressor and common specification

<b>Nil</b>	Without light/surge voltage suppressor (Non-polar)
<b>R</b>	With surge voltage suppressor (Non-polar)
<b>U</b>	With light/surge voltage suppressor (Non-polar)
<b>S</b>	With surge voltage suppressor (Positive common)
<b>Z</b>	With light/surge voltage suppressor (Positive common)
<b>NS</b>	With surge voltage suppressor (Negative common)
<b>NZ</b>	With light/surge voltage suppressor (Negative common)

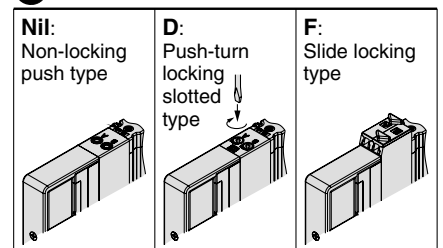
\* "Nil" is not available for the SI unit manifold.

\* Only "Z" and "NZ" types are available for the product with power saving circuit. Select a valve which is suited to the SI unit output polarity or SI unit specification when the SI unit is selected.

Refer to the pages below for details.

EX500: P. 84    EX600: P. 90    EX250: P. 98  
 EX260: P. 104    EX126: P. 110    EX120: P. 116

### 10 Manual override



### 11 Type of mounting screw

<b>Nil</b>	Round head combination screw
<b>B</b>	Hexagon socket head cap screw
<b>K</b>	Round head combination screw (Falling-out-prevention type)
<b>H</b>	Hexagon socket head cap screw (Falling-out-prevention type)

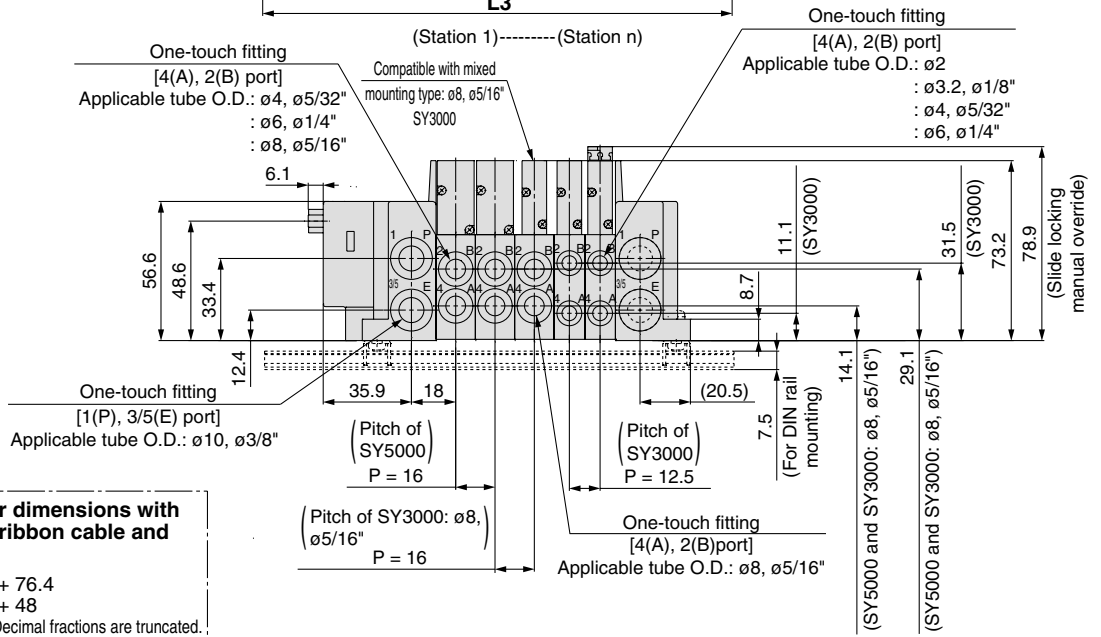
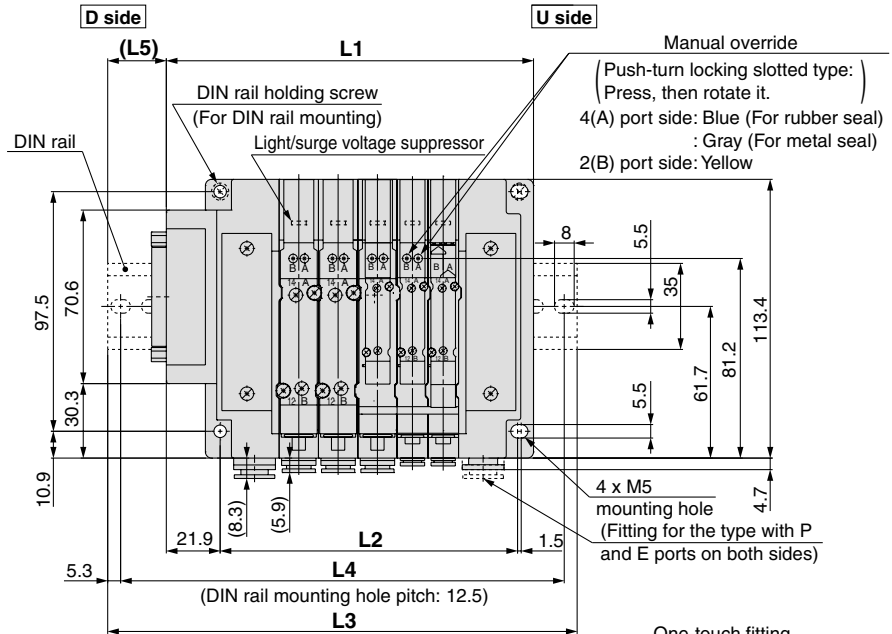
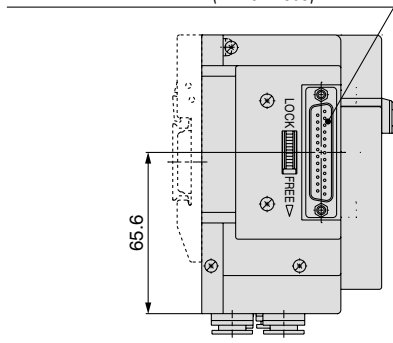
\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.  
 \* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.  
 Refer to page 136 for part numbers of the base gasket and mounting screw.  
 \* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

# Series SY3000/5000

## Dimensions: Type 10/Mixed Mounting

SS5Y5-M10 □ - Stations  $\frac{U}{D}$   
B

Applicable connector: D-sub (JIS-X-5101 MIL-C-24308) equivalent



**Calculation formula for dimensions with D-sub connector, Flat ribbon cable and PC wiring**

L1 = 12.5 x n1 + 16 x n2 + 76.4  
 L2 = 12.5 x n1 + 16 x n2 + 48  
 M = (L1 + 6.1)/12.5 + 1 Decimal fractions are truncated.  
 L3 = 12.5 x M + 23  
 L4 = L3 - 10.5  
 L5 = (L3 - L1 + 6.1)/2

n1: Number of valve stations of the SY3000  
 n2: Number of valve stations of the SY5000  
 (Including the stations of the SY3000: ø8, ø5/16")

**Calculation formula for dimensions with Terminal block box, Lead wire, Circular connector, EX500/600/250/260/126/120 serial transmission**

L1 = 12.5 x n1 + 16 x n2 + a + b x n3  
 L2 = 12.5 x n1 + 16 x n2 x 48  
 M = L1/12.5 + 1 Decimal fractions are truncated.  
 L3 = 12.5 x M + 23  
 L4 = L3 - 10.5  
 L5 = (L3 - L1)/2  
 L6 = b x n3 + c

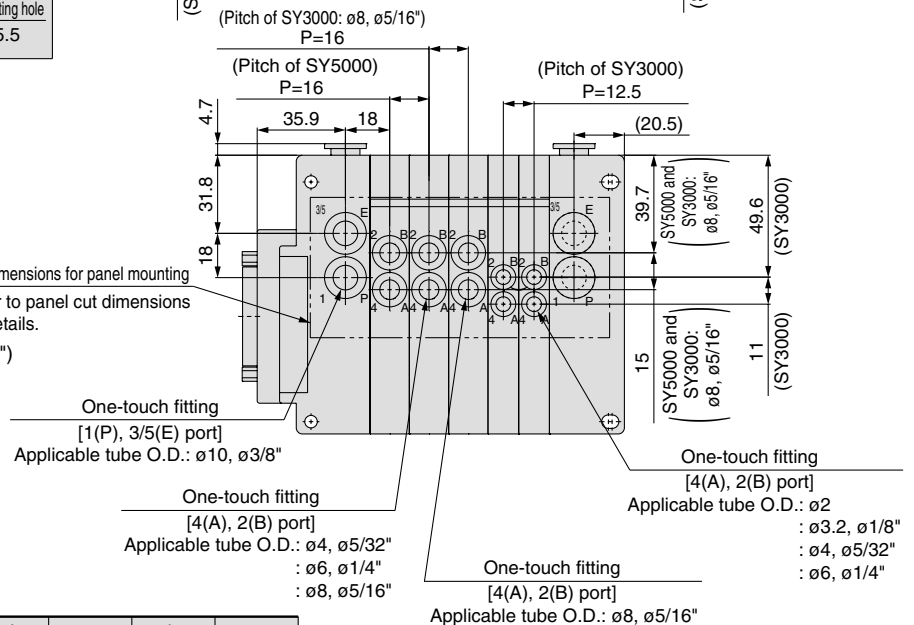
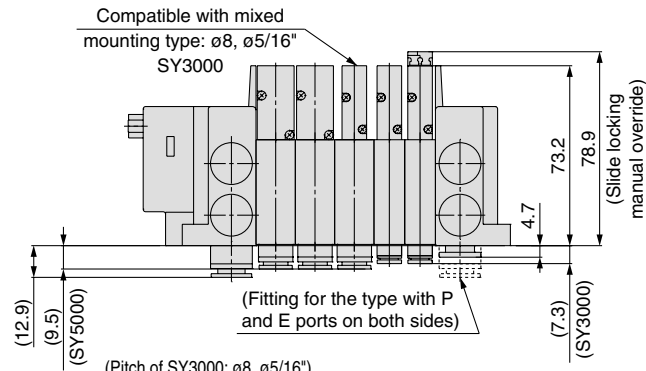
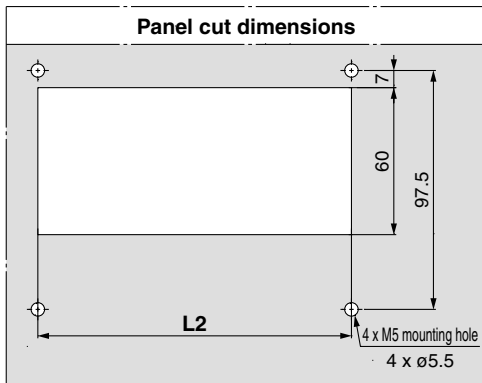
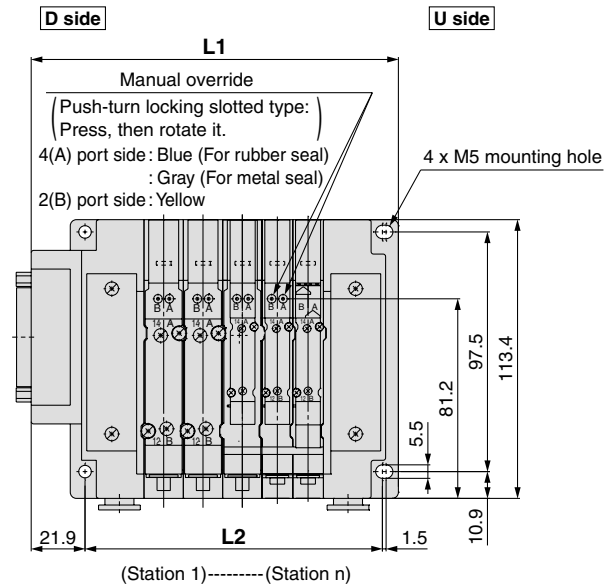
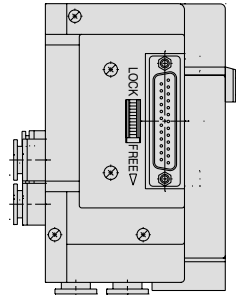
n1: Number of valve stations of the SY3000  
 n2: Number of valve stations of the SY5000  
 n3: Number of I/O units or input block stations  
 Note) Refer to pages 91 to 94 for dimensions of the EX600 serial transmission with I/O unit and pages 99 and 100 for the EX250 serial transmission with input block when L6, b and c are used for the calculation formula.

Note) Refer to pages 121 and 122 for dimensions of external pilot, built-in silencer and elbow fittings.

	Coefficient	a	b	c
Terminal block box or Serial transmission: EX126		149.3	—	—
Lead wire or Circular connector		97	—	—
Serial transmission: EX500		88.5	—	—
Serial transmission: EX600 (M12 connector)		141.5	47	81.5
Serial transmission: EX600 (7/8 inch connector)		158	47	81.5
Serial transmission: EX250		141.5	21	81.5
Serial transmission: EX260		88.7	—	—
Serial transmission: EX120		84.7	—	—

## Dimensions: Type 11/Mixed Mounting

SS5Y5-M11 □ - Stations  $\frac{U}{D}$



### Calculation formula for dimensions

$$L1 = 12.5 \times n1 + 16 \times n2 + a + b \times n3$$

$$L2 = 12.5 \times n1 + 16 \times n2 + 48$$

$$L6 = b \times n3 + c$$

n1: Number of valve stations of the SY3000  
n2: Number of valve stations of the SY5000  
(Including the stations of the SY3000: ø8, ø5/16")  
n3: Number of I/O units or input block stations

Note) Refer to pages 91 to 94 for dimensions of the EX600 serial transmission with I/O unit and pages 99 and 100 for the EX250 serial transmission with input block when L6, b and c are used for the calculation formula.

Coefficient	a	b	c
D-sub connector, Flat ribbon cable or PC wiring	74.6	—	—
Terminal block box or Serial transmission: EX126	149.3	—	—
Lead wire or Circular connector	97	—	—
Serial transmission: EX500	88.5	—	—
Serial transmission: EX600 (M12 connector)	141.5	47	81.5
Serial transmission: EX600 (7/8 inch connector)	158	47	81.5
Serial transmission: EX250	141.5	21	81.5
Serial transmission: EX260	88.7	—	—
Serial transmission: EX120	84.7	—	—

Note) Refer to page 123 for dimensions of external pilots and built-in silencers, as well as their panel cuts.

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire Circular Connector  
**EX500 EX600 EX250 EX260 EX126 EX120**  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold

D-sub Connector Flat Ribbon Cable PC Wiring Terminal Block Box (IP67)

Lead Wire (IP67) Circular Connector (IP67) EX500 (IP67) EX600 (IP67)

EX250 (IP67) EX260 (IP67) EX126 (IP67) EX120

Type 12  
Top Ported

# Series SY3000/5000 C €

SY3000 can be mounted onto SY5000 size manifold.

## How to Order Manifold

Refer to pages 124 and 125 for dimensions of Type 12/Top ported type.

SS5Y5 - M 12 F 1 - 05 U □ - □ □

① ② ③ ④ ⑤ ⑥ ⑦

Mixed Mounting Type

It is possible to mount the SY3000 size valves on all stations. However, the manifold block width should be 12.5 mm.

### ① Connector type

Symbol	Type	Page
F	D-sub connector (25 pins)	P. 55
P	Flat ribbon cable (26 pins)	
PG	Flat ribbon cable (20 pins)	
PH	Flat ribbon cable (10 pins)	
J	PC wiring (20 pins)	P. 63
T	Terminal block box	
L1	Lead wire 34 cores	P. 71
L2	Lead wire 17 cores	
L3	Lead wire 9 cores	
M	Circular connector	P. 79
S□	Serial transmission: EX500	P. 87
S6□	Serial transmission: EX600	P. 95
S□	Serial transmission: EX250	P. 101
S□	Serial transmission: EX260	P. 107
S4□	Serial transmission: EX126	P. 113
S3□	Serial transmission: EX120	P. 119

\* Refer to the pages shown in the table above for details.

### ②

• With Lead wire

Lead wire length

1	0.6 m
2	1.5 m
3	3 m

• With D-sub connector, Flat ribbon cable and PC wiring

Connector entry direction

1	Upward
2	Lateral

\* It is not necessary to select the items above for the valve with terminal block box or with circular connector or the serial transmission type.

### ③ Valve stations

Symbol	Stations	Note
02	2 stations	Some connectors have a limitation on the number of stations. Refer to the pages shown in the table "Connector type" for details.
:	:	
24	24 stations	

### ④ P, E port entry

U Note)	U side (2 to 10 stations)
D Note)	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

\* Refer to page 95 for the EX600 and ⑥ on page 101 for the EX250.

Note) For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### ⑤ SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

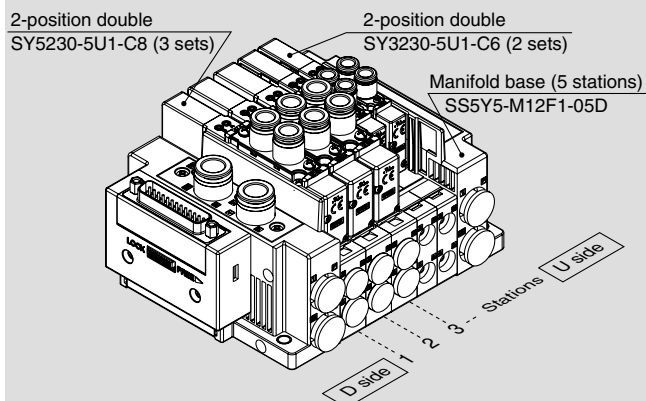
\* Refer to page 95 for the EX600 and ⑥ on page 101 for the EX250.

### ⑥ P, E port size (One-touch fittings)

Nil	ø10
N	ø3/8"

## How to Order Manifold Assembly

### Example (SS5Y5-M12F1-□)



SS5Y5-M12F1-05D ... 1 set (Type M12 5-station manifold base part no.)  
 \*SY5230-5U1-C8 ..... 3 sets (2-position double part no.)  
 \*SY3230-5U1-C6 ..... 2 sets (2-position double part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

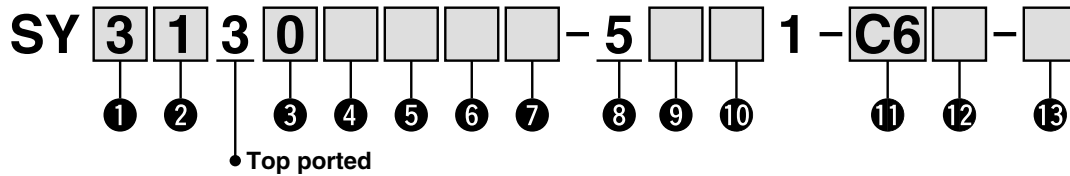
### ⑦ Mounting

Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0	DIN rail mounting (Without DIN rail)
D3	For 3 stations Specify a longer rail than the standard length.
:	:
D24	For 24 stations [The SY5000 valve is now at a mountable length (manifold block length of 16 mm).]

\* Refer to page 133 to determine the L3 using "Calculation formula" for the DIN rail length.

## How to Order Valves (With two mounting screws)

Refer to page 8 for valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type. Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to page 147 for Ordering Example. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected. Refer to page 154.

### 8 Rated voltage

5	24 VDC
6	12 VDC

\* Only 24 VDC is available for the serial transmission type.

### 9 Light/surge voltage suppressor and common specification

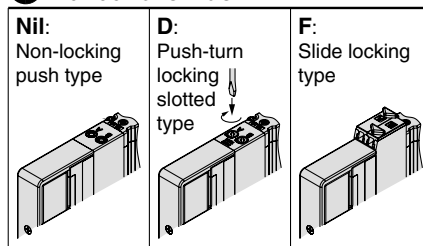
Nil	Without light/surge voltage suppressor (Non-polar)
R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* "Nil" is not available for the SI unit manifold.  
\* Only "Z" and "NZ" types are available for the product with power saving circuit. Select a valve which is suited to the SI unit output polarity or SI unit specification when the SI unit is selected.

Refer to the pages below for details.

EX500: P. 88  
EX600: P. 96  
EX250: P. 102  
EX260: P. 108  
EX126: P. 114  
EX120: P. 120

### 10 Manual override



### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

Symbol	A, B port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

#### One-touch fitting (Inch)

Symbol	A, B port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

### 12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

### 13 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to page 136 for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.

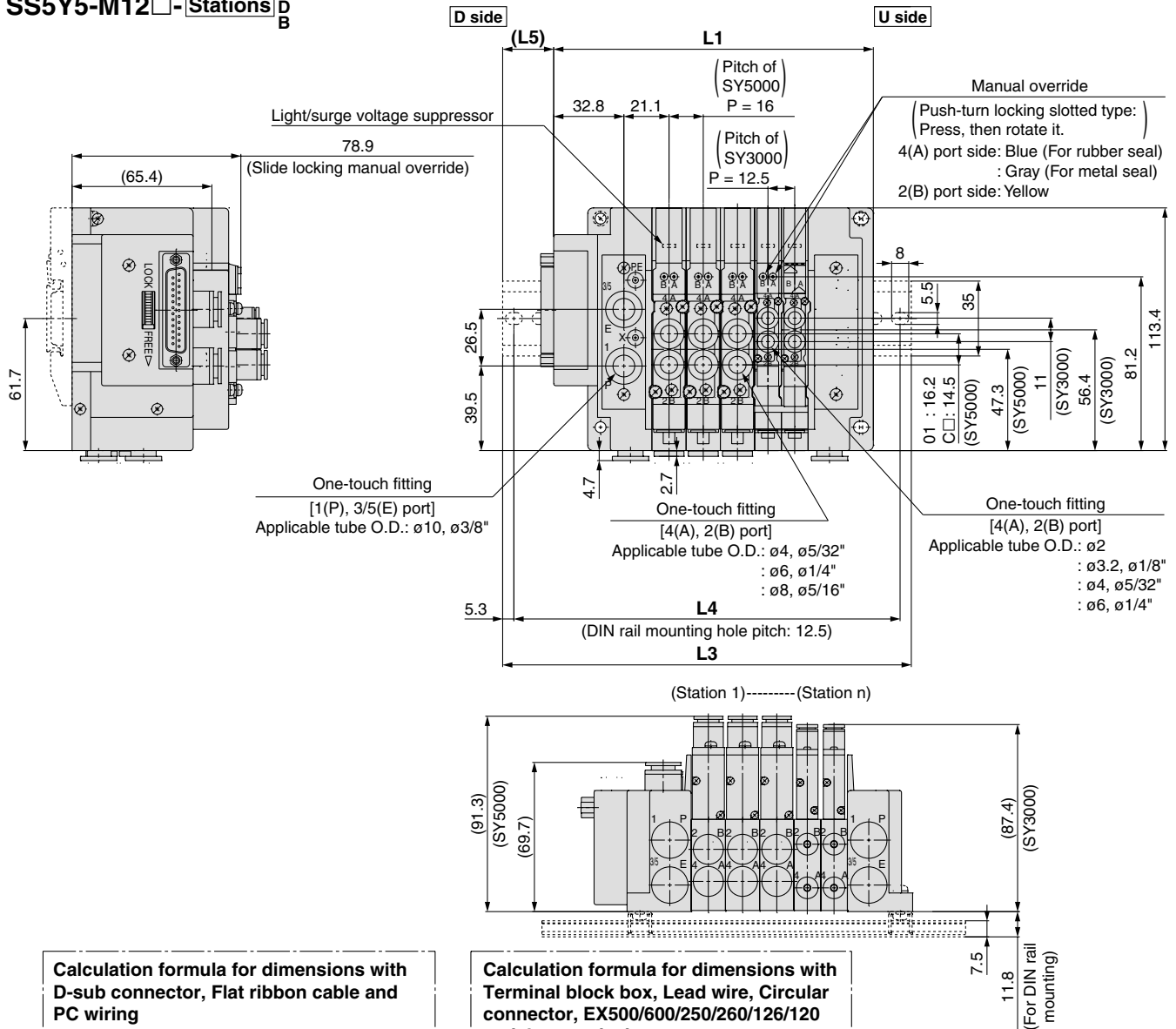
Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 Dual Connector Flat Ribbon Cable PC Wiring  
 EX510  
 Plug-in Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500  
 EX600  
 EX250  
 EX260  
 EX126  
 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions



# Series SY3000/5000

## Dimensions: Type 12/Mixed Mounting

SS5Y5-M12 □ - Stations  $\frac{U}{D}$   
B



**Calculation formula for dimensions with D-sub connector, Flat ribbon cable and PC wiring**

$L1 = 12.5 \times n1 + 16 \times n2 + 76.4$   
 $L2 = 12.5 \times n1 + 16 \times n2 + 48$   
 $M = (L1 + 6.1)/12.5 + 1$  Decimal fractions are truncated.  
 $L3 = 12.5 \times M + 23$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1 + 6.1)/2$

n1: Number of valve stations of the SY3000  
n2: Number of valve stations of the SY5000

**Calculation formula for dimensions with Terminal block box, Lead wire, Circular connector, EX500/600/250/260/126/120 serial transmission**

$L1 = 12.5 \times n1 + 16 \times n2 + a + b \times n3$   
 $L2 = 12.5 \times n1 + 16 \times n2 \times 48$   
 $M = L1/12.5 + 1$  Decimal fractions are truncated.  
 $L3 = 12.5 \times M + 23$   
 $L4 = L3 - 10.5$   
 $L5 = (L3 - L1)/2$   
 $L6 = b \times n3 + c$

n1: Number of valve stations of the SY3000  
n2: Number of valve stations of the SY5000  
n3: Number of I/O units or input block stations

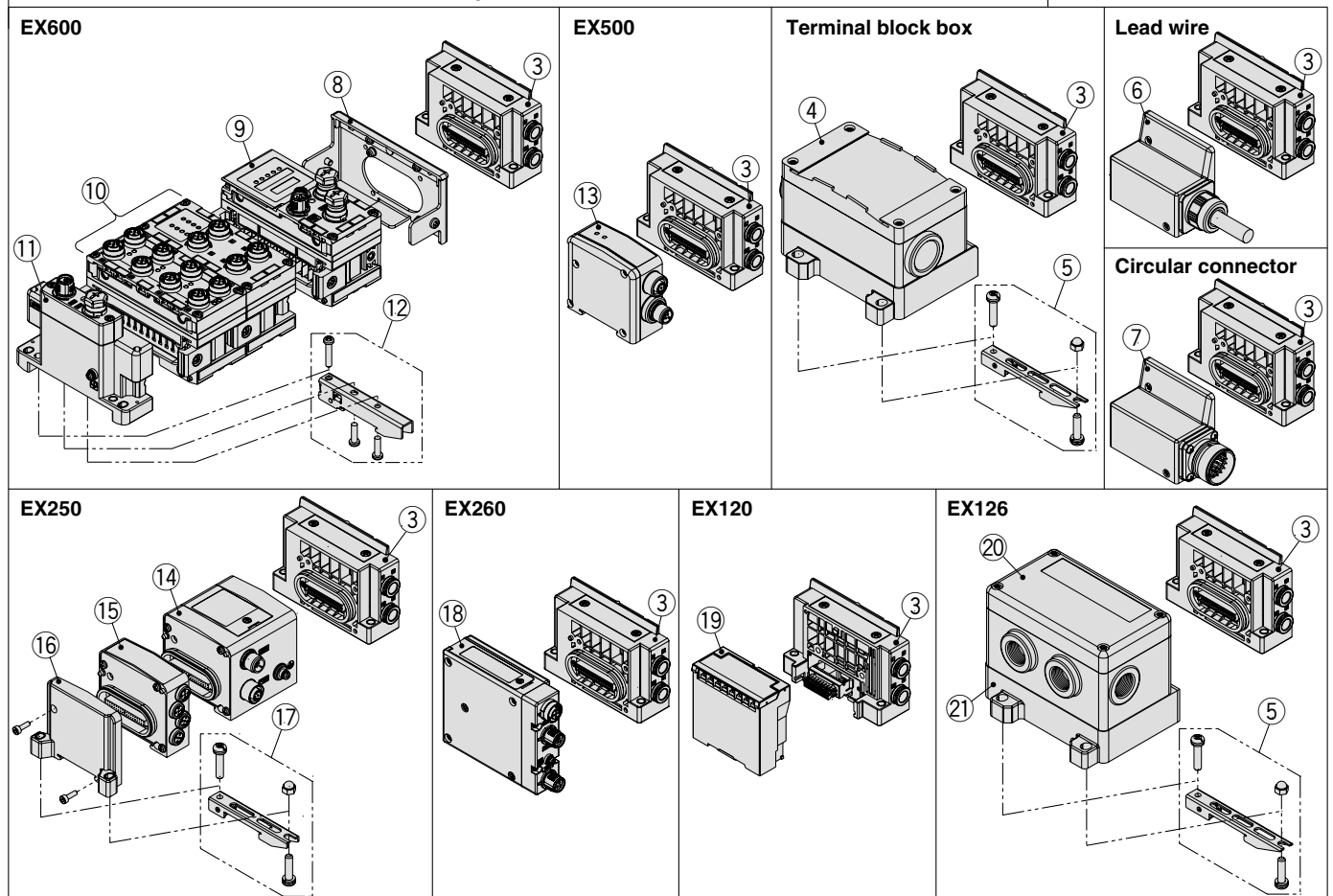
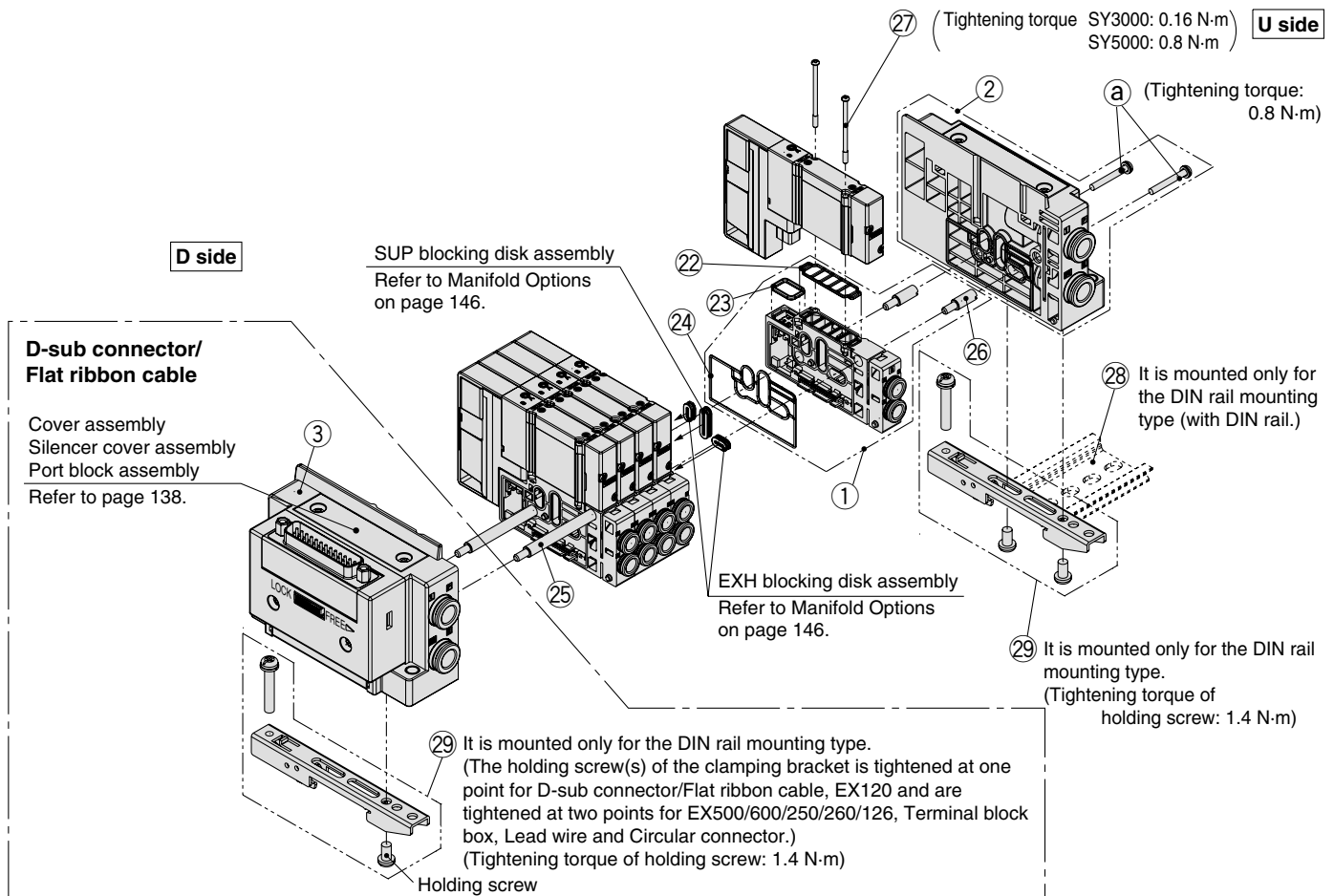
Note) Refer to pages 121 and 122 for dimensions of external pilot and elbow fittings.

Note) Refer to pages 91 to 94 for dimensions of the EX600 serial transmission with I/O unit and pages 99 and 100 for the EX250 serial transmission with input block when L6, b and c are used for the calculation formula.

Coefficient	a	b	c
Terminal block box or Serial transmission: EX126	149.3	—	—
Lead wire or Circular connector	97	—	—
Serial transmission: EX500	88.5	—	—
Serial transmission: EX600 (M12 connector)	141.5	47	81.5
Serial transmission: EX600 (7/8 inch connector)	158	47	81.5
Serial transmission: EX250	141.5	21	81.5
Serial transmission: EX260	88.7	—	—
Serial transmission: EX120	84.7	—	—

# Series SY3000/5000 Type 10, 11, 12

## Plug-in Connector Connecting Base Manifold Exploded View



Specifications  
Construction  
Replacement Parts  
Plug-in Metal Base  
D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
Plug-in Connector Connecting Base  
D-sub Connector Flat Ribbon Cable PC Wiring  
Terminal Block Box  
Lead Wire  
Circular Connector  
**EX500 EX600 EX250 EX260 EX126 EX120**  
One-touch Fillings and Plug Assembly Part No.  
Manifold Options  
Specific Product Precautions

# Series SY3000/5000

## Manifold Parts No.

No.	Description	Part no.		Note	
		SS5Y3-10/11/12	SS5Y5-(M)10/11/12		
①	Manifold block assembly	Refer to page 137.		Includes ② (1 pc.), ③, ④, and ⑥.	
②	SUP/EXH end block assembly	Refer to page 137.			
③	SUP/EXH block assembly	Refer to page 137.			
④	Terminal block box housing assembly	VVQC1000-T0-1			
⑤	Clamp bracket assembly for terminal block box Clamp bracket assembly for EX126 SI unit	SY30M-15-4A		Supplied individually.	
⑥	Lead wire connector block assembly	SY30M-14-4A-1-1		34 cores, 0.6 m lead wire	
		SY30M-14-4A-1-2		34 cores, 1.5 m lead wire	
		SY30M-14-4A-1-3		34 cores, 3 m lead wire	
		SY30M-14-4A-2-1		17 cores, 0.6 m lead wire	
		SY30M-14-4A-2-2		17 cores, 1.5 m lead wire	
		SY30M-14-4A-2-3		17 cores, 3 m lead wire	
		SY30M-14-4A-3-1		9 cores, 0.6 m lead wire	
		SY30M-14-4A-3-2		9 cores, 1.5 m lead wire	
⑦	Circular connector block assembly	SY30M-14-4A-3-3		9 cores, 3 m lead wire	
⑦	Circular connector block assembly	SY30M-14-5A		26 pins	
⑧	Valve plate	EX600-ZMV2		With mounting screws (2 pcs. of M4 x 6 and 2 pcs. of M3 x 8)	
⑨	EX600 SI unit	EX600-SDN1A		DeviceNet™ PNP (Negative common)	
		EX600-SDN2A		DeviceNet™ NPN (Positive common)	
		EX600-SMJ1		CC-Link PNP (Negative common)	
		EX600-SMJ2		CC-Link NPN (Positive common)	
		EX600-SPR1A		PROFIBUS DP PNP (Negative common)	
		EX600-SPR2A		PROFIBUS DP NPN (Positive common)	
		EX600-SEN1		EtherNet/IP™ PNP (Negative common)	
		EX600-SEN2		EtherNet/IP™ NPN (Positive common)	
		EX600-SEC1		EtherCAT PNP (Negative common)	
		EX600-SEC2		EtherCAT NPN (Positive common)	
⑩	EX600 digital input unit	EX600-DXNB		NPN input, M12 connector, 5 pins (4 pcs.), 8 inputs	
		EX600-DXPB		PNP input, M12 connector, 5 pins (4 pcs.), 8 inputs	
		EX600-DXNC		NPN input, M8 connector, 3 pins (8 pcs.), 8 inputs	
		EX600-DXNC1		NPN input, M8 connector, 3 pins (8 pcs.), 8 inputs, with open circuit detection	
		EX600-DXPC		PNP input, M8 connector, 3 pins (8 pcs.), 8 inputs	
		EX600-DXPC1		PNP input, M8 connector, 3 pins (8 pcs.), 8 inputs, with open circuit detection	
		EX600-DXND		NPN input, M12 connector, 5 pins (8 pcs.), 16 inputs	
		EX600-DXPD		PNP input, M12 connector, 5 pins (8 pcs.), 16 inputs	
		EX600-DXNE		NPN input, D-sub connector, 25 pins, 16 inputs	
		EX600-DXPE		PNP input, D-sub connector, 25 pins, 16 inputs	
		EX600-DXNF		NPN input, Spring type terminal block, 32 pins, 16 inputs	
		EX600-DXPF		PNP input, Spring type terminal block, 32 pins, 16 inputs	
	EX600 digital output unit	EX600-DYNB		NPN output, M12 connector, 5 pins (4 pcs.), 8 outputs	
		EX600-DYPB		PNP output, M12 connector, 5 pins (4 pcs.), 8 outputs	
		EX600-DYNE		NPN output, D-sub connector, 25 pins, 16 outputs	
		EX600-DYPE		PNP output, D-sub connector, 25 pins, 16 outputs	
		EX600-DYNF		NPN output, Spring type terminal block, 32 pins, 16 outputs	
		EX600-DYPF		PNP input/output, Spring type terminal block, 32 pins, 16 outputs	
	EX600 digital input/output unit	EX600-DMNE		NPN input/output, D-sub connector, 25 pins, 8 inputs/outputs	
		EX600-DMPE		PNP input/output, D-sub connector, 25 pins, 8 inputs/outputs	
		EX600-DMNF		NPN input/output, Spring type terminal block, 32 pins, 8 inputs/outputs	
		EX600-DMPF		PNP input/output, Spring type terminal block, 32 pins, 8 inputs/outputs	
	EX600 analog input unit		EX600-AXA		M12 connector, 5 pins (2 pcs.), 2-channel input
	EX600 analog output unit		EX600-AYA		M12 connector, 5 pins (2 pcs.), 2-channel output
EX600 analog input/output unit		EX600-AMB		M12 connector, 5 pins (4 pcs.), 2-channel input/output	
⑪	EX600 end plate	EX600-ED2		M12 connector, 5 pins, Max. supplied current 2 A	
		EX600-ED2-3		M12 connector, 5 pins, Max. supplied current 2 A, with DIN rail mounting bracket	
		EX600-ED3		7/8 inch connector, 5 pins, Max. supplied current 8 A	
		EX600-ED3-3		7/8 inch connector, 5 pins, Max. supplied current 8 A, with DIN rail mounting bracket	
⑫	Clamp bracket for EX600	EX600-ZMA2		With mounting screws (1 pc. of M4 x 20 and 2 pcs. of M4 x 14)	
⑬	EX500 SI unit	EX500-Q001		DeviceNet™, PROFIBUS DP, CC-Link, EtherNet/IP™ (Positive common)	
		EX500-Q101		DeviceNet™, PROFIBUS DP, CC-Link, EtherNet/IP™ (Negative common)	
⑭	EX250 SI unit	EX250-SDN1		DeviceNet™ (Negative common)	
		EX250-SPR1		PROFIBUS DP (Negative common)	
		EX250-SMJ2		CC-Link (Positive common)	
		EX250-SAS3		AS-Interface, 8 in/8 out, 31 slave modes, 2 isolated common type (Negative common)	
		EX250-SAS5		AS-Interface, 4 in/4 out, 31 slave modes, 2 isolated common type (Negative common)	
		EX250-SAS7		AS-Interface, 8 in/8 out, 31 slave modes, 1 common type (Negative common)	
		EX250-SAS9		AS-Interface, 4 in/4 out, 31 slave modes, 1 common type (Negative common)	
		EX250-SCA1A		CANopen (Negative common)	
⑮	EX250 input block	EX250-SEN1		EtherNet/IP™ (Negative common)	
		EX250-IE1		M12, 2 inputs	
		EX250-IE2		M12, 4 inputs	
⑯	EX250 end plate assembly	EX250-IE3		M8, 4 inputs	
		EX250-EA1		With mounting screws (2 pcs. of M3 x 10)	
⑰	Clamp bracket assembly for EX250	SY30M-15-3A		Supplied individually.	

## Manifold Parts No.

No.	Description	Part no.		Note
		SS5Y3-10/11/12	SS5Y5-(M)10/11/12	
18	EX260 SI unit	EX260-SDN1		DeviceNet™ M12 connector, 32 outputs (Negative common) (PNP)
		EX260-SDN2		DeviceNet™ M12 connector, 32 outputs (Positive common) (NPN)
		EX260-SDN3		DeviceNet™ M12 connector, 16 outputs (Negative common) (PNP)
		EX260-SDN4		DeviceNet™ M12 connector, 16 outputs (Positive common) (NPN)
		EX260-SPR1		PROFIBUS DP M12 connector, 32 outputs (Negative common) (PNP)
		EX260-SPR2		PROFIBUS DP M12 connector, 32 outputs (Positive common) (NPN)
		EX260-SPR3		PROFIBUS DP M12 connector, 16 outputs (Negative common) (PNP)
		EX260-SPR4		PROFIBUS DP M12 connector, 16 outputs (Positive common) (NPN)
		EX260-SPR5		PROFIBUS DP D-sub connector, 32 outputs (Negative common) (PNP)
		EX260-SPR6		PROFIBUS DP D-sub connector, 32 outputs (Positive common) (NPN)
		EX260-SPR7		PROFIBUS DP D-sub connector, 16 outputs (Negative common) (PNP)
		EX260-SPR8		PROFIBUS DP D-sub connector, 16 outputs (Positive common) (NPN)
		EX260-SMJ1		CC-Link M12 connector, 32 outputs (Negative common) (PNP)
		EX260-SMJ2		CC-Link M12 connector, 32 outputs (Positive common) (NPN)
		EX260-SMJ3		CC-Link M12 connector, 16 outputs (Negative common) (PNP)
		EX260-SMJ4		CC-Link M12 connector, 16 outputs (Positive common) (NPN)
		EX260-SEC1		EtherCAT M12 connector, 32 outputs (Negative common) (PNP)
		EX260-SEC2		EtherCAT M12 connector, 32 outputs (Positive common) (NPN)
		EX260-SEC3		EtherCAT M12 connector, 16 outputs (Negative common) (PNP)
		EX260-SEC4		EtherCAT M12 connector, 16 outputs (Positive common) (NPN)
EX260-SPN1		PROFINET 32 outputs (Negative common) (PNP)		
EX260-SPN2		PROFINET 32 outputs (Positive common) (NPN)		
EX260-SPN3		PROFINET 16 outputs (Negative common) (PNP)		
EX260-SPN4		PROFINET 16 outputs (Positive common) (NPN)		
19	EX120 SI unit	EX120-SDN1		DeviceNet™ (Positive common)
		EX120-SCS1		OMRON Corp.: CompoBus/S (16 outputs) (Positive common)
		EX120-SCS2		OMRON Corp.: CompoBus/S (8 outputs) (Positive common)
		EX120-SMJ1		CC-Link (Positive common)
		EX120-SCM1		CompoNet™ (Positive common)
20	EX126 SI unit	EX120-SCM3		CompoNet™ (Negative common)
		EX126D-SMJ1		CC-Link (Positive common)
21	Terminal block plate assembly	VVQC1000-74A-2		For mounting EX126 SI unit
22	Base gasket (for connector connecting base)	SY30M-9-1A	SY50M-9-1A	Part numbers shown on the left are for 10 valves. (10 pcs.)
23	Connector gasket	SX3000-146-2		Supplied individually.
24	Manifold block gasket	SY30M-9-2	SY50M-9-2	Supplied individually.
25	Tie-rod Tie-rod (for mounting only SY3000 on mixed mounting type manifolds)	VVQ1000-TR-□	SV2000-55-1-□-A	□: Manifold stations 2 pcs. supplied (SY3000), 3 pcs. supplied (SY5000)
		—	SY50M-49-1-□-A	3 pcs. supplied.
26	Tie-rod for additional stations Tie-rod for additional stations (for mixed mounting of SY3000: except A, B port size ø8, ø5/16") Tie-rod for additional stations (for mixed mounting of SY3000: A, B port size ø8, ø5/16")	SY30M-49-2-A	SV2000-55-2A-A	2 pcs. supplied (SY3000), 3 pcs. supplied (SY5000) (Included in ①)
		—	SY50M-49-2-A	3 pcs. supplied. (Included in ①)
		—	SV2000-55-ZA-A	3 pcs. supplied.
27	Valve mounting screw	Round head combination screw M2 x 32	SY3000-23-24A SY5000-221-1A (M3 x 32.5)	Part numbers shown on the left are for 10 valves. (20 pcs.)
		Hexagon socket head cap screw M2 x 32	SY3000-222-1A SY5000-222-1A (M3 x 32.5)	Part numbers shown on the left are for 10 valves. (20 pcs.)
28	DIN rail	VZ1000-11-1-□		Refer to page 140.
29	Clamp bracket assembly (for connector connecting base)	SY30M-15-1A	SY50M-15-1A	Supplied individually.

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 EX510  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500  
 EX600  
 EX250  
 EX260  
 EX126  
 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

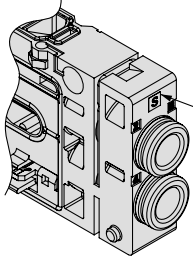
# Series SY3000/5000

## Manifold Parts No.

### ① Manifold block assembly

SY  OM-2-  A- • A, B port size

Series		Piping direction	
3	SY3000	1	Side/Top ported
5	SY5000	2	Bottom ported



Single wiring  
Marked with **S**

Symbol	A, B port	SY3000	SY5000	Note
C2	ø2 One-touch fitting	●	—	Side/Bottom ported Metric size
C3	ø3.2 One-touch fitting	●	—	
C4	ø4 One-touch fitting	●	—	
C6	ø6 One-touch fitting	●	—	
C8	ø8 One-touch fitting	—	●	Side/Bottom ported Inch size
N1	ø1/8" One-touch fitting	—	●	
N3	ø5/32" One-touch fitting	●	●	Side/Bottom ported Inch size
N7	ø1/4" One-touch fitting	●	●	
N9	ø5/16" One-touch fitting	—	●	

Note) Refer to Mixed Mounting Type: ø8, ø5/16"

Wiring type	
S	Single wiring
D	Double wiring

Symbol	A, B port	SY3000	SY5000	Note
L4	ø4 One-touch fitting	●	●	Side ported Metric size
L6	ø6 One-touch fitting	●	●	
L8	ø8 One-touch fitting	—	●	
LN3	ø5/32" One-touch fitting	●	—	Side ported Metric size
LN7	ø1/4" One-touch fitting	●	●	
LN9	ø5/16" One-touch fitting	—	●	
B4	ø4 One-touch fitting	●	●	Side ported Metric size
B6	ø6 One-touch fitting	●	●	
B8	ø8 One-touch fitting	—	●	
BN3	ø5/32" One-touch fitting	●	—	Side ported Metric size
BN7	ø1/4" One-touch fitting	●	●	
BN9	ø5/16" One-touch fitting	—	●	
00	Plug	●	●	Top ported

### ① Mixed mounting of the SY3000 and SY5000, Manifold block assembly for mounting the SY3000

SY50M-2-  A-

Piping direction	
3	Side/Top ported
4	Bottom ported

Wiring type	
S	Single wiring
D	Double wiring

A, B port size

Symbol	A, B port	Note	Symbol	A, B port	Note
C2	ø2 One-touch fitting	Side/Bottom ported Metric size	L4	ø4 One-touch fitting	Side ported
C3	ø3.2 One-touch fitting		L6	ø6 One-touch fitting	Metric size
C4	ø4 One-touch fitting		LN3	ø5/32" One-touch fitting	Side ported
C6	ø6 One-touch fitting		LN7	ø1/4" One-touch fitting	Inch size
N1	ø1/8" One-touch fitting	Side/Bottom ported Inch size	B4	ø4 One-touch fitting	Side ported
N3	ø5/32" One-touch fitting		B6	ø6 One-touch fitting	Metric size
N7	ø1/4" One-touch fitting		BN3	ø5/32" One-touch fitting	Side ported
			BN7	ø1/4" One-touch fitting	Inch size
			00	Plug	Top ported

### ① Mixed mounting of the SY3000 and SY5000, Manifold block assembly for mounting the SY3000 valves on the SY5000 manifolds at A, B port size: ø8, ø5/16"

SY50M-2-  A-

Piping direction	
5	Side ported
6	Bottom ported

Wiring type	
S	Single wiring
D	Double wiring

A, B port size

Symbol	A, B port	Note
C8	ø8 One-touch fitting	Side/Bottom ported Metric size
N9	ø5/16" One-touch fitting	Side/Bottom ported Inch size
L8	ø8 One-touch fitting	Side ported Metric size
LN9	ø5/16" One-touch fitting	Side ported Inch size
B8	ø8 One-touch fitting	Side ported Metric size
BN9	ø5/16" One-touch fitting	Side ported Inch size

#### \*Manifold block assembly accessories

SY3000:

- ②6 Tie-rod assembly for additional stations/2
- ②2 Base gasket/1
- ②3 Connector gasket/1
- ②4 Manifold block gasket/1

SY5000 (including mixed mounting type):

- ②6 Tie-rod assembly for additional stations/3
- ②2 Base gasket/1
- ②3 Connector gasket/1
- ②4 Manifold block gasket/1

#### \*SUP/EXH end block assembly accessories

- SY3000: Tension bolt/2
- ②4 Manifold block gasket/1
- SY5000: Tension bolt/3
- ②4 Manifold block gasket/1

#### \*SUP/EXH block assembly accessories

- SY3000: Tension bolt/None  
(because the nuts are embedded)
- SY5000: Tension bolt/3

### ② SUP/EXH end block assembly

SY  OM-3-1 A  -  -

### ③ SUP/EXH block assembly

SY  OM-1- A  -  -  -

Series	
3	SY3000
5	SY5000

SUP/EXH block assembly	
1	EX500/600/250/260/126, Terminal block box, Lead wire, Circular connector
11	D-sub connector
12	Flat ribbon cable (26 pins)
13	Flat ribbon cable (20 pins)
14	Flat ribbon cable (10 pins)
15	PC wiring (20 pins)
16	EX120

Mounting

Nil	Direct mounting
D0	DIN rail mounting (Without DIN rail)

P, E port size

Symbol	P, E port	SY3000	SY5000	Note
C8	ø8 One-touch fitting	●	—	Side/Bottom/Top ported Metric size
C10	ø10 One-touch fitting	—	●	
N9	ø5/16" One-touch fitting	●	—	Side/Bottom/Top ported Inch size
N11	ø3/8" One-touch fitting	—	●	
L8	ø8 One-touch fitting	●	—	Side ported Metric size
L10	ø10 One-touch fitting	—	●	
LN9	ø5/16" One-touch fitting	●	—	
LN11	ø3/8" One-touch fitting	—	●	Side ported Inch size
B8	ø8 One-touch fitting	●	—	
B10	ø10 One-touch fitting	—	●	Side ported Metric size
BN9	ø5/16" One-touch fitting	●	—	
BN11	ø3/8" One-touch fitting	—	●	Side ported Inch size
00	Plug	●	●	
00U	Plug	●	●	P/E port entry on one side or Top ported

Note 1) It can be selected only if no symbol or "S" or "V" or "B" is selected for the pilot port and the piping.

Note 2) "00U" is available only for the D-sub connector type and it has an inch size locking bracket.

Pilot/Piping type

Symbol	Specifications	Note
Nil	Internal pilot	Side ported
S	Internal pilot, Built-in silencer	
R	External pilot	
V	Internal pilot	Top ported
RV	External pilot	
VP	Internal pilot, for silencer (supply side)*	
B	Internal pilot	Bottom ported
BS	Internal pilot, Built-in silencer	
BR	External pilot	

\*"VP" type is plugged with an E port.

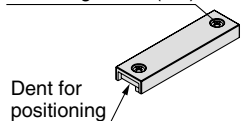
Connector entry direction (for D-sub connector, Flat ribbon cable, PC wiring only)

1	Upward
2	Lateral

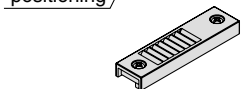
## Manifold Parts No.

### ■ Cover assembly/Silencer cover assembly/Port block assembly for SUP/EXH (end) block assembly

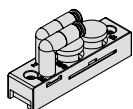
Mounting screw (M3)



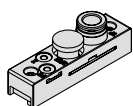
**Cover assembly**  
(Internal pilot)



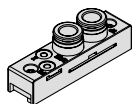
**Silencer cover assembly**  
(Internal pilot, Built-in silencer)



**Port block assembly**  
(Side/Bottom ported, External pilot)



**Port block assembly**  
(Top ported, Internal pilot, for silencer  
(supply side))



**Port block assembly**  
(Top ported, Internal/External pilot)

\* Cover assembly, silencer cover assembly and port block assembly are included in the SUP/EXH (end) block assembly, but they need to be ordered for piping direction change.

**Tightening torque for mounting screw (M3): 0.8 N·m**

SY **3** 0M-4- 1A

SY **3** 0M-5- 1A

SY **3** 0M-6- 1AR - 00

X, PE port one-touch fitting type

Nil	Metric size (ø4)
U	Inch size (ø5/32")

SY **3** 0M-6- 3AV - C8

SY **3** 0M-6- 1A V - C8

<b>Series</b>	
3	SY3000
5	SY5000

<b>Pilot type</b>	
Nil	Internal pilot
R	External pilot

**P, E port size**

Symbol	P, E port	SY3000	SY5000
C8	ø8 One-touch fitting	●	—
C10	ø10 One-touch fitting	—	●
N9	ø5/16" One-touch fitting	●	—
N11	ø3/8" One-touch fitting	—	●

## Type 10, 11, 12: How to Increase Connector Type Manifold

- 1 Loosen the U-side tension bolt (a), and remove the SUP/EXH end block assembly (2).

- 2 Screw in tie-rods for additional stations (26) to the manifold's tie-rod (25).  
(Screw them in until there is no gap between the tie-rods.)

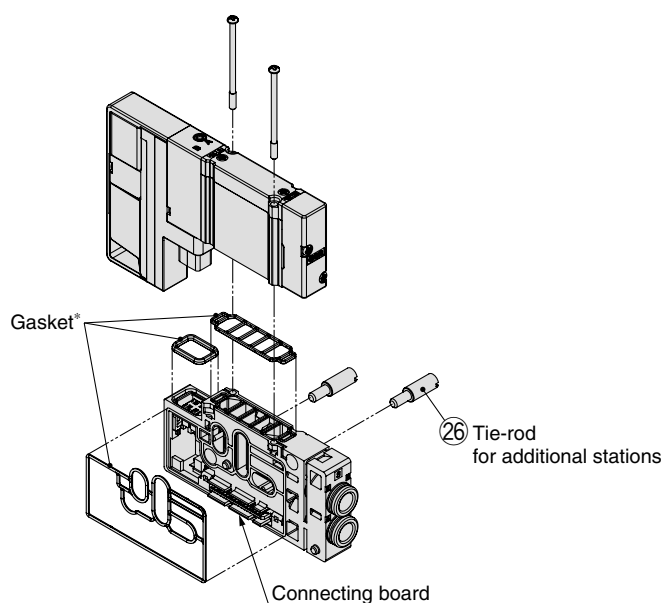
- 3 Connect the manifold block assembly (1) and SUP/EXH end block assembly (2) to be added, and tighten the tension bolt (a).

**Tightening torque for tension bolt (a) (M3): 0.8 N·m**

(Refer to page 134 for (1), (2), (25) and (a).)

### ⚠ Caution

1. Be sure to shut off the power and air supplies before disassembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
2. When disassembly and assembly are performed, air leakage may result if the tightening of the tension bolt is inadequate.



\*Gaskets (in three places) are mounted.

## One-touch Fittings and Plug Assembly/Part No.

Refer to Changing One-touch Fittings on page 157 for replacement method.

### ■ One-touch fittings

		Port size	SY3000	SY5000
A, B port	Metric size	ø2 One-touch fitting (Straight type)	VVQ1000-50A-C2	—
		ø3.2 One-touch fitting (Straight type)	VVQ1000-50A-C3	—
		ø4 One-touch fitting (Straight type)	VVQ1000-50A-C4	VVQ1000-51A-C4
		ø6 One-touch fitting (Straight type)	VVQ1000-50A-C6	VVQ1000-51A-C6
		ø8 One-touch fitting (Straight type)	—	VVQ1000-51A-C8
		ø4 One-touch fitting (Elbow type)	SZ3000-73-1A-L4	SZ3000-74-1A-L4
		ø6 One-touch fitting (Elbow type)	SZ3000-73-1A-L6	SZ3000-74-1A-L6
		ø8 One-touch fitting (Elbow type)	—	SZ3000-74-1A-L8
		ø4 One-touch fitting (Long elbow type)	SZ3000-73-2A-L4	SZ3000-74-2A-L4
		ø6 One-touch fitting (Long elbow type)	SZ3000-73-2A-L6	SZ3000-74-2A-L6
	ø8 One-touch fitting (Long elbow type)	—	SZ3000-74-2A-L8	
	Inch size	ø1/8" One-touch fitting (Straight type)	VVQ1000-50A-N1	—
		ø5/32" One-touch fitting (Straight type)	VVQ1000-50A-N3	VVQ1000-51A-N3
		ø1/4" One-touch fitting (Straight type)	VVQ1000-50A-N7	VVQ1000-51A-N7
		ø5/16" One-touch fitting (Straight type)	—	VVQ1000-51A-N9
		ø5/32" One-touch fitting (Elbow type)	KJL03-95-X224	—
		ø1/4" One-touch fitting (Elbow type)	KJL07-95-X224	KQ2L07-14-X224
		ø5/16" One-touch fitting (Elbow type)	—	KQ2L09-14-X224
		ø5/32" One-touch fitting (Long elbow type)	KJL03-95-X225	—
		ø1/4" One-touch fitting (Long elbow type)	KJL07-95-X225	KQ2L07-14-X225
ø5/16" One-touch fitting (Long elbow type)		—	KQ2L09-14-X225	
P, E port	Metric size	ø8 One-touch fitting (Straight type)	VVQ1000-51A-C8	—
		ø10 One-touch fitting (Straight type)	—	VVQ2000-51A-C10
		ø8 One-touch fitting (Elbow type)	SZ3000-74-1A-L8	—
		ø10 One-touch fitting (Elbow type)	—	SZ3000-83-1A-L10
		ø8 One-touch fitting (Long elbow type)	SZ3000-74-2A-L8	—
		ø10 One-touch fitting (Long elbow type)	—	SZ3000-83-2A-L10
	Inch size	ø5/16" One-touch fitting (Straight type)	VVQ1000-51A-N9	—
		ø3/8" One-touch fitting (Straight type)	—	VVQ2000-51A-N11
		ø5/16" One-touch fitting (Elbow type)	KQ2L09-14-X224	—
		ø3/8" One-touch fitting (Elbow type)	—	KQ2L11-14-X224
		ø5/16" One-touch fitting (Long elbow type)	KQ2L09-14-X225	—
		ø3/8" One-touch fitting (Long elbow type)	—	KQ2L11-14-X225

### ■ Plug assembly

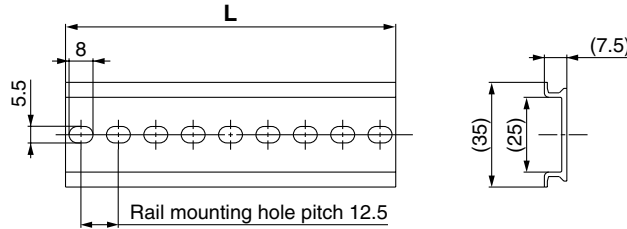
	SY3000	SY5000
A, B port	VVQ0000-58A	VVQ1000-58A
P, E port	VVQ1000-58A	VVQ2000-58A

## Manifold Options

### ■ DIN rail dimensions/weight for the SY3000 plug-in metal base and the SY3000/5000 plug-in connector connecting base

#### VZ1000-11-1-□

\* Refer to the DIN rail dimensions table below and specify the number in the box □.

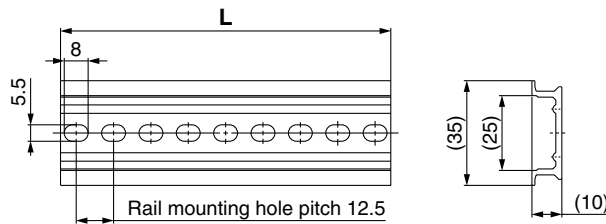


No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	235.5	248	260.5	273	285.5	298	310.5	323
Weight (g)	17.6	19.9	22.1	24.4	26.6	28.9	31.1	33.4	35.6	37.9	40.1	42.4	44.6	46.9	49.1	51.4	53.6	55.9	58.1
No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
L dimension	335.5	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5	523	535.5	548	560.5
Weight (g)	60.4	62.5	64.9	67.1	69.4	71.6	73.9	76.1	78.4	80.6	82.9	85.1	87.4	89.6	91.9	94.1	96.4	98.6	100.9
No.	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
L dimension	573	585.5	598	610.5	623	635.5	648	660.5	673	685.5	698	710.5	723	735.5	748	760.5	773	785.5	798
Weight (g)	103.1	105.4	107.6	109.9	112.1	114.4	116.6	118.9	121.1	123.4	125.6	127.9	130.1	132.4	134.6	136.9	139.1	141.4	143.6
No.	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71				
L dimension	810.5	823	835.5	848	860.5	873	885.5	898	910.5	923	935.5	948	960.5	973	985.5				
Weight (g)	145.9	148.1	150.4	152.6	154.9	157.1	159.4	161.6	163.9	166.1	168.4	170.6	172.9	175.1	177.4				

### ■ DIN rail dimensions/weight for the SY5000 plug-in metal base

#### VZ1000-11-4-□

\* Refer to the DIN rail dimensions table below and specify the number in the box □.



No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	233.5	248	260.5	273	285.5	298	310.5	323
Weight (g)	24.8	28	31.1	34.3	37.4	40.6	43.8	46.9	50.1	53.3	56.4	59.6	62.7	65.9	69.1	72.2	75.4	78.6	81.7
No.	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37
L dimension	335.5	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5	523	535.5	548	560.5
Weight (g)	84.9	88	91.2	94.4	97.5	100.7	103.9	107	110.2	113.3	116.5	119.7	122.8	126	129.2	132.3	135.5	138.6	141.8
No.	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56
L dimension	573	585.5	598	610.5	623	635.5	648	660.5	673	685.5	698	710.5	723	735.5	748	760.5	773	785.5	798
Weight (g)	145	148.1	151.3	154.5	157.6	160.8	163.9	167.1	170.3	173.4	176.6	179.8	182.9	186.1	189.2	192.4	195.6	198.7	201.9
No.	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71				
L dimension	810.5	823	835.5	848	860.5	873	885.5	898	910.5	923	935.5	948	960.5	973	985.5				
Weight (g)	205.1	208.2	211.4	214.5	217.7	220.9	224	227.2	230.4	233.5	236.7	239.8	243	246.2	249.3				



## Caution

Tightening torque for mounting screw	
M2:	0.16 N·m
M3:	0.8 N·m

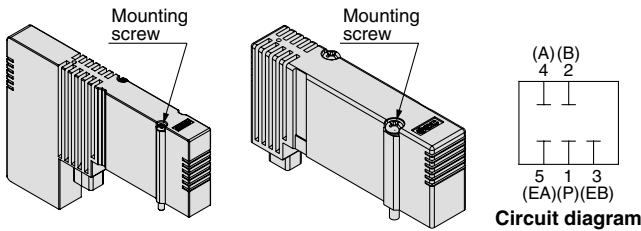
## Manifold Options

Refer to pages 149 and 151 for dimensions.

### Blanking plate assembly

(With two mounting screws)

Used when valve additions are expected or for maintenance. A structure is in place on the blanking plate to prevent the mounting screws from sliding.



SY30M-26-□A (-B)

SY50M-26-□A (-B)

### How to Order Blanking Plate Assembly

SY **3** OM-26-**1** A-□

- Series**

3	SY3000
5	SY5000
- Option for mounting**

Nil	With mounting screw (Round head combination screw)
B	With mounting screw (Hexagon socket head cap screw)
- Base type**

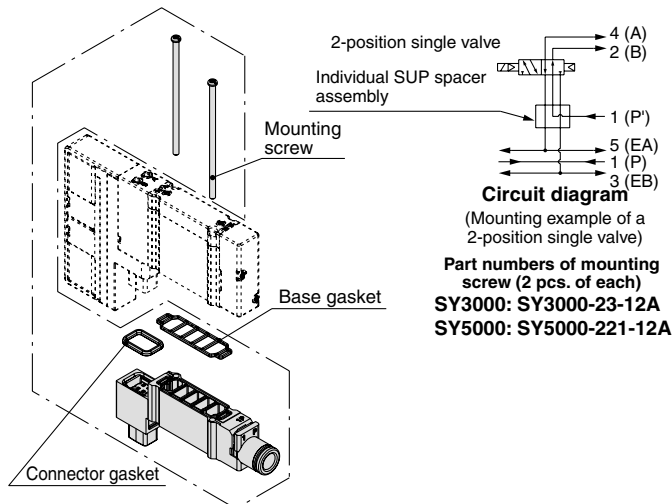
1	For plug-in connector connecting base
2	For plug-in metal base

### Individual SUP spacer assembly

(With a connector gasket, a base gasket, and two mounting screws)

When the same manifold is used for different pressures, an individual SUP spacer assembly is used as a supply port for different pressures.

Note) When selecting an elbow type for one-touch fitting for a spacer assembly, use it faced upward, since it interferes with A and B port piping in Type 50 and Type 10 manifolds.



**Part numbers of mounting screw (2 pcs. of each)**  
 SY3000: SY3000-23-12A  
 SY5000: SY5000-221-12A

### How to Order Individual SUP/EXH Spacer Assembly

One-touch fitting Straight type SY **3** OM-**38**-**1** A-**C6**

One-touch fitting Elbow type SY **3** OM-**38**-**2** A-**L6**

**Series**

3	SY3000
5	SY5000

**Spacer type**

38	Individual SUP spacer
39	Individual EXH spacer

**Individual SUP/EXH spacer assembly**

2	Short elbow type
3	Long elbow type

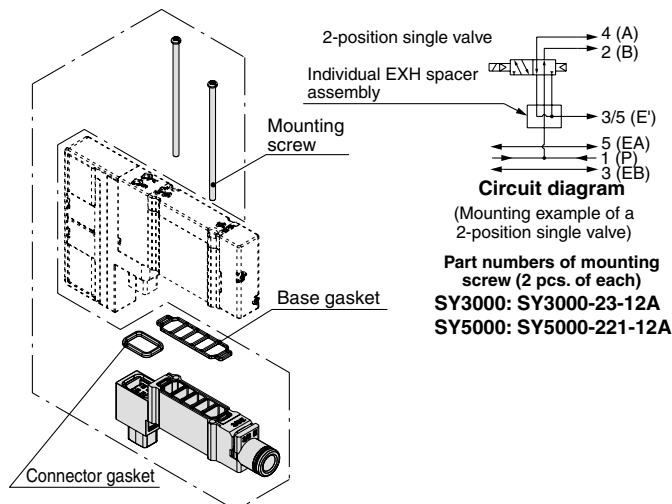
Note) Select the long elbow type for a 3-position valve when using Type 11 and Type 12 downwards. However, Type 11 of the SY3000 series for the mixed mounting of connector connecting bases cannot be used downwards.

### Individual EXH spacer assembly

(With a connector gasket, a base gasket, and two mounting screws)

When valve exhaust affects other stations due to the circuit configuration, this spacer assembly is used for individual valve exhaust.

Note) When selecting an elbow type for one-touch fitting for a spacer assembly, use it faced upward, since it interferes with A and B port piping in Type 50 and Type 10 manifolds.



**Part numbers of mounting screw (2 pcs. of each)**  
 SY3000: SY3000-23-12A  
 SY5000: SY5000-221-12A

### Port size (Metric)

Symbol	P, E port	SY3000	SY5000
L4	ø4 One-touch fitting	●	●
L6	ø6 One-touch fitting	●	●
L8	ø8 One-touch fitting	—	●

### Port size (Inch)

Symbol	P, E port	SY3000	SY5000
LN3	ø5/32" One-touch fitting	●	—
LN7	ø1/4" One-touch fitting	●	●
LN9	ø5/16" One-touch fitting	—	●

### Port size (Metric)

Symbol	P, E port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

### Port size (Inch)

Symbol	P, E port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

## ⚠ Caution

Tightening torque for mounting screw
M2: 0.16 N·m
M3: 0.8 N·m

## Manifold Options

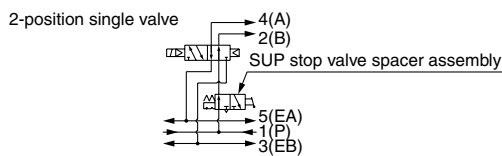
Refer to pages 149 and 152 for dimensions.

### ■ SUP stop valve spacer assembly with residual pressure release valve

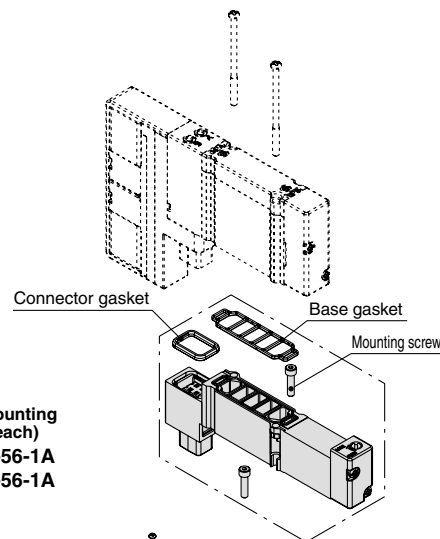
(With a connector gasket, a base gasket and two mounting screws.)

It is used to shut off the supply air to valves individually.

Series	Part no.
SY3000	SY30M-50-1A
SY5000	SY50M-50-1A



**Circuit diagram**  
(Mounting example of a 2-position single valve)



**Part numbers of mounting screw (2 pcs. of each)**  
SY3000: SY30M-56-1A  
SY5000: SY50M-56-1A

### [How to mount SUP stop valve spacer assembly with residual pressure release valve]

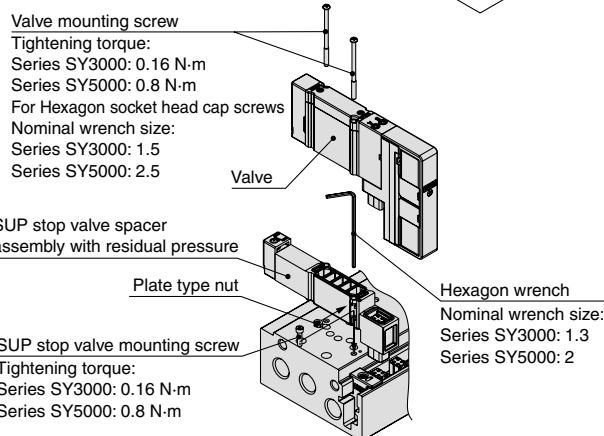
Insert the SUP stop valve mounting screw from the side of the spacer assembly, and mount it to the manifold.

Tighten the SUP stop valve mounting screw to the specified tightening torque.

Mount the valve and tighten the valve mounting screws to the specified tightening torque after mounting the SUP stop valve spacer assembly with residual pressure exhaust valve.

Note 1) Install the plate type nut to the spacer assembly as shown in the figure if it comes off. The SUP stop valve mounting screws can be tightened with a hexagon wrench without removing the plate type nut.

Note 2) When the elbows are facing upwards in A and B ports in Type 10 manifolds, they will interfere with the piping for the spacer assembly. Therefore, please combine the A and B ports with straight types or elbows facing downwards.



### ■ Double check spacer assembly with residual pressure release valve (Side/Bottom ported)

(With a connector gasket, a base gasket, and two mounting screws)

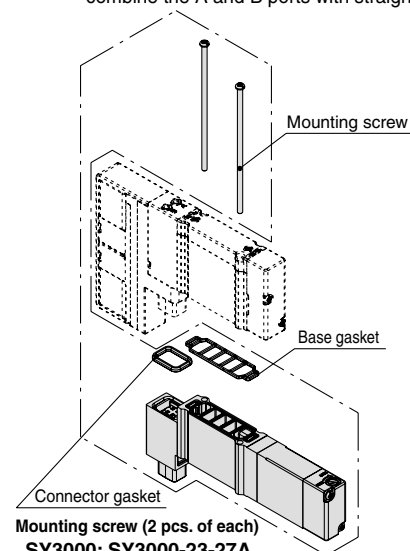
It is used to hold the intermediate position of the cylinder for a long period of time. Use a 3-position exhaust center valve when the double check spacer assembly with residual exhaust valve is used.

It can also be used for drop prevention at the cylinder stroke end when supply residual pressure is released by using a 2-position single/double valve.

Note) When the elbows are facing upwards in A and B ports in Type 10 manifolds, they will interfere with the piping for the spacer assembly. Therefore, please combine the A and B ports with straight types or elbows facing downwards.

Series	Part no.
SY3000	SY30M-60-1A
SY5000	SY50M-60-1A

Applicable valve	Intermediate stop	Drop prevention
	SY $\frac{3}{5}$ 40 $\frac{0}{1}$	SY $\frac{3}{5}$ 2 0 $\frac{0}{1}$



**Mounting screw (2 pcs. of each)**  
SY3000: SY3000-23-27A  
SY5000: SY5000-221-4A

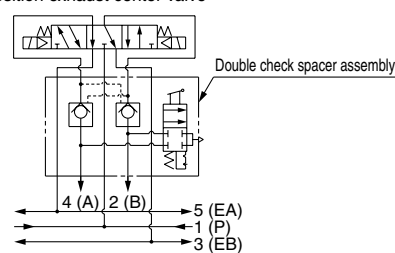
## ⚠ Caution

- Air leakage from the pipe between the valve and cylinder or from the fittings will prevent the cylinder from stopping for a long period of time. Check the leakage using neutral household detergent, such as dish washing soap. Also, check the cylinder's tube gasket, piston packing and rod packing for air leakage.
- Combining with 3-position closed center or pressure center valve will not work.
- If the exhaust of the double check spacer is restricted too much, the cylinder may not operate properly and may not stop intermediately.
- Set the cylinder load so that the cylinder pressure will be within two times that of the supply pressure.

### <Example>

#### Double check spacer assembly with residual pressure release valve

3-position exhaust center valve

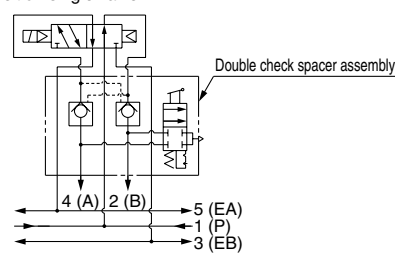


**Circuit diagram**

(Intermediate stop: When 3-position exhaust center valve is mounted)

#### Double check spacer assembly with residual pressure release valve

2-position single valve



**Circuit diagram**

(Drop prevention: When 2-position single valve is mounted)

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 EX510  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500  
 EX600  
 EX250  
 EX260  
 EX126  
 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

Tightening torque for mounting screw	
M2:	0.16 N·m
M3:	0.8 N·m

## Manifold Options

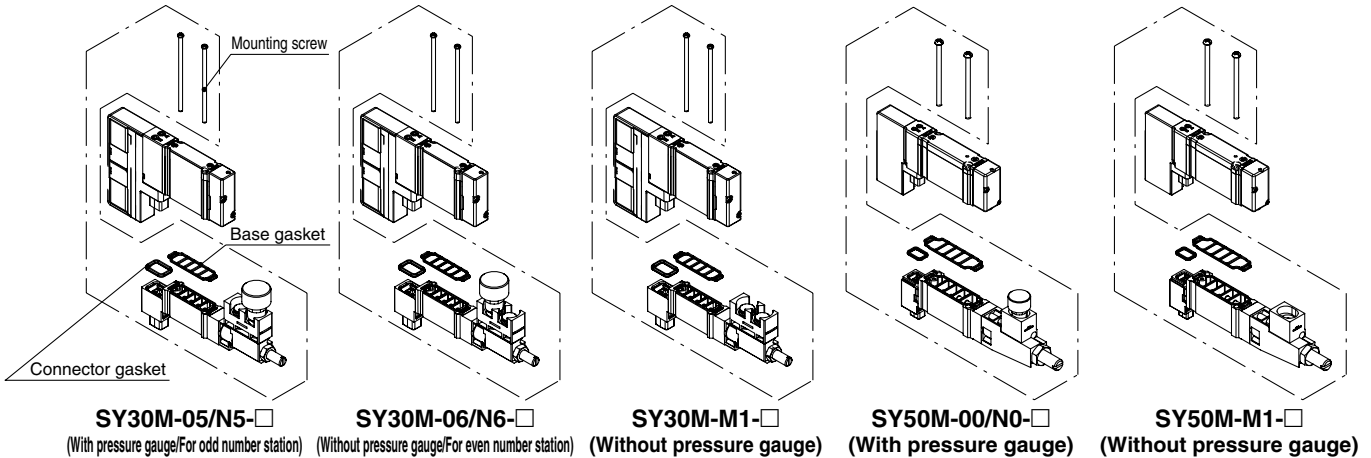
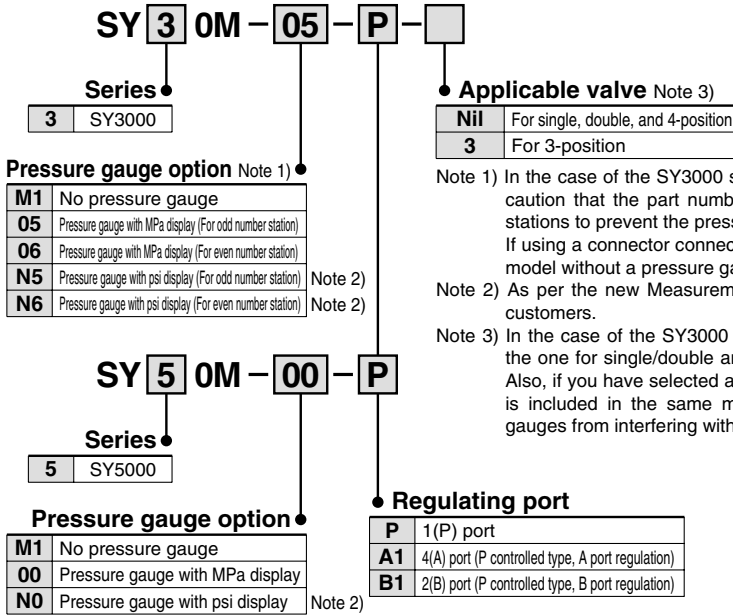
Refer to pages 150 and 152 for dimensions.

### Interface regulator

(With a connector gasket, a base gasket, and two mounting screws)

Used when the supply pressure for each valve on the same manifold must be individually set (reduced pressure).

### How to Order

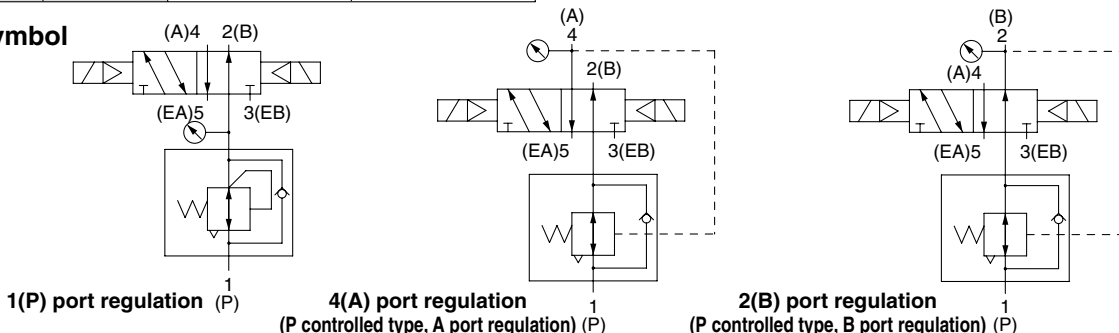


### Specifications

Interface regulator model	SY30M-□-□-□	SY50M-□-□
Applicable valve model Note 2)	SY3□□□(R)	SY5□□□(R)
Regulating port	1(P), 4(A), 2(B)	
Set pressure range	0.1 to 0.7 MPa	
Maximum operating pressure	1.0 MPa	
Fluid	Air	
Ambient and fluid temperature	-10 to 50°C (No freezing)	
Weight [g] Note 3)	With pressure gauge	33(35) Note 4)
	Without pressure gauge	27(29) Note 4)

Note 1) Always apply pressure from 1(P) port in the base for interface regulator.  
 Note 2) 1(P) port pressure regulation is only available for 3-position closed center and pressure center, and 4-position dual 3-port valves.  
 Note 3) Gasket and mounting screws are included in the weight.  
 Note 4) ( ): Denotes the values of SY30M-□-□-3.

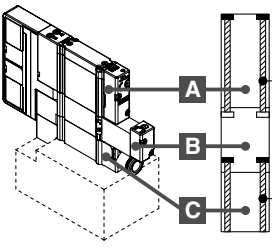
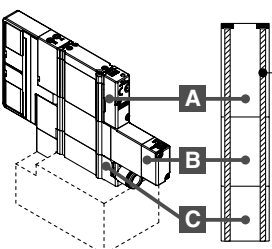
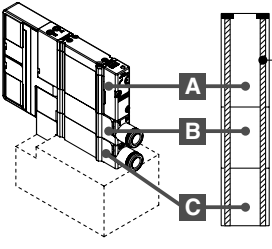
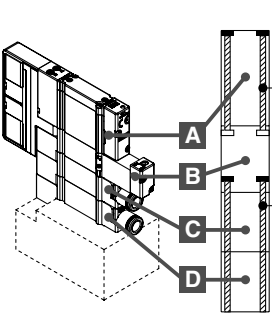
### JIS symbol



## Caution

Tightening torque for mounting screw
M2: 0.16 N·m
M3: 0.8 N·m

### Mounting Screw Part No. ① (when adding optional lamination layers)

Combination	① SY3000 (M2)		② SY5000 (M3)		
	Round head combination screw	Hexagon socket head cap screw	Round head combination screw	Hexagon socket head cap screw	
 <p>&lt;Round head combination screw&gt; ①:SY3000-23-24A ②:SY5000-221-1A</p> <p>&lt;Hexagon socket head cap screw&gt; ①:SY3000-222-1A ②:SY5000-222-1A</p> <p>①:SY30M-56-2A ②:SY50M-56-2A</p>	A Valve	SY3000-23-24A [for 10 valves (20 pcs.)]	SY3000-222-1A [for 10 valves (20 pcs.)]	SY5000-221-1A [for 10 valves (20 pcs.)]	SY5000-222-1A [for 10 valves (20 pcs.)]
	B SUP stop valve spacer assembly with residual pressure release valve	SY30M-56-2A (2 pcs.)		SY50M-56-2A (2 pcs.)	
	C Individual SUP (EXH) spacer assembly				
	 <p>&lt;Round head combination screw&gt; ①:SY3000-23-33A ②:SY5000-221-5A</p>	A Valve	SY3000-23-33A (2 pcs.)	—	SY5000-221-5A (2 pcs.)
B Double check spacer assembly with residual pressure release valve					
C Individual SUP (EXH) spacer assembly					
 <p>&lt;Round head combination screw&gt; ①:SY3000-23-32A ②:SY5000-221-3A</p>	A Valve	SY3000-23-32A (2 pcs.)	—	SY5000-221-3A (2 pcs.)	—
	B Individual SUP (EXH) spacer assembly				
	C Individual EXH (SUP) spacer assembly				
 <p>&lt;Round head combination screw&gt; ①:SY3000-23-24A ②:SY5000-221-1A</p> <p>&lt;Hexagon socket head cap screw&gt; ①:SY3000-222-1A ②:SY5000-222-1A</p> <p>①:SY30M-56-4A ②:SY50M-56-4A</p>	A Valve	SY3000-23-24A [for 10 valves (20 pcs.)]	SY3000-222-1A [for 10 valves (20 pcs.)]	SY5000-221-1A [for 10 valves (20 pcs.)]	SY5000-222-1A [for 10 valves (20 pcs.)]
	B SUP stop valve spacer assembly with residual pressure release valve	SY30M-56-4A (2 pcs.)		SY50M-56-4A (2 pcs.)	
	C Individual SUP (EXH) spacer assembly				
	D Individual EXH (SUP) spacer assembly				

\* Mounting onto a manifold follows the order explained above.

Note) The fitting for individual SUP/EXH spacers comes in a straight type only, since an elbow type would interfere with each spacer assembly when laminated.

Specifications

Construction

Replacement Parts

Plug-in Metal Base

D-sub Connector Flat Ribbon Cable PC Wiring

EX510

Plug-in Connector Connecting Base

D-sub Connector Flat Ribbon Cable PC Wiring

Terminal Block Box

Lead Wire

Circular Connector

EX500

EX600

EX250

EX260

EX126

EX120

One-touch Filings and Plug Assembly Part No.

Manifold Options

Specific Product Precautions

# Series SY3000/5000

## Caution

Tightening torque for mounting screw	
M2:	0.16 N·m
M3:	0.8 N·m

### Mounting Screw Part No. ② (when adding optional lamination layers)

Combination	① SY3000 (M2)		② SY5000 (M3)		
	Round head combination screw	Hexagon socket head cap screw	Round head combination screw	Hexagon socket head cap screw	
<p>&lt;Round head combination screw&gt; ①:SY3000-23-24A ②:SY5000-221-1A</p> <p>&lt;Hexagon socket head cap screw&gt; ①:SY3000-222-1A ②:SY5000-222-1A</p> <p>①:SY30M-56-3A ②:SY50M-56-3A</p>	<b>A Valve</b>	<b>SY3000-23-24A</b> [for 10 valves (20 pcs.)]	<b>SY3000-222-1A</b> [for 10 valves (20 pcs.)]	<b>SY5000-221-1A</b> [for 10 valves (20 pcs.)]	<b>SY5000-222-1A</b> [for 10 valves (20 pcs.)]
	<b>B SUP stop valve spacer assembly with residual pressure release valve</b>	<b>SY30M-56-3A</b> (2 pcs.)		<b>SY50M-56-3A</b> (2 pcs.)	
	<b>C Double check spacer assembly with residual pressure release valve</b>				
<p>&lt;Round head combination screw&gt; ①:SY3000-23-24A ②:SY5000-221-1A</p> <p>&lt;Hexagon socket head cap screw&gt; ①:SY3000-222-1A ②:SY5000-222-1A</p> <p>①:SY30M-56-5A ②:SY50M-56-5A</p>	<b>A Valve</b>	<b>SY3000-23-24A</b> [for 10 valves (20 pcs.)]	<b>SY3000-222-1A</b> [for 10 valves (20 pcs.)]	<b>SY5000-221-1A</b> [for 10 valves (20 pcs.)]	<b>SY5000-222-1A</b> [for 10 valves (20 pcs.)]
	<b>B SUP stop valve spacer assembly with residual pressure release valve</b>	<b>SY30M-56-5A</b> (2 pcs.)		<b>SY50M-56-5A</b> (2 pcs.)	
	<b>C Double check spacer assembly with residual pressure release valve</b>				
	<b>D Individual EXH (SUP) spacer assembly</b>				
<p>&lt;Round head combination screw&gt; ①:SY3000-23-32A ②:SY5000-221-7A</p>	<b>A Valve</b>	<b>SY3000-23-32A</b> (2 pcs.)	—	<b>SY5000-221-7A</b> (2 pcs.)	—
	<b>B Interface regulator assembly</b>				
	<b>C Individual SUP (EXH) spacer assembly</b>				

\* Mounting onto a manifold follows the order explained above.

Note) The fitting for individual SUP/EXH spacers comes in a straight type only, since an elbow type would interfere with each spacer assembly when laminated.

## Caution

Tightening torque for mounting screw	
M2:	0.16 N·m
M3:	0.8 N·m

\*Refer to pages 150 and 152 for dimensions.

## Manifold Options

### Individual SUP block assembly

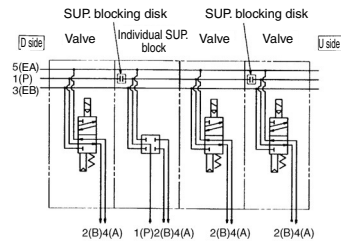
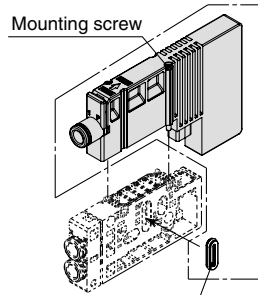
Used as supply port for different pressures when using different pressures for plug-in connector connecting base. (Use for 1 station)

Used by disconnecting both sides of the number of stations used to supply pressure from the individual SUP block (as shown in example).

\* Specify the mounting position of the block as well as the position where the SUP passage is to be blocked on the manifold specification sheet. Blocking is required for 1 or 2 positions for 1 set.

(2 SUP blocking disks to block SUP is attached to individual SUP block.)

\* Electrical wiring is connected to a number of stations in the individual SUP block manifold.



### Individual EXH block assembly

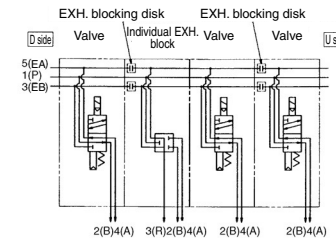
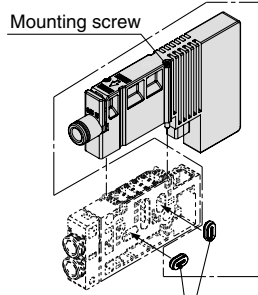
On the circuit of the plug-in connector connection base, used to individually exhaust the valve when the exhaust from the valve will affect a number of stations. (Use for 1 station.)

Used by blocking both sides of the number of stations when exhausting individually (as shown in example).

\* Specify the mounting position of the block as well as the position where the EXH passage is to be blocked on the manifold specification sheet. Blocking is required for 1 or 2 positions for 1 set.

(2 sets of EXH blocking disks (4 pcs.) to block EXH is attached to individual EXH block.)

\* Electrical wiring is connected to a number of stations in the individual EXH block manifold.



### How to Order Individual SUP/EXH Block Assembly

One-touch fitting Straight type SY 3 0M - 78 - 1 A - C6

One-touch fitting Elbow type SY 3 0M - 78 - 2 A - L6

Series	
3	SY3000
5	SY5000

#### Block type

78	Individual SUP block
79	Individual EXH block

#### Individual SUP/EXH block assembly

2	Short elbow type (Type 12)
3	Long elbow type (Type 11)

Note) Long elbow type is for the SY5000 only.

#### Port size (Metric)

Symbol	P, E port	SY3000	SY5000
L4	ø4 One-touch fitting	●	●
L6	ø6 One-touch fitting	●	●
L8	ø8 One-touch fitting	—	●

#### Port size (Inch)

Symbol	P, E port	SY3000	SY5000
LN3	ø5/32" One-touch fitting	●	—
LN7	ø1/4" One-touch fitting	●	●
LN9	ø5/16" One-touch fitting	—	●

#### Port size (Metric)

Symbol	P, E port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

#### Port size (Inch)

Symbol	P, E port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

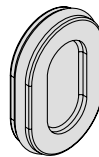
### SUP/EXH blocking disk assembly (for connector type manifold, Type 10, 11, 12)

#### [SUP blocking disk]

By inserting the SUP blocking disk in the pressure supply passage of the manifold valve, can provide two different high and low pressure in one manifold.

#### [EXH blocking disk]

By inserting the EXH blocking disk in the exhaust passage of the manifold valve, can separate the exhaust from the valve so it does not affect the other valves. It can also be used for the manifold for the positive pressure and vacuum mixed manifold. (2 pcs. are required to block both sides of the EXH.)

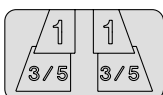


Series	SUP blocking disk assembly	EXH blocking disk assembly
SY3000	SY30M-40-1A	SY30M-40-2A
SY5000	SV2000-59-2A	SV2000-59-2A

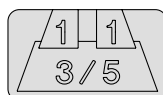
### Label for blocking disk

Label to indicate and confirm on the manifold where the SUP/EXH blocking disk assemblies were inserted. (3 sheets each)

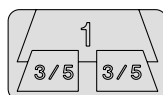
SUP/EXH blocking disk label



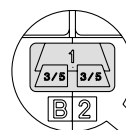
SUP blocking disk label



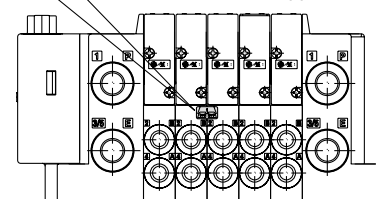
EXH blocking disk label



Series	Part no.
SY3000	SJ3000-155-1A
SY5000	



\* If the blocking disk assembly is ordered using the manifold specification sheet and ordered at the same time as the manifold, the position where the blocking disk assembly is inserted will be labeled and shipped out.



Specifications  
 Construction  
 Replacement Parts  
 Plug-in Base  
 Plug-in Connector  
 Plug-in Connector  
 Plug-in Connector  
 Lead Wire  
 Circular Connector  
 EX500  
 EX600  
 EX250  
 EX260  
 EX126  
 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

# Series SY3000/5000

## Manifold Options

### Back pressure check valve assembly (Retrofit or pre-installed type)

It prevents cylinder malfunction caused by other valve exhaust entry. Insert it into EA/EB port (valve mounting side) on the manifold side of a valve which is affected. It is effective when a single-acting cylinder is used.

\* When ordering assemblies incorporated with a manifold, refer to the Ordering Example below (when installed in all stations.)

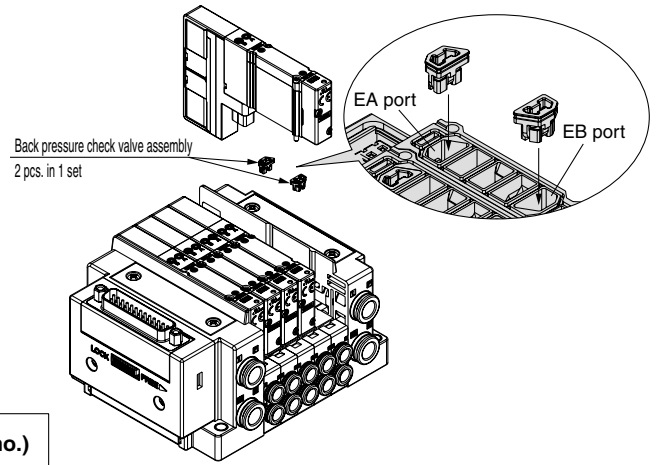
Note) When a check valve for back pressure prevention is desired and is to be installed only in certain manifold stations, clearly indicate the part number and specify the mounting position on the manifold specification sheet.

#### <Precautions>

1. The back pressure check valve assembly is assembly parts with a check valve structure. However, since the valve has slight air leakage, take precautions for the exhaust air not to be restricted at the exhaust port.
2. When the back pressure check valve assembly is mounted, please contact SMC for valve flow-rate characteristics.

#### Ordering Example

SS5Y3-10F1-05B-C6.....1 set (Type 10 5-station manifold base part no.)  
 \*SY3201-5U1.....5 sets (2-position double part no.)  
 \*SY30M-24-1A.....5 sets (Back pressure check valve assembly part no.)  
 \*The asterisk denotes the symbol for assembly.



Series	Part no.
SY3000	SY30M-24-1A
SY5000	SY50M-24-1A

### Dual flow fitting (for connector connecting base, Type 10, side ported)

This is a fitting for cylinder ports which enables simultaneous actuation and increase in flow rate of valves for 2 stations.

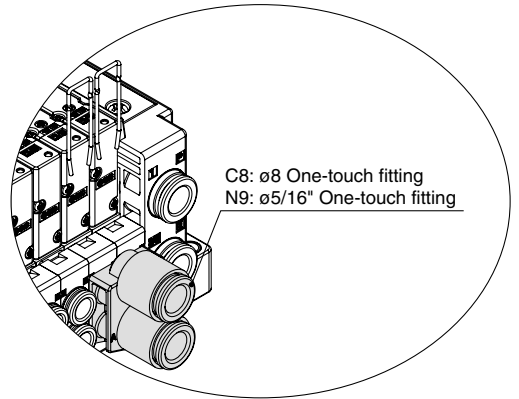
\* When ordering assemblies incorporated into a manifold, refer to the Ordering Example below and specify on the manifold specifications sheet.

#### How to Order Dual Flow Fitting

SY 3 0M - 120 - 1A - C8

Series	
3	SY3000
5	SY5000

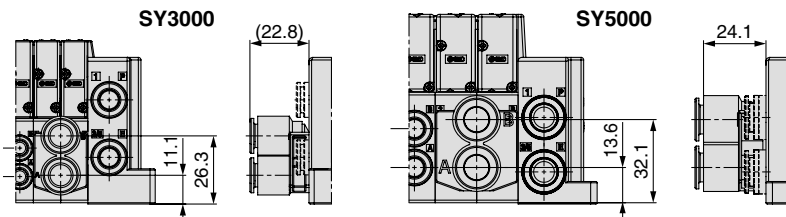
Symbol	A, B port		SY3000	SY5000
C8	Metric	ø8 One-touch fitting	●	—
C10	size	ø10 One-touch fitting	—	●
N9	Inch	ø5/16" One-touch fitting	●	—
N11	size	ø3/8" One-touch fitting	—	●



#### Ordering Example

SS5Y3-10F1-08B-CM  
 \*SY3100-5U1  
 \*SY30M-120-1A-C8

\*The asterisk denotes the symbol for assembly.

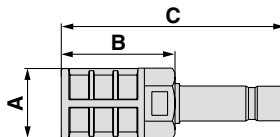


Note 1) Specifically for side porting for a connector connecting base. Cannot be attached to bottom or top ported, or mixed mounting types that are metal or connector connecting bases.

Note 2) When adding or changing clips, please push them into the very end of the manifold for each station. Also, please make sure to use the clip that was packed together, as the clip and the fitting for one station differ among products that can be used with the SY5000.

### Silencer (One-touch fitting connection type)

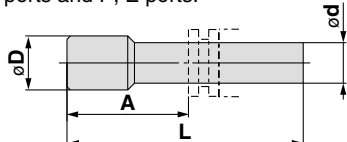
This silencer can be mounted to the 3/5 (E: EXH) port of the manifold in one step.



Series	Model	Effective area	A	B	C
For SY3000 (ø8)	AN203-KM8	14 mm <sup>2</sup>	ø16	26	51
For SY5000 (ø10)	AN200-KM10	26 mm <sup>2</sup>	ø22	53.8	80.8
	AN300-KM10	30 mm <sup>2</sup>	ø25	70	97

### Plug (White)

These are inserted in unused cylinder ports and P, E ports.



#### Dimensions

Applicable fitting size ød (Metric size)	Model	A	L	D
2	KJP-02	8.2	17	3
3.2	KQ2P-23	5	31.5	16
4	KQ2P-04	16	32	6
6	KQ2P-06	18	35	8
8	KQ2P-08	20.5	39	10
10	KQ2P-10	22	43	12

Applicable fitting size ød (Inch size)	Model	A	L	D
1/8"	KQ2P-01	16	31.5	5
5/32"	KQ2P-03	16	32	6
1/4"	KQ2P-07	18	35	8.5
5/16"	KQ2P-09	20.5	39	10
3/8"	KQ2P-11	22	43	11.5

## Manifold Options

A transparent plastic plate to put a label with the name of the function of the solenoid valve.

### ■ Name plate (for manifold)

**SY3000: For SS5Y3-10 (Side ported)**  
**SY5000: For SS5Y5-10/11 (Side/Bottom ported)**

**Name plate bracket assembly and name plate mounting instructions**  
 Insert it into the groove on the name plate bracket onto which a SUP/EXH (end) block is mounted, as shown in Fig. 2.

\* When ordering assemblies incorporated with a manifold, refer to the Ordering Example below.

SS5Y3-10 □□□-□□□-□□□

SS5Y5-10 □□□-□□□-□□□

### Mounting and Option

Symbol	Mounting option
AA	Name plate (printed), (directly mounting)
A	Name plate (printed), DIN rail mounted (With DIN rail)
A0	Name plate (printed), DIN rail mounted (Without DIN rail)
A3	Name plate (printed), DIN rail specified length (For 3 stations)
⋮	⋮
A24	Name plate (printed), DIN rail specified length (For 24 stations)
BA	Name plate (no printing), (direct mounting)
B	Name plate (no printing), DIN rail mounted (With DIN rail)
B0	Name plate (no printing), DIN rail mounted (Without DIN rail)
B3	Name plate (no printing), DIN rail specified length (For 3 stations)
⋮	⋮
B24	Name plate (no printing), DIN rail specified length (For 24 stations)

Note) You cannot mount name plates onto Type 12 (top ported) and Type 10 (side ported) mixed mounting types with top ported valves, nor onto manifolds with optional laminated spacers. Also, no name plate settings are available for the SY3000/SY5000 mixed mounting types.

### Ordering Example

**SS5Y3-10F1-05UR-C6AA** ..... 1 set  
**\*SY3200R-5U1** ..... 5 sets

\* The asterisk denotes the symbol for assembly.

### ■ If adding a name plate

If adding a name plate to a manifold in use, you must order a name plate bracket assembly, in addition to ordering a name plate. Refer to the table below for the part number. and the amount.

### Name plate part no.

Series	SS5Y3-10	SS5Y5-10/11	Note
Name plate Printed	SY30M-86-□N	SY50M-86-□N	□: Number of stations
Name plate No printing	SY30M-86-□	SY50M-86-□	(1 to 24)

### Name plate bracket assembly part no. and number of items ordered

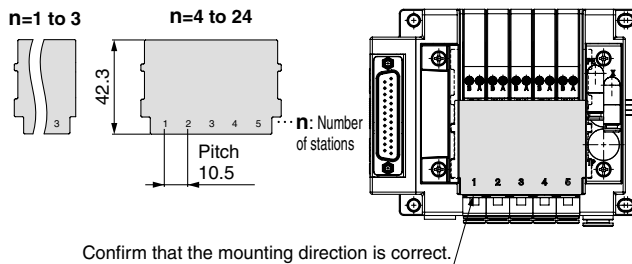
Series	SS5Y3-10	SS5Y5-10/11
Name plate assembly part no.	SY30M-85-1A	SY50M-85-1A
Manifold SUP/EXH block assembly Pilot type and P, E port entry	Internal pilot U/D piping	2 pcs.
	Internal pilot double sided piping	2 pcs.
	External pilot U/D piping	1 pc. Note)
	External pilot double sided piping	Not required Note)

Note) If the manifold is an external pilot, an insertion slot for name plates is on the port block of the SUP/EXH block assembly. Thus, a bracket assembly is no longer required on the port piping side.

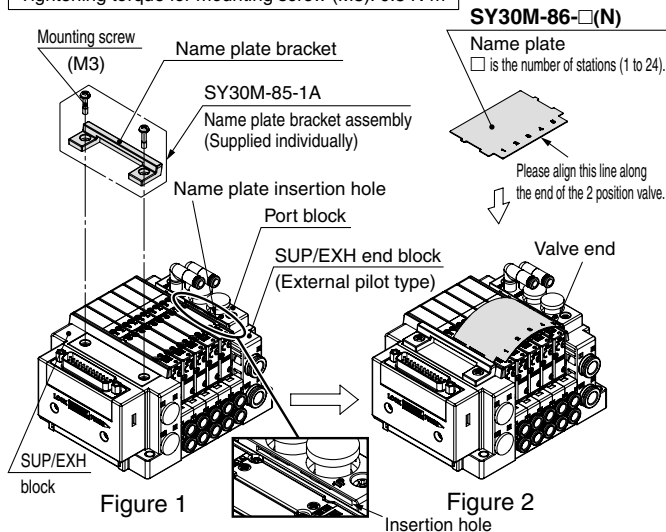
### ⚠ Caution

1. Be sure to shut off the power and air supplies before mounting the name plate bracket assembly. Furthermore, since air may remain inside the actuator, piping and manifold, confirm that the air is completely exhausted before performing any work.
2. When disassembly and assembly are performed, air leakage may result if the tightening of the bracket mounting screws is inadequate.

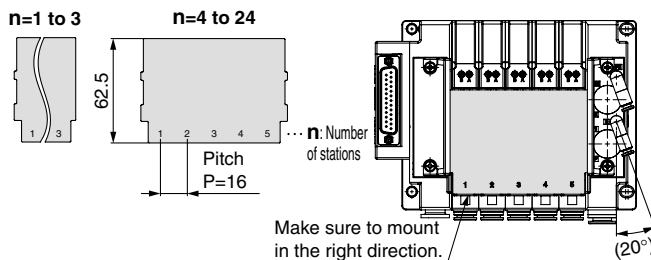
### <Series SY3000>



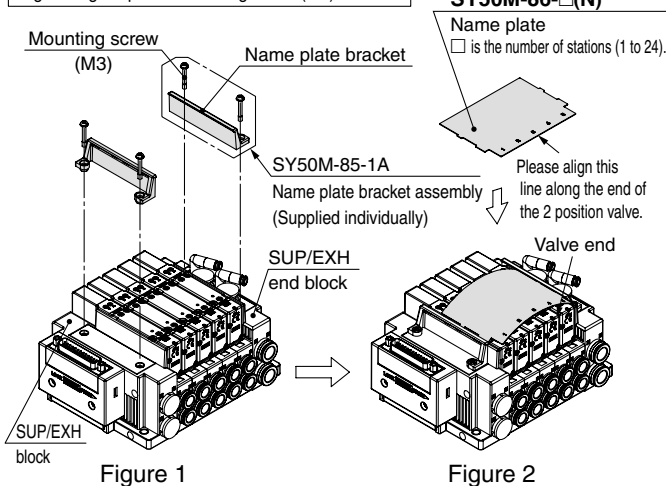
Tightening torque for mounting screw (M3): 0.8 N·m



### <Series SY5000>



Tightening torque for mounting screw (M3): 0.8 N·m



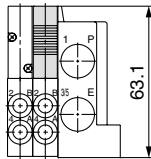
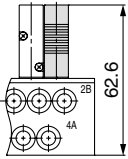
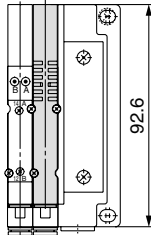
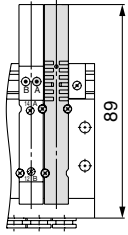
Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 Plug-in Connector Flat Ribbon Cable PC Wiring  
 EX510 Plug-in Connector Connecting Base  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500 EX600 EX250 EX260 EX126 EX120  
 One-touch Filings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions



# Series SY3000/5000

## Dimensions: Manifold Options/Series SY3000

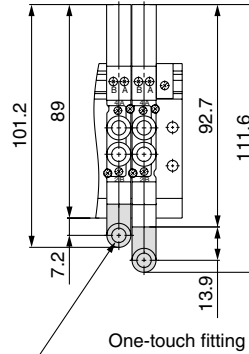
### ■ Blanking plate assembly



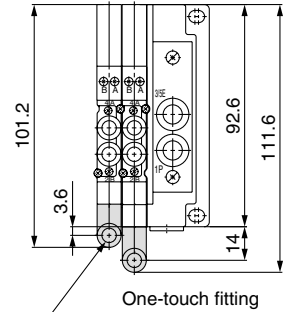
<Type 50, 51, 52>

<Type 10, 12>

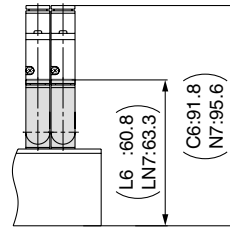
### ■ Individual SUP/EXH spacer assembly (Top/Bottom ported)



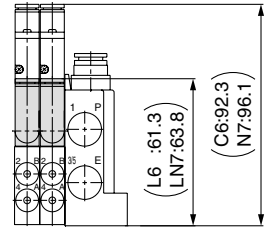
One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 4$ ,  $\phi 5/32''$   
:  $\phi 6$ ,  $\phi 1/4''$



One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 4$ ,  $\phi 5/32''$   
:  $\phi 6$ ,  $\phi 1/4''$

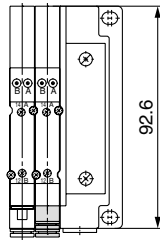
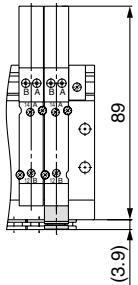


<Type 51, 52>

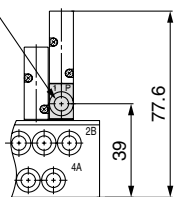


<Type 12>

### ■ Individual SUP/EXH spacer assembly (Side ported)

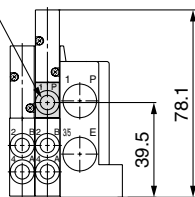


One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 2$   
:  $\phi 3.2$ ,  $\phi 1/8''$   
:  $\phi 4$ ,  $\phi 5/32''$   
:  $\phi 6$ ,  $\phi 1/4''$



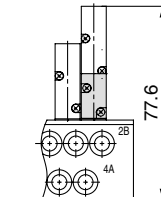
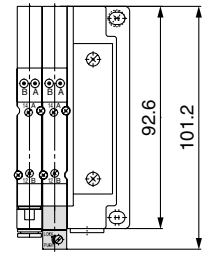
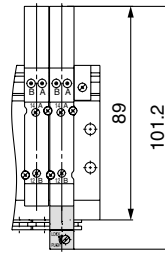
<Type 50>

One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 2$   
:  $\phi 3.2$ ,  $\phi 1/8''$   
:  $\phi 4$ ,  $\phi 5/32''$   
:  $\phi 6$ ,  $\phi 1/4''$

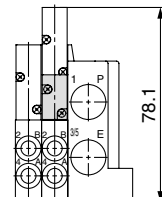


<Type 10>

### ■ SUP stop valve spacer assembly with residual pressure release valve



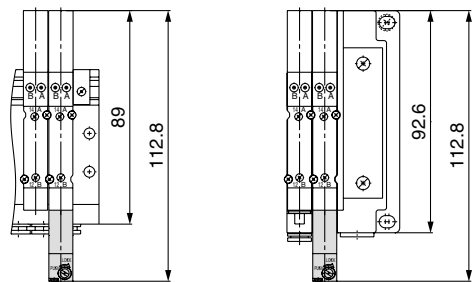
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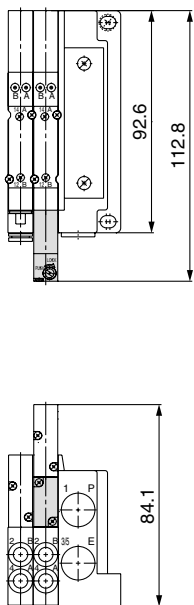
<Type 10, 12>

## Dimensions: Manifold Options/Series SY3000

### Double check spacer assembly with residual pressure release valve

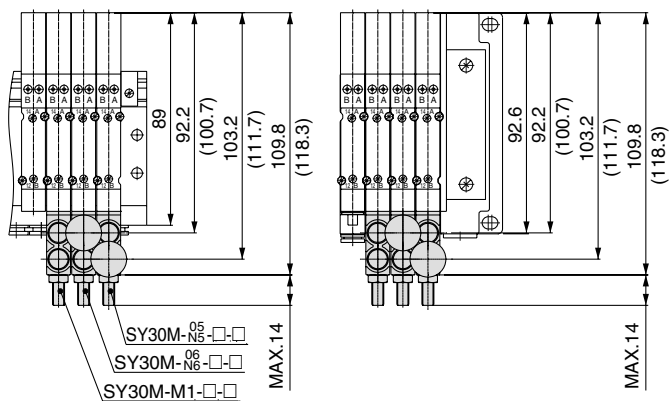


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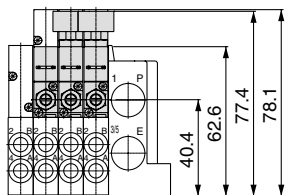


<Type 10>

### Interface regulator assembly



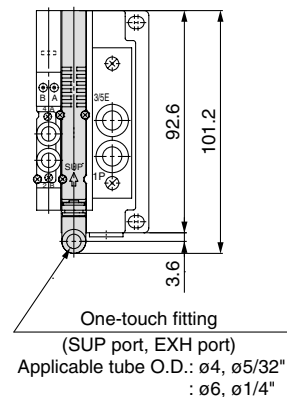
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<Type 10, 12>

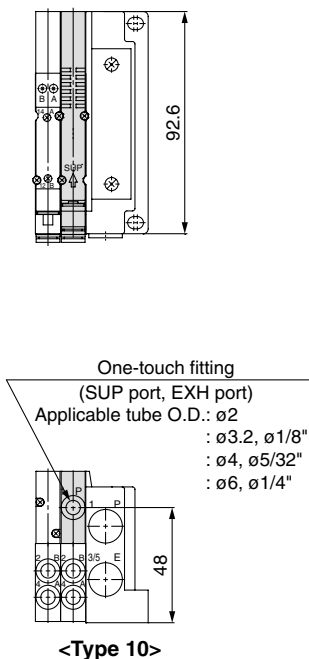
\*The dimensions within ( ) applies to the SY30M-□-□-3.

### Individual SUP/EXH block assembly (Top ported)



<Type 12>

### Individual SUP/EXH block assembly (Side ported)



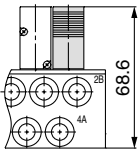
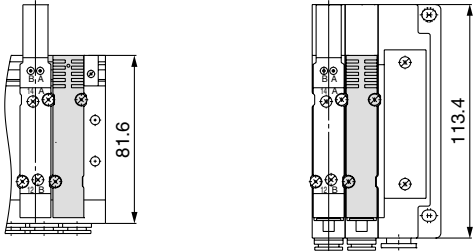
<Type 10>

Specifications
Construction
Replacement Parts
Plug-in Metal Base
D-sub Connector Flat Ribbon Cable PC Wiring
EX510
Plug-in Connector Connecting Base
D-sub Connector Flat Ribbon Cable PC Wiring
Terminal Block Box
Lead Wire
Circular Connector
EX500
EX600
EX250
EX260
EX126
EX120
One-touch Fittings and Plug Assembly Part No.
Manifold Options
Specific Product Precautions

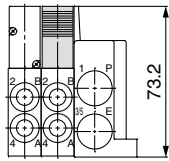
# Series SY3000/5000

## Dimensions: Manifold Options/Series SY5000

### ■ Blanking plate assembly

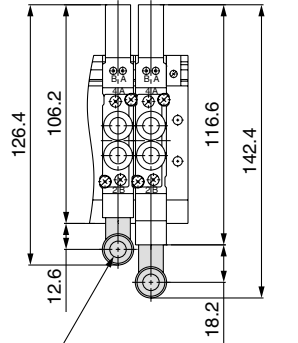


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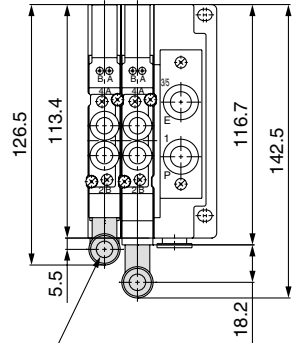


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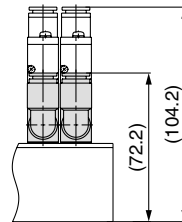
### ■ Individual SUP/EXH spacer assembly (Top/Bottom ported)



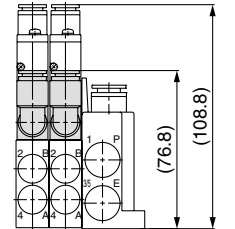
One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 4$   
:  $\phi 6, \phi 1/4"$   
:  $\phi 8, \phi 5/16"$



One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 4$   
:  $\phi 6, \phi 1/4"$   
:  $\phi 8, \phi 5/16"$

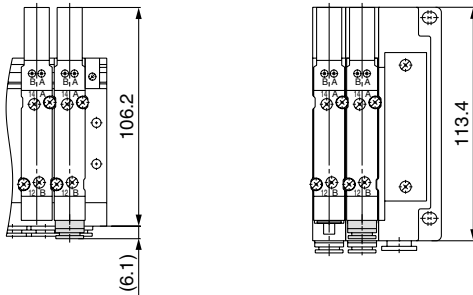


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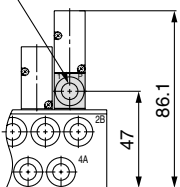


<Type 11, 12>

### ■ Individual SUP/EXH spacer assembly (Side ported)

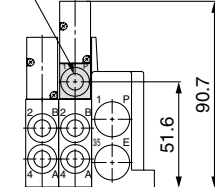


One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 4, \phi 5/32"$   
:  $\phi 6, \phi 1/4"$   
:  $\phi 8, \phi 5/16"$



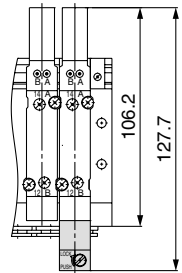
<Type 50>

One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 4, \phi 5/32"$   
:  $\phi 6, \phi 1/4"$   
:  $\phi 8, \phi 5/16"$

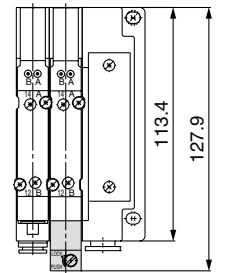


<Type 10>

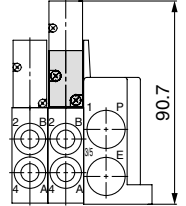
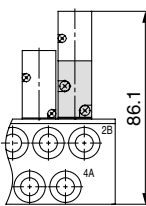
### ■ SUP stop valve spacer assembly with residual pressure release valve



<Type 50, 51, 52>

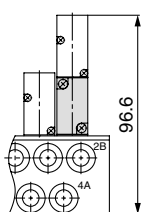
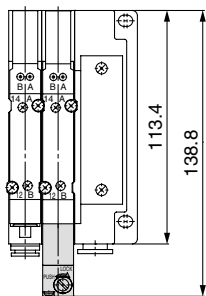
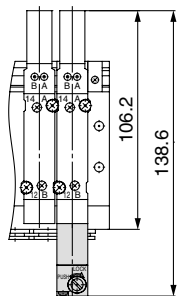


<Type 10, 11, 12>

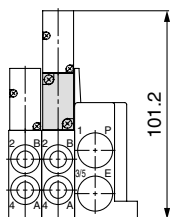


## Dimensions: Manifold Options/Series SY5000

### Double check spacer assembly with residual pressure release valve

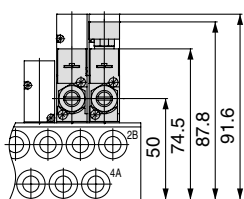
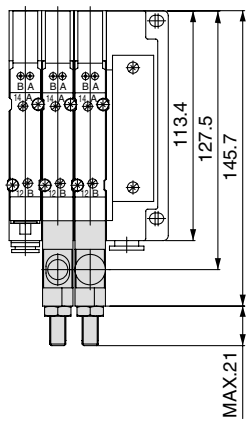
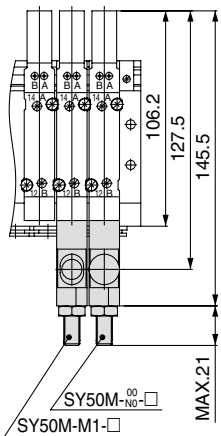


<Type 50, 51>

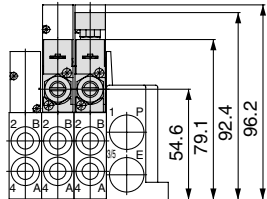


<Type 10, 11>

### Interface regulator assembly

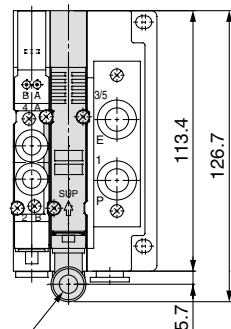


<Type 50, 51, 52>

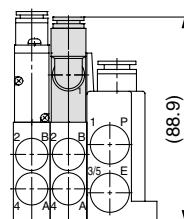


<Type 10, 11, 12>

### Individual SUP/EXH block assembly (Top ported)

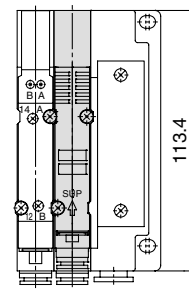


One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 4$   
:  $\phi 6, \phi 1/4"$   
:  $\phi 8, \phi 5/16"$

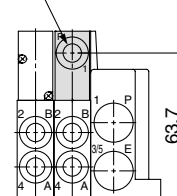


<Type 12>

### Individual SUP/EXH block assembly (Side ported)

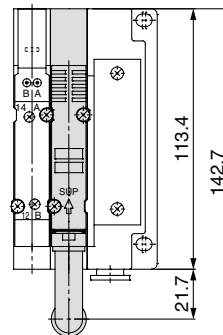


One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 4, \phi 5/32"$   
:  $\phi 6, \phi 1/4"$   
:  $\phi 8, \phi 5/16"$

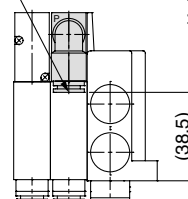


<Type 10>

### Individual SUP/EXH block assembly (Bottom ported)



One-touch fitting  
(SUP port, EXH port)  
Applicable tube O.D.:  $\phi 4$   
:  $\phi 6, \phi 1/4"$   
:  $\phi 8, \phi 5/16"$



<Type 11>

Specifications
Construction
Replacement Parts
Plug-in Metal Base
D-sub Connector Flat Ribbon Cable PC Wiring
EX510
Plug-in Connector Connecting Base
D-sub Connector Flat Ribbon Cable PC Wiring
Terminal Block Box
Lead Wire Connector
Circular Connector
EX500
EX600
EX250
EX260
EX126
EX120
One-touch Fittings and Plug Assembly/ Part No.
Manifold Options
Specific Product Precautions



# Series SY3000/5000

## Specific Product Precautions 1

Be sure to read before handling.

Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valve Precautions.

### Valve Mounting

#### Caution

Mount it so that there is no slippage or deformation in gaskets, and tighten with the tightening torque as shown below.

Model	Thread size	Tightening torque
SY3000	M2	0.16 N·m
SY5000	M3	0.8 N·m

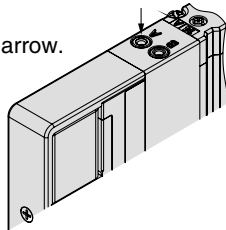
### Manual Override

#### Warning

Regardless of an electric signal for the valve, the manual override is used for switching the main valve. Connected actuator is started by manual operation. Use the manual override after confirming that there is no danger.

##### ■Non-locking push type

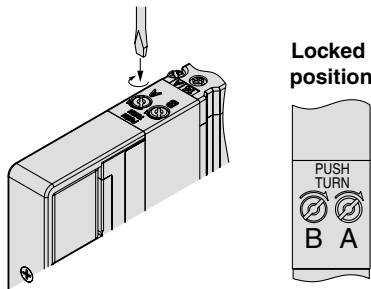
Press in the direction of the arrow.



##### ■Push-turn locking slotted type [Type D]

Push down on the manual override with a small flat head screwdriver until it stops. Turn it clockwise by 90° to lock it. Turn it counterclockwise to release it.

If it is not turned, it can be operated the same way as the non-locking type.

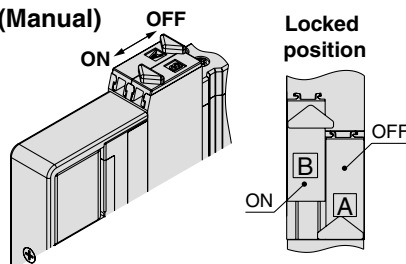


#### Caution

Do not apply excessive torque when turning the manual override. [0.1 N·m]

When locking the manual override, be sure to push it down before turning. Turning without first pushing it down can cause damage to the manual override and other trouble such as air leakage, etc.

##### ■Slide locking type (Manual)



It is locked by sliding the manual override all the way in the direction indicated by the arrow (ON side) with a small flat head screwdriver or with your fingers. Slide it in the direction indicated by the arrow (OFF side) to release it.

### Back Pressure Check Valve

#### Caution

There are two types of back pressure check valves; the one which is built into a valve (with rubber seal type only) and the one which is built in on the manifold side with connector connection. Both of them have a check valve built-in to prevent back pressure. For this reason, use caution that the valves with external pilot specification cannot be pressurized from exhaust port [3/5(E)]. As compared with the types which do not integrate the back pressure check valve, C value of the flow-rate characteristics goes down. Please contact SMC for details.

### Exhaust Throttle

#### Caution

The SY series pilot valve and main valve share a common exhaust inside the valve. Therefore, do not block the exhaust port when arranging the piping.

### Used as a 3-Port Valve

#### Caution

##### ■In case of using a 5-port valve as a 3-port valve

The SY3000/5000 series can be used as normally closed (N.C.) or normally open (N.O.) 3-port port valves by closing one of the cylinder ports 4(A) or 2(B) with a plug. However, they should be used with the exhaust ports kept open. They are convenient at times when a double solenoid type 3-port valve is required.

Plug position		B port	A port
Type of actuation		N.C.	N.O.
Number of solenoids	Single		
	Double		

### Valve and Manifold Combination

The SY series plug-in valve has the common configuration of the valve mounting surface between base mounted type (SY<sup>3</sup>□□□) and top ported type (SY<sup>5</sup>□□□), therefore, it can be mounted to all manifolds of the side ported type (type 50 and type 10), the bottom ported type (type 51 and type 11) and the top ported type (type 52 and type 12).

For example, air output can be obtained from both sides of the A and B ports of the manifold and the valve by mounting a top ported valve to a side ported or bottom ported manifold, and a pressure switch can be connected to the output port on one side. However, when selecting valves and manifolds, note that when a base mounted valve is mounted to a top ported manifold, there will be no output from the A and B port.



# Series SY3000/5000 Specific Product Precautions 2

Be sure to read before handling.  
Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valve Precautions.

## Light/Surge Voltage Suppressor

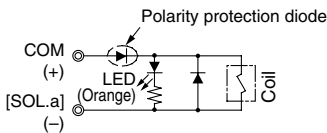
### ⚠ Caution

#### ■ Polar type

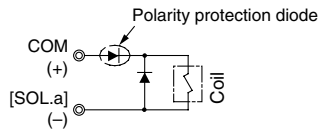
##### Positive common

##### Single solenoid

Light/surge voltage suppressor (□Z)



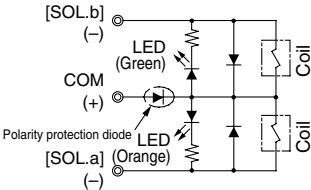
Surge voltage suppressor (□S)



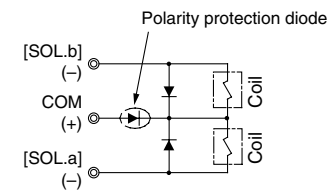
##### Positive common

##### Double solenoid, 3-position, 4-position

Light/surge voltage suppressor (□Z)



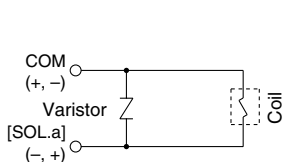
Surge voltage suppressor (□S)



#### ■ Non-polar type

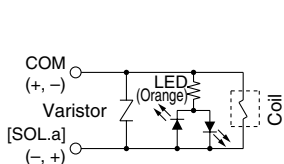
##### With surge voltage suppressor (□R)

##### Single solenoid



##### With light/surge voltage suppressor (□U)

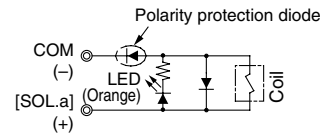
##### Single solenoid



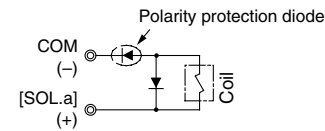
##### Negative common

##### Single solenoid

Light/surge voltage suppressor (□NZ)



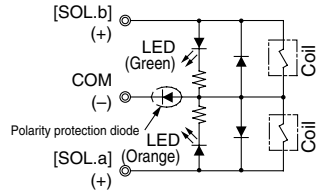
Surge voltage suppressor (□NS)



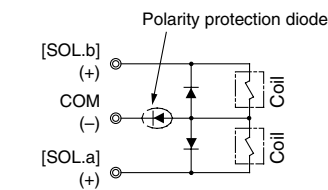
##### Negative common

##### Double solenoid, 3-position, 4-position

Light/surge voltage suppressor (□NZ)



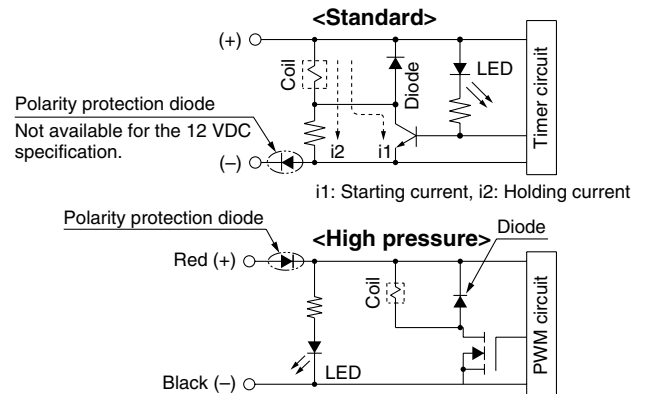
Surge voltage suppressor (□NS)



#### ■ With power saving circuit

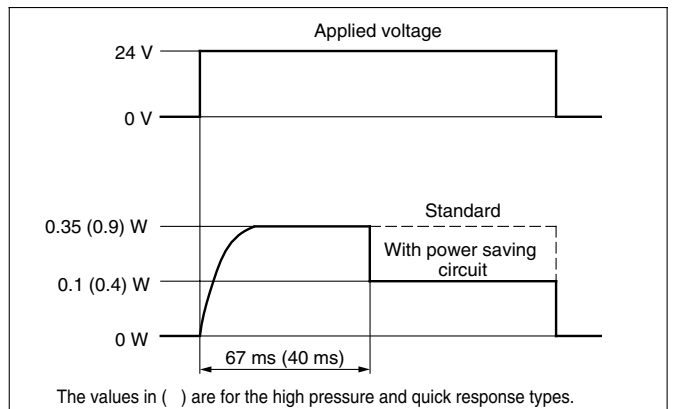
Power consumption is decreased by approx. 1/3 by reducing the wattage required to hold the valve in an energized state. (Effective energizing time is over 67 ms at 24 VDC.)

Note) Be careful with the energizing time, as quick response and high pressure types will become operational when loaded at more than 40 ms.



The above circuit reduces the current consumption when holding in order to save energy. Refer to the electrical power waveform as shown below.

#### <Electrical power waveform with power saving circuit>



- The 12 VDC specification with power saving circuit (standard specification) does not have the polarity protection diode. Do not make a mistake with the polarity.
- Since the voltage will drop by approx. 0.5 V due to the transistor, pay attention to the allowable voltage fluctuation. (For details, refer to the solenoid specifications of each type of valve.)

#### Residual voltage of the surge voltage suppressor

Note) If a varistor or diode surge voltage suppressor is used, there is some residual voltage to the protection element and rated voltage. Therefore, refer to the below table and pay attention to the surge voltage protection on the controller side. Also, since the response time does change, refer to the valve specifications on page 8.

#### Residual Voltage

Surge voltage suppressor	DC	
	24 V	12 V
S, Z	Approx. 1 V	
R, U	Approx. 47 V	Approx. 32 V

Specifications  
Construction  
Replacement Parts  
Plug-in Metal Base  
D-sub Connector Flat Ribbon Cable PC Wiring  
EX510  
Plug-in Connector Connecting Base  
D-sub Connector Flat Ribbon Cable PC Wiring  
Terminal Block Box  
Lead Wire  
Circular Connector  
EX500  
EX600  
EX250  
EX260  
EX126  
EX120  
One-touch Filings and Plug Assembly Part No.  
Manifold Options  
Specific Product Precautions



# Series SY3000/5000

## Specific Product Precautions 3

Be sure to read before handling.

Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valve Precautions.

### Continuous Duty

#### Caution

If a valve is energized continuously for a long period of time, the rise in temperature due to heat-up of the coil assembly may cause a decline in solenoid valve performance, reduce service life, or have adverse effects on peripheral equipment. If the valve is energized continuously for a long period of time, be sure to use a valve with power saving circuit. In particular, if three or more adjacent stations on the manifold are energized simultaneously for extended periods of time or if the valves on A side and B side are energized simultaneously for a long period of time, take special care as the temperature rise will be greater.

### Countermeasure for Surge Voltage Intrusion

#### ■ Sneak-in of surge voltage

With non-polar type valves, at times of sudden interruption of the loading power supply, such as emergency shutdown, surge voltage intrusion may be generated from loading equipment with a large capacity (power consumption), and the valve in a de-energized state may switch over (see Figure 1). When installing a breaker circuit for the loading power supply, consider using a valve with polarity protection diode (with polarity protection diode), or install a surge absorption diode between the loading equipment COM line and the output equipment COM line (see Figure 2).

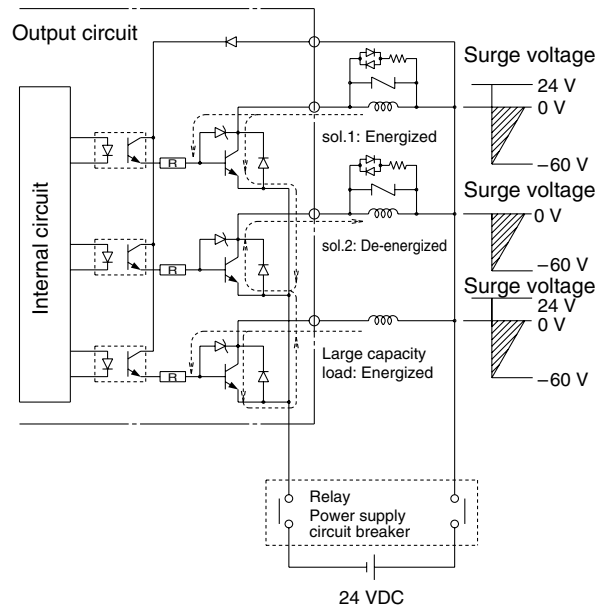


Figure 1. Surge intrusion circuit example (NPN outlet example) (24 VDC)

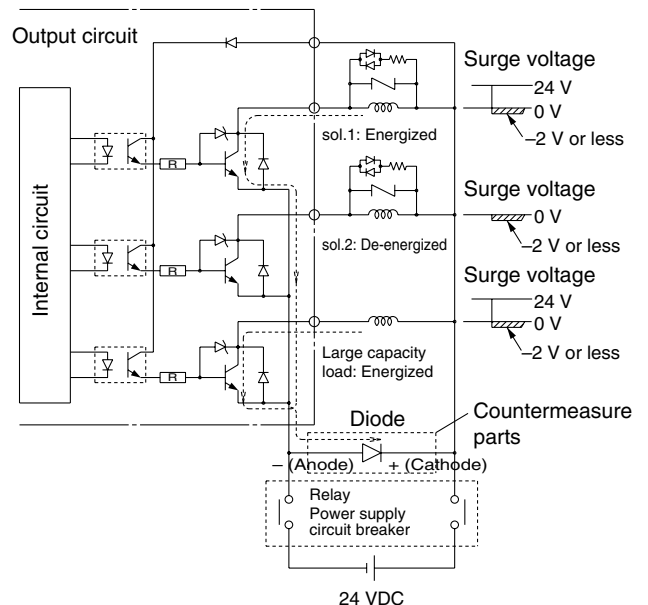


Figure 2. Surge intrusion circuit example (NPN outlet example) (24 VDC)

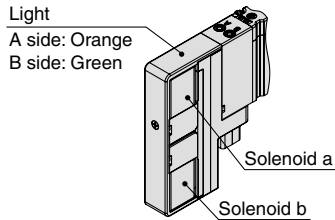


# Series SY3000/5000 Specific Product Precautions 4

Be sure to read before handling.  
Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products"  
(M-E03-3) for 3/4/5 Port Solenoid Valve Precautions.

## Light Indication

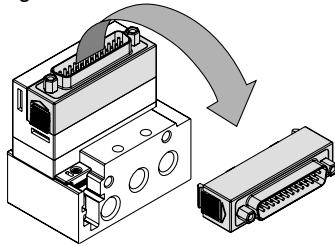
When equipped with indicator light and surge voltage suppressor, the light window turns orange when solenoid a is energized, and it turns green when solenoid b is energized.



## Type 5 (Metal Base) Changing Connector Entry Direction

### Caution

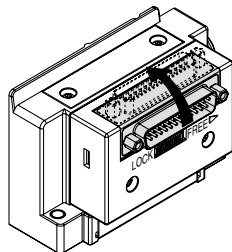
Connector direction for electrical entry of D-sub connector, flat ribbon cable and PC wiring can be changed. If the directional change is required, push the lever on both sides to remove the connector and change the connector direction for electrical entry as shown in the figure. Since lead wire assemblies are attached to the connector, excessive pulling or twisting can cause broken wires or other trouble. Also, take precautions so that lead wires are not caught and pinched when installing the connector.



## Type 1 (Connector Connecting Base) Changing Connector Entry Direction

### Caution

Connector direction for electrical entry of D-sub connector, flat ribbon cable and PC wiring can be changed. If the directional change is required, slide the lever on the side of the connector block to the FREE position, and then change the direction as shown in the figure. Also, before connecting the connector, be sure to return the lever to the LOCK position. (If the lever is difficult to slide, move the connector a little bit to make it easier to slide the lever.) If an excessive force is applied on the connector in the LOCK position, the connector block may be damaged. Also, using in such a way that the connector floats in the FREE position, it may cause the lead wire, etc. to break. Thus, refrain from using in these ways.



## Fixation of DIN Rail Mounting Type Manifold

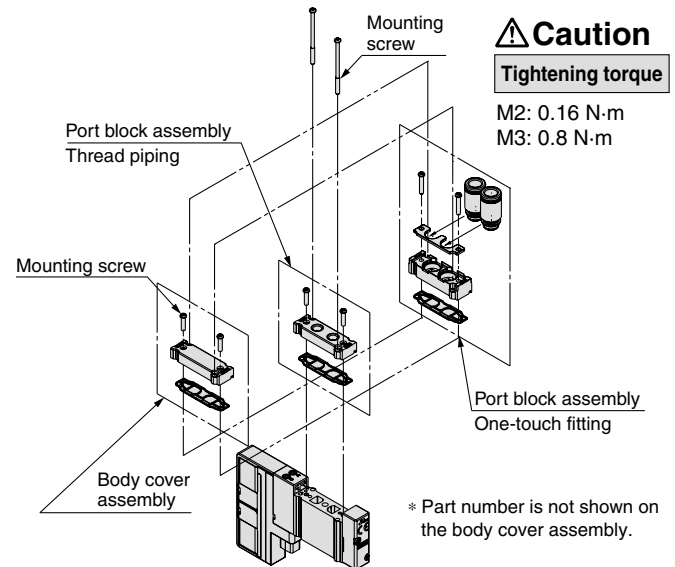
When the manifold is fixed with bolts on a mounting surface, etc., it can be operated just by fixing on both ends of the DIN rail if the bottom surface of the DIN rail is entirely in contact with the mounting surface when mounted horizontally. However, if it is used with other mounting or with side or reverse mounting, fix the DIN rail with bolts at regular intervals. As a guide, insert bolts in 2 positions for 2-5 stations, 3 positions for 6-10 stations, 4 positions for 11-15 stations, 5 positions for 16-20 stations and 6 positions for 21-24 stations. Take the same measures for horizontal mounting if the mounting surface vibrates. If fixed at lesser points than specified and use it, there could be a warp or torsion in the DIN rail and the manifold and lead to bring some troubles such as air leakage.

## Port Block Assembly and How to Change Piping Types between Top and Side

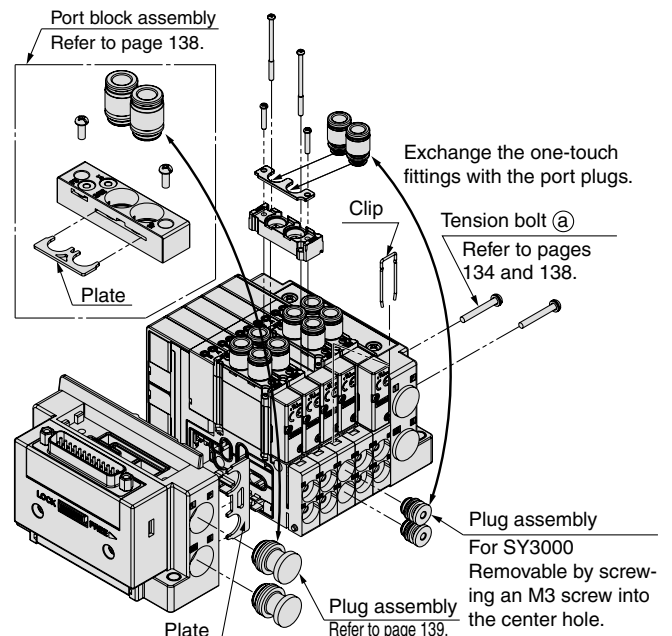
### Caution

For top ported type, the port size of A and B ports can be changed by switching the port block assemblies which are mounted on the body. The piping method can also be changed by switching the top ported type port block assembly with the side ported type cover assembly. Also, it may cause air leakage if the mounting screws are not tightened securely enough when they are switched. Take care to tighten to the correct tightening torque. Refer to page 13 for part numbers of port block assembly and body cover assembly.

When switching them while valves are mounted on a manifold, remove the clip with a flat head screwdriver before switching the port plugs and the one-touch fittings. It may cause air leakage if the mounting screws are not tightened or the clip is not inserted securely enough when they are switched. Take care to tighten to the correct tightening torque.



## How to change while mounted on a manifold



Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
**EX510**  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
**EX500 EX600 EX250 EX260 EX126 EX120**  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
**Specific Product Precautions**





# Series SY3000/5000

## Specific Product Precautions 5

Be sure to read before handling.

Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valve Precautions.

### Changing One-touch Fittings

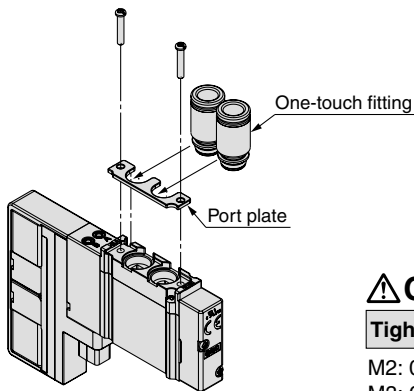
#### ⚠ Caution

By replacing one-touch fittings of valve or manifold base, it is possible to change the connection diameter of the 4(A), 2(B), 1(P), 3/5(E) ports.

When replacing the one-touch fittings, remove the clip or the plate and the plate mounting screws with a screwdriver before pulling the one-touch fittings off. Mount the one-touch fittings by following the removal procedure in reverse.

It may cause air leakage if the mounting screws are not tightened or the clip and the clip plate are not inserted securely enough when they are switched. Take care to tighten to the correct tightening torque. Refer to page 139 for part numbers of one-touch fittings for valve or manifold.

#### ■ Valve

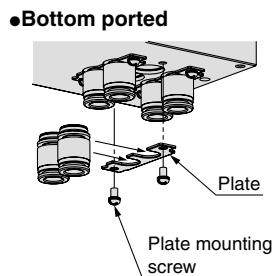
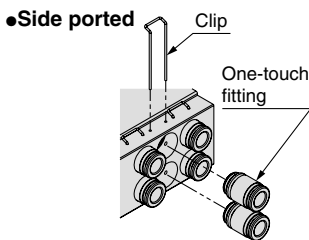


#### ⚠ Caution

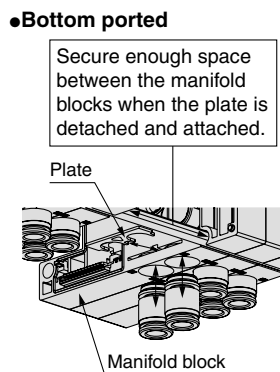
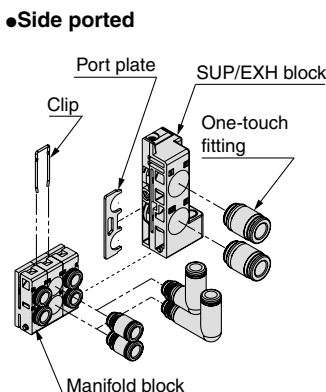
##### Tightening torque

M2: 0.16 N·m  
M3: 0.8 N·m

#### ■ Plug-in metal base



#### ■ Plug-in connector connecting base



### Other Tube Brands

#### ⚠ Caution

1. When using other than SMC brand tube, confirm that the following specifications are satisfied with respect to the tube outside diameter tolerance.

- |                      |                              |
|----------------------|------------------------------|
| 1) Nylon tube        | within $\pm 0.1$ mm          |
| 2) Soft nylon tube   | within $\pm 0.1$ mm          |
| 3) Polyurethane tube | within $+0.15$ mm<br>-0.2 mm |

Do not use tube which do not meet these outside diameter tolerances. It may not be possible to connect them, or they may cause other trouble, such as air leakage or the tube pulling out after connection.

### One-touch Fittings

#### ■ Tube attachment/detachment for one-touch fittings

##### 1) Tube attachment

1. Take a tube having no flaws on its periphery and cut it off at a right angle. When cutting the tube, use tube cutters TK-1, 2 or 3. Do not use pinchers, nippers or scissors, etc. If cutting is done with tools other than tube cutters, the tube may be cut diagonally or become flattened, etc., making a secure installation impossible. Allow some extra length in the tube.
2. Grasp the tube and push it in slowly, inserting it securely all the way into the fitting.
3. After inserting the tube, pull on it lightly to confirm that it will not come out. If it is not installed securely all the way into the fitting, this can cause problems such as air leakage or the tube pulling out.

##### 2) Tube detachment

1. Push in the release button sufficiently, pushing its collar equally around the circumference.
2. Pull out the tube while holding down the release button so that it does not come out. If the release button is not pressed down sufficiently, there will be increased bite on the tube and it will become more difficult to pull it out.
3. When the removed tube is to be used again, cut off the portion which has been chewed before reusing it. If the chewed portion of the tube is used as is, this can cause trouble such as air leakage or difficulty in removing the tube.



# Series SY3000/5000 Specific Product Precautions 6

Be sure to read before handling.

Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) for 3/4/5 Port Solenoid Valve Precautions.

## One-touch Fittings

### Caution

When fittings are used, they may interfere with one another depending on their types and sizes. Therefore, the dimensions of the fittings to be used should first be confirmed in their respective catalogs.

Fittings whose compliance with the SY series is already confirmed are stated below. If the fitting within the applicable range is selected, there will not be any interference.

**Applicable Fittings: Series KQ2H, KQ2S  
Series KJH, KJS**




Series	Model	Piping port	Port size	Fittings	Applicable tube O.D.						
					ø2	ø3.2	ø4	ø6	ø8	ø10	ø12
SY3000	SY3□3 <sub>1</sub> <sup>0</sup> -□□-M5	4A, 2B	M5	KQ2H KJH	████████████████████						
				KQ2S KJS	██						
	SS5Y3-50/51/52(R) Manifold base	1P, 5EA, 3EB	1/8	KQ2H KJH	██						
				KQ2S KJS	██						
		X, PE	M5	KQ2H KJH	████████████████████						
				KQ2S KJS	██						
	4A, 2B	1/8	KQ2H KJH	████████████████████							
			KQ2S KJS	██							
	M5	KQ2H KJH	████████████████████								
			KQ2S KJS	██							

Series	Model	Piping port	Port size	Fittings	Applicable tube O.D.					
					ø2	ø3.2	ø4	ø6	ø8	ø10
SY5000	SY5□3 <sub>1</sub> <sup>0</sup> -□□-01	4A, 2B	1/8	KQ2H KJH	████████████████████					
				KQ2S KJS	██					
	SS5Y5-50/51/52(R) Manifold base	1P, 5EA, 3EB	1/4	KQ2H	██					
				KQ2S	██					
		X, PE	M5	KQ2H KJH	████████████████████					
				KQ2S KJS	██					
	4A, 2B	1/4	KQ2H	████████████████████						
			KQ2S	██						
	1/8	KQ2H KJH	████████████████████							
			KQ2S KJS	██						

Specifications  
 Construction  
 Replacement Parts  
 Plug-in Metal Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 EX510  
 Plug-in Connector Connecting Base  
 D-sub Connector Flat Ribbon Cable PC Wiring  
 Terminal Block Box  
 Lead Wire  
 Circular Connector  
 EX500  
 EX600  
 EX250  
 EX260  
 EX126  
 EX120  
 One-touch Fittings and Plug Assembly Part No.  
 Manifold Options  
 Specific Product Precautions

## Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “**Caution**,” “**Warning**” or “**Danger**.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)\*1, and other safety regulations.

-  **Caution:** **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.
-  **Warning:** **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
-  **Danger:** **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

- \*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
- ISO 4413: Hydraulic fluid power – General rules relating to systems.
- IEC 60204-1: Safety of machinery – Electrical equipment of machines. (Part 1: General requirements)
- ISO 10218-1: Manipulating industrial robots - Safety. etc.

### Warning

#### 1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

#### 2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

#### 3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

#### 4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

### Caution

#### 1. The product is provided for use in manufacturing industries.

The product herein described is basically provided for peaceful use in manufacturing industries. If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary. If anything is unclear, contact your nearest sales branch.

## Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”.  
Read and accept them before using the product.

### Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered.\*2)  
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.  
This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

#### \*2) Vacuum pads are excluded from this 1 year warranty.

A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.  
Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

### Compliance Requirements

The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

#### Revisions

- Added the EX260 Integrated-type (For Output) Serial Transmission System.
- Added EtherNet/IP™ and EtherCAT to the EX600 Integrated-type (For Input/Output) Serial Transmission System (Fieldbus System).
- Additional Options:
  - Interface regulator assembly
  - Individual SUP block assembly
  - Individual EXH block assembly
  - Dual flow fitting
  - Name plate for manifolds

- Changed the part numbers for A, B port mixed sizes for plug-in connector connecting bases for Type 10 (side ported), Type 11 (bottom ported), Type 12 (top ported).
- Deleted the mixed specification for A, B port piping specification for plug-in connector connecting base for Type 12 (top ported).
- Number of pages increased from 148 to 164.

PY

## Safety Instructions

Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.

## SMC Corporation

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4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021, JAPAN  
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URL <http://www.smcworld.com>  
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Specifications are subject to change without prior notice and any obligation on the part of the manufacturer.

D-DN

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This catalog is printed on recycled paper with concern for the global environment.

# Fieldbus System

(Output device for driving 5 port solenoid valves)



**Compact  
28 mm**  
(Actual size)

## Space-saving Installation

**EtherNet/IP™ added!**

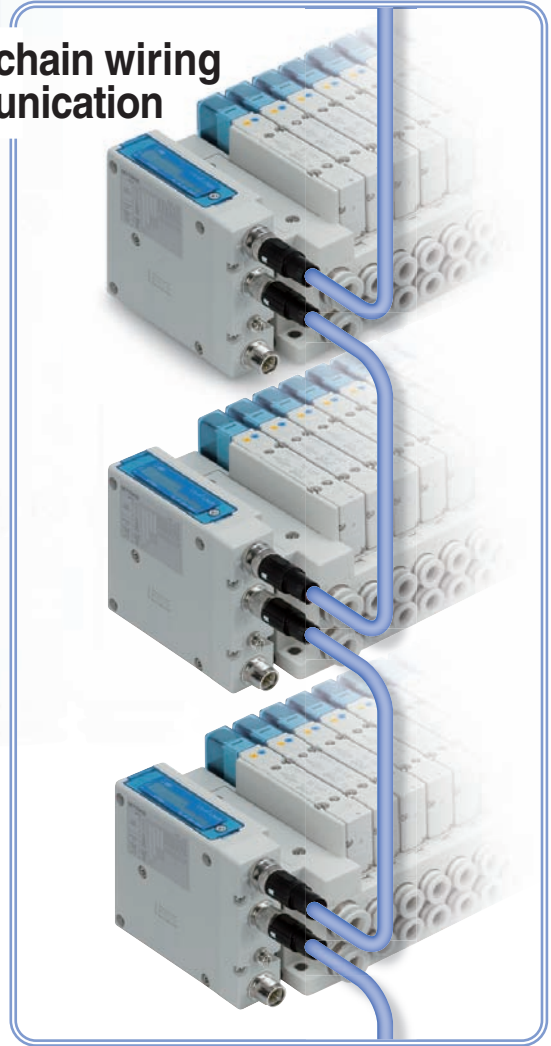
- **IP67\***

\* For units with D-sub connector, and when connected to S0700 manifolds, it is IP40.

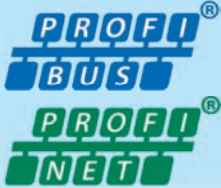
- **Drives up to 32 solenoids**



**Daisy-chain wiring communication**



Applicable Fieldbus protocols



**Top ported valve**



IP67

**Bottom ported valve**



IP67

**Side ported valve  
Mixed valve sizes manifold**



IP67

**7 mm width valve**

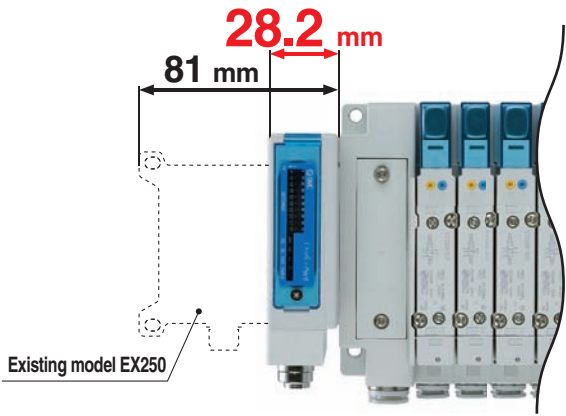


IP40

**Series EX260**

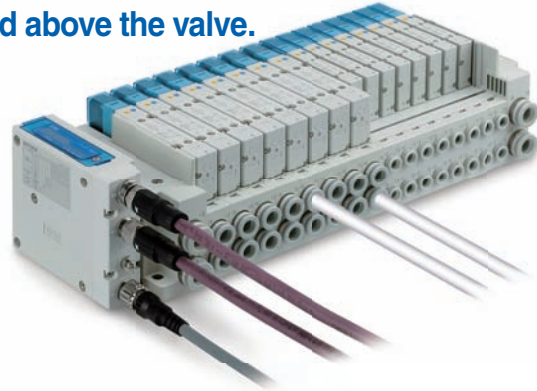


Manifold length is shortened by the small fieldbus output module (SI unit).

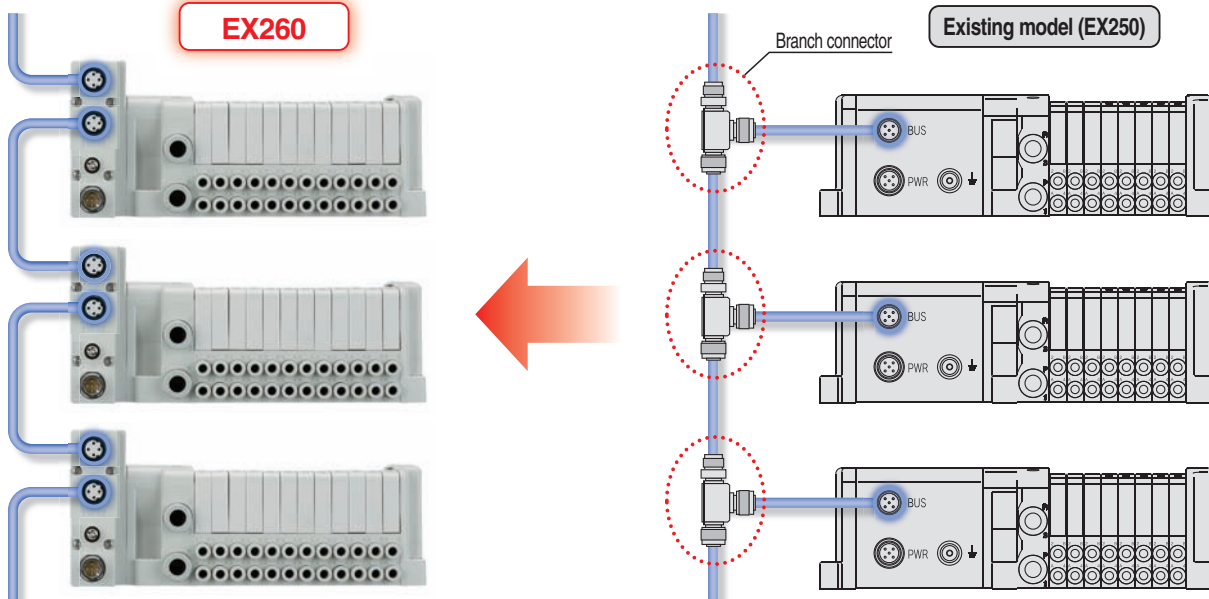


Wiring and piping from the same direction is possible. (for side ported)

Effective for installation in locations where space is limited above the valve.



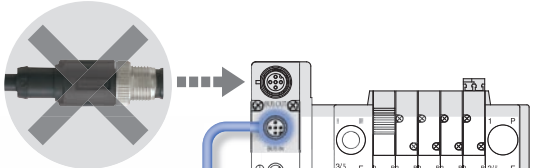
External branch connector is not necessary. Daisy-chain wiring is possible. Reduced wiring space



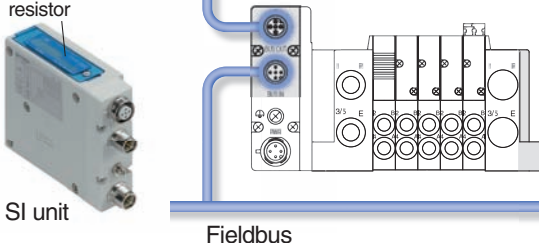
External terminating resistor is not necessary. (Only available for M12 PROFIBUS DP, CC-Link communication connectors)

ON/OFF switching is possible with an internal terminating resistor. External terminating resistor is not necessary.

External terminating resistor



Internal terminating resistor



## Product Specification Variations

	PROFIBUS	DeviceNet	CC-Link	PROFIBUS	EtherNet/IP	EtherCAT
Number of outputs	16	16	16	16	16	16
	32	32	32	32	32	32
Output polarity	PNP	PNP	PNP	PNP	PNP	PNP
	NPN	NPN	NPN	NPN	NPN	NPN
Communication connector	M12	M12	M12	M12	M12	M12
	D-sub					

### Communication connector examples



M12 communication connector (PROFIBUS DP)



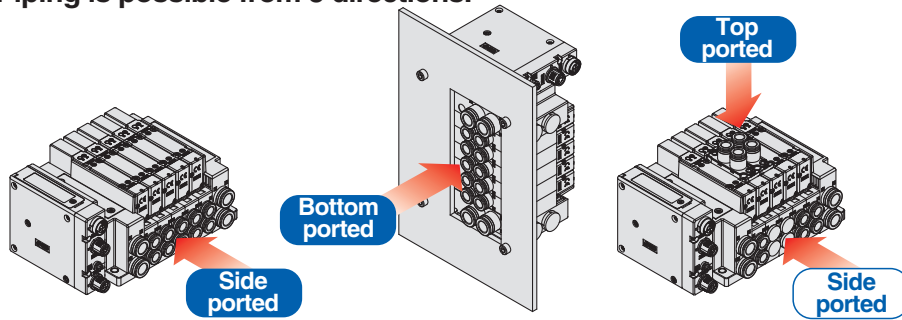
D-sub communication connector (PROFIBUS DP)



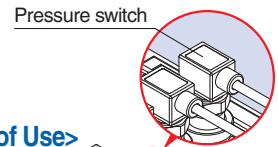
# Series SY3000/5000

## Valve piping direction variations

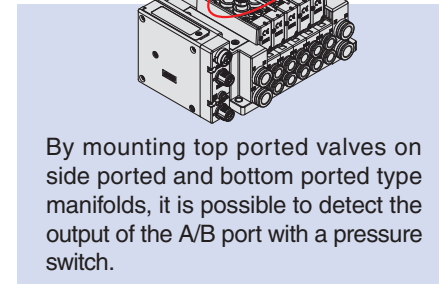
- Piping is possible from 3 directions.



Mixed mounting of top ported and side ported is possible.

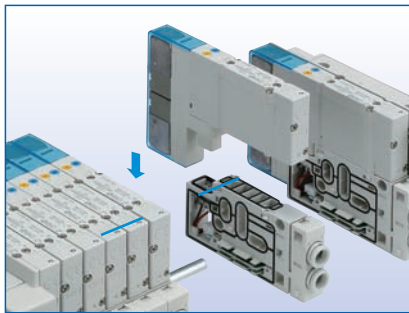


<Example of Use>



By mounting top ported valves on side ported and bottom ported type manifolds, it is possible to detect the output of the A/B port with a pressure switch.

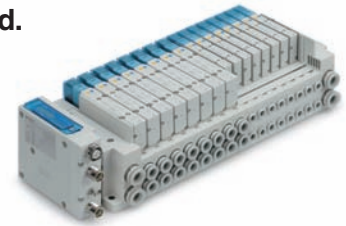
## Valves can be freely connected up to 24 stations.



- It is possible to connect only the number of valves required, from 1 to 24 stations, to suit the application. (Maximum number of solenoids connected: 32)

## Mixed valve sizes manifold

- Valves of different sizes, SY3000 and SY5000, can be mounted on the same manifold.







# Series S0700

7 mm width valves can be connected.



- It is possible to connect only the number of 7 mm width valves required, from 1 to 24 stations. (Maximum number of solenoids connected: 32)

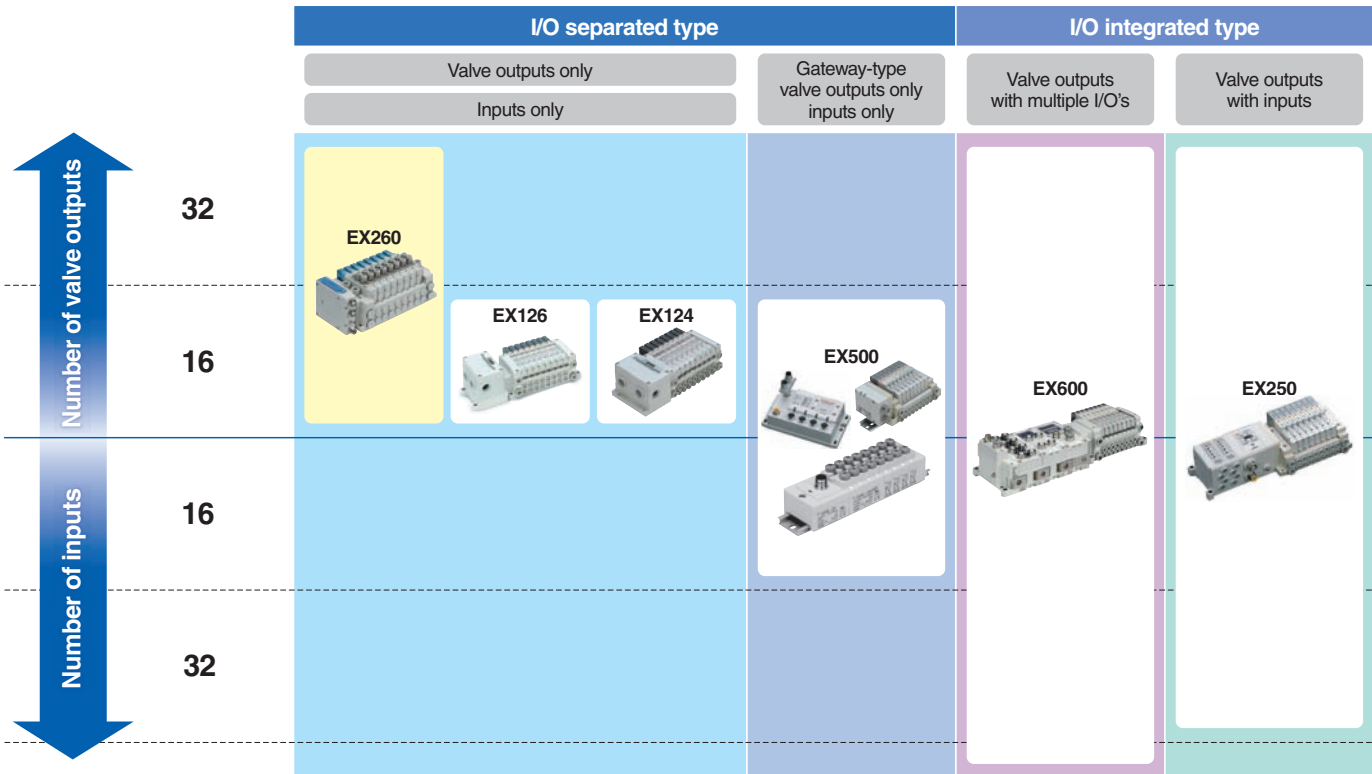
## ● Applicable Valve Series

Series	Flow-rate characteristics (4/2→5/3)		Maximum number of solenoids	Power consumption (W)	Enclosure	Standards	Page	
	C [dm <sup>3</sup> /(s·bar)]	b						
	SY3000	1.6	0.19	32	0.35 (standard) 0.1 (with power-saving circuit)	IP67	CE	page 7
	SY5000	3.6	0.17					
	S0700	0.37	0.39	32	0.35	IP40	CE	page 38
	SV1000	1.1	0.35	32	0.6	IP67	CE	page 24
	SV2000	2.4	0.18					
	SV3000	4.3	0.21					
	VQC1000	1.0	0.30	24	0.4 (standard) 1.0 (standard)	IP67	CE	page 29
	VQC2000	3.2	0.30					
	VQC4000	7.3	0.38					

Note) For units with D-sub communication connector, it is IP40.

# Fieldbus System Variations

IP67/65 specification models



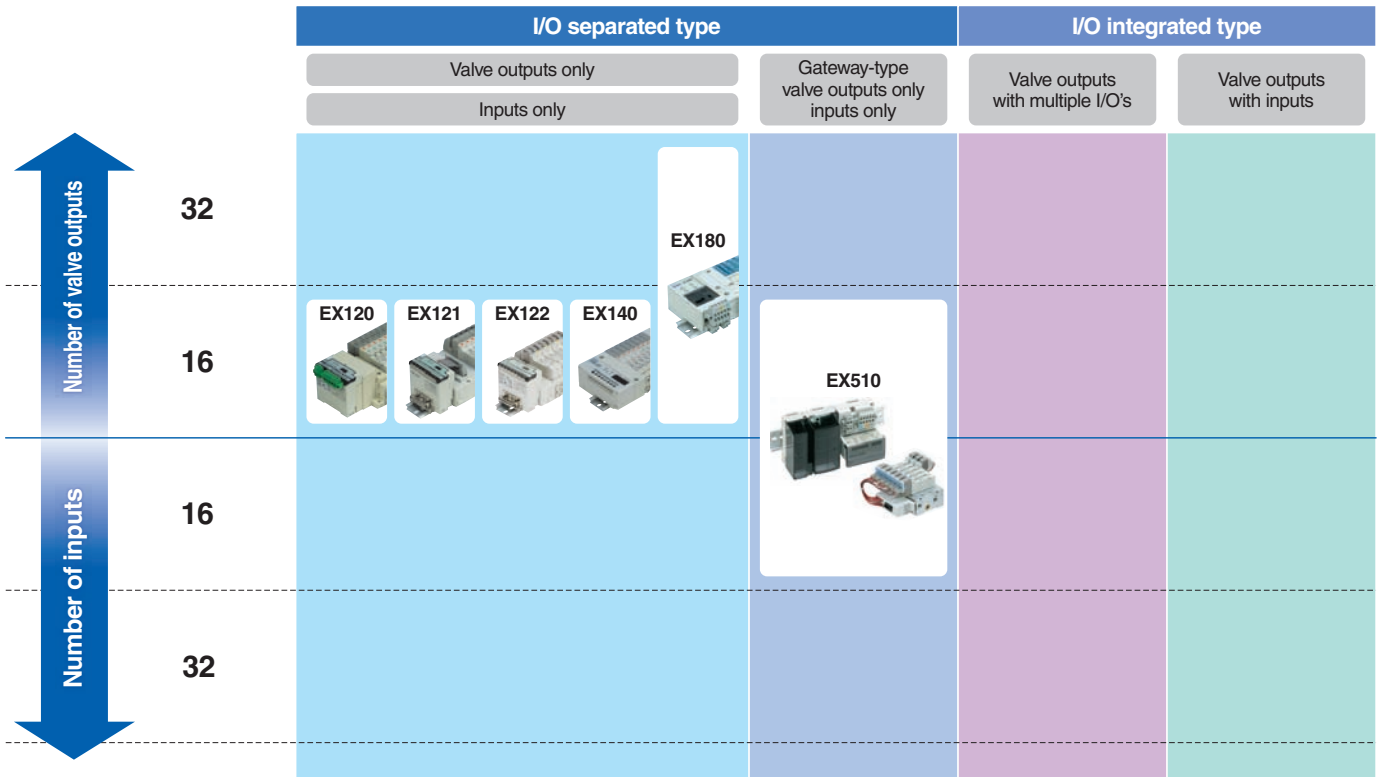
Number of valve outputs	16			32	16 (total 64)	32	32
Number of inputs	None						
SI unit series	EX260	EX126	EX124	EX260	EX500	EX600	EX250

Open network	PROFINET	●			●			
	EtherCAT	●			●		●	
	EtherNet/IP™	●			●	●	●	●
	PROFIBUS DP	●			●	●	●	●
	DeviceNet™	●		●	●	●	●	●
	CC-Link	●	●	●	●	●	●	●
	AS-Interface							●
	CANopen							●
	CompoNet™							

Applicable valve series	SY (Plug-in connector connecting base)	3000	●	●		●	●	●	●
		5000	●	●		●	●	●	●
	S0700 (Stacking base)	0700	●			●	●	●	●
		SV	1000	●	●		●	●	●
	2000		●	●		●	●	●	●
	3000		●	●		●	●	●	●
	4000						●		
	VQC	1000	●	●		●	●	●	●
		2000	●	●		●	●	●	●
		4000	●	●		●	●	●	●
	VQ	1000							
		2000			●				
		4000			●				
5000				●					

# Fieldbus System Variations

IP20 specification models



Number of valve outputs	16					32	16 (total 64)
Number of inputs	None						16 (total 64)
SI unit series	EX120	EX121	EX122	EX140	EX180		EX510

Open network	PROFINET						
	EtherCAT						
	EtherNet/IP™						
	PROFIBUS DP						•
	DeviceNet™	•	•	•	•	•	•
	CC-Link	•	•	•	•	•	•
	AS-Interface						
	CANopen						
	CompoNet™	•	•	•			

Applicable valve series	SY (Plug-in connector connecting base)	3000	•					
		5000	•					
	SJ	2000				•		•
		3000				•		•
	SY (Plug-in metal base)	3000						•
		5000						•
	S0700 (Bar stock)	0700				•		•
	SY (Bar stock)	3000						•
		5000						•
		7000						•
	SY (Stacking base)	3000		•	•			•
		5000		•	•			•
		7000						•
								•
	SV	1000	•					
		2000	•					
		3000	•					
		4000	•					
	VQ	1000	•					•
		2000	•					•
		4000						
5000								
SQ	1000				•		•	
	2000				•		•	
SZ	3000				•		•	
VQZ	1000						•	
	2000						•	
	3000						•	
SYJ	3000						•	
	5000						•	
	7000						•	



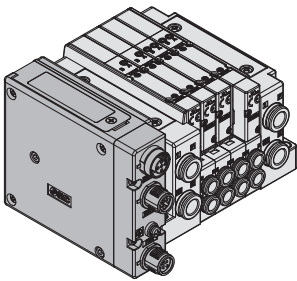
# SI Unit Integrated-type/For Output

## Series EX260

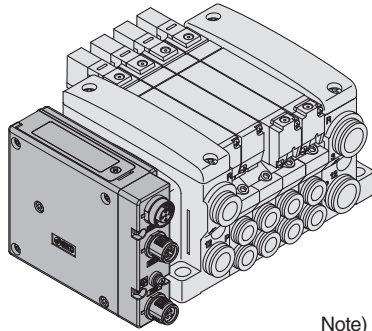


<b>Compact design</b>	Compact design for space saving
<b>Number of outputs</b>	Each 32/16 digital output type available in the series
<b>Output polarity</b>	Each negative common (PNP) / positive common (NPN) type available in the series
<b>Enclosure</b>	IP67 (For units with D-sub connector, and when connected with S0700 manifolds, it is IP40.)
<b>Internal terminating resistor</b>	ON/OFF switching is possible with an internal terminating resistor for communication. (Only for units compatible with M12 PROFIBUS DP, CC-Link communication connectors)

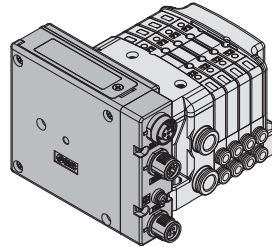
SY3000/5000



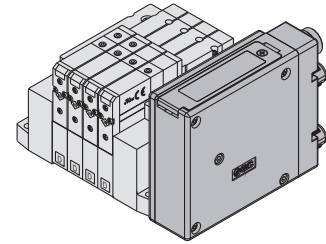
VQC1000/2000/4000



S0700



SV1000/2000/3000



Note) The SY3000/5000, VQC1000/2000/4000, and S0700 are not yet UL-compatible.

### How to Order SI Units

## EX260 - S PR1

#### Communication protocol

Symbol	Protocol	Number of outputs	SI unit output polarity	Communication connector	Manifold symbol		
DN1	DeviceNet™	32	Source/PNP (Negative common)	M12	QAN		
DN2			Sink/NPN (Positive common)		QA		
DN3		16	Source/PNP (Negative common)		QBN		
DN4			Sink/NPN (Positive common)		QB		
PR1	PROFIBUS DP	32	Source/PNP (Negative common)	M12	NAN		
PR2			Sink/NPN (Positive common)		NA		
PR3		16	Source/PNP (Negative common)		NBN		
PR4			Sink/NPN (Positive common)		NB		
PR5		32	Source/PNP (Negative common)		D-sub <sup>Note)</sup>	NCN	
PR6			Sink/NPN (Positive common)			NC	
PR7			16			Source/PNP (Negative common)	NDN
PR8						Sink/NPN (Positive common)	ND
MJ1	CC-Link	32	Source/PNP (Negative common)	M12	VAN		
MJ2			Sink/NPN (Positive common)		VA		
MJ3		16	Source/PNP (Negative common)		VBN		
MJ4			Sink/NPN (Positive common)		VB		
EC1	EtherCAT	32	Source/PNP (Negative common)	M12	DAN		
EC2			Sink/NPN (Positive common)		DA		
EC3		16	Source/PNP (Negative common)		DBN		
EC4			Sink/NPN (Positive common)		DB		
PN1	PROFINET	32	Source/PNP (Negative common)	M12	FAN		
PN2			Sink/NPN (Positive common)		FA		
PN3		16	Source/PNP (Negative common)		FBN		
PN4			Sink/NPN (Positive common)		FB		
EN1	EtherNet/IP™	32	Source/PNP (Negative common)	M12	EAN		
EN2			Sink/NPN (Positive common)		EA		
EN3		16	Source/PNP (Negative common)		EBN		
EN4			Sink/NPN (Positive common)		EB		

Note) Enclosure is IP40 when the communication connector is D-sub.

**SI Unit Specifications**

Model		EX260-SPR1/3	EX260-SPR2/4	EX260-SPR5/7	EX260-SPR6/8	EX260-SDN1/3	EX260-SDN2/4	EX260-SMJ1/3	EX260-SMJ2/4
Applicable system	Protocol	PROFIBUS DP				DeviceNet™		CC-Link	
	Version <sup>Note 1)</sup>	DP-V0				Volume 1 (Edition 3.5) Volume 3 (Edition 1.5)		Ver. 1.10	
	Configuration file <sup>Note 3)</sup>	GSD file				EDS file		—	
I/O occupation area (Inputs/Outputs)		SPR1: 0/32 SPR3: 0/16	SPR2: 0/32 SPR4: 0/16	SPR5: 0/32 SPR7: 0/16	SPR6: 0/32 SPR8: 0/16	SDN1: 0/32 SDN3: 0/16	SDN2: 0/32 SDN4: 0/16	SMJ1: 32/32 SMJ3: 32/32 (1 station, remote I/O stations)	SMJ2: 32/32 SMJ4: 32/32 (1 station, remote I/O stations)
Communication speed		9.6 k/19.2 k/45.45 k/93.75 k/ 187.5 k/500 k/1.5 M/3 M/6 M/12 Mbps				125 k/250 k/500 kbps		156 k/625 k/ 2.5 M/5 M/10 Mbps	
Power supply for control	Power supply voltage	21.6 to 26.4 VDC				—		21.6 to 26.4 VDC	
	Internal current consumption	100 mA or less				—		100 mA or less	
Power supply for output	Power supply voltage	—				22.8 to 26.4 VDC			
Power supply for communication	Power supply voltage	—				11 to 25 VDC		—	
	Internal current consumption	—				100 mA or less		—	
Communication connector specification		M12		D-sub		M12			
Terminating resistor switch		Built-in		None				Built-in	
Output	Output type	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)	Sink/NPN (Positive common)
	Number of outputs	SPR1: 32 points SPR3: 16 points	SPR2: 32 points SPR4: 16 points	SPR5: 32 points SPR7: 16 points	SPR6: 32 points SPR8: 16 points	SDN1: 32 points SDN3: 16 points	SDN2: 32 points SDN4: 16 points	SMJ1: 32 points SMJ3: 16 points	SMJ2: 32 points SMJ4: 16 points
	Load	Solenoid valve with protective circuit for surge voltage of 24 VDC/1.5 W or less (SMC)							
	Supplied voltage	24 VDC							
	Supplied current	SPR1: Max. 2.0 A SPR3: Max. 1.0 A	SPR2: Max. 2.0 A SPR4: Max. 1.0 A	SPR5: Max. 2.0 A SPR7: Max. 1.0 A	SPR6: Max. 2.0 A SPR8: Max. 1.0 A	SDN1: Max. 2.0 A SDN3: Max. 1.0 A	SDN2: Max. 2.0 A SDN4: Max. 1.0 A	SMJ1: Max. 2.0 A SMJ3: Max. 1.0 A	SMJ2: Max. 2.0 A SMJ4: Max. 1.0 A
Environmental resistance	Enclosure	IP67		IP40		IP67			
	Operating temperature range	14 to 122°F (−10 to 50°C)							
	Operating humidity range	35 to 85%RH (No condensation)							
	Withstand voltage	500 VAC for 1 minute between terminals and housing							
Insulation resistance		10 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing							
Standards		CE marking, UL (CSA) compatible							
Weight		0.44 lbs (200 g)							
Accessories	Mounting screw	2 pcs.							
	Seal cap (for M12 connector socket)	EX9-AWTS (1 pc.)		—		EX9-AWTS (1 pc.)			

Model		EX260-SEC1/3	EX260-SEC2/4	EX260-SPN1/3	EX260-SPN2/4	EX260-SEN1/3	EX260-SEN2/4
Applicable system	Protocol	EtherCAT <sup>Note 2)</sup>		PROFINET <sup>Note 2)</sup>		EtherNet/IP™ <sup>Note 2)</sup>	
	Version <sup>Note 1)</sup>	Conformance Test Record V.1.1		PROFINET Specification Version 2.2		Volume 1 (Edition 3.8) Volume 2 (Edition 1.9)	
	Configuration file <sup>Note 3)</sup>	XML file		GSD file		EDS file	
I/O occupation area (Inputs/Outputs)		SEC1: 0/32 SEC3: 0/16	SEC2: 0/32 SEC4: 0/16	SPN1: 0/32 SPN3: 0/16	SPN2: 0/32 SPN4: 0/16	SEN1: 16/32 SEN3: 16/16	SEN2: 16/32 SEN4: 16/16
Communication speed		100 Mbps <sup>Note 2)</sup>				10 M/100 Mbps <sup>Note 2)</sup>	
Power supply for control	Power supply voltage	21.6 to 26.4 VDC					
	Internal current consumption	100 mA or less					
Power supply for output	Power supply voltage	22.8 to 26.4 VDC					
Power supply for communication	Power supply voltage	—					
	Internal current consumption	—					
Communication connector specification		M12					
Terminating resistor switch		None					
Output	Output type	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)	Sink/NPN (Positive common)
	Number of outputs	SEC1: 32 points SEC3: 16 points	SEC2: 32 points SEC4: 16 points	SPN1: 32 points SPN3: 16 points	SPN2: 32 points SPN4: 16 points	SEN1: 32 points SEN3: 16 points	SEN2: 32 points SEN4: 16 points
	Load	Solenoid valve with protective circuit for surge voltage of 24 VDC/1.5 W or less (SMC)		Solenoid valve with protective circuit for surge voltage of 24 VDC/1.0 W or less (SMC)		Solenoid valve with protective circuit for surge voltage of 24 VDC/1.5 W or less (SMC)	
	Supplied voltage	24 VDC					
	Supplied current	SEC1: Max. 2.0 A SEC3: Max. 1.0 A	SEC2: Max. 2.0 A SEC4: Max. 1.0 A	SPN1: Max. 2.0 A SPN3: Max. 1.0 A	SPN2: Max. 2.0 A SPN4: Max. 1.0 A	SEN1: Max. 2.0 A SEN3: Max. 1.0 A	SEN2: Max. 2.0 A SEN4: Max. 1.0 A
Environmental resistance	Enclosure	IP67					
	Operating temperature range	14 to 12°F (−10 to 50°C)					
	Operating humidity range	35 to 85%RH (No condensation)					
	Withstand voltage	500 VAC for 1 minute between terminals and housing					
Insulation resistance		10 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing					
Standards		CE marking, UL (CSA) compatible					
Weight		0.44 lbs (200 g)					
Accessories	Mounting screw	2 pcs.					
	Seal cap (for M12 connector socket)	EX9-AWTS (1 pc.)					

Note 1) Please note that the version is subject to change.  
 Note 2) Use a CAT5 or higher transmission cable for EtherCAT, PROFINET, EtherNet/IP™.  
 Note 3) Each file can be downloaded from the SMC website, <http://www.smcworld.com>

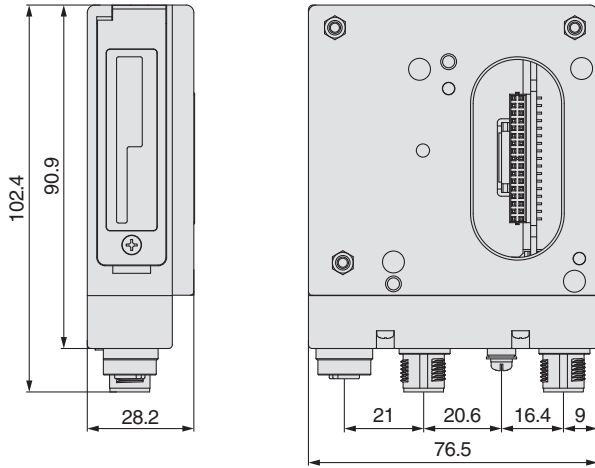
EX260  
SY  
SV  
VQC  
S0700

# Series EX260

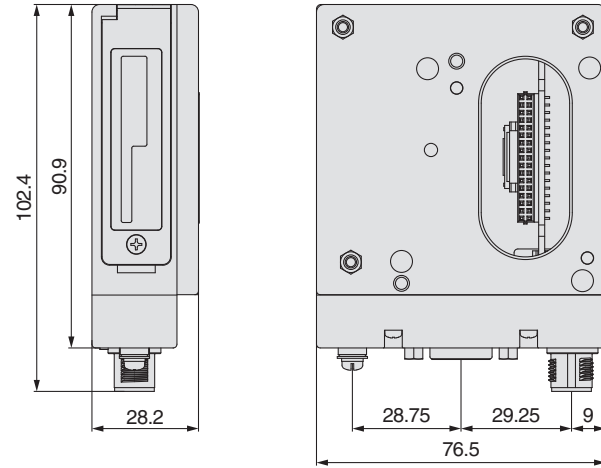
## SI Unit Dimensions

(mm)

### M12 communication connector type

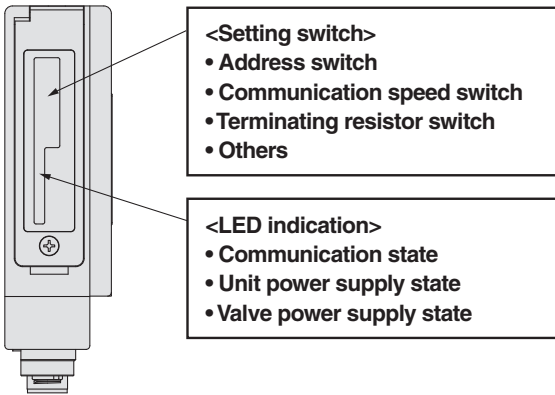


### D-sub communication connector type



## Functions of SI Unit Parts

### <LED indication and setting switch>



Note) The setting switch varies depending on the model.  
Refer to the operation manual for details.  
Please download it via the SMC website, <http://www.smcworld.com>

### <Connector>

#### M12 communication connector type

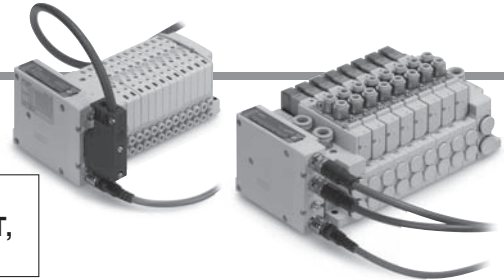
Part no.	EX260-SPR1/-SPR2 -SPR3/-SPR4	EX260-SDN□	EX260-SMJ□	EX260-SEC□ EX260-SPN□ EX260-SEN□
Communication protocol	PROFIBUS DP	DeviceNet™	CC-Link	EtherCAT PROFINET EtherNet/IP™
Communication connector (M12) BUS OUT	5 pins, socket, B code	5 pins, socket, A code	5 pins, socket, A code	4 pins, socket, D code
Communication connector (M12) BUS IN	5 pins, plug, B code	5 pins, plug, A code	4 pins, plug, A code	4 pins, socket, D code
Ground terminal	M3			
Power connector (M12)	5 pins, plug, A code	4 pins, plug, A code	5 pins, plug, B code	5 pins <sup>Note1)</sup> , 4 pins <sup>Note2)</sup> , plug, A code

Note 1) For EtherCAT, PROFINET  
Note 2) For EtherNet/IP™

#### D-sub communication connector type

Part no.	EX260-SPR5/-SPR6/-SPR7/-SPR8
Communication protocol	PROFIBUS DP
Ground terminal	M3
Communication connector (D-sub) BUS IN/OUT	9 pins, socket
Power connector (M12)	5 pins, plug, A code

**Accessories**



① **Communication cable with connector**

For SI units compatible with PROFIBUS DP, DeviceNet™, CC-Link

For SI units compatible with EtherCAT, PROFINET, EtherNet/IP™

Refer to the catalog (CAT. NAS100-73) for details.



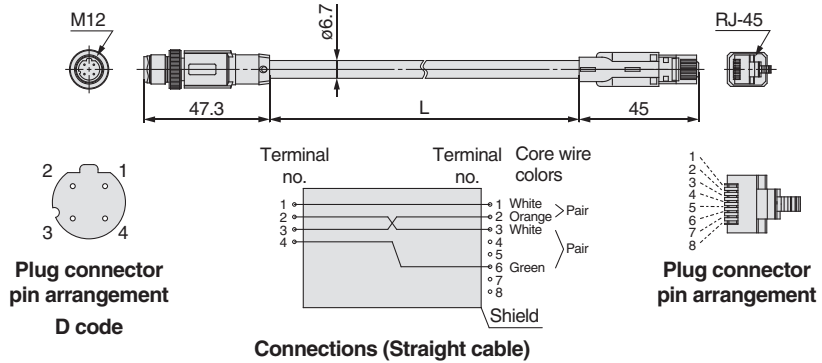
**EX9-AC 020 EN - PSRJ**

**Cable length (L)**

010	1000 [mm]
020	2000 [mm]
030	3000 [mm]
050	5000 [mm]
100	10000 [mm]

**Connector specification**

PSRJ	M12 plug (straight) ⇔ RJ-45 connector
------	---------------------------------------

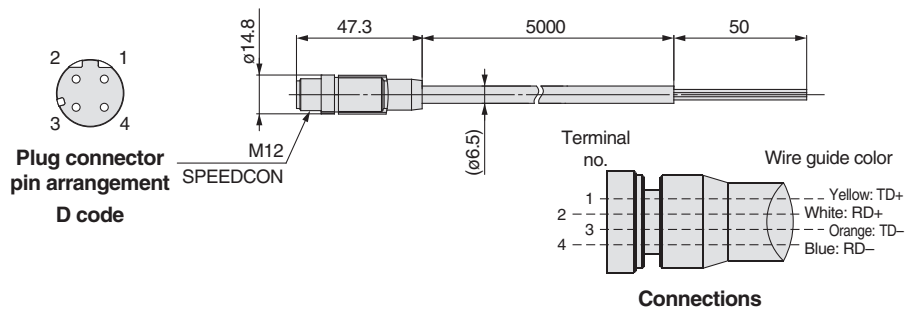


For SI units compatible with EtherCAT, PROFINET, EtherNet/IP™

**PCA-1446566**

**Cable length**

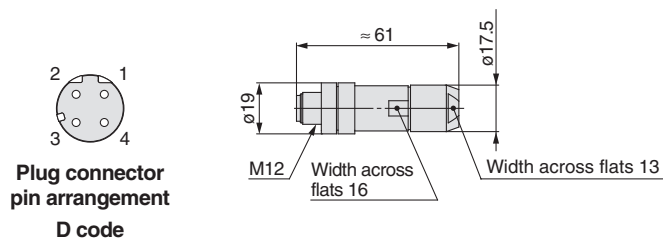
1446566	5000 [mm]
---------	-----------



For SI units compatible with EtherCAT, PROFINET, EtherNet/IP™

**Fieldwireable connector**

**PCA-1446553**



EX260

SY

SV

VQC

S0700

# Series EX260

## Accessories

### ② Power cable with connector (for SI units)

For SI units compatible with PROFIBUS DP, DeviceNet™, EtherCAT, PROFINET, EtherNet/IP™

#### EX500 – AP 050 – S

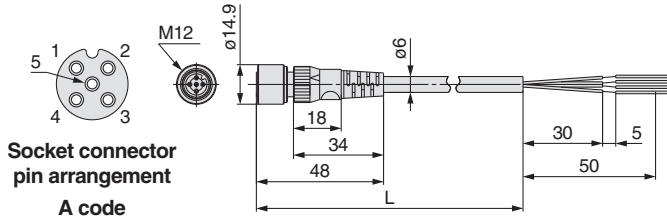
Cable length (L)

010	1000 [mm]
050	5000 [mm]

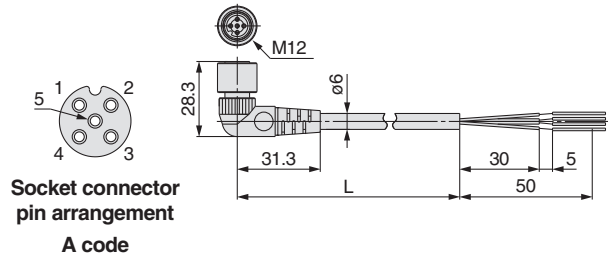
Connector specification

S	Straight
A	Angle

#### Straight connector type



#### Angle connector type

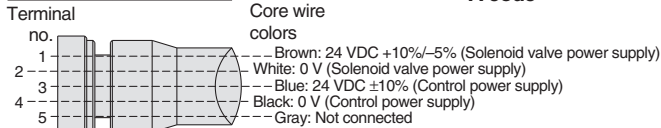
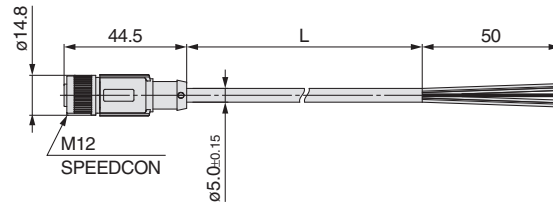
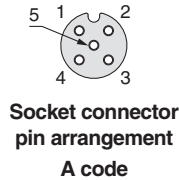


#### SPEEDCON

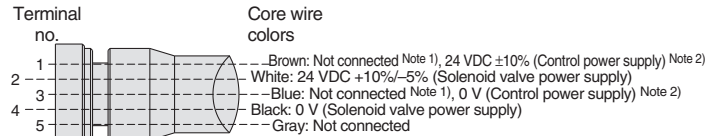
#### PCA-1401804

Cable length (L)

1401804	1500 [mm]
1401805	3000 [mm]
1401806	5000 [mm]



Connections (PROFIBUS DP/EtherCAT)



Connections (DeviceNet™, EtherNet/IP™)

Note 1) For DeviceNet™  
Note 2) For EtherNet/IP™

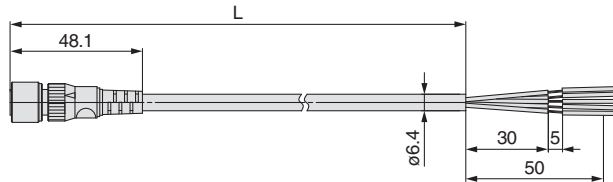
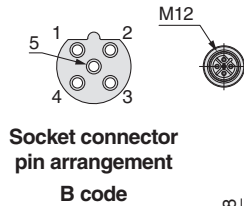
For SI units compatible with CC-Link

#### Straight connector type

#### EX9 – AC 050 – 1

Cable length (L)

010	1000 [mm]
030	3000 [mm]
050	5000 [mm]

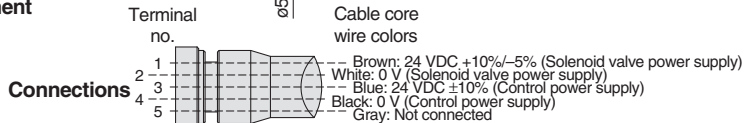
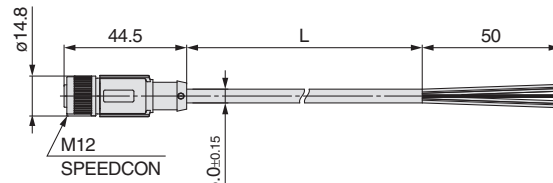
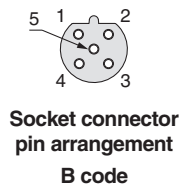


#### SPEEDCON

#### PCA-1401807

Cable length (L)

1401807	1500 [mm]
1401808	3000 [mm]
1401809	5000 [mm]



Connections

### ③ Seal cap: For M12 connector socket

Use this on ports that are not being used for communication connector (M12 connector socket).

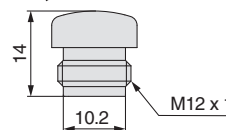
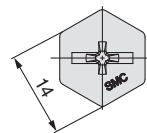
Use of this seal cap maintains the integrity of the IP67 enclosure.

Note) Tighten the seal cap with the prescribed tightening torque. (For M12: 0.07 lbf-ft (0.1 N-m))

#### EX9 – AW TS

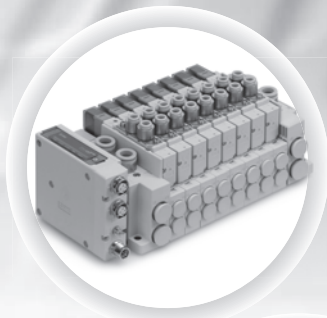
Connector type

TS	For M12 connector socket (10 pcs.)
----	------------------------------------



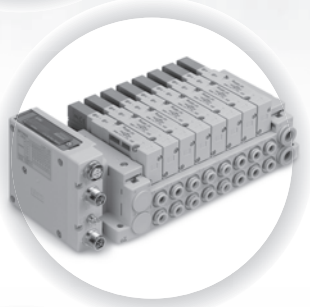
SMC For M12 connector socket

# Manifold Solenoid Valves for *Series EX260* Integrated-type (For Output) Serial Transmission System



**Series SY3000/5000**

**Page 7**



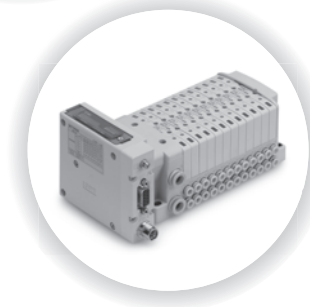
**Series SV1000/2000/3000**

**Page 24**



**Series VQC1000/2000/4000**

**Page 29**



**Series S0700**

**Page 38**

EX260

SY

SV

VQC

S0700



Type 10  
Side Ported

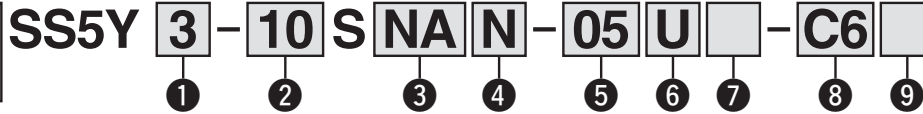
Type 11  
Bottom Ported

# Plug-in Connector Connecting Base: For EX260 Integrated-type (For Output) Serial Transmission System

# Series SY3000/5000

## How to Order Manifold

Refer to page 11 for Type 11/Bottom ported dimensions.



### 1 Series

3	SY3000
5	SY5000

### 2 Type

10	Side ported
11	Bottom ported*

\* The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to Plug-in Mixed Type Manifold (from page 17).

### 3 SI unit specifications

Symbol	Protocol	Number of outputs	Communication connector
0	Without SI unit		
QA	DeviceNet™	32	M12
QB		16	
NA	PROFIBUS DP	32	M12
NB		16	
NC		32	D-sub <sup>Note)</sup>
ND		16	
VA	CC-Link	32	M12
VB		16	
DA	EtherCAT	32	M12
DB		16	
FA	PROFINET	32	M12
FB		16	
EA	EtherNet/IP™	32	M12
EB		16	

Note) IP40 for the D-sub applicable communication connector specification.

For SI unit part number, refer to page 1.

DIN rail and SI unit output polarity "N" cannot be selected for the product without SI unit.

### 4 SI unit output polarity

Nil	Positive common
N	Negative common

Note 1) Ensure a match with the common specifications of the valve to be used.

Note 2) Without SI unit, the symbol is nil.

### 8 A, B port size (Metric)

Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported	
		SY3000	SY5000	SY5000	
Straight	C2	●	—	—	
	C3	●	—	—	
	C4	●	—	●	
	C6	●	●	●	
	C8	—	●	●	
CM*	Straight port, mixed sizes	●	●	●	
Elbow	Upward	L4	●	●	—
		L6	●	●	—
		L8	—	●	—
		B4	●	●	—
	Downward	B6	●	●	—
		B8	—	●	—
		LM*	●	●	—
		LM*	Elbow port, mixed sizes (Including upward and downward piping)	●	●
P, E port size (One-touch fittings)		ø8	ø10	ø10	

Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (Refer to the SY3000/ 5000 series catalog (CAT. NAS11-103)).

### 5 Valve stations

In the case of the 32-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>
⋮	⋮	
16	16 stations	
02	2 stations	Specified layout <sup>Note 2)</sup> (Available up to 32 solenoids)
⋮	⋮	
24	24 stations	

In the case of the 16-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>
⋮	⋮	
08	8 stations	
02	2 stations	Specified layout <sup>Note 2)</sup> (Available up to 16 solenoids)
⋮	⋮	
16	16 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) Includes the number of blanking plate assemblies.

Note 4) For the model without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

### 6 P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

### 7 SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* 3/5(E) port is plugged for the built-in silencer type.

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### 9 Mounting and Option

Symbol	Mounting	Option
Nil	Direct mounting	None
AA		Name plate (With station number)
BA		Name plate (Without station number)
D□	DIN rail mounting	Without name plate
A□		Name plate (With station number)
B□		Name plate (Without station number)

Note 1) Enter the number of stations inside □. (Refer to "DIN Rail Option" below.)

Note 2) Only direct mounting is available for Type 11 (Bottom ported).

#### DIN Rail Option

Symbol	Mounting	Option
Nil	Direct mounting	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations.
⋮	⋮	
24	For 24 stations	

\* When it is necessary to mount a DIN rail without an SI unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. Refer to the SY3000/5000 series catalog (CAT. NAS11-103) for part numbers of DIN rail.

### A, B port size (Inch)

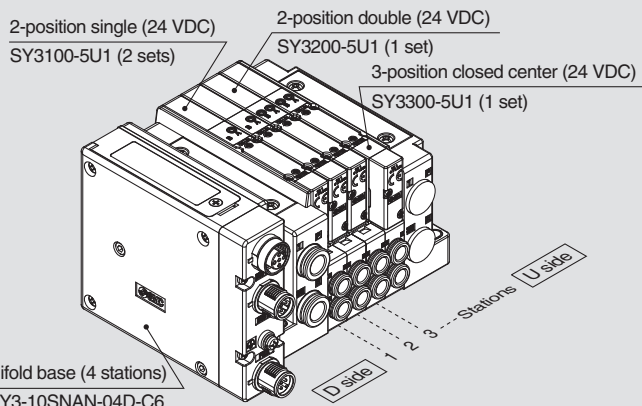
Symbol	A, B port	Type 10/ Side ported		Type 11/ Bottom ported	
		SY3000	SY5000	SY5000	
Straight	N1	●	—	—	
	N3	●	●	●	
	N7	●	●	●	
	N9	—	●	●	
	CM*	Straight port, mixed sizes	●	●	●
Elbow	Upward	LN3	●	—	—
		LN7	●	●	—
		LN9	—	●	—
	Downward	BN3	●	—	—
		BN7	●	●	—
		BN9	—	●	—
LM*	Elbow port, mixed sizes (Including upward and downward piping)	●	●	—	
P, E port size (One-touch fittings)		ø5/16"	ø3/8"	ø3/8"	

\* Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

\* The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

## How to Order Manifold Assembly

### Example (SS5Y3-10SNAN-□)



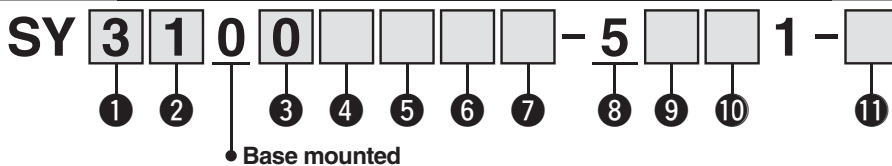
SS5Y3-10SNAN-04D-C6 ...1 set (Type 10 4-station manifold base part no.)  
 \*SY3100-5U1 .....2 sets (2-position single part no.)  
 \*SY3200-5U1 .....1 set (2-position double part no.)  
 \*SY3300-5U1 .....1 set (3-position closed center part no.)  
 ↳\*The asterisk denotes the symbol for assembly.  
 \*Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note) When mixing top ported configurations, select from page 13. Specify on a manifold specification sheet if plugs are required on the A and B port on the manifold.

## How to Order Valves (With two mounting screws)

Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for details on valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type.  
 Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for details. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.  
 \* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)
K*	High pressure type (1.0 MPa)

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.  
 \* Note the specified energizing time when power saving circuit is selected.

### 8 Rated voltage

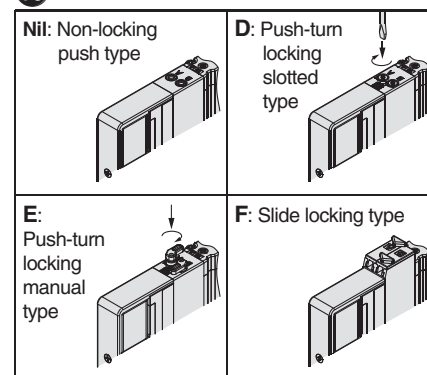
5	24 VDC
---	--------

### 9 Light/surge voltage suppressor and common specification

R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit. Select a valve from R, U, S or Z when the SI unit output polarity is Nil (Positive common). Select a valve from R, U, NS or NZ when the SI unit output polarity is N (Negative common).

### 10 Manual override

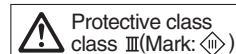


### 11 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.  
 \* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for part numbers of the base gasket and mounting screw.  
 \* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

Refer to the SMC website or the SY3000/5000 series catalog (CAT.NAS11-103) for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.



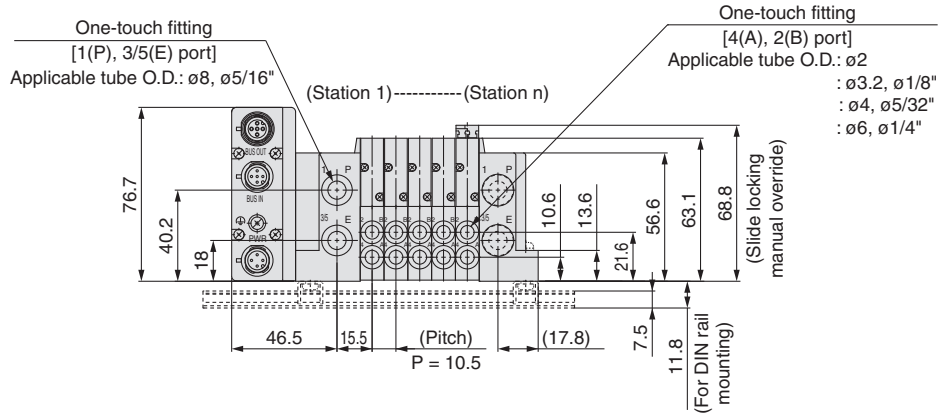
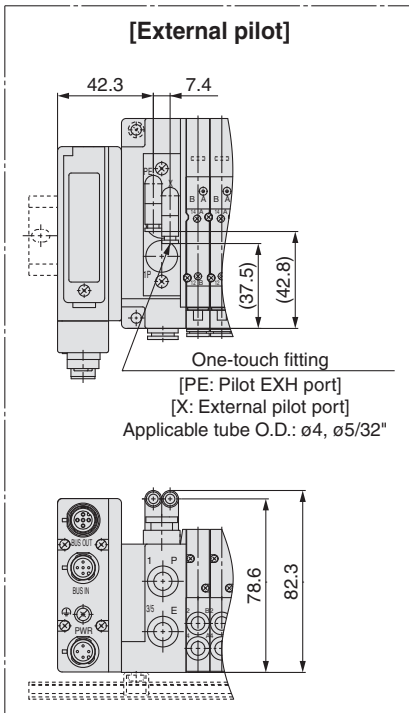
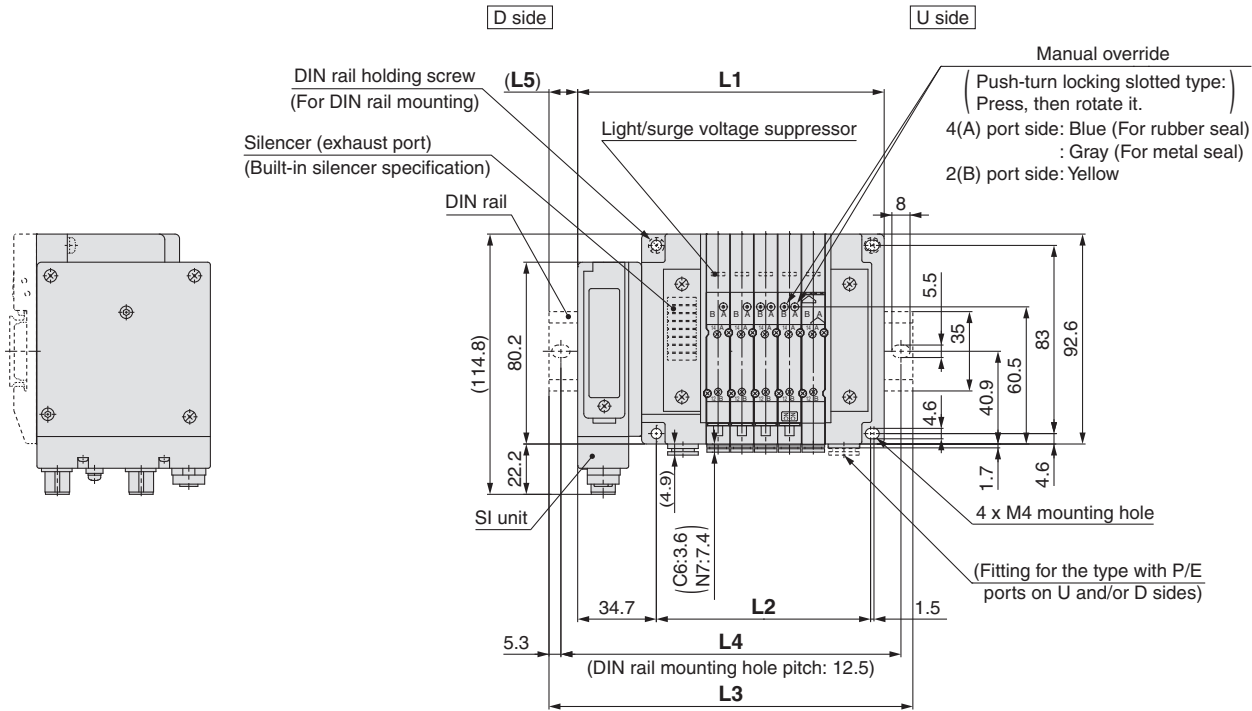


# Series SY3000/5000

## Dimensions: Type 10/For EX260/Series SY3000

(mm)

SS5Y3-10S□□-Stations<sub>D</sub><sup>U</sup>(S, R) - <sup>C2, C3, N1, C4, N3, C6, N7</sup>(D)



Note) These figures show the "SS5Y3-10SQA-05D-C6".

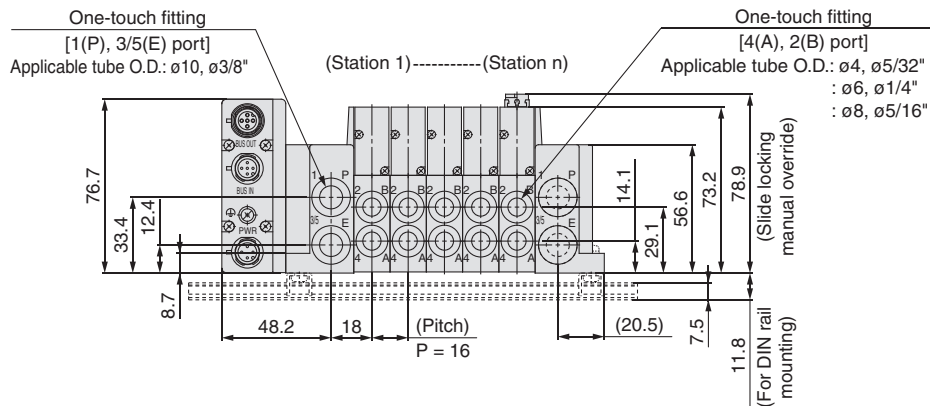
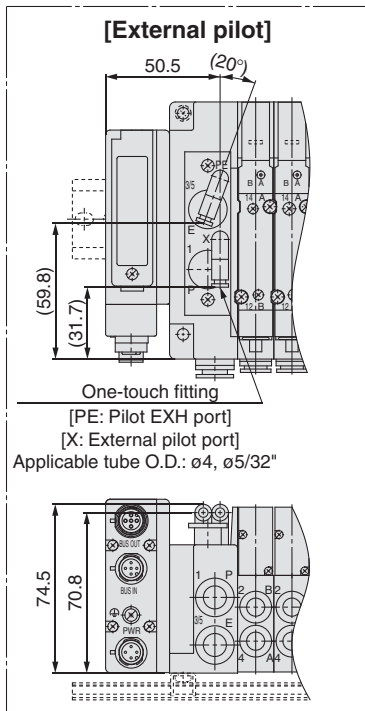
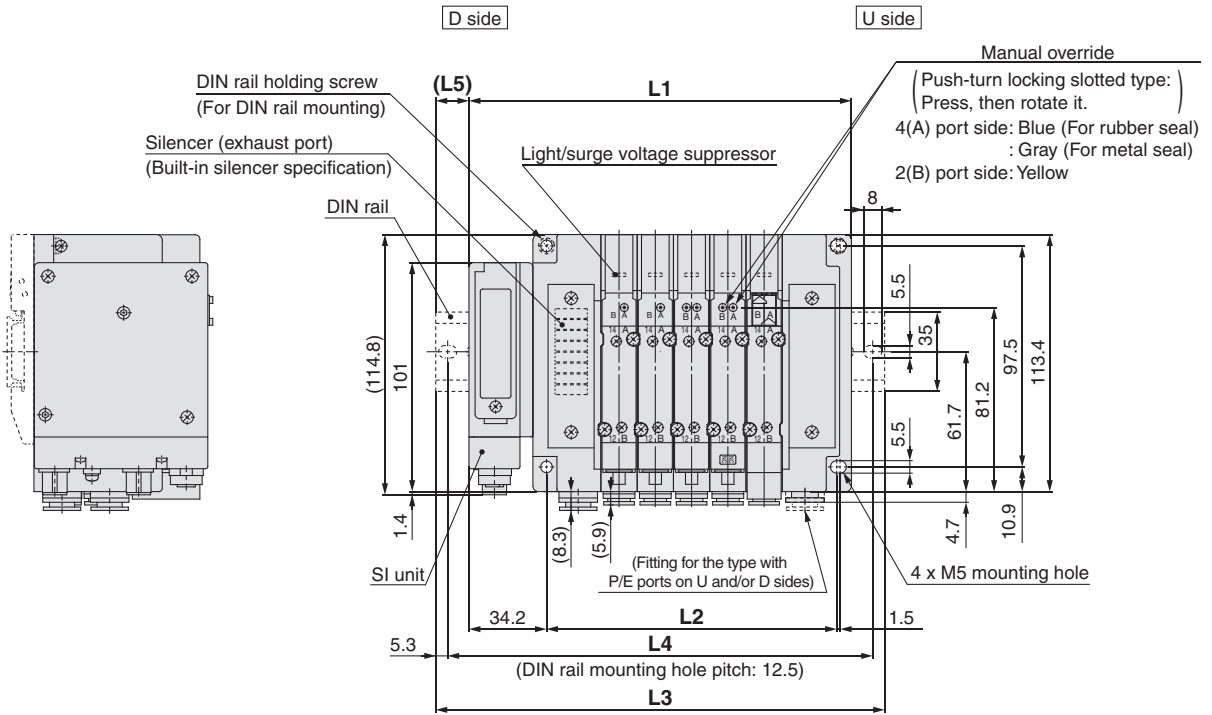
n: stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	103.7	114.2	124.7	135.2	145.7	156.2	166.7	177.2	187.7	198.2	208.7	219.2	229.7	240.2	250.7	261.2	271.7	282.2	292.7	303.2	313.7	324.2	334.7
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5	294
L3	135.5	148	148	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5
L4	125	137.5	137.5	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5	275	275	287.5	300	312.5	325	337.5	337.5	350
L5	16	17	11.5	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13	14	15	16	17	12	13

# Plug-in Connector Connecting Base *Series SY3000/5000*

## Dimensions: Type 10/For EX260/Series SY5000

(mm)

SS5Y5-10S□□ - Stations  $\frac{U}{D}$  (S, R) - C4, N3  
C6, N7 (D)  
C8, N9



Note) These figures show the "SS5Y5-10SQA-05D-C8".

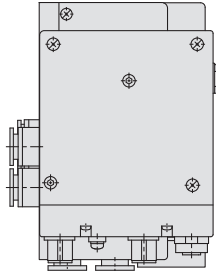
n: Station	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	120.7	136.7	152.7	168.7	184.7	200.7	216.7	232.7	248.7	264.7	280.7	296.7	312.7	328.7	344.7	360.7	376.7	392.7	408.7	424.7	440.7	456.7	472.7
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
L3	148	160.5	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373	385.5	410.5	423	435.5	448	473	485.5	498
L4	137.5	150	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5	375	400	412.5	425	437.5	462.5	475	487.5
L5	13.5	12	16.5	14.5	13	17.5	15.5	14	12	16.5	15	13	17.5	16	14	12.5	17	15	13.5	11.5	16	14.5	12.5

# Series SY3000/5000

## Dimensions: Type 11/For EX260/Series SY5000

(mm)

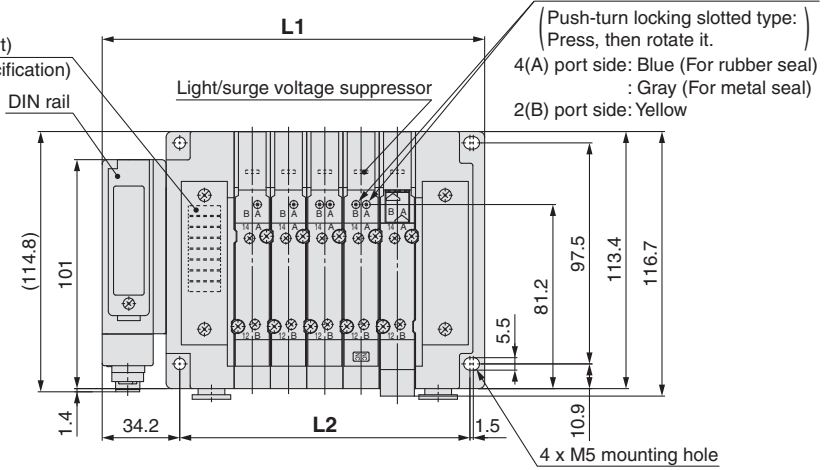
SS5Y5-11S□□ - Stations  $\frac{U}{D}$ (S, R) - C4, N3  
C6, N7  
C8, N9



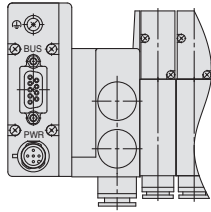
Silencer (exhaust port)  
(Built-in silencer specification)

D side

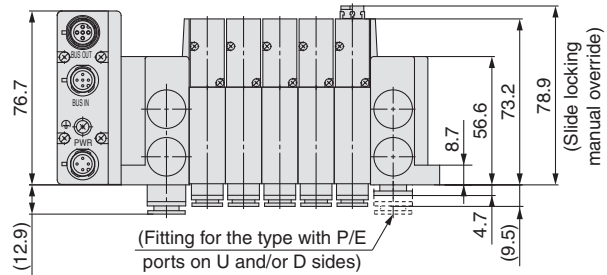
U side



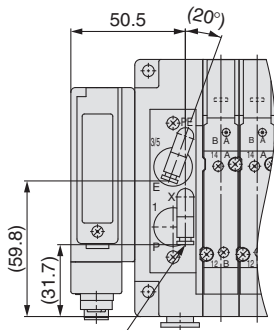
### [Communication connector D-sub]



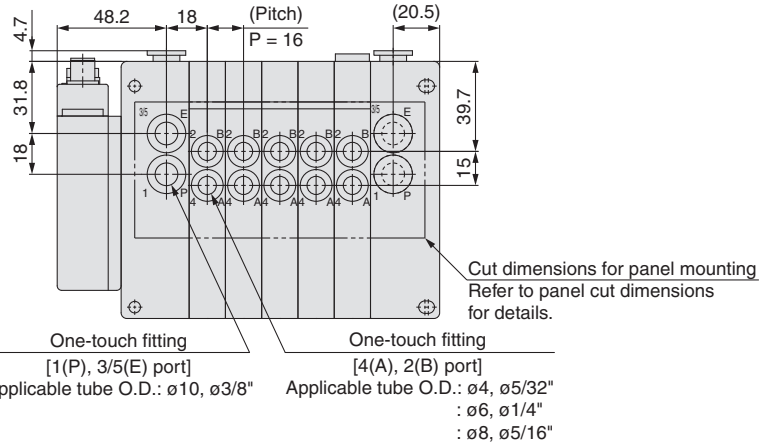
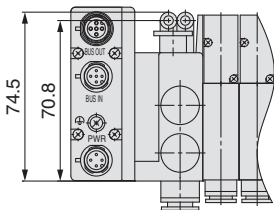
(Station 1)------(Station n)



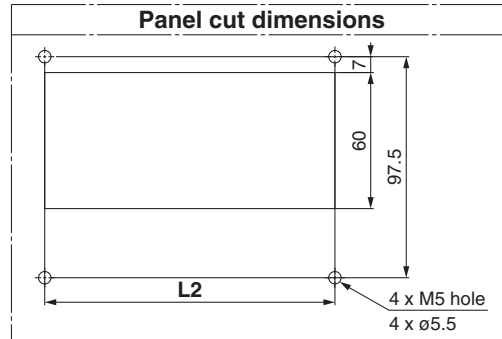
### [External pilot]



One-touch fitting  
[PE: Pilot EXH port]  
[X: External pilot port]  
Applicable tube O.D.C4:  $\phi 4$ (SMC)  
N3:  $\phi 5/32$ "(SMC)



### Panel cut dimensions



Note) These figures show the "SS5Y5-11SQA-05D-C8".

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	120.7	136.7	152.7	168.7	184.7	200.7	216.7	232.7	248.7	264.7	280.7	296.7	312.7	328.7	344.7	360.7	376.7	392.7	408.7	424.7	440.7	456.7	472.7
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432

# Plug-in Connector Connecting Base: For EX260 Integrated-type (For Output) Serial Transmission System

Type 12  
Top Ported

# Series SY3000/5000



## How to Order Manifold

Refer to pages 15,  
16 for Type 12/Top  
ported dimensions.

SS5Y **3** - 12S **NA N** - **05 U** **□** - **□** **□**

①
②
③
④
⑤
⑥
⑦
⑧

### ① Series

3	SY3000
5	SY5000

### ② SI unit specifications

Symbol	Protocol	Number of outputs	Communication connector
0	Without SI unit		
QA	DeviceNet™	32	M12
QB		16	
NA	PROFIBUS DP	32	M12
NB		16	
NC		32	D-sub <sup>Note)</sup>
ND		16	
VA	CC-Link	32	M12
VB		16	
DA	EtherCAT	32	M12
DB		16	
FA	PROFINET	32	M12
FB		16	
EA	EtherNet/IP™	32	M12
EB		16	

Note) IP40 for the D-sub applicable communication connector specification.  
For SI unit part number, refer to page 1.  
DIN rail and SI unit output polarity "N" cannot be selected for the product without SI unit.

### ③ SI unit output polarity

Nil	Positive common
N	Negative common

Note 1) Ensure a match with the common specifications of the valve to be used.  
Note 2) Without SI unit, the symbol is nil.

### ④ Valve stations

In the case of the 32-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>
⋮	⋮	
16	16 stations	Specified layout <sup>Note 2)</sup> (Available up to 32 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

In the case of the 16-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>
⋮	⋮	
08	8 stations	Specified layout <sup>Note 2)</sup> (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.  
Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)  
Note 3) Includes the number of blanking plate assemblies.  
Note 4) For the model without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

### ⑤ P, E port entry

U <sup>Note)</sup>	U side (2 to 10 stations)
D <sup>Note)</sup>	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

Note) ⑥ For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

### ⑥ SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)  
\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### ⑦ P, E port size (One-touch fittings)

Symbol	SY3000	SY5000
Nil	ø8	ø10
N	ø5/16"	ø3/8"

\* For N, sizes are in inches.

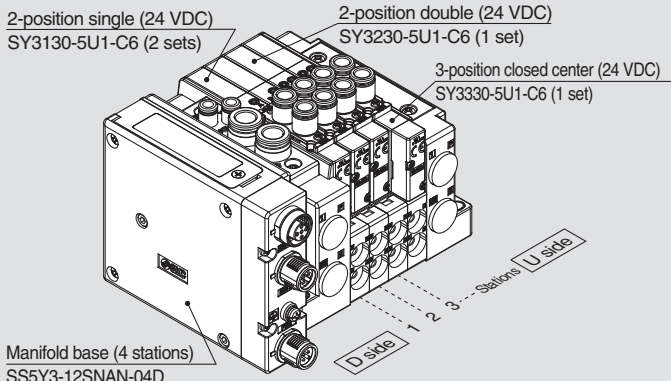
### ⑧ Mounting

Nil	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a longer rail than the standard length.
⋮	⋮	
D24	For 24 stations	

\* When it is necessary to mount a DIN rail without an SI unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for part numbers of DIN rail.

## How to Order Manifold Assembly

### Example (SS5Y3-12SNAN-□)



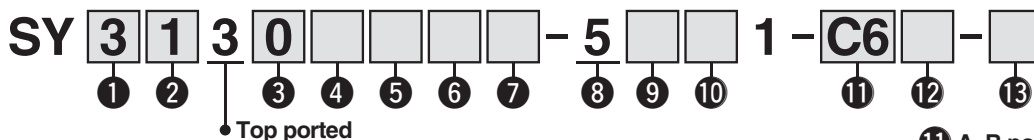
SS5Y3-12SNAN-04D ..... 1 set (Type 12 4-station manifold base part no.)  
 \*SY3130-5U1-C6 ..... 2 sets (2-position single part no.)  
 \*SY3230-5U1-C6 ..... 1 set (2-position double part no.)  
 \*SY3330-5U1-C6 ..... 1 set (3-position closed center part no.)

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

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

## How to Order Valves (With two mounting screws)

Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for details on valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type.

Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for details. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

Refer to the SMC website or the SY3000/5000 series catalog (CAT.NAS11-103) for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.

### 6 Pilot valve option

Nil	Standard (101 psi (0.7 MPa))
B	Quick response type (101 psi (0.7 MPa))
K*	High pressure type (145psi (1.0 MPa))

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected.

### 8 Rated voltage

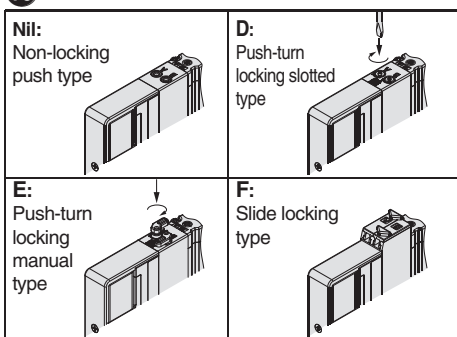
5	24 VDC
---	--------

### 9 Light/surge voltage suppressor and common specification

R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit. Select a valve from R, U, S or Z when the SI unit output polarity is Nil (Positive common). Select a valve from R, U, NS or NZ when the SI unit output polarity is N (Negative common).

### 10 Manual override



### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

Symbol	A and B port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

#### One-touch fitting (Inch)

Symbol	A and B port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

### 12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

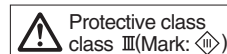
### 13 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.

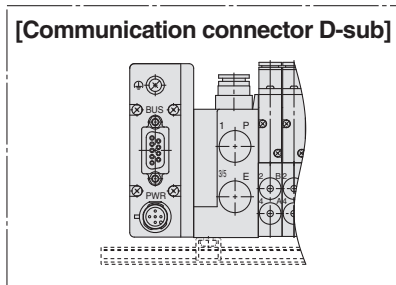
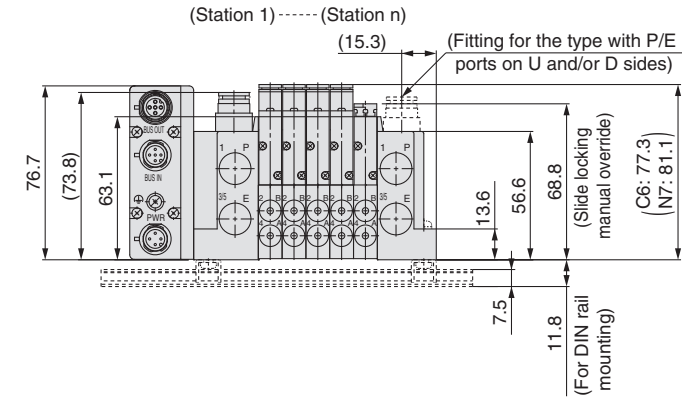
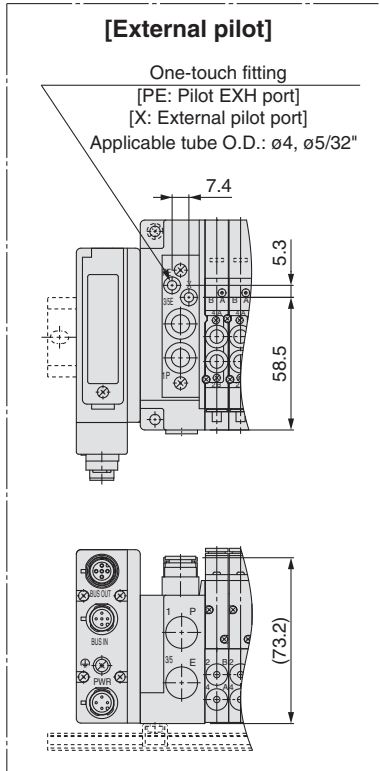
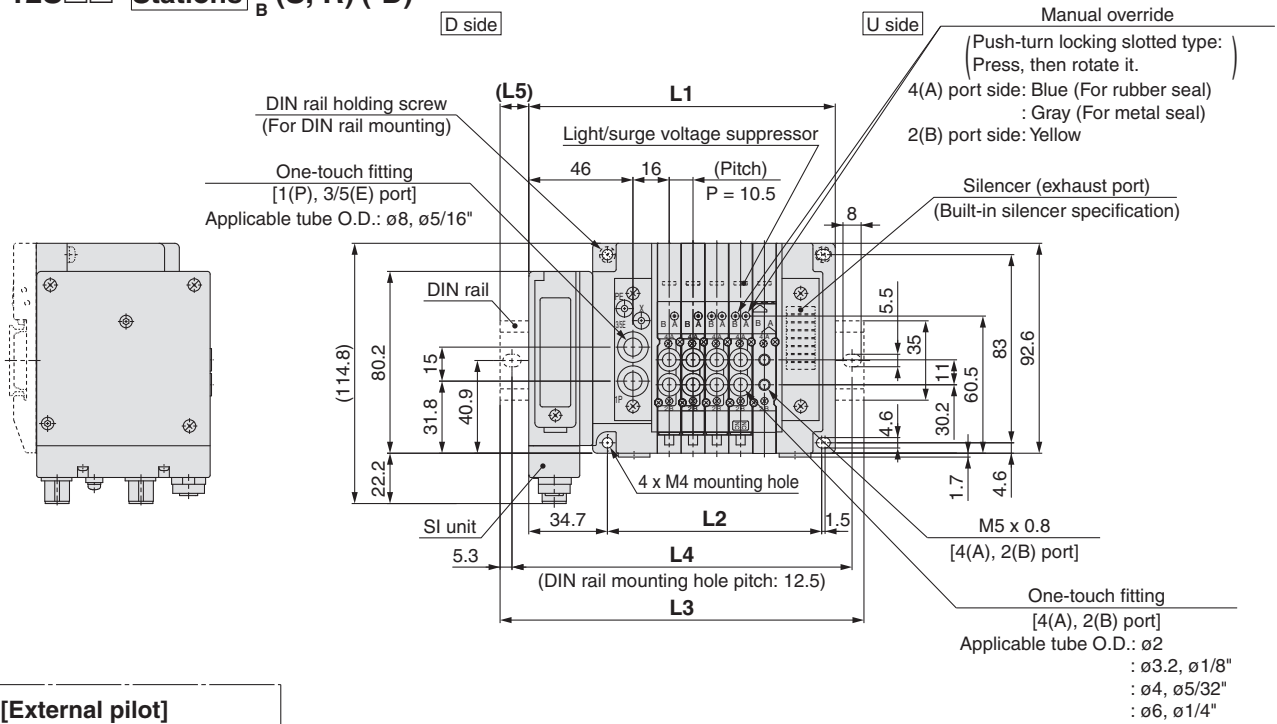


# Series SY3000/5000

## Dimensions: Type 12/For EX260/Series SY3000

(mm)

SS5Y3-12S□□- Stations  $\frac{U}{D}$  (S, R) (-D)



Note 1) These figures show the "SS5Y3-12SQA-05D".  
Note 2) For built-in silencer type, a silencer is mounted on the opposite side of U or D side with P or E port.

n:Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	103.7	114.2	124.7	135.2	145.7	156.2	166.7	177.2	187.7	198.2	208.7	219.2	229.7	240.2	250.7	261.2	271.7	282.2	292.7	303.2	313.7	324.2	334.7
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5	294
L3	135.5	148	148	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5
L4	125	137.5	137.5	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5	275	275	287.5	300	312.5	325	337.5	337.5	350
L5	16	17	11.5	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13	14	15	16	17	12	13



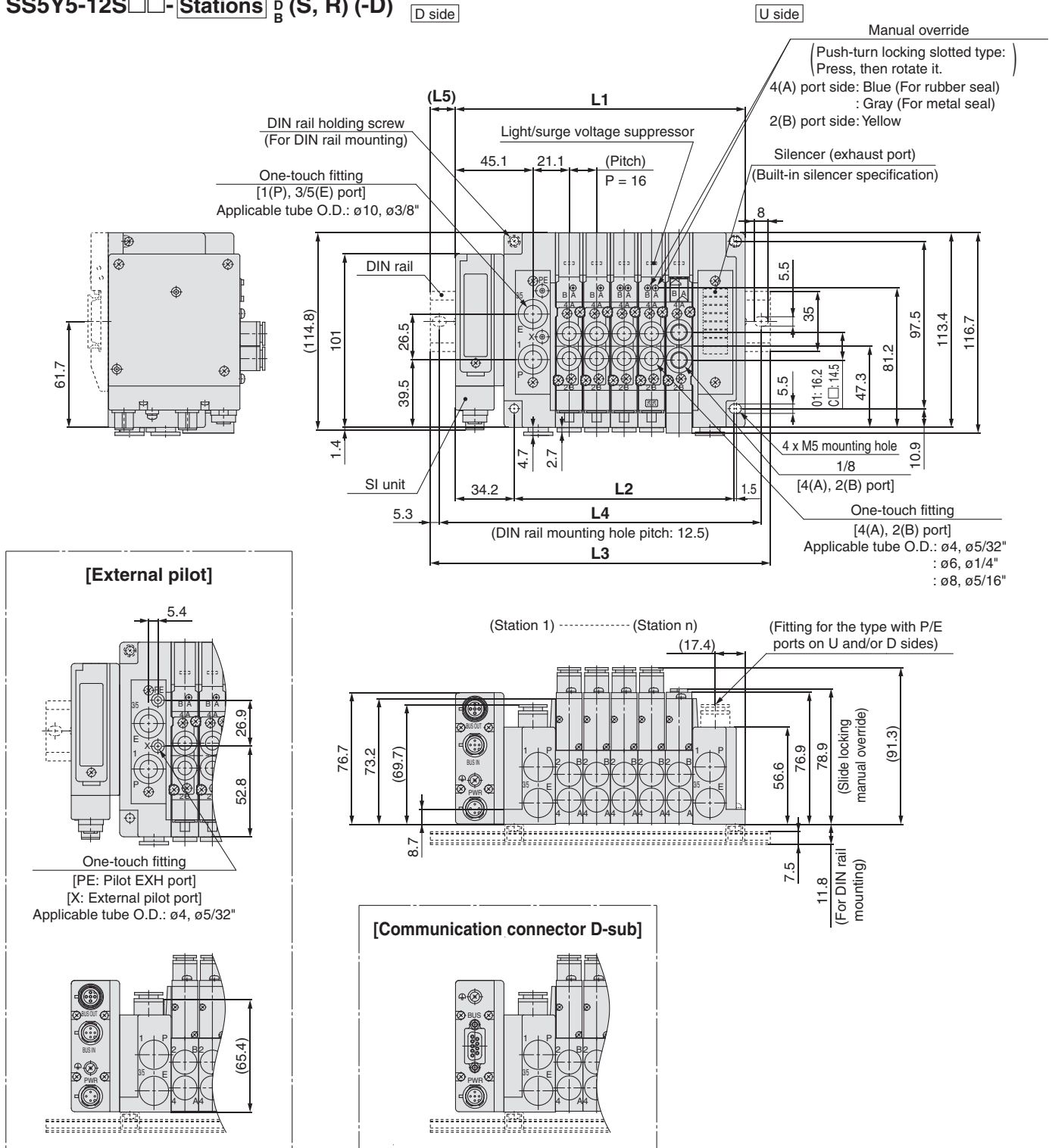


# Plug-in Connector Connecting Base *Series SY3000/5000*

## Dimensions: Type 12/For EX260/Series SY5000

(mm)

SS5Y5-12S□□-Stations  $\frac{U}{D}$  (S, R) (-D) D side



Note 1) These figures show the "SS5Y5-12SQA-05D".

Note 2) For built-in silencer type, a silencer is mounted on the opposite side of U or D side with P or E port.

n:Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>L1</b>	120.7	136.7	152.7	168.7	184.7	200.7	216.7	232.7	248.7	264.7	280.7	296.7	312.7	328.7	344.7	360.7	376.7	392.7	408.7	424.7	440.7	456.7	472.7
<b>L2</b>	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
<b>L3</b>	148	160.5	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373	385.5	410.5	423	435.5	448	473	485.5	498
<b>L4</b>	137.5	150	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5	375	400	412.5	425	437.5	462.5	475	487.5
<b>L5</b>	13.5	12	16.5	14.5	13	17.5	15.5	14	12	16.5	15	13	17.5	16	14	12.5	17	15	13.5	11.5	16	14.5	12.5

EX260

SY

SV

VQC

S0700

Type 10  
Side Ported

Type 11  
Bottom Ported

# Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold For EX260 Integrated-type (For Output) Serial Transmission System

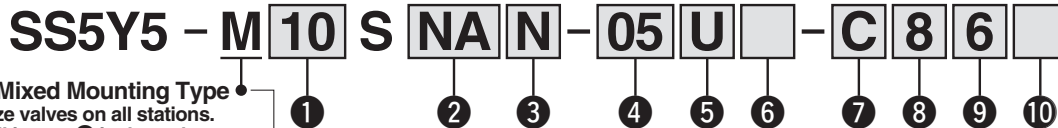
## Series SY3000/5000



SY3000 can be mounted onto SY5000 size manifold.

### How to Order Manifold

Refer to page 20 for Type 11/  
Bottom ported dimensions.



#### Mixed Mounting Type

It is possible to mount SY3000 size valves on all stations.  
In this case, there is no need to fill in part ⑩ in the order  
code. However, the manifold block width should be 12.5 mm.

#### ① Type

10	Side ported
11	Bottom ported

#### ② SI unit specifications

Symbol	Protocol	Number of outputs	Communication connector
0		Without SI unit	
QA	DeviceNet™	32	M12
QB		16	
NA	PROFIBUS DP	32	M12
NB		16	
NC		32	D-sub Note)
ND		16	
VA	CC-Link	32	M12
VB		16	
DA	EtherCAT	32	M12
DB		16	
FA	PROFINET	32	M12
FB		16	
EA	EtherNet/IP™	32	M12
EB		16	

Note) IP40 for the D-sub applicable communication connector specification.  
For SI unit part number, refer to page 1.  
DIN rail and SI unit output polarity "N" cannot be selected for the  
product without SI unit.

#### ③ SI unit output polarity

Nil	Positive common
N	Negative common

Note 1) Ensure a match with the common specifications of the valve to be used.  
Note 2) Without SI unit, the symbol is nil.

#### ④ Valve stations

##### In the case of the 32-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
16	16 stations	Specified layout Note 2) (Available up to 32 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

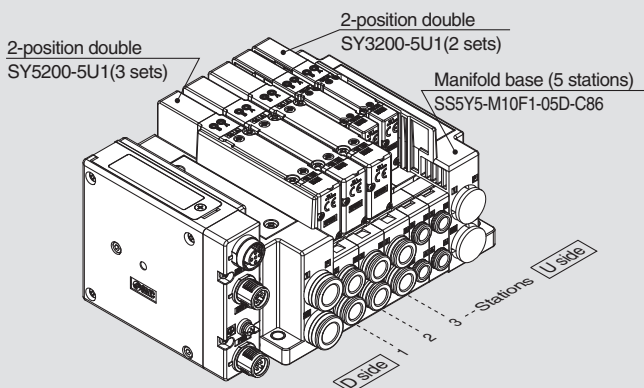
##### In the case of the 16-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	Specified layout Note 2) (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.  
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.  
Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet.  
(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)  
Note 3) Includes the number of blanking plate assemblies.  
Note 4) For the model without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

### How to Order Manifold Assembly

#### Example (SS5Y5-M10SNAN-□)



SS5Y5-M10F1-05D-C86 ...1 set (Type 10 5-station manifold base part no.)  
 \*SY5200-5U1 .....3 sets (2-position double part no.)  
 \*SY3200-5U1 .....2 sets (2-position double part no.)  
 \*The asterisk denotes the symbol for assembly.  
 \*Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above.  
If the arrangement becomes complicated, then indicate on the manifold specification sheet.

Note ) When mounting top ported valves, select from page 21. In this case, use caution as there is also output on the A and B port on base side.  
Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

#### ⑤ P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 24 stations)

#### ⑥ SUP/EXH block assembly

Nil	Internal pilot
S	Internal pilot, Built-in silencer
R	External pilot

\* 3/5(E) port is plugged for the built-in silencer type.  
\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for ⑦, ⑧, ⑨

#### ⑩ Mounting and Option

Symbol	Mounting	Option
Nil	Direct mounting	None
AA		Name plate (With station number)
BA		Name plate (Without station number)
D□	DIN rail mounting	Without name plate
A□		Name plate (With station number)
B□		Name plate (Without station number)

Note 1) Enter the number of stations inside □.  
(Refer to "DIN Rail Option" below.)  
Note 2) Only direct mounting is available for Type 11 (Bottom ported).

##### DIN Rail Option

Nil	Standard length	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations. [The SY5000 valve is now at a mountable length (manifold block length of 16 mm).]
⋮	⋮	
24	For 24 stations	

\* When it is necessary to mount a DIN rail without an SI unit, select D0 and calculate DIN rail length, referring to L3 in the dimensions on page 19.



## 7 Fitting type

Symbol	A, B port
<b>C</b>	Metric size: Straight one-touch fitting
<b>L</b>	Metric size: Elbow one-touch fitting for upward <sup>Note)</sup>
<b>B</b>	Metric size: Elbow one-touch fitting for downward <sup>Note)</sup>
<b>N</b>	Inch size: Straight one-touch fitting
<b>LN</b>	Inch size: Elbow one-touch fitting for upward <sup>Note)</sup>
<b>BN</b>	Inch size: Elbow one-touch fitting for downward <sup>Note)</sup>
<b>CM*</b>	Straight port, mixed sizes
<b>LM*</b>	Elbow port, mixed sizes (Including upward and downward piping) <sup>Note)</sup>

Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly.

\* Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

\* The direction of P, E port fittings is the same as for A, B port.

If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

\* Elbow fittings:  $\phi 2$ ,  $\phi 3.2$  and  $\phi 1.8$ " are not available for the SY3000 series.  $\phi 2$ ,  $\phi 3.2$ ,  $\phi 1.8$ " and  $\phi 5/32$ " are not available for the SY5000 series.

## 8 SY5000: A, B port size

(Metric)		(Inch)	
Symbol	Port size	Symbol	Port size
<b>4</b>	$\phi 4$ One-touch fitting	<b>3</b>	$\phi 5/32$ " One-touch fitting
<b>6</b>	$\phi 6$ One-touch fitting	<b>7</b>	$\phi 1/4$ " One-touch fitting
<b>8</b>	$\phi 8$ One-touch fitting	<b>9</b>	$\phi 5/16$ " One-touch fitting
<b>Nil</b>	For all stations of SY3000	<b>Nil</b>	For all stations of SY3000

\* No symbol needs to be specified when fitting type "CM", "LM" is selected.

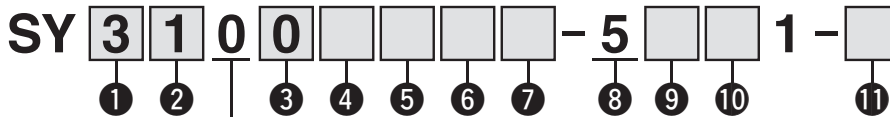
## 9 SY3000: A, B port size

(Metric)		(Inch)	
Symbol	Port size	Symbol	Port size
<b>2</b>	$\phi 2$ One-touch fitting	<b>1</b>	$\phi 1/8$ " One-touch fitting
<b>3</b>	$\phi 3.2$ One-touch fitting	<b>3</b>	$\phi 5/32$ " One-touch fitting
<b>4</b>	$\phi 4$ One-touch fitting	<b>7</b>	$\phi 1/4$ " One-touch fitting
<b>6</b>	$\phi 6$ One-touch fitting		

\* No symbol needs to be specified when fitting type "CM", "LM" is selected.

## How to Order Valves (With two mounting screws)

Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for details on valve specifications.



• Base mounted

### 1 Series

<b>3</b>	SY3000
<b>5</b>	SY5000

### 2 Type of actuation

<b>1</b>	2-position single
<b>2</b>	2-position double
<b>3</b>	3-position closed center
<b>4</b>	3-position exhaust center
<b>5</b>	3-position pressure center
<b>A*</b>	4-position dual 3-port valve (N.C./N.C.)
<b>B*</b>	4-position dual 3-port valve (N.O./N.O.)
<b>C*</b>	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

<b>0</b>	Rubber seal
<b>1</b>	Metal seal

### 4 Pilot type

<b>Nil</b>	Internal pilot
<b>R</b>	External pilot

### 5 Back pressure check valve (Built-in valve type)

<b>Nil</b>	None
<b>H</b>	Built-in

\* Only rubber seal type.

Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for details. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

<b>Nil</b>	Standard (101 psi (0.7 MPa))
<b>B</b>	Quick response type (101 psi (0.7 MPa))
<b>K*</b>	High pressure type (145 psi (1.0 MPa))

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

<b>Nil</b>	Standard
<b>T</b>	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected.

### 8 Rated voltage

<b>5</b>	24 VDC
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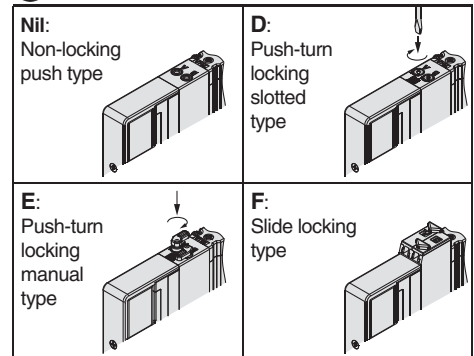
### 9 Light/surge voltage suppressor and common specification

<b>Nil</b>	Without light/surge voltage suppressor (Non-polar)
<b>R</b>	With surge voltage suppressor (Non-polar)
<b>U</b>	With light/surge voltage suppressor (Non-polar)
<b>S</b>	With surge voltage suppressor (Positive common)
<b>Z</b>	With light/surge voltage suppressor (Positive common)
<b>NS</b>	With surge voltage suppressor (Negative common)
<b>NZ</b>	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit. Select a valve from R, U, S or Z when the SI unit output polarity is Nil (Positive common).

Select a valve from R, U, NS or NZ when the SI unit output polarity is N (Negative common).

### 10 Manual override



### 11 Type of mounting screw

<b>Nil</b>	Round head combination screw
<b>B</b>	Hexagon socket head cap screw
<b>K</b>	Round head combination screw (Falling-out-prevention type)
<b>H</b>	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.

Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for part numbers of the base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

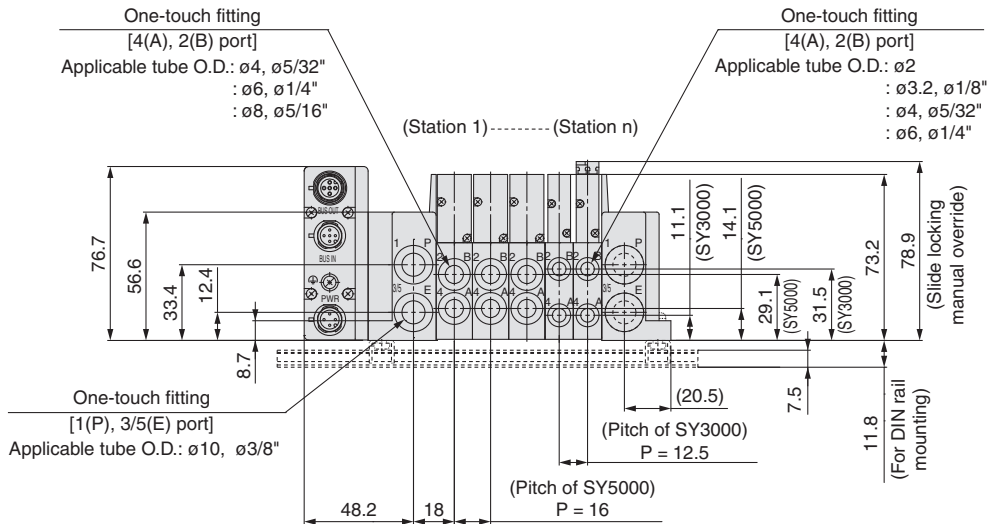
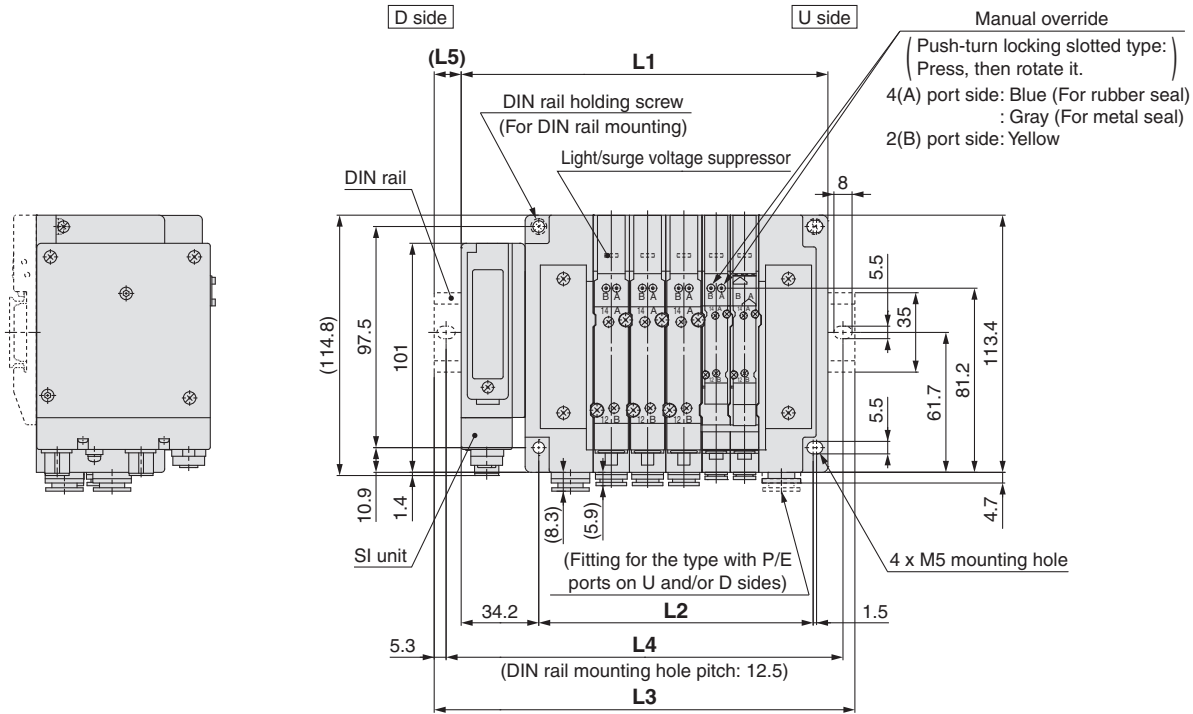
Refer to the SMC website or the SY3000/5000 series catalog (CAT.NAS11-103) for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.

# Series SY3000/5000

## Dimensions: Type 10/For EX260/Mixed Mounting Type

(mm)

SS5Y5-M10S□□-Stations  $\frac{U}{D}$  (-D)



Note 1) These figures show the "SS5Y5-M10SQA-05D-C86".

Note 2) Refer to page 10 for dimensions of D-sub communication connector, external pilot and built-in silencer.

### EX260 Serial transmission Calculation of dimensions

$$L1 = 12.5 \times n1 + 16 \times n2 + 88.7$$

$$L2 = 12.5 \times n1 + 16 \times n2 + 48$$

$$M = L1/12.5 + 1 \text{ Remove all numbers after the decimal}$$

$$L3 = 12.5 \times M + 23$$

$$L4 = L3 - 10.5$$

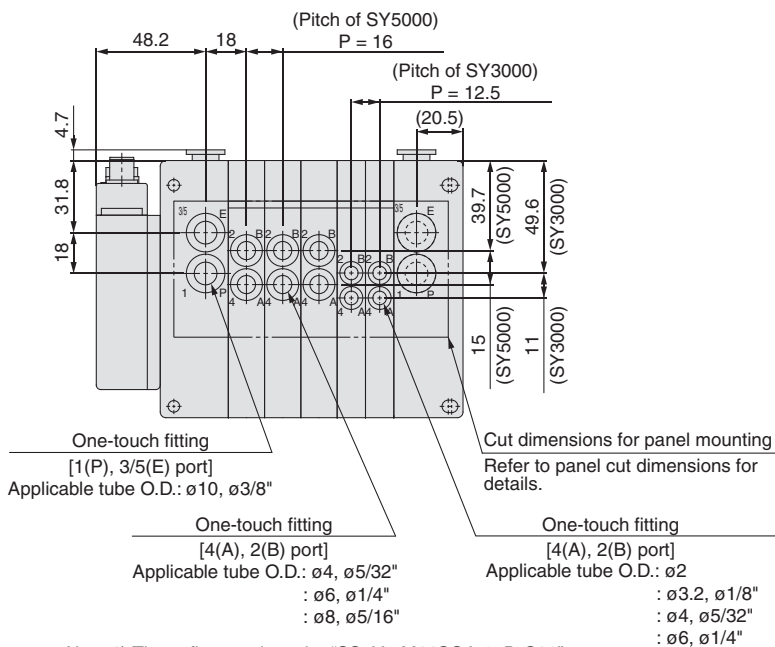
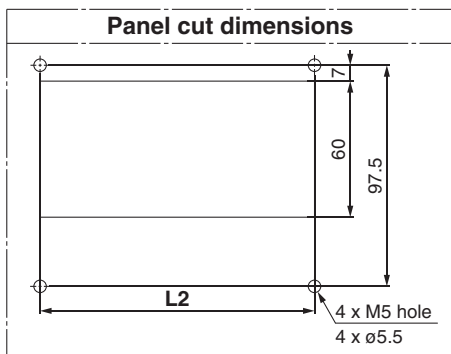
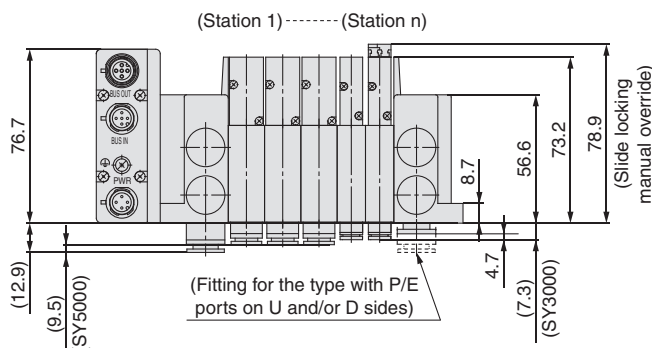
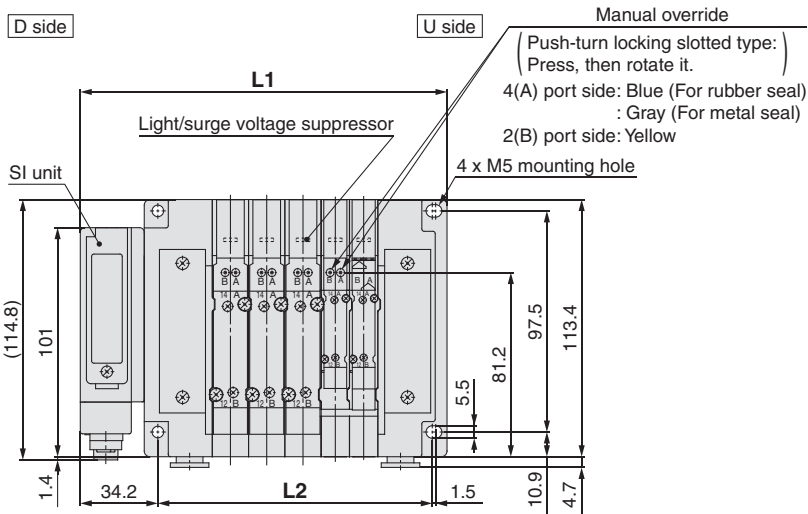
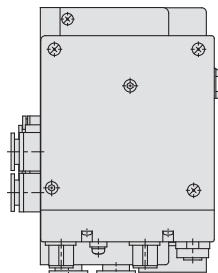
$$L5 = (L3 - L1)/2$$

n1: SY3000 Valve stations  
n2: SY5000 Valve stations

## Dimensions: Type 11/For EX260/Mixed Mounting Type

(mm)

SS5Y5-M11S□□ - Stations  $\begin{matrix} \text{U} \\ \text{D} \\ \text{B} \end{matrix}$



Note 1) These figures show the "SS5Y5-M11SQA-05D-C86".  
 Note 2) Refer to page 11 for dimensions of D-sub communication connector, external pilot and built-in silencer.

### EX260 Serial transmission Calculation of dimensions

$$L1 = 12.5 \times n1 + 16 \times n2 + 88.7$$

$$L2 = 12.5 \times n1 + 16 \times n2 + 48$$

n1: SY3000 Valve stations  
 n2: SY5000 Valve stations

EX260  
 SY  
 SV  
 VQC  
 S0700

# Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold For EX260 Integrated-type (For Output) Serial Transmission System

Type 12  
Top Ported

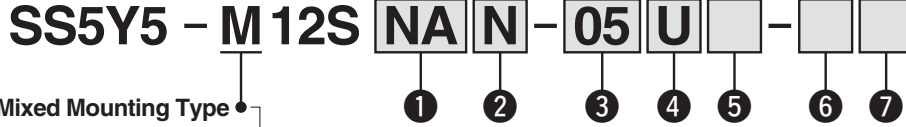
## Series SY3000/5000



SY3000 can be mounted onto SY5000 size manifold.

### How to Order Manifold

Refer to page 23 for Type 12/  
Top ported dimensions.



Mixed Mounting Type

It is possible to mount SY3000 size valves on all stations.  
However, the manifold block width should be 12.5 mm.

#### ① SI unit specifications

Symbol	Protocol	Number of outputs	Communication connector
<b>0</b>		Without SI unit	
<b>QA</b>	DeviceNet™	32	M12
<b>QB</b>		16	
<b>NA</b>	PROFIBUS DP	32	M12
<b>NB</b>		16	
<b>NC</b>		32	D-sub Note)
<b>ND</b>		16	
<b>VA</b>	CC-Link	32	M12
<b>VB</b>		16	
<b>DA</b>	EtherCAT	32	M12
<b>DB</b>		16	
<b>FA</b>	PROFINET	32	M12
<b>FB</b>		16	
<b>EA</b>	EtherNet/IP™	32	M12
<b>EB</b>		16	

Note) IP40 for the D-sub applicable communication connector specification.

For SI unit part number, refer to page 1.

DIN rail and SI unit output polarity "N" cannot be selected for the product without SI unit.

#### ② SI unit output polarity

Nil	Positive common
N	Negative common

Note 1) Ensure a match with the common specifications of the valve to be used.

Note 2) Without SI unit, the symbol is nil.

#### ③ Valve stations

In the case of the 32-output SI unit

Symbol	Stations	Note
<b>02</b>	2 stations	Double wiring Note 1)
⋮	⋮	
<b>16</b>	16 stations	
<b>02</b>	2 stations	Specified layout Note 2) (Available up to 32 solenoids)
⋮	⋮	
<b>24</b>	24 stations	

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.

Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet.

(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) Includes the number of blanking plate assemblies.

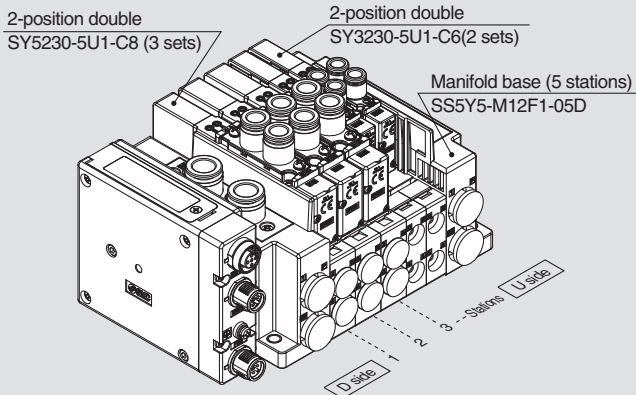
Note 4) For the model without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

In the case of the 16-output SI unit

Symbol	Stations	Note
<b>02</b>	2 stations	Double wiring Note 1)
⋮	⋮	
<b>08</b>	8 stations	
<b>02</b>	2 stations	Specified layout Note 2) (Available up to 16 solenoids)
⋮	⋮	
<b>16</b>	16 stations	

### How to Order Manifold Assembly

#### Example (SS5Y5-M12SNAN-□)



SS5Y5-M12F1-05D.....1 set (Type M12 5-station manifold base part no.)

\* SY5230-5U1-C8.....3 sets (2-position double part no.)

\* SY3230-5U1-C6.....2 sets (2-position double part no.)

→ \* The asterisk denotes the symbol for assembly.

\* Prefix it to the part nos. of the valve, etc.

- The valve arrangement is numbered as the 1st station from the D side.
- Under the manifold part number, state the valves to be mounted in order from the 1st station as shown in the figure above. If the arrangement becomes complicated, specify on a manifold specification sheet.

#### ④ P, E port entry

<b>U</b> Note)	U side (2 to 10 stations)
<b>D</b> Note)	D side (2 to 10 stations)
<b>B</b>	Both sides (2 to 24 stations)

Note) For type "S", supply/exhaust block assembly with built-in silencer, choose U or D for P port entry.

#### ⑤ SUP/EXH block assembly

Nil	Internal pilot
<b>S</b>	Internal pilot, Built-in silencer
<b>R</b>	External pilot

\* For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)

\* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

#### ⑥ P, E port size (One-touch fittings)

Nil	ø10
<b>N</b>	ø3/8"

\* For N, sizes are in inches.

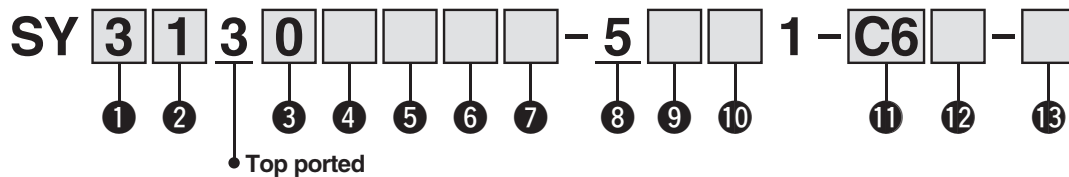
#### ⑦ Mounting

Nil	Direct mounting	
<b>D</b>	DIN rail mounting (With DIN rail)	
<b>D0</b>	DIN rail mounting (Without DIN rail)	
<b>D3</b>	For 3 stations	Specify a longer rail than the standard length. [The SY5000 valve is now at a mountable length (manifold block length of 16 mm).]
⋮	⋮	
<b>D24</b>	For 24 stations	

\* When it is necessary to mount a DIN rail without an SI unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for part numbers of DIN rail.

## How to Order Valves (With two mounting screws)

Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for details on valve specifications.



### 1 Series

3	SY3000
5	SY5000

### 2 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
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

\* Only rubber seal type is available for the 4-position dual 3-port valve.

### 3 Seal type

0	Rubber seal
1	Metal seal

### 4 Pilot type

Nil	Internal pilot
R	External pilot

### 5 Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

\* Only rubber seal type.

Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for details. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

\* The built-in valve type back pressure check valve is not available for the 3-position type.

### 6 Pilot valve option

Nil	Standard (101 psi (0.7 MPa))
B	Quick response type (101 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

\* Only metal seal type is available for the high pressure type.

### 7 Coil type

Nil	Standard
T	With power saving circuit (Continuous duty type)

\* Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.

\* Note the specified energizing time when power saving circuit is selected.

### 8 Rated voltage

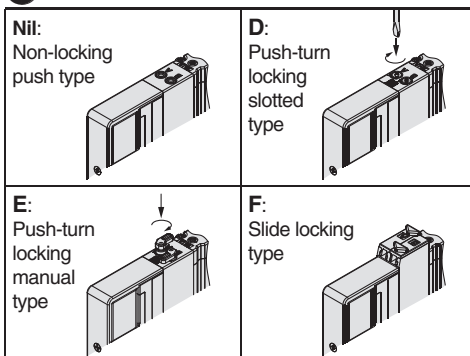
5	24 VDC
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### 9 Light/surge voltage suppressor and common specification

Nil	Without light/surge voltage suppressor (Non-polar)
R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)
S	With surge voltage suppressor (Positive common)
Z	With light/surge voltage suppressor (Positive common)
NS	With surge voltage suppressor (Negative common)
NZ	With light/surge voltage suppressor (Negative common)

\* Only "Z" and "NZ" types are available for the product with power saving circuit. Select a valve from R, U, S or Z when the SI unit output polarity is Nil (Positive common). Select a valve from R, U, NS or NZ when the SI unit output polarity is N (Negative common).

### 10 Manual override



### 11 A, B port size

#### Thread piping

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

#### One-touch fitting (Metric)

Symbol	A and B port	SY3000	SY5000
C2	ø2 One-touch fitting	●	—
C3	ø3.2 One-touch fitting	●	—
C4	ø4 One-touch fitting	●	●
C6	ø6 One-touch fitting	●	●
C8	ø8 One-touch fitting	—	●

#### One-touch fitting (Inch)

Symbol	A and B port	SY3000	SY5000
N1	ø1/8" One-touch fitting	●	—
N3	ø5/32" One-touch fitting	●	●
N7	ø1/4" One-touch fitting	●	●
N9	ø5/16" One-touch fitting	—	●

### 12 Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

\* Only Nil is available for M5.

### 13 Type of mounting screw

Nil	Round head combination screw
B	Hexagon socket head cap screw
K	Round head combination screw (Falling-out-prevention type)
H	Hexagon socket head cap screw (Falling-out-prevention type)

\* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.

\* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for part numbers of base gasket and mounting screw.

\* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.

Refer to the SMC website or the SY3000/5000 series catalog (CAT.NAS11-103) for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.

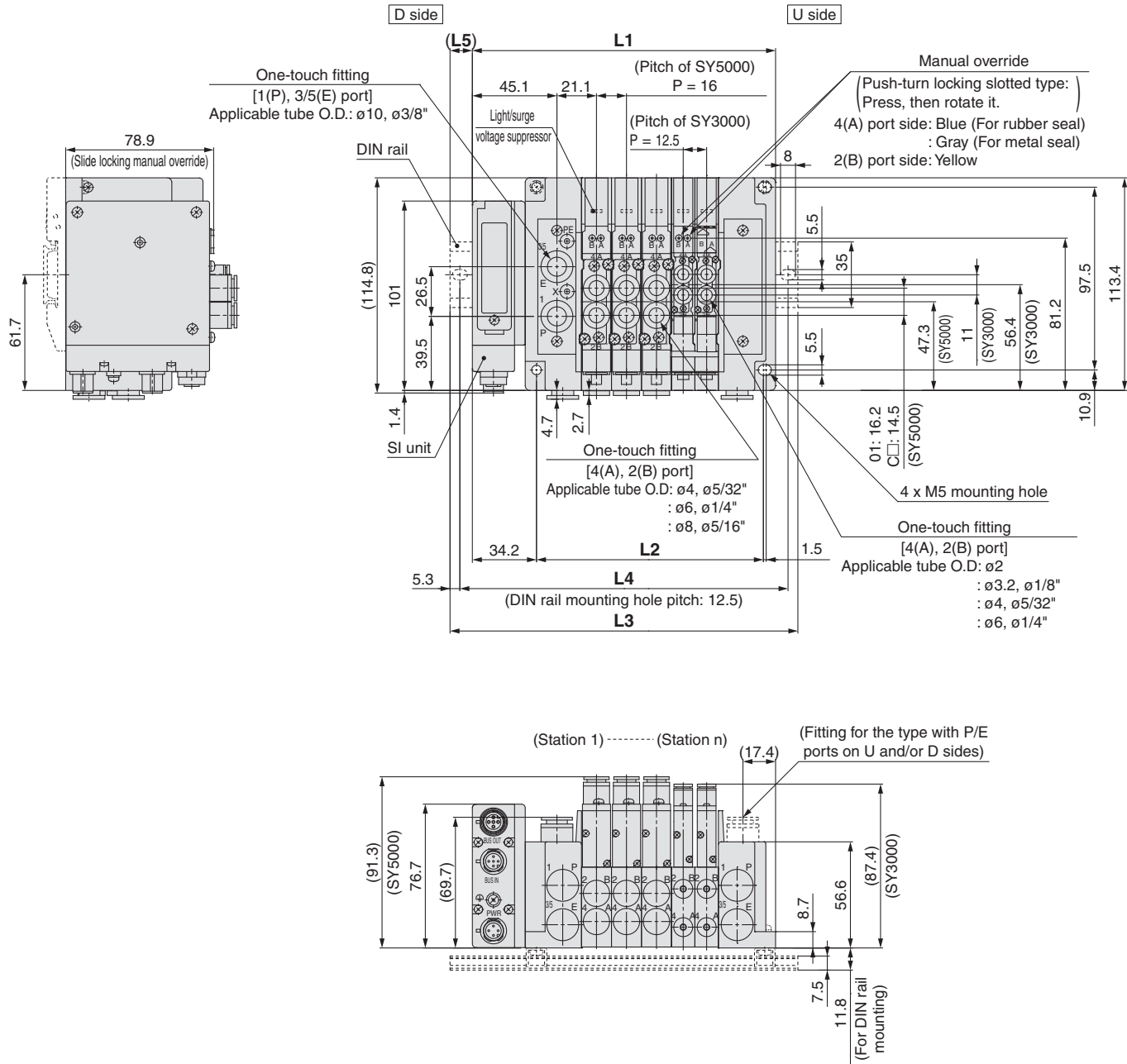


# Series SY3000/5000

## Dimensions: Type 12/Mixed Mounting Type

(mm)

SS5Y5-M12S□□- Stations  $\frac{U}{P}$ (-D)



Note 1) These figures show the "SS5Y5-M12SQA-05D".

Note 2) Refer to page 16 for dimensions of D-sub communication connector, external pilot and built-in silencer.

### EX260 Serial transmission Calculation of dimensions

$$L1 = 12.5 \times n1 + 16 \times n2 + 88.7$$

$$L2 = 12.5 \times n1 + 16 \times n2 + 48$$

$$M = L1/12.5 + 1 \text{ Remove all numbers after the decimal.}$$

$$L3 = 12.5 \times M + 23$$

$$L4 = L3 - 10.5$$

$$L5 = (L3 - L1)/2$$

n1: SY3000 Valve stations

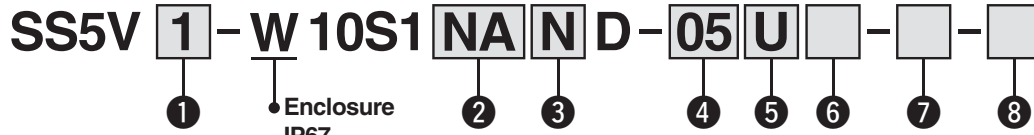
n2: SY5000 Valve stations

# Tie-rod Base: For EX260 Integrated-type (For Output) Serial Transmission System

# Series SV



## How to Order Manifold



\*Refer to Note 1) of the ② SI unit specifications.

### ① Series

1	SV1000
2	SV2000
3	SV3000

### ② SI unit specifications

Symbol	Protocol	Number of outputs	Communication connector
0	Without SI unit		
QA	DeviceNet™	32	M12
QB		16	
NA	PROFIBUS DP	32	M12
NB		16	
NC		32	
ND		16	
VA	CC-Link	32	M12
VB		16	
DA	EtherCAT	32	M12
DB		16	
FA	PROFINET	32	M12
FB		16	
EA	EtherNet/IP™	32	M12
EB		16	

• DIN rail cannot be selected for the product without SI unit.

Note 1) IP40 for the D-sub applicable communication connector specification. (The manifold part number is "SS5V□-10S1NC/ND□□".)

Note 2) For SI unit part number, refer to page 1.

### ③ SI unit output polarity

Nil	Positive common
N	Negative common

Note) Without SI unit, the symbol is nil.

### ⑦ A, B port size (Metric)

Symbol	A, B port	P, E port	Applicable series
C3	ø3.2 One-touch fitting	ø8 One-touch fitting	SV1000
C4	ø4 One-touch fitting		
C6	ø6 One-touch fitting		
C4	ø4 One-touch fitting	ø10 One-touch fitting	SV2000
C6	ø6 One-touch fitting		
C8	ø8 One-touch fitting		
C6	ø6 One-touch fitting	ø12 One-touch fitting	SV3000
C8	ø8 One-touch fitting		
C10	ø10 One-touch fitting		
M	A, B ports mixed		

### A, B port size (Inch)

Symbol	A, B port	P, E port	Applicable series
N1	ø1/8" One-touch fitting	ø5/16" One-touch fitting	SV1000
N3	ø5/32" One-touch fitting		
N7	ø1/4" One-touch fitting		
N3	ø5/32" One-touch fitting	ø3/8" One-touch fitting	SV2000
N7	ø1/4" One-touch fitting		
N9	ø5/16" One-touch fitting		
N7	ø1/4" One-touch fitting	ø3/8" One-touch fitting	SV3000
N9	ø5/16" One-touch fitting		
N11	ø3/8" One-touch fitting		
M	A, B ports mixed		

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

\* The X and PE port size of External pilot type (R, RS) are ø4 (mm) or ø5/32" (inch) for the SV1000/2000 series, and ø6 (mm) or ø1/4" (inch) for the SV3000 series.

### ④ Valve stations

In the case of the 32-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
16	16 stations	Specified layout Note 2) (Available up to 32 solenoids)
02	2 stations	
⋮	⋮	
20	20 stations	

In the case of the 16-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring Note 1)
⋮	⋮	
08	8 stations	Specified layout Note 2) (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

Note 1) Double wiring: single, double, 3-position and 4-position solenoid valves can be used on all manifold stations.

Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that double, 3-position and 4-position valves cannot be used where single solenoid wiring has been specified.)

Note 3) Includes the number of blanking plate assemblies.

### ⑤ P, E port entry

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 20 stations)

### ⑥ SUP/EXH block assembly

Nil	Internal pilot
S Note)	Internal pilot, Built-in silencer
R	External pilot
RS Note)	External pilot, Built-in silencer

Note) When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

### ⑧ Mounting

Nil	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	When a longer DIN rail is desired than the specified stations. (Specify a longer rail than the standard length.)
⋮	⋮	
D20	For 20 stations	

EX260

SY

SV

VQC

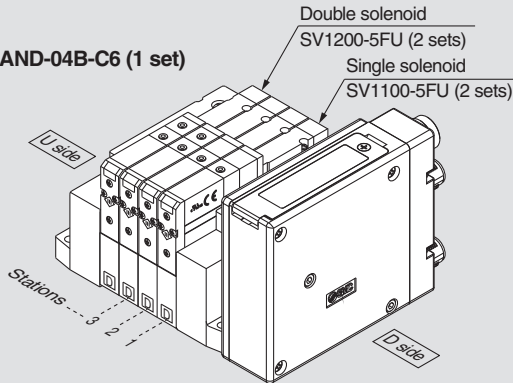
S0700

# Series SV

## How to Order Manifold Assembly

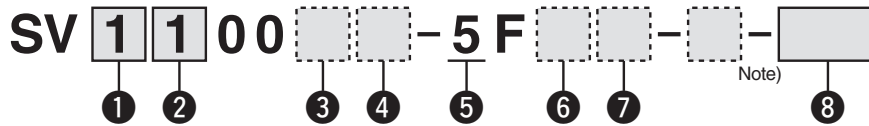
### Example (SV1000)

Manifold  
SS5V1-W10S1NAND-04B-C6 (1 set)



SS5V1-W10S1NAND-04B-C6.....1 set (Manifold part no.)  
\*SV1100-5FU.....2 sets (Single solenoid part no.)  
\*SV1200-5FU.....2 sets (Double solenoid part no.)

## How to Order Valves



### 1 Series

1	SV1000
2	SV2000
3	SV3000

### 2 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
A	4-position dual 3-port valve: N.C./N.C.
B	4-position dual 3-port valve: N.O./N.O.
C	4-position dual 3-port valve: N.C./N.O.

\* 4-position dual 3-port valves are applicable to the SV1000/2000 series only.

### 3 Pilot type

Nil	Internal pilot
R	External pilot

\* External pilot specification is not available for 4-position dual 3-port valves.

### 4 Back pressure check valve

Nil	None
K	Built-in

\* Built-in back pressure check valve type is applicable to the SV1000 series only.  
\* Back pressure check valve is not available for 3-position valve.

Note) Refer to Specific Product Precautions 2 in Best Pneumatics No. 1.

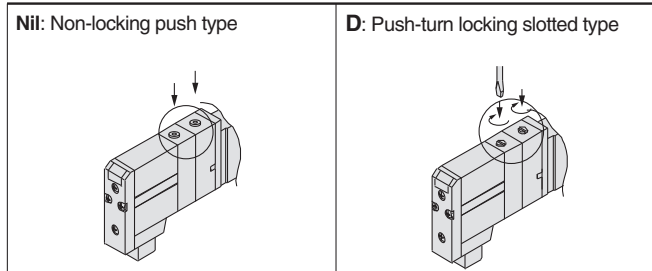
### 5 Rated voltage

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

### 6 Light/surge voltage suppressor

U	With light/surge voltage suppressor
R	With surge voltage suppressor

### 7 Manual override



Note) Available with manifold block for station additions. Refer to Best Pneumatics No. 1.

### 8 Made to Order

Nil	—
X90	Main valve fluororubber (Refer to page 448 in Best Pneumatics No. 1.)

Refer to the SMC website or the SV series in Best Pneumatics No.1 for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.





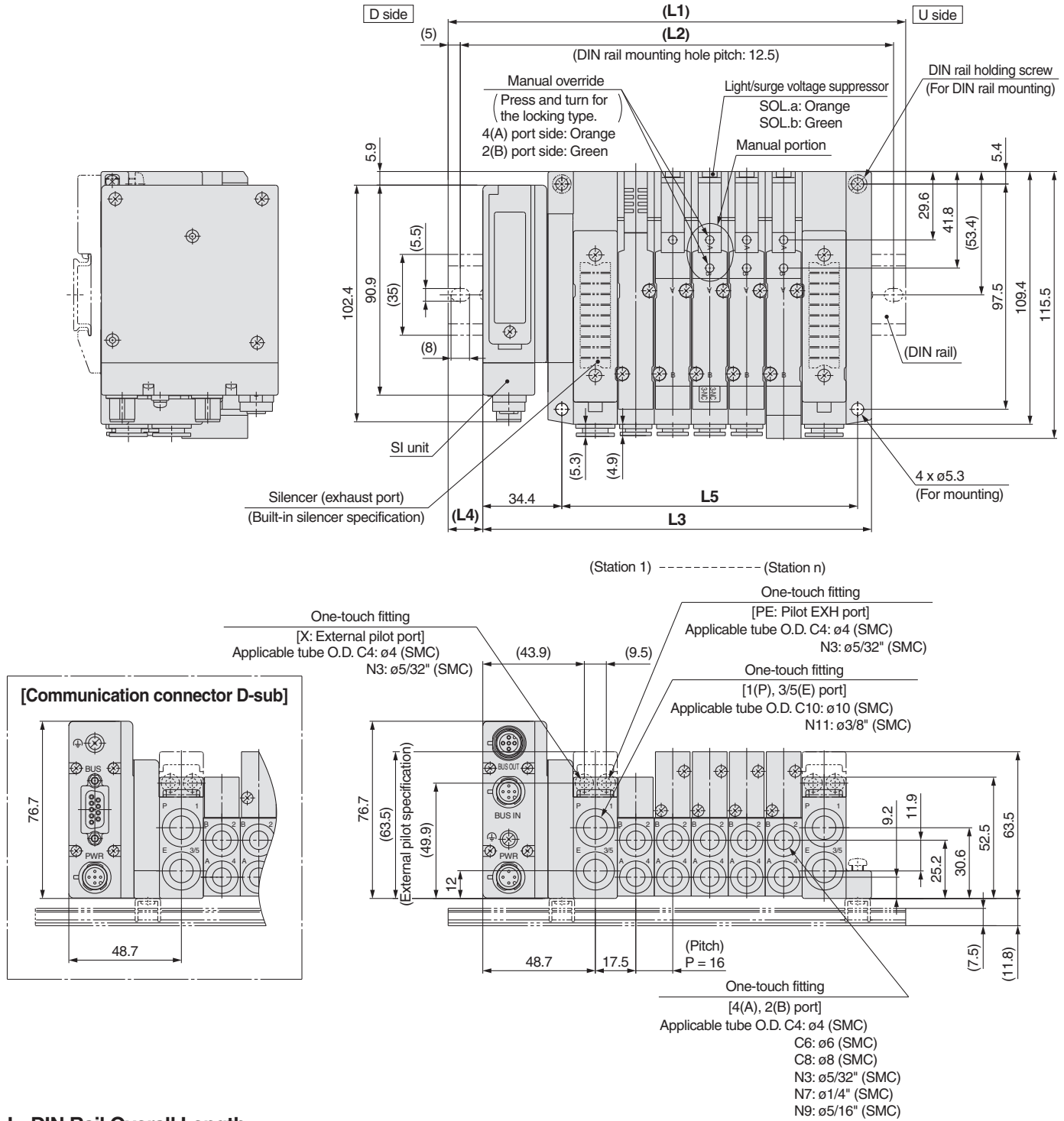
# Series SV

## Dimensions: For EX260 Integrated-type (For Output) Serial Transmission System/Series SV2000

(mm)

### ● Tie-rod base manifold: SS5V2-W10S1□□D- Stations $\frac{U}{D}$ (S, R, RS)- C4, N3 C6, N7 C8, N9 (-D)

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



### L: DIN Rail Overall Length

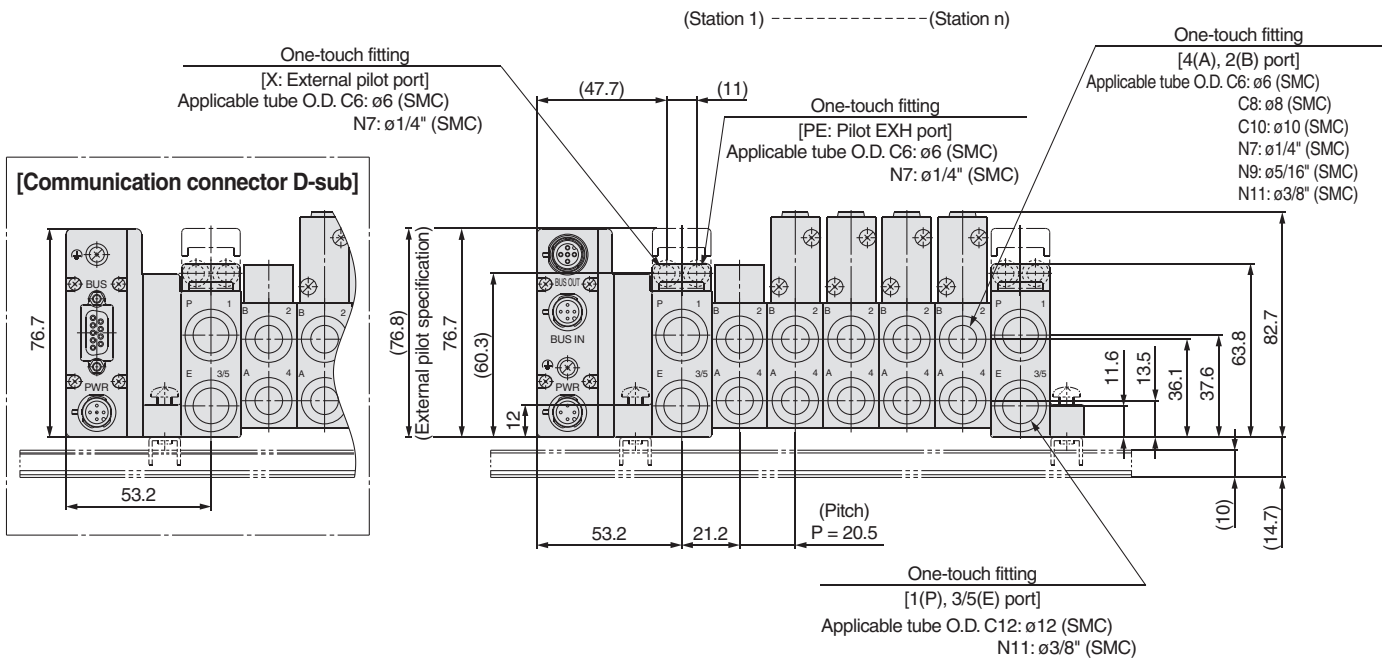
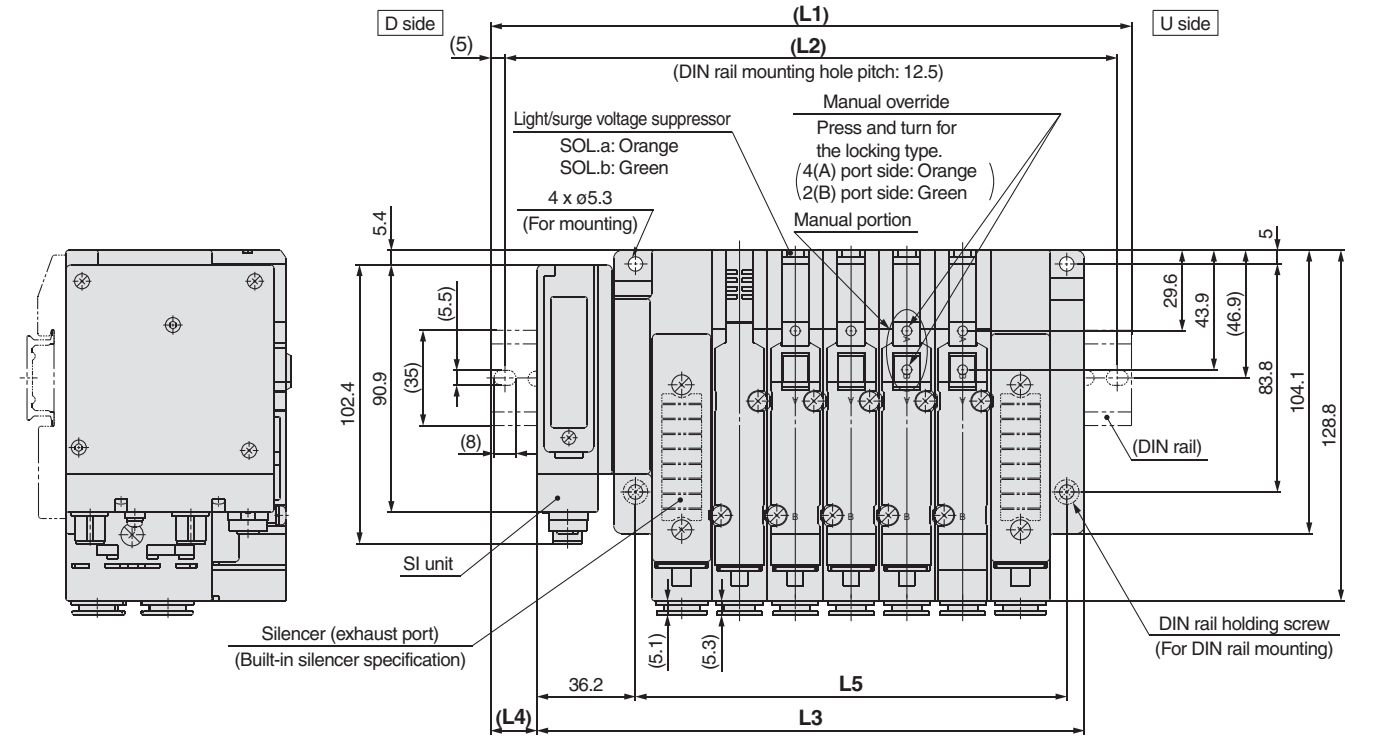
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	148	160.5	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	335.5	360.5	373	385.5	410.5	423	435.5
L2	137.5	150	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	325	350	362.5	375	400	412.5	425
L3	120.2	136.2	152.2	168.2	184.2	200.2	216.2	232.2	248.2	264.2	280.2	296.2	312.2	328.2	344.2	360.2	376.2	392.2	408.2
L4	14	12	16.5	15	13	17.5	16	14	12.5	17	15	13.5	11.5	16	14.5	12.5	17	15.5	13.5
L5	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368

**Dimensions: For EX260 Integrated-type (For Output) Serial Transmission System/Series SV3000**

● Tie-rod base manifold: SS5V3-W10S1□□D - Stations  $\frac{U}{D}$  (S, R, RS)-  $\frac{C6, N7}{C8, N9}{C10, N11}$  (-D) (mm)

- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



**L: DIN Rail Overall Length**

L	n: Stations																		
	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	173	185.5	210.5	235.5	248	273	298	310.5	335.5	348	373	398	410.5	435.5	460.5	473	498	523	535.5
L2	162.5	175	200	225	237.5	262.5	287.5	300	325	337.5	362.5	387.5	400	425	450	462.5	487.5	512.5	525
L3	139.7	160.2	180.7	201.2	221.7	242.2	262.7	283.2	303.7	324.2	344.7	365.2	385.7	406.2	426.7	447.2	467.7	488.2	508.7
L4	16.5	12.5	15	17	13	15.5	17.5	13.5	16	12	14	16.5	12.5	14.5	17	13	15	17.5	13.5
L5	97	117.5	138	158.5	179	199.5	220	240.5	261	281.5	302	322.5	343	363.5	384	404.5	425	445.5	466

Base Mounted

# Plug-in Unit: For EX260 Integrated-type (For Output) Serial Transmission System Series VQC1000



## How to Order Manifold

VV5QC 1 1 - 08 C6 SNA N - B ..... S Kit

1
2
3
4
5
6
7

### 1 Series

1	VQC1000
---	---------

### 2 Manifold model

1	Plug-in unit
---	--------------

### 3 Stations

In the case of the 32-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>
⋮	⋮	
12	12 stations	Specified layout <sup>Note 2)</sup> (Available up to 24 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

In the case of the 16-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>
⋮	⋮	
08	8 stations	Specified layout <sup>Note 2)</sup> (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

Note 1) Double wiring: single, double, 3-position and 4-position solenoid valves can be used on all manifold stations.

Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet.  
(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) Includes the number of blanking plate assemblies.

### 4 Cylinder port size

C3	With ø3.2 One-touch fitting
C4	With ø4 One-touch fitting
C6	With ø6 One-touch fitting
M5	M5 thread
CM	Mixed sizes and with port plug
L3	Top ported elbow with ø3.2 One-touch fitting
L4	Top ported elbow with ø4 One-touch fitting
L6	Top ported elbow with ø6 One-touch fitting
L5	M5 thread
B3	Bottom ported elbow with ø3.2 One-touch fitting
B4	Bottom ported elbow with ø4 One-touch fitting
B6	Bottom ported elbow with ø6 One-touch fitting
B5	M5 thread
LM	Elbow port, mixed sizes
MM <sup>Note 2)</sup>	Mixed size for different types of piping, option installed

Note 1) Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

Note 2) When selecting the mixed size for different types of piping or dual flow fitting assembly, enter "MM" and give instructions in the manifold specification sheet.

Note 3) Symbols for inch sizes are as follows:

- N1: ø1/8"
- N3: ø5/32"
- N7: ø1/4"
- NM: Mixed

The top ported elbow is LN□ and the bottom ported elbow is BN□.

### 6 SI unit output polarity

Nil	Positive common
N	Negative common

### 7 Option

Nil	None
B	With back pressure check valve (All stations) <sup>Note 2)</sup>
D	With DIN rail (Rail length: Standard)
D□	With DIN rail (Rail length: Special) <sup>Note 3)</sup>
K	Special wiring spec. (Except double wiring) <sup>Note 4)</sup>
N	With name plate
R	External pilot <sup>Note 5)</sup>
S	Built-in silencer, Direct exhaust <sup>Note 6)</sup>

Note 1) When two or more symbols are specified, indicate them alphabetically.  
Example: -BRS

Note 2) When the back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position on the manifold specification sheet.

Note 3) For special DIN rail length, indicate "D□".  
(Enter the number of stations inside □.)  
Example: -D08

In this case, stations will be mounted on a DIN rail for 8 stations regardless of the actual number of manifold stations.

The specified number of stations must be larger than the number of stations on the manifold.  
Indicate "-D0" for the option without DIN rail.

Note 4) Specify wiring type of each station on the manifold specification sheet.

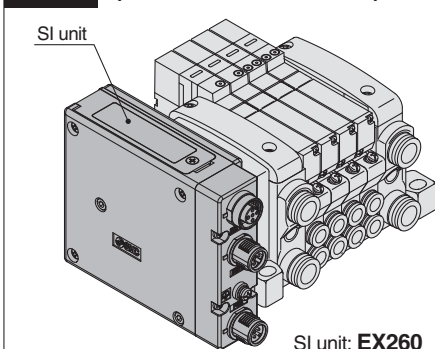
Note 5) For external pilot option, "-R", indicate the external pilot specification "R" for the applicable valves as well.

Note 6) Built-in silencer type does not satisfy IP67.

Note 7) When the "SD0" (Without SI unit) is specified, "-D", "-D□" cannot be selected.

### 5 Kit type

**S** Kit  
(Serial transmission kit (for Output))



SI unit: EX260

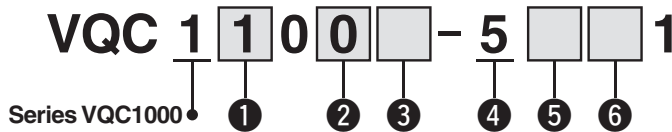
IP40 specification  
IP67 specification

Symbol	Protocol	Number of outputs	Communication connector
SD0		Without SI unit	
SQA	DeviceNet™	32	M12
SQB		16	
SNA	PROFIBUS DP	32	M12
SNB		16	
SNC		32	D-sub <sup>Note 1)</sup>
SND		16	
SVA	CC-Link	32	M12
SVB		16	
SDA	EtherCAT	32	M12
SDB		16	
SFA	PROFINET	32	M12
SFB		16	
SEA	EtherNet/IP™	32	M12
SEB		16	

Note 1) D-sub S kit: IP40 specification (IP67 specification for all other S kits)

Note 2) For SI unit part number, refer to page 1.

How to Order Valves



1 Type of actuation

1	2-position single 
2	2-position double (Metal) 
	2-position double (Rubber) 
3	3-position closed center 
4	3-position exhaust center 
5	3-position pressure center 
A Note)	4-position dual 3-port valve (A) 
B Note)	4-position dual 3-port valve (B) 
C Note)	4-position dual 3-port valve (C) 

Note) Only rubber seal type

2 Seal type

0	Metal seal
1	Rubber seal

3 Function

Nil	Standard (0.4 W)
B	Quick response type (0.95 W)
K Note 2)	High pressure type (145 psi (1.0 MPa), 0.95 W)
N Note 3)	Negative common
R Note 4)	External pilot

Note 1) When two or more symbols are specified, indicate them alphabetically. However, combination of "B" and "K" is not possible.

Note 2) Only metal seal type  
Note 3) When negative common is specified for SI unit, select and mount the valve of negative common.

Note 4) Not applicable for dual 3-port valves

4 Coil voltage

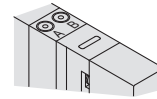
5	24 VDC
---	--------

5 Light/surge voltage suppressor

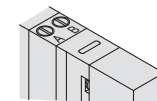
Nil	Yes
-----	-----

6 Manual override

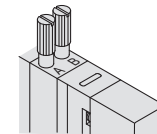
Nil: Non-locking push type (Tool required)



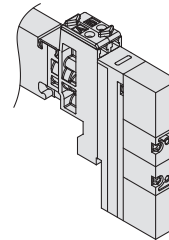
B: Locking type (Tool required)



C: Locking type (Manual)



D: Slide locking type (Manual)



EX260

SY

SV

VQC

S0700

Refer to the SMC website or the VQC1000/2000 series catalog (CAT.NAS11-101) for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.



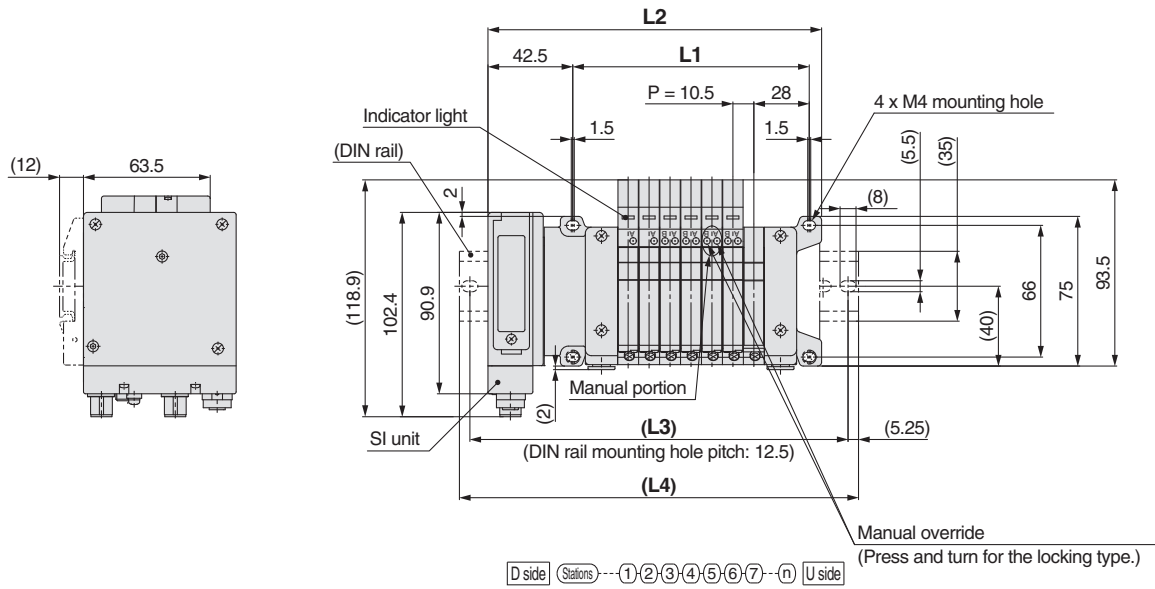
# Series VQC1000

## Kit (Serial transmission) For EX260 Integrated-type (For Output) Serial Transmission System

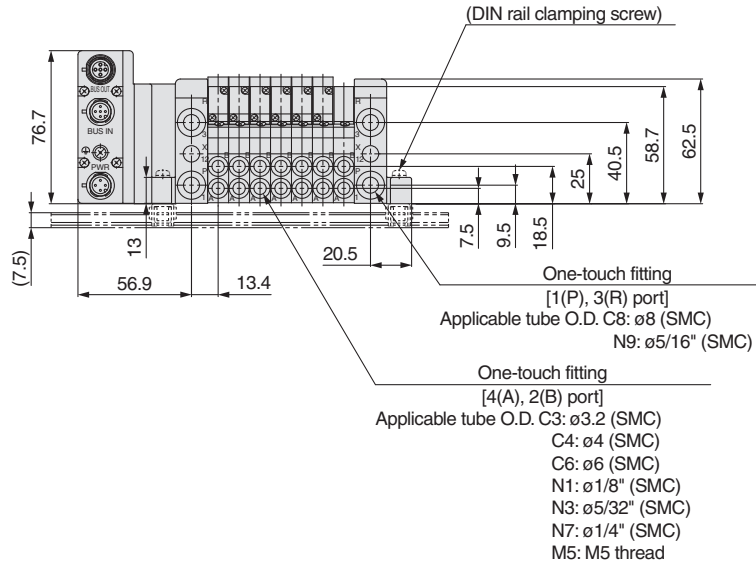
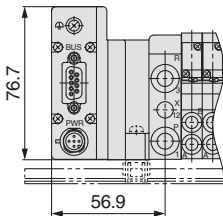
(mm)

VV5QC11

S Kit (Serial transmission kit: EX260)



### [Communication connector D-sub]



n: Stations (Maximum 24 stations)

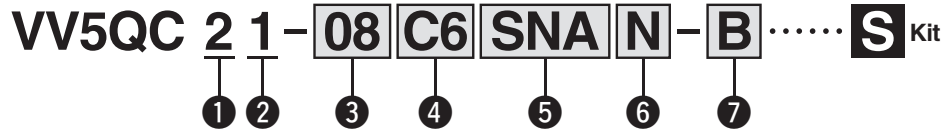
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192	202.5	213	223.5	234	244.5	255	265.5	276	286.5	297
L2	104.2	114.7	125.2	135.7	146.2	156.7	167.2	177.7	188.2	198.7	209.2	219.7	230.2	240.7	251.2	261.7	272.2	282.7	293.2	303.7	314.2	324.7	335.2	345.7
L3	127	139.5	152	164.5	177	177	189.5	202	214.5	227	239.5	239.5	252	264.5	277	289.5	302	314.5	314.5	327	339.5	352	364.5	377
L4	137.5	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5	300	312.5	325	325	337.5	350	362.5	375	387.5



# Plug-in Unit: For EX260 Integrated-type (For Output) Serial Transmission System Series VQC2000



## How to Order Manifold



### 1 Series

2	VQC2000
---	---------

### 2 Manifold model

1	Plug-in unit
---	--------------

### 3 Stations

In the case of the 32-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>
⋮	⋮	
12	12 stations	Specified layout <sup>Note 2)</sup> (Available up to 24 solenoids)
02	2 stations	
⋮	⋮	
24	24 stations	

In the case of the 16-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring <sup>Note 1)</sup>
⋮	⋮	
08	8 stations	Specified layout <sup>Note 2)</sup> (Available up to 16 solenoids)
02	2 stations	
⋮	⋮	
16	16 stations	

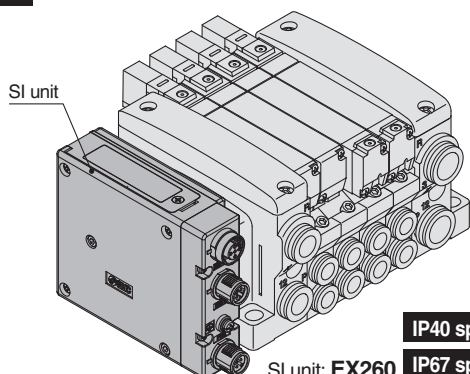
Note 1) Double wiring: single, double, 3-position and 4-position solenoid valves can be used on all manifold stations. Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) Includes the number of blanking plate assemblies.

### 5 Kit type

**S** Kit  
(Serial transmission kit (for Output))



### 4 Cylinder port size

C4	ø4 One-touch fitting
C6	ø6 One-touch fitting
C8	ø8 One-touch fitting
CM	Mixed sizes and with port plug
L4	Top ported elbow with ø4 One-touch fitting
L6	Top ported elbow with ø6 One-touch fitting
L8	Top ported elbow with ø8 One-touch fitting
B4	Bottom ported elbow with ø4 One-touch fitting
B6	Bottom ported elbow with ø6 One-touch fitting
B8	Bottom ported elbow with ø8 One-touch fitting
LM	Elbow port, mixed sizes
MM <sup>Note 2)</sup>	Mixed size for different types of piping, option installed

Note 1) Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".

Note 2) When selecting the mixed size for different types of piping or dual flow fitting assembly, enter "MM" and give instructions in the manifold specification sheet.

Note 3) Symbols for inch sizes are as follows:

- N3: ø5/32"
- N7: ø1/4"
- N9: ø5/16"
- NM: Mixed

The top ported elbow is LN□ and the bottom ported elbow is BN□.

### 6 SI unit output polarity

Nil	Positive common
N	Negative common

### 7 Option

Nil	None
B	With back pressure check valve (All stations) <sup>Note 2)</sup>
D	With DIN rail (Rail length: Standard)
D□	With DIN rail (Rail length: Special) <sup>Note 3)</sup>
K	Special wiring spec. (Except double wiring) <sup>Note 4)</sup>
N	With name plate
R	External pilot <sup>Note 5)</sup>
S	Built-in silencer, Direct exhaust <sup>Note 6)</sup>
T	P and R ports included on both sides of the U side <sup>Note 7)</sup>

Note 1) When two or more symbols are specified, indicate them alphabetically. Example: -BRS

Note 2) When the back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position on the manifold specification sheet.

Note 3) For special DIN rail length, indicate "D□". (Enter the number of stations inside □.) Example: -D08

In this case, stations will be mounted on a DIN rail for 8 stations regardless of the actual number of manifold stations. The specified number of stations must be larger than the number of stations on the manifold. Indicate "D0" for the option without DIN rail.

Note 4) Specify wiring type of each station on the manifold specification sheet.

Note 5) For external pilot option, "-R", indicate the external pilot specification "R" for the applicable valves as well.

Note 6) Built-in silencer type does not satisfy IP67.

Note 7) 2 ports for SUP and EXH are included on both sides of U side (cylinder port and coil side) with ø12 One-touch fittings.

Note 8) When the "SD0" (Without SI unit) is specified, "-D", "-D□" cannot be selected.

Symbol	Protocol	Number of outputs	Communication connector
SD0	Without SI unit		
SQA	DeviceNet™	32	M12
SQB		16	
SNA	PROFIBUS DP	32	M12
SNB		16	
SNC		32	D-sub <sup>Note 1)</sup>
SND		16	
SVA	CC-Link	32	M12
SVB		16	
SDA	EtherCAT	32	M12
SDB		16	
SFA	PROFINET	32	M12
SFB		16	
SEA	EtherNet/IP™	32	M12
SEB		16	

Note 1) D-sub S kit: IP40 specification (IP67 specification for all other S kits)

Note 2) For SI unit part number, refer to page 1.

VQC 2 1 0 0    - 5       1

Series VQC2000    ①    ②    ③    ④    ⑤    ⑥

### ① Type of actuation

<b>1</b>	2-position single 
<b>2</b>	2-position double (Metal) 
	2-position double (Rubber) 
<b>3</b>	3-position closed center 
	3-position exhaust center 
<b>4</b>	3-position pressure center 
	4-position dual 3-port valve (A) 
<b>A</b> Note)	4-position dual 3-port valve (B) 
	4-position dual 3-port valve (C) 

Note) Only rubber seal type

### ② Seal type

<b>0</b>	Metal seal
<b>1</b>	Rubber seal

### ③ Function

Nil	Standard (0.4 W)
<b>B</b>	Quick response type (0.95 W)
<b>K</b> Note 2)	High pressure type (145 psi (1.0 MPa), 0.95 W)
<b>N</b> Note 3)	Negative common
<b>R</b> Note 4)	External pilot

Note 1) When two or more symbols are specified, indicate them alphabetically. However, combination of "B" and "K" is not possible.

Note 2) Only metal seal type

Note 3) When negative common is specified for SI unit, select and mount the valve of negative common.

Note 4) Not applicable for dual 3-port valves

### ④ Coil voltage

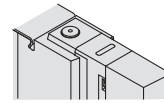
<b>5</b>	24 VDC
----------	--------

### ⑤ Light/surge voltage suppressor

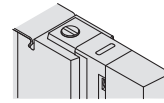
Nil	Yes
-----	-----

### ⑥ Manual override

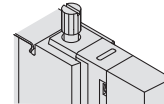
Nil: Non-locking push type  
(Tool required)



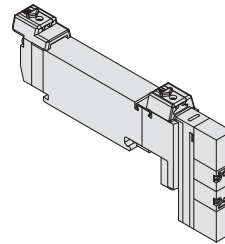
B: Locking type  
(Tool required)



C: Locking type  
(Manual)



D: Slide locking type  
(Manual)



Refer to the SMC website or the VQC1000/2000 series catalog (CAT.NAS11-101) for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.





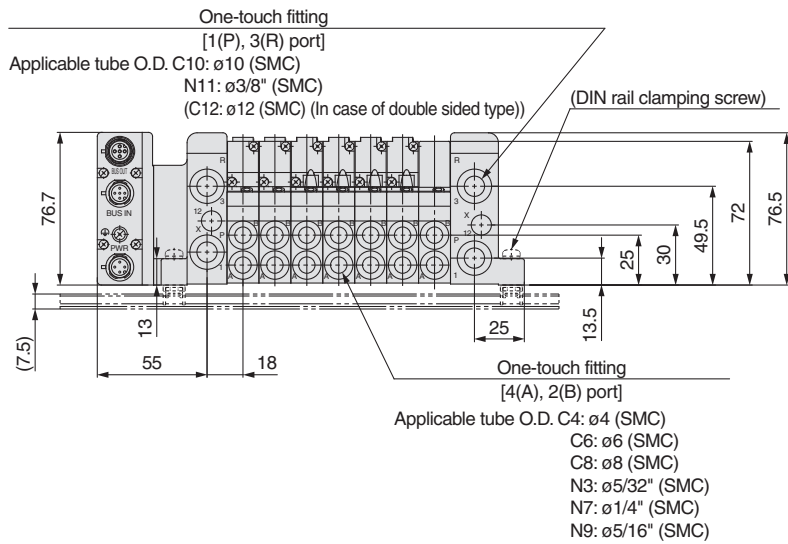
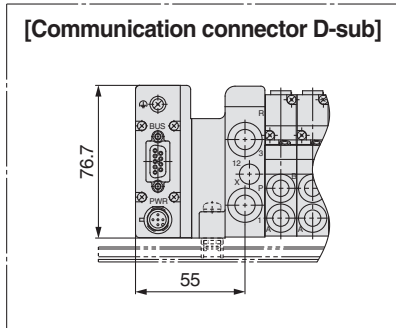
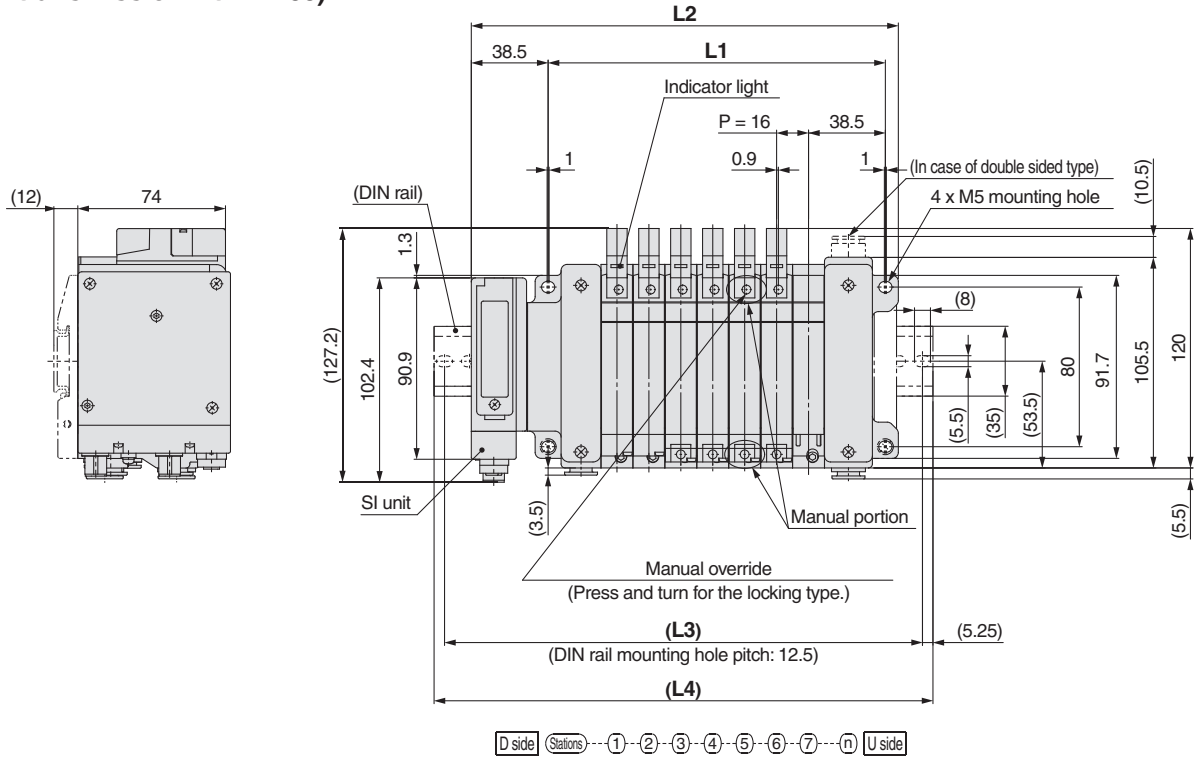
# Series VQC2000

## Kit (Serial transmission) For EX260 Integrated-type (For Output) Serial Transmission System

(mm)

VV5QC21

S Kit (Serial transmission kit: EX260)



n: Stations (Maximum 24 stations)

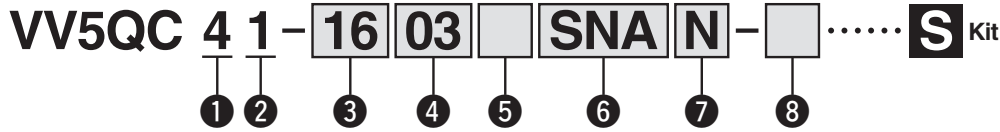
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	73	89	105	121	137	153	169	185	201	217	233	249	265	281	297	313	329	345	361	377	393	409	425	441
L2	118	134	150	166	182	198	214	230	246	262	278	294	310	326	342	358	374	390	406	422	438	454	470	486
L3	139.5	164.5	177	189.5	202	227	239.5	252	277	289.5	302	314.5	339.5	352	364.5	389.5	402	414.5	427	452	464.5	477	489.5	514.5
L4	150	175	187.5	200	212.5	237.5	250	262.5	287.5	300	312.5	325	350	362.5	375	400	412.5	425	437.5	462.5	475	487.5	500	525



# Plug-in Unit: For EX260 Integrated-type (For Output) Serial Transmission System Series VQC4000



## How to Order Manifold



### 1 Series

4	VQC4000
---	---------

### 2 Manifold model

1	Plug-in unit
---	--------------

### 4 Cylinder port size

C8	With ø8 One-touch fitting
C10	With ø10 One-touch fitting
C12	With ø12 One-touch fitting
02	Rc1/4
03	Rc3/8
B	Bottom ported Rc1/4
CM	Mixed

Note 1) Indicate the sizes on the manifold specification sheet in the case of "CM".

Note 2) Symbols for inch sizes are as follows:  
<In the case of One-touch fittings>

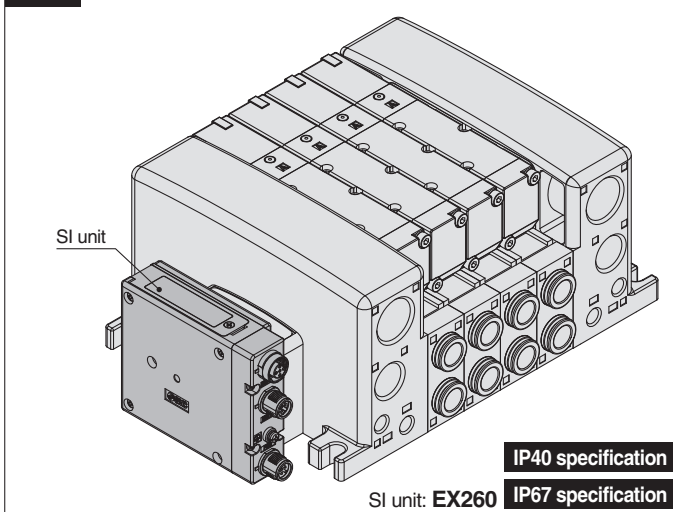
- N7: ø1/4"
- N9: ø5/16"
- N11: ø3/8"
- NM: Mixed

### 5 Thread type

Nil	Rc
F	G
T	NPT/NPTF

### 6 Kit type

**S** Kit  
(Serial transmission kit (for Output))



### 3 Stations

In the case of the 32-output SI unit

Symbol	Stations	Note
01	1 station	Double wiring <sup>Note 1)</sup>
⋮	⋮	
12	12 stations	Specified layout <sup>Note 2)</sup> (Available up to 24 solenoids)
01	1 station	
⋮	⋮	
16	16 stations	

In the case of the 16-output SI unit

Symbol	Stations	Note
01	1 station	Double wiring <sup>Note 1)</sup>
⋮	⋮	
08	8 stations	Specified layout <sup>Note 2)</sup> (Available up to 16 solenoids)
01	1 station	
⋮	⋮	
16	16 stations	

Note 1) Double wiring: single, double, 3-position and 4-position solenoid valves can be used on all manifold stations.  
Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet.  
(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) Includes the number of blanking plate assemblies.

### 7 SI unit output polarity

Nil	Positive common
N	Negative common

### 8 Option

Nil	None
S	Built-in silencer, Direct exhaust <sup>Note 1)</sup>
K	Special wiring spec. (Except double wiring) <sup>Note 2)</sup>

Note 1) Built-in silencer type does not satisfy IP67.

Note 2) Specify wiring type of each station on the manifold specification sheet.

Symbol	Protocol	Number of outputs	Communication connector
SD0A		Without SI unit	
SQA	DeviceNet™	32	M12
SQB		16	
SNA	PROFIBUS DP	32	M12
SNB		16	
SNC		32	D-sub <sup>Note 1)</sup>
SND		16	
SVA	CC-Link	32	M12
SVB		16	
SDA	EtherCAT	32	M12
SDB		16	
SFA	PROFINET	32	M12
SFB		16	
SEA	EtherNet/IP™	32	M12
SEB		16	

Note 1) D-sub S kit: IP40 specification (IP67 specification for all other S kits)

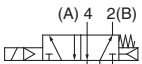
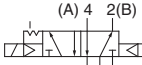
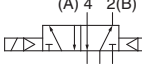
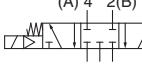
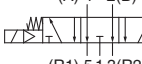
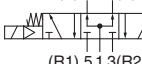
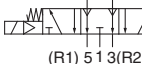
Note 2) For SI unit part number, refer to page 1.

## How to Order Valves

VQC 4 1 0 0 - 5 - -

Series VQC4000 • ① ② ③ ④ ⑤ ⑥

### ① Type of actuation

1	2-position single (A) 4 2(B)  (R1) 5 1 3(R2) (P)
	2-position double (Metal) (A) 4 2(B)  (R1) 5 1 3(R2) (P)
2	2-position double (Rubber) (A) 4 2(B)  (R1) 5 1 3(R2) (P)
	3-position closed center (A) 4 2(B)  (R1) 5 1 3(R2) (P)
3	3-position exhaust center (A) 4 2(B)  (R1) 5 1 3(R2) (P)
4	3-position pressure center (A) 4 2(B)  (R1) 5 1 3(R2) (P)
5	3-position double check (A) 4 2(B)  (R1) 5 1 3(R2) (P)

### ② Seal type

0	Metal seal
1	Rubber seal

### ③ Function

Nil	Standard (1 W)
R	External pilot
Y <sup>Note 2)</sup>	Low wattage type (0.5 W)

Note 1) When two or more symbols are specified, indicate them alphabetically.

Note 2) Select "Y" when a valve is continuously energized for long periods of time.

### ④ Coil voltage

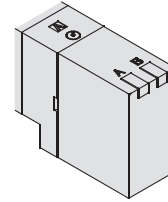
5	24 VDC
---	--------

### ⑤ Light/surge voltage suppressor

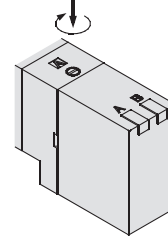
Nil	Yes
E	Without light, with surge voltage suppressor

### ⑥ Manual override

Nil: Non-locking push type  
(Tool required)



B: Locking type  
(Tool required)



Refer to the SMC website or the VQC4000 series in Best Pneumatics No.1 for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.

EX260

SY

SV

VQC

S0700



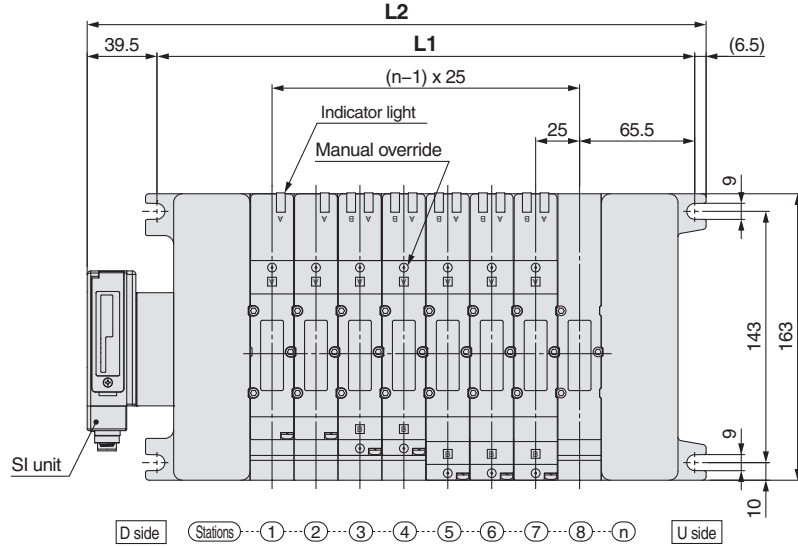
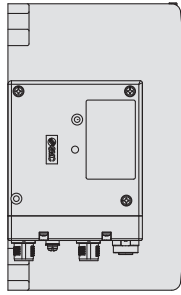
# VQC4000

## Kit (Serial transmission) For EX260 Integrated-type (For Output) Serial Transmission System

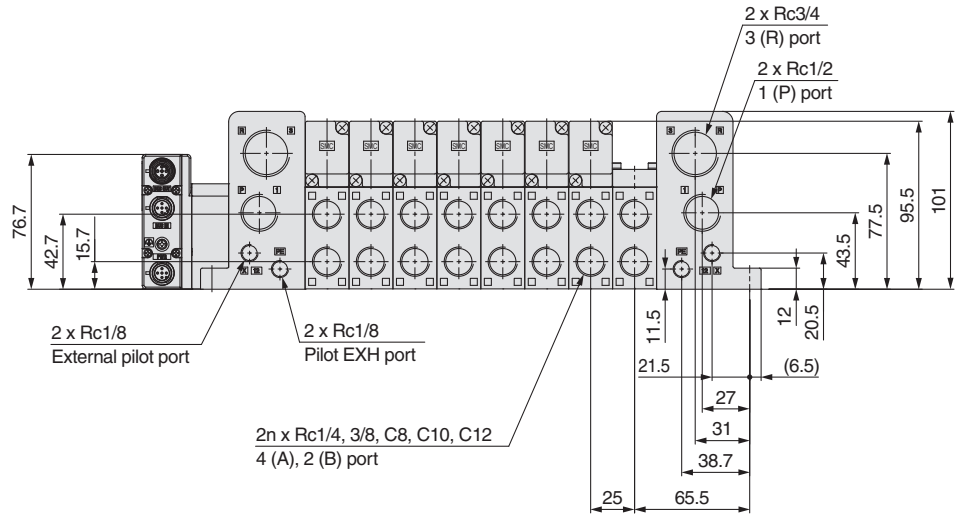
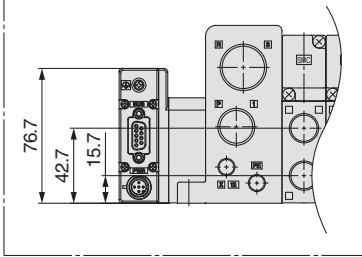
(mm)

VV5QC41

S Kit (Serial transmission kit: EX260)



### [Communication connector D-sub]



n: Stations (Maximum 16 stations)

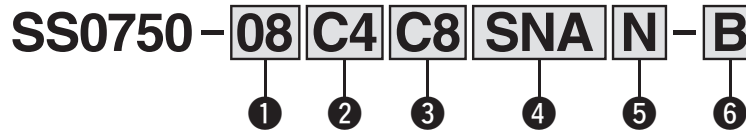
L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2	177	202	227	252	277	302	327	352	377	402	427	452	477	502	527	552

# Plug-in Manifold Stacking Base S Kit (Serial Transmission): For EX260 Integrated-type (For Output) Serial Transmission System

## Series S0700



### How to Order Manifold



#### 1 Stations

In the case of the 32-output SI unit

Symbol	Stations	Note
01	1 station	Double wiring <sup>Note 1)</sup>
⋮	⋮	
16	16 stations	
01	1 station	Specified layout <sup>Note 2)</sup> (Available up to 32 solenoids)
⋮	⋮	
24	24 stations	

In the case of the 16-output SI unit

Symbol	Stations	Note
01	1 station	Double wiring <sup>Note 1)</sup>
⋮	⋮	
08	8 stations	
01	1 station	Specified layout <sup>Note 2)</sup> (Available up to 16 solenoids)
⋮	⋮	
16	16 stations	

Note 1) Double wiring: single, double, 3-position and 4-position solenoid valves can be used on all manifold stations. Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet.  
(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Note 3) Includes the number of blanking plate assemblies.

#### 2 Cylinder port size

Symbol	Port size	
C2	With ø2 One-touch fitting	Metric
C3	With ø3.2 One-touch fitting	
C4	With ø4 One-touch fitting	
CM	Mixed sizes and with port plug <sup>Note)</sup>	
N1	With ø1/8" One-touch fitting	Inch
N3	With ø5/32" One-touch fitting	
NM	Mixed sizes and with port plug <sup>Note)</sup>	

Note) Indicate the sizes on the manifold specification sheet in the case of "CM", "NM".

#### 3 P, R port size

Symbol	Port size	
Nil	With ø8 One-touch fitting <sup>Note)</sup>	Metric
C6	With ø6 One-touch fitting	
C8	With ø8 One-touch fitting	
N7	With ø1/4" One-touch fitting	Inch
N9	With ø5/16" One-touch fitting	

Note) The cylinder port is ø5/16" when measured in inches.

#### 4 Kit type

Symbol	Protocol	Number of outputs	Communication connector
SD0	Without SI unit		
SQA	DeviceNet™	32	M12
SQB		16	
SNA	PROFIBUS DP	32	M12
SNB		16	
SNC		32	
SND		16	
SVA	CC-Link	32	M12
SVB		16	
SDA	EtherCAT	32	M12
SDB		16	
SFA	PROFINET	32	M12
SFB		16	
SEA	EtherNet/IP™	32	M12
SEB		16	

Note 1) The maximum number of stations is determined by the total number of solenoids.

For mixed single and double wirings, enter "-K" to the order code options.

Note 2) For SI unit part number, refer to page 1.

Type of actuation	Single	Double, Dual 3-port
Number of solenoids	1	2

#### 5 SI unit output polarity

Nil	Positive common
N	Negative common

#### 6 Option

Symbol	Option
Nil	None
B <sup>Note 2)</sup>	With back pressure check valve (All stations)
D	With DIN rail (Rail length: Standard)
D0	Without DIN rail (With bracket)
D□ <sup>Note 3)</sup>	With DIN rail (Rail length specified, □: Stations)
K <sup>Note 4)</sup>	Special wiring specifications (Except double wiring)
N	With name plate
R <sup>Note 5)</sup>	External pilot
S	Built-in silencer

Note 1) When two or more options are specified, indicate them alphabetically.

Example) -BKN

Note 2) When the back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position on the manifold specification sheet.

Note 3) The available number of stations is larger than the number of manifold stations.

Note 4) Indicate the wiring specifications for mixed single and double wirings.

Note 5) Refer to the S0700 series catalog (CAT.NAS11-88) for details.

\* Refer to the S0700 series catalog (CAT.NAS11-88) for manifold optional parts.

\* Refer to the S0700 series catalog (CAT.NAS11-88) for manifold exploded view.

\* When the "SD0" (Without SI unit) is specified, "-D", "-D□" cannot be selected.

EX260

SY

SV

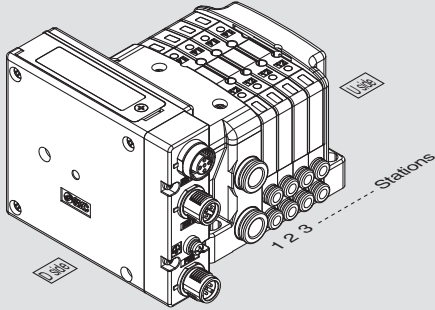
VQC

S0700

# Series S0700

## How to Order Manifold Assembly

### Example (Serial transmission kit)



SS0750-04C4SNAN ...1 set – Manifold base part no.  
 \*S0720-5..... 4 sets – Valve part no. (Stations 1 to 4)  
 \* Prefix the asterisk to the part nos. of the solenoid valve, etc.  
 Write sequentially from the 1st station on the D side.  
 When part nos. written collectively are complicated, specified on the manifold specification sheet.

- Specify the part numbers for valves and options together beneath the manifold base part number.

## How to Order Valves

S07 **1** 0 **□** - 5

### Type of actuation

Symbol	Port size
<b>1</b>	2-position single
<b>2</b>	2-position double
<b>A</b>	4-position dual 3-port (N.C. + N.C.) [Exhaust center]
<b>B</b>	4-position dual 3-port (N.O. + N.O.) [Pressure center]
<b>C</b>	4-position dual 3-port (N.C. + N.O.)

Note) Refer to the S0700 series catalog (CAT.NAS11-88) for symbol.

• Voltage: 24 VDC

### Function

Symbol	Specification
<b>Nil</b>	Standard
<b>R</b>	External pilot <sup>Note)</sup>

Note) Not applicable for dual 3-port valves

• Base mounted plug-in

Refer to the SMC website or the S0700 series catalog (CAT.NAS11-88) for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.

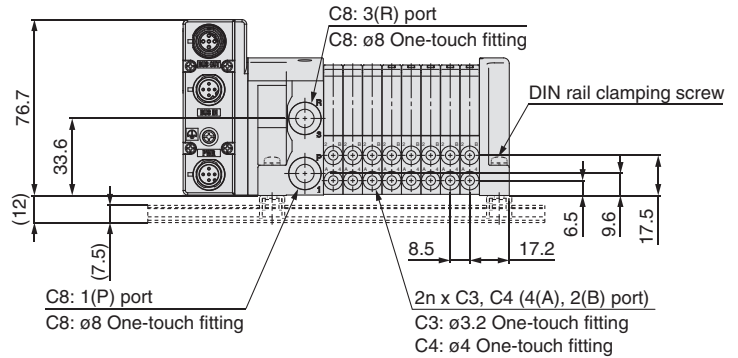
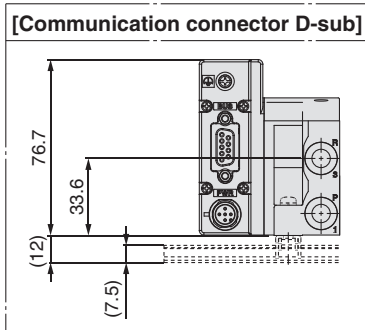
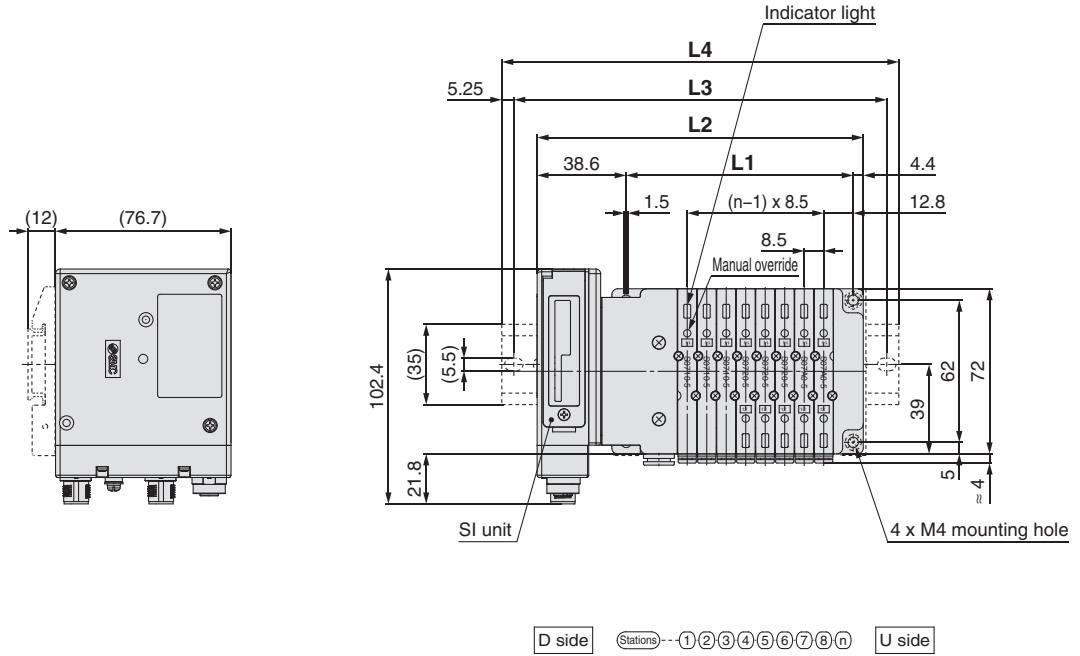
# Plug-in Manifold Stacking Base S Kit (Serial Transmission): For EX260 Integrated-type (For Output) Serial Transmission System **Series S0700**

## Dimensions

(mm)

SS0750

S Kit (Serial transmission kit: EX260)



## Dimensions

Formula  $L1 = 8.5n + 31$ ,  $L2 = 8.5n + 74$  n: Station (Maximun 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	39.5	48	56.5	65	73.5	82	90.5	99	107.5	116	124.5	133	141.5	150	158.5	167
L2	82.5	91	99.5	108	116.5	125	133.5	142	150.5	159	167.5	176	184.5	193	201.5	210
L3	112.5	112.5	125	137.5	137.5	150	162.5	162.5	175	187.5	187.5	200	212.5	212.5	225	237.5
L4	123	123	135.5	148	148	160.5	173	173	185.5	198	198	210.5	223	223	235.5	248

EX260

SY

SV

VQC

S0700





# Series EX260 Specific Product Precautions 1

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" for 3/4/5 Port Solenoid Valve Precautions. The Operation Manual can be downloaded from the SMC website, <http://www.smcworld.com>

## Design/Selection

### Warning

- 1. Use this product within the specification range.**  
Using beyond the specified specifications range can cause fire, malfunction, or damage to the system.  
Check the specifications before operation.
- 2. When using for an interlock circuit:**
  - Provide a multiple interlock system which is operated by another system (such as mechanical protection function).
  - Perform an inspection to confirm that it is working properly.

This may cause possible injury due to malfunction.

### Caution

- 1. When applicable to UL, use a Class 2 power supply unit conforming to UL1310 for direct current power supply.**
- 2. Use this product within the specified voltage range.**  
Using beyond the specified voltage range is likely to cause the units and connecting devices to be damaged or to malfunction.
- 3. Do not install a unit in a place where it can be used as a foothold.**  
Applying any excessive load such as stepping on the unit by mistake or placing a foot on it, will cause it to break.
- 4. Keep the surrounding space free for maintenance.**  
When designing a system, take into consideration the amount of free space needed for performing maintenance.
- 5. Do not remove the name plate.**  
Improper maintenance or incorrect use of operation manual can cause failure and malfunction. Also, there is a risk of losing conformity with safety standards.

## Mounting

### Caution

- 1. When handling and assembling units:**
  - Do not apply excessive force to the unit when disassembling.  
The connecting portions of the unit are firmly joined with seals.
  - When joining units, take care not to get fingers caught between units.  
Injury can result.
- 2. Do not drop, bump, or apply excessive impact.**  
Otherwise, the unit can become damaged, malfunction, or fail to function.
- 3. Observe the tightening torque range.**  
Tightening outside of the allowable torque range will likely damage the screw.  
IP67 cannot be guaranteed if the screws are not tightened to the specified torque.

## Mounting

### Caution

- 4. When lifting a large size manifold solenoid valve unit, take care to avoid causing stress to the valve connection joint.**  
The connection parts of the unit may be damaged. Because the unit may be heavy, carrying and installation should be performed by more than one operator to avoid strain or injury.
- 5. When placing a manifold, mount it on a flat surface.**  
Torsion in the whole manifold can lead to trouble such as air leakage or defective insulation.

## Wiring

### Caution

- 1. Check the grounding to maintain the safety of the reduced wiring system and for anti-noise performance.**  
Provide a specific grounding as close to the unit as possible to minimize the distance to grounding.
- 2. Avoid repeatedly bending or stretching the cable and applying a heavy object or force to it.**  
Wiring applying repeated bending and tensile stress to the cable can break the circuit.
- 3. Avoid miswiring.**  
If miswired, there is a danger of malfunction or damage to the reduced wiring system.
- 4. Do not wire while energizing the product.**  
There is a danger of malfunction or damage to the reduced wiring system or output device.
- 5. Avoid wiring the power line and high pressure line in parallel.**  
Noise or surge produced by signal line resulting from the power line or high pressure line could cause malfunction. Wiring of the reduced wiring system or output device and the power line or high pressure line should be separated from each other.
- 6. Check the wiring insulation.**  
Defective insulation (contact with other circuits, improper insulation between terminals, etc.) may cause damage to the reduced wiring system or output device due to excessive voltage and current.
- 7. When a reduced wiring system is installed in machinery/equipment, provide adequate protection against noise by using noise filters, etc.**  
Noise in signal lines may cause malfunction.





## Series EX260

# Specific Product Precautions 2

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" for 3/4/5 Port Solenoid Valve Precautions. The Operation Manual can be downloaded from the SMC website, <http://www.smcworld.com>

### Wiring

#### Caution

- 8. When connecting wires of output device, prevent water, solvent or oil from entering inside the connector section.**

This can cause damage, equipment failure or malfunction.

- 9. Avoid wiring patterns in which excessive stress is applied to the connector.**

This may cause malfunction or damage to the unit due to contact failure.

- 10. Select connectors that are  $\phi 16$  or less if mounting manifolds directly using fieldwireable connectors for SI unit power supply wiring.**

Using large diameter connectors causes interference with the mounting surface.

The following cables with connectors are recommended.

■ For EX260-SPR□/-SDN□/-SEC□/-SPN□/-SEN□

<Cable with connector>

- EX500-AP□□□□-□
- PCA-1401804/-1401805/-1401806

■ For EX260-SMJ□

<Cable with connector>

- EX9-AC□□□□-1
- PCA-1401807/-1401808/-1401809

### Operating Environment

#### Warning

- 1. Do not use in an atmosphere containing an inflammable gas or explosive gas.**

Use in such an atmosphere is likely to cause a fire or explosion. This system is not explosion-proof.

#### Caution

- 1. Select the proper type of enclosure according to the environment of operation.**

IP67 is achieved when the following conditions are met.

- 1) Provide appropriate wiring between all units using electrical wiring cables, communication connectors and cables with M12 connectors.
- 2) Suitable mounting of each unit and manifold valve.
- 3) Be sure to mount a seal cap on any unused connectors.

If using in an environment that is exposed to water splashes, please take measures such as using a cover.

When the enclosure is IP40, do not use in an operating environment or atmosphere where it may come in contact with corrosive gas, chemical agents, seawater, water, or water vapor.

When connected to the EX260-SPR5/6/7/8, manifold enclosure is IP40.

### Operating Environment

#### Caution

- 2. Provide adequate protection when operating in locations such as the following.**

Failure to do so may cause damage or malfunction.

The effect of countermeasures should be checked in individual equipment and machine.

- 1) Where noise is generated by static electricity, etc.
- 2) Where there is a strong electric field
- 3) Where there is a danger of exposure to radiation
- 4) When in close proximity to power lines or high voltage lines

- 3. Do not use in an environment where oil and chemicals are used.**

Operating in environments with coolants, cleaning solvents, various oils or chemicals may cause adverse effects (damage, malfunction) to the unit even in a short period of time.

- 4. Do not use in an environment where the product could be exposed to corrosive gas or liquid.**

This may damage the unit and cause it to malfunction.

- 5. Do not use in locations with sources of surge generation.**

Installation of the unit in an area around the equipment (electromagnetic lifters, high frequency induction furnaces, welding machine, motors, etc.), which generates the large surge voltage could cause to deteriorate an internal circuitry element of the unit or result in damage. Implement countermeasures against the surge from the generating source, and avoid touching the lines with each other.

- 6. The product is CE marked, but not immune to lightning strikes. Take measures against lightning strikes in your system.**

- 7. Keep dust, wire scraps and other extraneous material from getting inside the product.**

This may cause malfunction or damage.

- 8. Mount the unit in such locations, where no vibration or shock is affected.**

This may cause malfunction or damage.

- 9. Do not use in places where there are cyclic temperature changes.**

In case that the cyclic temperature is beyond normal temperature changes, the internal unit is likely to be adversely affected.

- 10. Do not use in direct sunlight.**

Do not use in direct sunlight. It may cause malfunction or damage.

- 11. Use this product within the specified ambient temperature range.**

This may cause malfunction.

- 12. Do not use in places where there is radiated heat around it.**

Such a place is likely to cause malfunction.



## Series EX260

# Specific Product Precautions 3

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" for 3/4/5 Port Solenoid Valve Precautions. The Operation Manual can be downloaded from the SMC website, <http://www.smcworld.com>

### Adjustment/Operation

#### Warning

1. Do not perform operation or setting with wet hands.

There is a risk of electrical shock.

#### Caution

1. Use a watchmakers' screwdriver with thin blade for the setting of each switch of the SI unit.

When setting the switch, do not touch other unrelated parts.

This may cause parts damage or malfunction due to a short circuit.

2. Provide adequate setting for the operating conditions.

Failure to do so could result in malfunction.

Refer to the operation manual for setting of the switches.

3. For details on programming and address setting, refer to the manual from the PLC manufacturer.

The content of programming related to protocol is designed by the manufacturer of the PLC used.

4. For the EX260-SPN□, the side of the SI unit may become hot.

It may cause burns.

### Maintenance

#### Warning

1. Do not disassemble, modify (including circuit board replacement) or repair this product.

Such actions are likely to cause injuries or breakage.

2. When an inspection is performed,

- Turn off the power supply.
- Stop the air supply, exhaust the residual pressure in piping and verify that the air is released before performing maintenance work.

Unexpected malfunction of system components and injury can result.

#### Caution

1. When handling and replacing the unit:

- Do not apply excessive force to the unit when disassembling.

The connecting portions of the unit are firmly joined with seals.

- When joining units, take care not to get fingers caught between units.

Injury can result.

2. Perform periodic inspection.

Unexpected malfunction in the system composition devices is likely to occur due to malfunction of machinery or equipment.

3. After maintenance, make sure to perform an appropriate functionality inspection.

In cases of abnormality such as faulty operation, stop operation. Unexpected malfunction in the system composition devices is likely to occur.

4. Do not use benzene and thinner for cleaning units.

Damage to the surface or erasure of the display can result.

Wipe off any stains with a soft cloth.

If the stain is persistent, wipe off with a cloth soaked in a dilute solution of neutral detergent and wrung out tightly, and then finish with a dry cloth.

### Other

#### Caution

1. Refer to the catalog of each series for Common Precautions and Specific Product Precautions on manifold solenoid valves.

#### ■ Trademark


DeviceNet™ is a trademark of ODVA.


EtherNet/IP™ is a trademark of ODVA.


EtherCAT® is registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

## Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of “**Caution**,” “**Warning**” or “**Danger**.” They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)\*1), and other safety regulations.

 **Caution:** **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

 **Warning:** **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

 **Danger:** **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

\*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.  
ISO 4413: Hydraulic fluid power – General rules relating to systems.  
IEC 60204-1: Safety of machinery – Electrical equipment of machines.  
(Part 1: General requirements)  
ISO 10218-1: Manipulating industrial robots - Safety.  
etc.

### Warning

#### 1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

#### 2. Only personnel with appropriate training should operate machinery and equipment.

The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

#### 3. Do not service or attempt to remove product and machinery/equipment until safety is confirmed.

1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

#### 4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.

1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

### Caution

#### 1. The product is provided for use in manufacturing industries.

The product herein described is basically provided for peaceful use in manufacturing industries.

If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.  
If anything is unclear, contact your nearest sales branch.

## Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following “Limited warranty and Disclaimer” and “Compliance Requirements”.

Read and accept them before using the product.

### Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered.\*2)  
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.  
This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

\*2) Vacuum pads are excluded from this 1 year warranty.

A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.

Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

### Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

#### Revision history

Edition B • EtherNet/IP™ added to applicable Fieldbus protocols.


QS

 **Safety Instructions** Be sure to read “Handling Precautions for SMC Products” (M-E03-3) before using.


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### Asia/Oceania

-  CHINA SMC (China) Co., Ltd.
-  CHINA SMC Pneumatics (Guangzhou) Ltd.
-  HONG KONG SMC Pneumatics (Hong Kong) Ltd.
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-  LITHUANIA (LIETUVA) UAB "SMC Pneumatics"
-  ROMANIA SMC Romania S.r.l.
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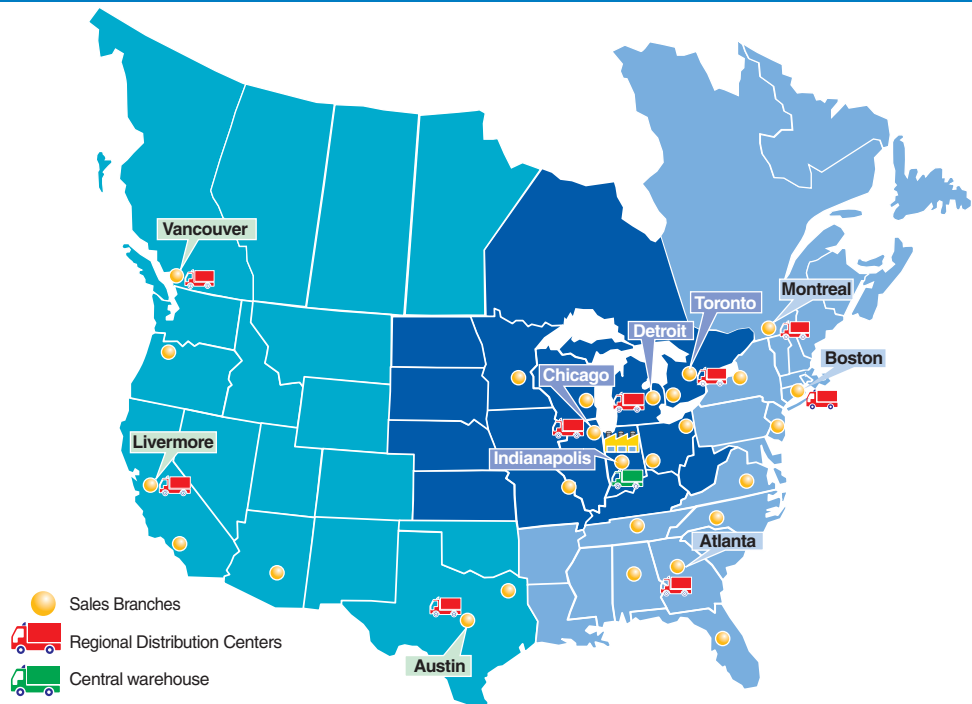
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### SMC Corporation of America

10100 SMC Blvd., Noblesville, IN 46060

[www.smccusa.com](http://www.smccusa.com)

### SMC Pneumatics (Canada) Ltd.

[www.smcpneumatics.ca](http://www.smcpneumatics.ca)

**(800) SMC.SMC1 (762-7621)**

**e-mail: [sales@smccusa.com](mailto:sales@smccusa.com)**

**For International inquiries: [www.smccworld.com](http://www.smccworld.com)**

