

# Modular Connection Type 5-Port Solenoid Valve



**Plug-in** Type

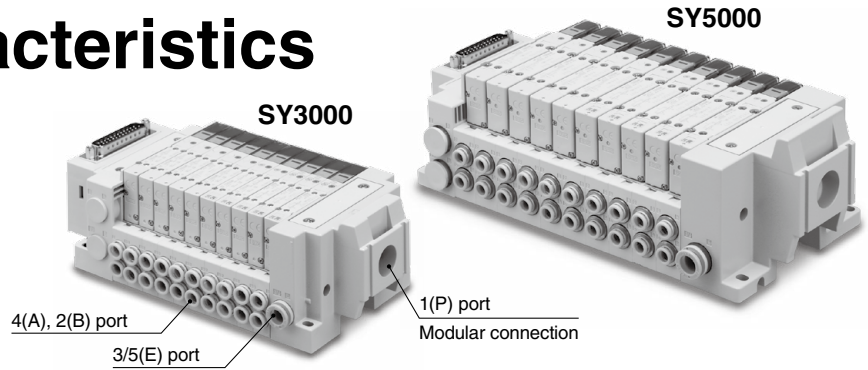


Can be connected to F.R.L. units

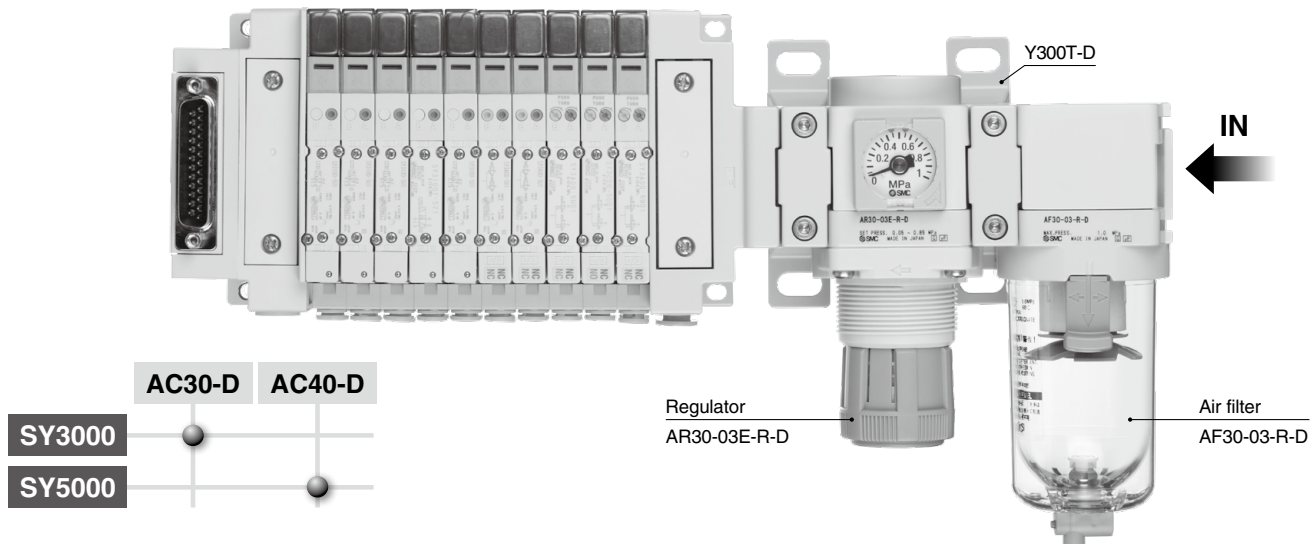
## Flow rate characteristics

C [dm<sup>3</sup>/(s·bar)]  
**SY3000: 1.6**\*1  
**SY5000: 3.6**\*1

\*1 4/2 → 3/5 (A/B → E)

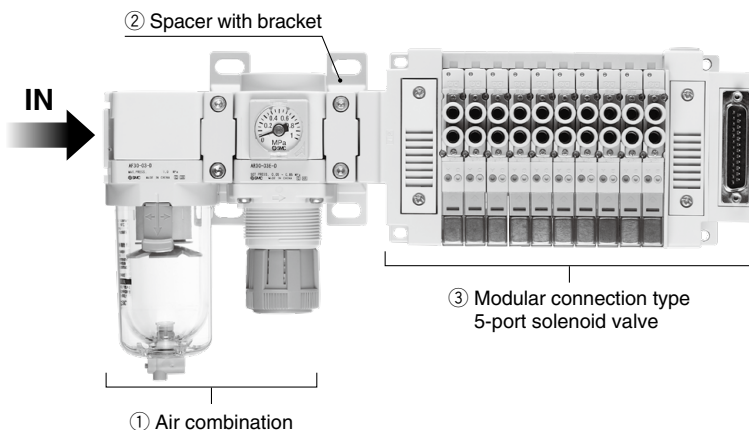


Allows for space saving and reduced piping labor.



## Simple Specials System

For modular connection units (shipped assembled), the simple specials system can be used.



### Ordering Example

- \* Products do not come assembled. They should be ordered separately and assembled by the customer.
- ① Air combination AC30C-03E-D ..... 1 pc.
- ② Spacer with bracket Y300T-D ..... 1 pc.
- ③ Modular connection type/5-port solenoid valve SS5Y3-12F1-10U-X990 ..... 1 pc.
- \* SY3230-51-C4 ..... 10 pcs.

# SY3000/5000-X990



# Modular Connection Type SY3000/5000-X990

# Manifold Specifications/Weight

## Manifold Specifications

Model	D-sub		Flat ribbon cable			Terminal block box (Spring type)	Terminal block box	Lead wire	Circular connector	Serial wiring			
	Type F	Type FW	Type P	Type PG	Type PH	Type TC	Type T	Type L	Type M	Type S6□ (EX600)	Type SA2 (EX500) Type S4□ (EX126)	Type SA3 (EX500) Type S□ (EX250) Type S□ (EX260)	Type S3□ (EX120)
<b>Valve stations</b>	2 to 10 stations			2 to 8 stations		2 to 10 stations							
<b>Port size</b>	<b>1(P) port</b>	<b>SY3000</b>	Modular size: 30										
		<b>SY5000</b>	Modular size: 40										
<b>Mounted valve</b>	Only the rubber seal type is available.												

## Manifold Weight

### Valve Seal Type: Rubber Seal Side Ported (Type 10)

Manifold model	Valve model	Weight: W [g]*1 (n: stations)
SS5Y3	SY3100/SY3200	28.9n + 433
	SY3300	
	SY3400	
	SY3500	
	SY3A00	
	SY3B00	
	SY3C00	
SS5Y5	SY5100/SY5200	74.7n + 698
	SY5300	
	SY5400	
	SY5500	
	SY5A00	
	SY5B00	
	SY5C00	

### Valve Seal Type: Rubber Seal Top Ported (Type 12)

Manifold model	Valve model	Weight: W [g]*1 (n: stations)
SS5Y3	SY3130/SY3230	25.1n + 465
SS5Y5	SY5130/SY5230	66.3n + 717

\*1 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 in the **Web Catalog** for the appropriate number of stations.

\* The other specifications are the same as those of the standard model.  
For details, refer to the **Web Catalog**.





### How to Order Manifolds

**Type 12 Top Ported** **SS5Y 3 - 12**   - **05 D S - N - X990**

**Type 10 Side Ported** **SS5Y 3 - 10**   - **05 D S - C6 - X990**

\* There is no bottom ported type.



More information can be viewed here.

Enter the standard product number.

- \* The A and B ports are only compatible with straight unions.
- \* DIN rail mounting is not supported.

**P-port modular connection type**  
SY3000 is 30.  
SY5000 is 40.

1 Series		Modular size
3	SY3000	30
5	SY5000	40

### 2 Valve stations

**F/FW:** D-sub connector (25 pins)

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
10	10 stations	Specified layout*2 (Up to 10 solenoids available)
02	2 stations	
⋮	⋮	
10	10 stations	

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

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
10	10 stations	Specified layout*2 (Up to 10 solenoids available)
02	2 stations	
⋮	⋮	
10	10 stations	

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

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
09	9 stations	Specified layout*2 (Up to 10 solenoids available)
02	2 stations	
⋮	⋮	
10	10 stations	

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

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

**TC/T:** Terminal block box

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
10	10 stations	Specified layout*2 (Up to 10 solenoids available)
02	2 stations	
⋮	⋮	
10	10 stations	

**M:** Circular connector

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
8	8 stations	Specified layout*2 (Up to 10 solenoids available)
02	2 stations	
⋮	⋮	
10	10 stations	

**L1:** Lead wire (0.6 m)

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
10	10 stations	Specified layout*2 (Up to 10 solenoids available)
02	2 stations	
⋮	⋮	
10	10 stations	

**L2:** Lead wire (1.5 m)

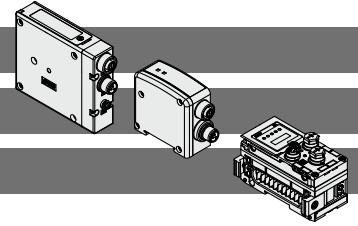
Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
08	8 stations	Specified layout*2 (Up to 10 solenoids available)
02	2 stations	
⋮	⋮	
10	10 stations	

**L3:** Lead wire (3 m)

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

- \*1 Double wiring: 2-position single, 2-position 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.
- \*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.)
- \* The blanking plate assembly is included in this number.

## How to Order Manifolds



EX500 128 Points: S□

EX500 64 Points: S□

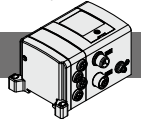
EX600: S6□□□

### 2 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
10	10 stations	
02	2 stations	Specified layout*2 (Up to 10 solenoids available)
⋮	⋮	
10	10 stations	

- \*1 Double wiring: 2-position single, 2-position 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.
- \*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.)
- \* The blanking plate assembly is included in this number.
- \* When the product without the SI unit (S0) is selected, 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. (Excludes the EX600)

EX250: S□□□

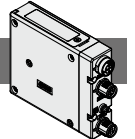


### 2 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
10	10 stations	
02	2 stations	Specified layout*2 (Up to 10 solenoids available)
⋮	⋮	
10	10 stations	

- \*1 Double wiring: 2-position single, 2-position 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.
- \*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
- \* The blanking plate assembly is included in this number.
- \* 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.

EX260: S□



### 2 Valve stations

In the case of the 32-output SI unit

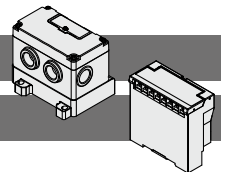
Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
10	10 stations	
02	2 stations	Specified layout*2 (Up to 10 solenoids available)
⋮	⋮	
10	10 stations	

In the case of the 16-output SI unit

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
08	8 stations	
02	2 stations	Specified layout*2 (Up to 10 solenoids available)
⋮	⋮	
10	10 stations	

- \*1 Double wiring: 2-position single, 2-position 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.
- \*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.)
- \* The blanking plate assembly is included in this number.
- \* 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.

EX126: S4□



EX120: S3□

### 2 Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring*1
⋮	⋮	
08	8 stations	
02	2 stations	Specified layout*2 (Up to 10 solenoids available)
⋮	⋮	
10	10 stations	

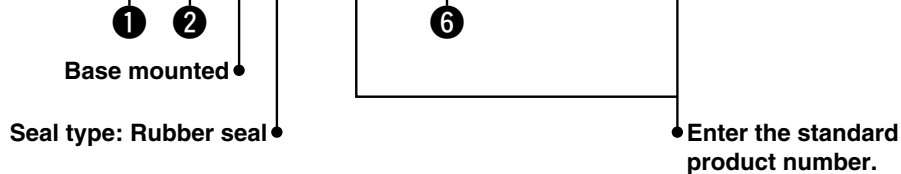
- \*1 Double wiring: 2-position single, 2-position double, 3-position, and 4-position valves can be used on all manifold stations. Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
- \*2 Specified layout: Indicate the wiring 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.)
- \* The blanking plate assembly is included in this number.
- \* Since R2 type SI unit has 8 outputs, note that up to 8 solenoids can be accommodated. (For the EX120)

## How to Order Equipped Valves (With mounting screw)

### Base Mounted

Base mounted **SY 3 1 0 0**     - **5**   **1** -

\* There are no metal seal types.



More information can be viewed here.

#### 1 Series

3	SY3000
5	SY5000

#### 2 Type of actuation

1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A	4-position dual 3-port	N.C./N.C.
B		N.O./N.O.
C		N.C./N.O.

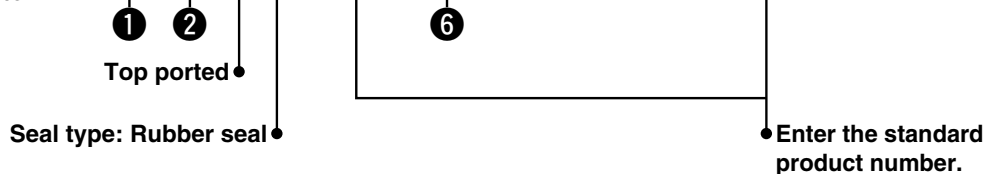
#### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)

### Top Ported

Top ported **SY 3 1 3 0**     - **5**   **1** - **C6**  -

\* There are no metal seal types.



More information can be viewed here.

#### 1 Series

3	SY3000
5	SY5000

#### 2 Type of actuation

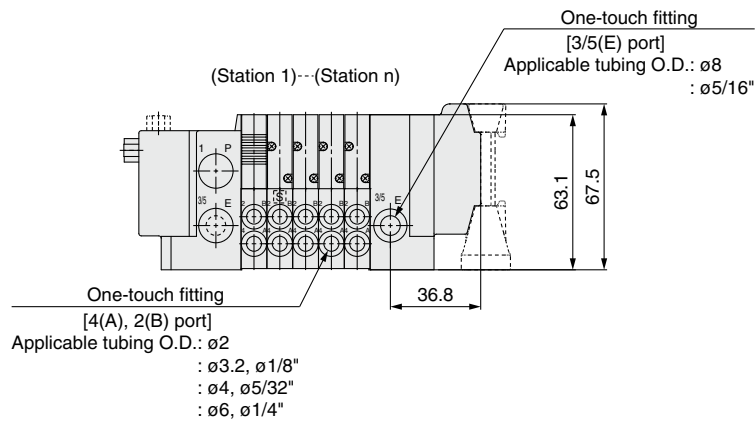
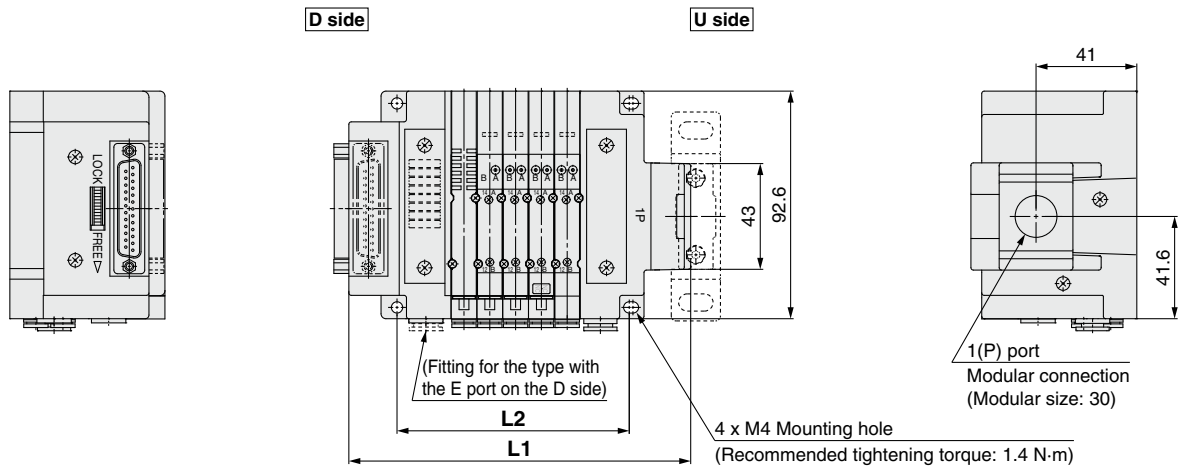
1	2-position	Single
2		Double
3	3-position	Closed center
4		Exhaust center
5		Pressure center
A	4-position dual 3-port	N.C./N.C.
B		N.O./N.O.
C		N.C./N.O.

#### 6 Pilot valve option

Nil	Standard (0.7 MPa)
B	Quick response type (0.7 MPa)

# SY3000/5000-X990

## Dimensions: SY3000 Series



\* These figures show the "SS5Y3-10F2-05U-C6-X990."  
 \* The other dimensions, as well as those of the top ported type, are the same as those of the standard model. For details, refer to the **Web Catalog**.

### D-sub, Flat Ribbon (Type F) Refer to the table below for the L1 and L2 dimensions of the D-sub and flat ribbon (Type F).

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	107.6	118.1	128.6	139.1	149.6	160.1	170.6	181.1	191.6
<b>L2</b>	63	73.5	84	94.5	105	115.5	126	136.5	147

### IP67 D-sub (Type FW) Refer to the table below for the L1 and L2 dimensions of the IP67 D-sub (Type FW).

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	124.5	135	145.5	156	166.5	177	187.5	198	208.5
<b>L2</b>	63	73.5	84	94.5	105	115.5	126	136.5	147

## Dimensions: SY3000 Series

### Terminal Block Box (Type T)

Refer to the table below for the L1 and L2 dimensions of the terminal block box (Type T).

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	183.3	193.8	204.3	214.8	225.3	235.8	246.3	256.8	267.3
<b>L2</b>	63	73.5	84	94.5	105	115.5	126	136.5	147

### Terminal Block Box/Spring Type (Type TC)

Refer to the table below for the L1 and L2 dimensions of the terminal block box/spring type (Type TC).

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	162	172.5	183	193.5	204	214.5	225	235.5	246
<b>L2</b>	63	73.5	84	94.5	105	115.5	126	136.5	147

### Lead Wire (L), Circular Connector (M)

Refer to the table below for the L1 and L2 dimensions of the lead wire and circular connector.

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	131	141.5	152	162.5	173	183.5	194	204.5	215
<b>L2</b>	63	73.5	84	94.5	105	115.5	126	136.5	147

### EX500 (Type SA2)

Refer to the table below for the L1 and L2 dimensions of the EX500 (Type SA2).

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	122.5	133	143.5	154	164.5	175	185.5	196	206.5
<b>L2</b>	63	73.5	84	94.5	105	115.5	126	136.5	147

### EX500 (Type SA3)

Refer to the table below for the L1 and L2 dimensions of the EX500 (Type SA3).

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	122.7	133.2	143.7	154.2	164.7	175.2	185.7	196.2	206.7
<b>L2</b>	63	73.5	84	94.5	105	115.5	126	136.5	147

### EX600 (M12 Connector)

Calculate the L1 dimension of the EX600 (M12 connector) using the formula shown below.

$$L1 = 10.5 \times n1 + 154.5 + 47 \times n2$$

n1: Valve stations

n2: I/O unit stations

### EX600 (7/8 Inch Connector)

Calculate the L1 dimension of the EX600 (7/8 inch connector) using the formula shown below.

$$L1 = 10.5 \times n1 + 171 + 47 \times n2$$

n1: Valve stations

n2: I/O unit stations

# SY3000/5000-X990

## Dimensions: SY3000 Series

### EX250

Calculate the L1 dimension of the EX250 using the formula shown below.

$$L1 = 10.5 \times n1 + 154.5 + 21 \times n2$$

n1: Valve stations

n2: I/O unit stations

### EX260

Refer to the table below for the L1 and L2 dimensions of the EX260.

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	122.7	133.2	143.7	154.2	164.7	175.2	185.7	196.2	206.7
L2	63	73.5	84	94.5	105	115.5	126	136.5	147

### EX126

Refer to the table below for the L1 and L2 dimensions of the EX126.

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	183.3	193.8	204.3	214.8	225.3	235.8	246.8	256.8	267.3
L2	63	73.5	84	94.5	105	115.5	126	136.5	147

### EX120

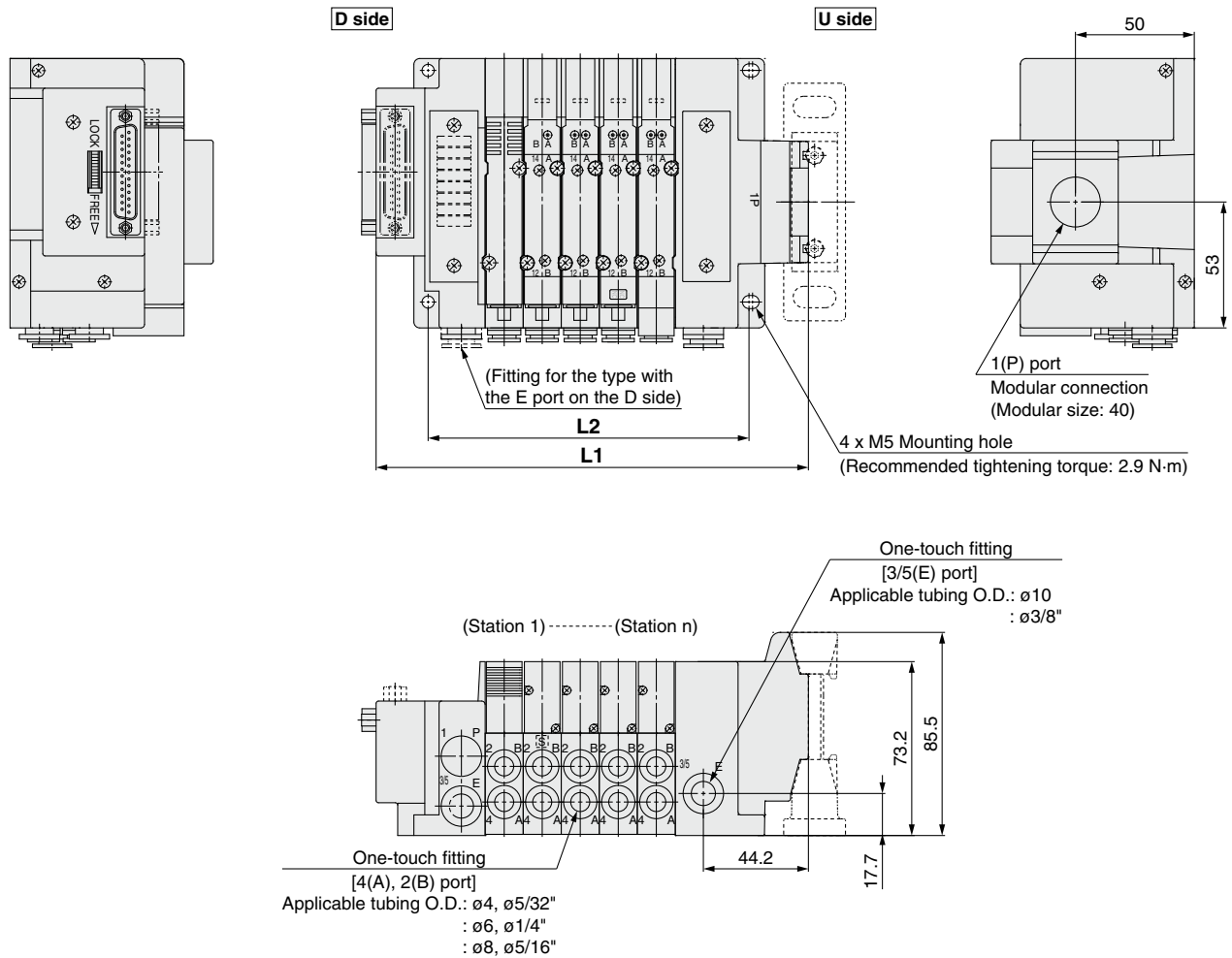
Refer to the table below for the L1 and L2 dimensions of the EX120.

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
L1	115.9	126.4	136.9	147.4	157.9	168.4	178.9	189.4	199.9
L2	63	73.5	84	94.5	105	115.5	126	136.5	147



**Dimensions: SY5000 Series**



\* These figures show the "SS5Y5-10F2-05U-C8-X990."  
 \* The other dimensions are the same as those of the standard model. For details, refer to the **Web Catalog**.

**D-sub, Flat Ribbon (Type F)** Refer to the table below for the L1 and L2 dimensions of the D-sub and flat ribbon (Type F).

**L: Dimensions**

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	133.9	149.9	165.9	181.9	197.9	213.9	229.9	245.9	261.9
<b>L2</b>	87	96	112	128	144	160	176	192	208

**IP67 D-sub (Type FW)** Refer to the table below for the L1 and L2 dimensions of the IP67 D-sub (Type FW).

**L: Dimensions**

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	148	164	180	196	212	228	244	260	276
<b>L2</b>	87	103	119	135	151	167	183	199	215

# SY3000/5000-X990

## Dimensions: SY5000 Series

### Terminal Block Box (Type T)

Refer to the table below for the L1 and L2 dimensions of the terminal block box (Type T).

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	206.8	222.8	238.8	254.8	270.8	286.8	302.8	318.8	334.8
<b>L2</b>	87	103	119	135	151	167	183	199	215

### Terminal Block Box/Spring Type (Type TC)

Refer to the table below for the L1 and L2 dimensions of the terminal block box/spring type (Type TC).

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	185.5	201.5	217.5	233.5	249.5	265.5	281.5	297.5	313.5
<b>L2</b>	87	103	119	135	151	167	183	199	215

### Lead Wire (L), Circular Connector (M)

Refer to the table below for the L1 and L2 dimensions of the lead wire and circular connector.

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	154.5	170.5	186.5	202.5	218.5	234.5	250.5	266.5	282.5
<b>L2</b>	87	103	119	135	151	167	183	199	215

### EX500 (Type SA2)

Refer to the table below for the L1 and L2 dimensions of the EX500 (Type SA2).

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	146	162	178	194	210	226	242	258	274
<b>L2</b>	87	103	119	135	151	167	183	199	215

### EX500 (Type SA3)

Refer to the table below for the L1 and L2 dimensions of the EX500 (Type SA3).

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	146.2	162.2	178.2	194.2	210.2	226.2	242.2	258.2	274.2
<b>L2</b>	87	103	119	135	151	167	183	199	215

### EX600 (M12 Connector)

Calculate the L1 and L2 dimensions for the EX600 (M12 connector) using the formula shown below.

$$L1 = 16 \times n1 + 167 + 47 \times n2$$

$$L2 = 16 \times n1 + 55$$

n1: Valve stations

n2: I/O unit stations

## Dimensions: SY5000 Series

### EX600 (7/8 Inch Connector)

Calculate the L1 and L2 dimensions for the EX600 (7/8 inch connector) using the formula shown below.

$$L1 = 16 \times n1 + 183.5 + 47 \times n2$$

$$L2 = 16 \times n1 + 55$$

n1: Valve stations

n2: I/O unit stations

### EX250

Calculate the L1 and L2 dimensions for the EX250 using the formula shown below.

$$L1 = 16 \times n1 + 167 + 21 \times n2$$

$$L2 = 16 \times n1 + 55$$

n1: Valve stations

n2: I/O unit stations

### EX260

Refer to the table below for the L1 and L2 dimensions of the EX260.

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	146.2	162.2	178.2	194.2	210.2	226.2	242.2	258.2	274.2
<b>L2</b>	87	103	119	135	151	167	183	199	215

### EX126

Refer to the table below for the L1 and L2 dimensions of the EX126.

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	206.8	222.8	238.8	254.8	270.8	286.8	302.8	318.8	334.8
<b>L2</b>	87	103	119	135	151	167	183	199	215

### EX120

Refer to the table below for the L1 and L2 dimensions of the EX120.

#### L: Dimensions

n: Stations	2	3	4	5	6	7	8	9	10
<b>L1</b>	142.2	158.2	174.2	190.2	206.2	222.2	238.2	254.2	270.2
<b>L2</b>	87	103	119	135	151	167	183	199	215

# SY3000/5000-X990

## Accessories Sold Separately (Spacer with Bracket)

### Spacer with Bracket

**Y 300 T - D**

① ②

For the spacer with bracket holding screw tightening torque, refer to the AC-D series catalog.

Spacer with bracket (Y□T-D)



	Symbol	Description	①	
			300 [SY3000 + AC30]	400 [SY5000 + AC40]
②	Bracket	T	Spacer with bracket	

### Standard Specifications

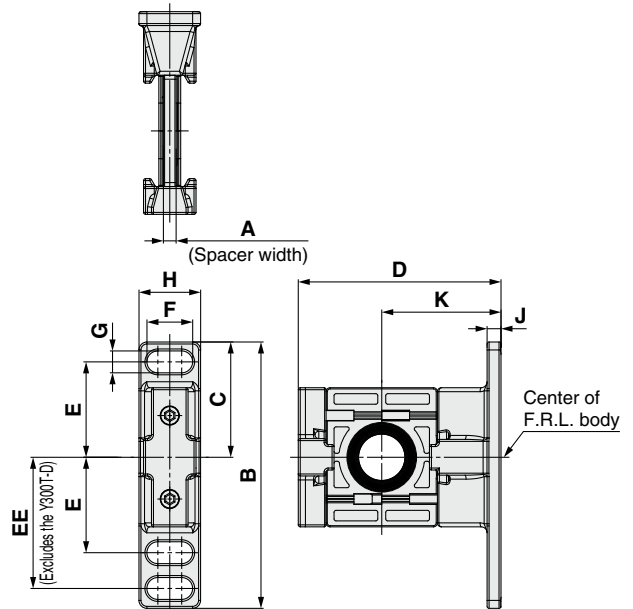
Fluid	Air
Ambient and fluid temperatures	-5 to 60°C (No freezing)
Proof pressure	1.5 MPa
Max. operating pressure	1.0 MPa

### Replacement Parts

Description	Material	Part number	
		Y300T-D	Y400T-D
Seal	HNBR	Y320P-050S	Y420P-050S

### Dimensions

Spacer with bracket



Model	A	B	C	D	E	EE	Applicable size
Y300T-D	4.2	85	42.5	67.5	35	—	AC30-D
Y400T-D	5.2	115	50	85.5	40	55	AC40-D

Model	F	G	H	J	K	Applicable size
Y300T-D	14	7	20	6	41	AC30-D
Y400T-D	18	9	26	7	50	AC40-D

## ⚠ Specific Product Precautions

Be sure to read this before handling the products. For safety instructions, 3/4/5-port solenoid valve precautions, SY3000/5000 specific product precautions, and F.R.L. units precautions, refer to the "Handling Precautions for SMC Products" and the "Operation Manual" on the SMC website.

### Mounting

### ⚠ Warning

- When connecting other products such as F.R.L. units, use a spacer with a bracket (Y300T/Y400T-D series) to connect the manifold connection part so that no moment is applied.
- Be sure to secure the spacer with a bracket used for connection.
- Avoid excessive torsional moment and bending moment other than those caused by the manifold's own weight, as failure to do so may result in damage.

- Support external piping separately.
- Piping materials without flexibility, such as steel tube piping, are prone to being affected by excess moment loads and vibrations from the piping side. Use flexible tubing in between to avoid such effects.

**⚠ Safety Instructions** Be sure to read the "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" before use.