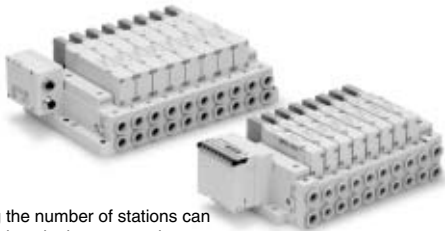


# Valve Manifold Common Specifications Series SV

## Cassette base manifold



- Changing the number of stations can be easily done by lever operation.

## Manifold Specifications

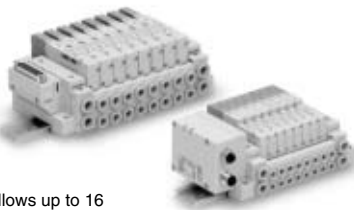
Applicable series		SV1000	SV2000
Manifold type		Stacking type cassette base manifold	
1 (P: SUP)/3, 5 (E: EXH) type		Common SUP, EXH	
Valve stations (maximum)		18 stations	20 stations
Max. number of solenoids		18 points	26 points
Port size	1(P), 3/5(E) port	C8, N9	C10, N11
	4(A), 2(B) port	C3, C4, C6 N1, N3, N7	C4, C6, C8 N3, N7, N9

## Flow Characteristics

Model	Port size		Flow characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2 (P → A/B)			4/2 → 3/5 (A/B → E)		
			C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(s·bar)]	b	Cv
SS5V1-16	C8	C6	0.89	0.22	0.22	0.98	0.21	0.23
SS5V2-16	C10	C8	2.3	0.28	0.50	2.7	0.18	0.56

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

## Tie-rod base manifold



- 34 pins connector allows up to 16 stations with double solenoids.

## Manifold Specifications

Applicable series		SV1000	SV2000	SV3000	SV4000
Manifold type		Tie-rod base manifold			
1 (P: SUP)/3, 5 (E: EXH) type		Common SUP, EXH			
Valve stations (maximum)		20 stations			
Max. number of solenoids		32 points			
Port size	1(P), 3/5(E) port	C8, N9	C10, N11	C12, N11	C12, N11, 03
	4(A), 2(B) port	C3, C4, C6 N1, N3, N7	C4, C6, C8 N3, N7, N9	C6, C8, C10 N7, N9, N11	C8, C10, C12 N9, N11, 02, 03

## Flow Characteristics

Model	Port size		Flow characteristics					
	1, 5, 3 (P, EA, EB)	4, 2 (A, B)	1 → 4/2(P → A/B)			4/2 → 3/5(A/B → E)		
			C [dm <sup>3</sup> /(s·bar)]	b	Cv	C [dm <sup>3</sup> /(s·bar)]	b	Cv
SS5V1-10	C8	C6	0.98	0.26	0.24	1.1	0.35	0.28
SS5V2-10	C10	C8	2.1	0.20	0.46	2.4	0.18	0.48
SS5V3-10	C12	C10	4.2	0.22	0.91	4.3	0.21	0.93
SS5V4-10	C12	C12	6.2	0.19	1.3	7.0	0.18	1.6

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

## Enclosure of Manifold Variations (Common for cassette base and tie-rod base)

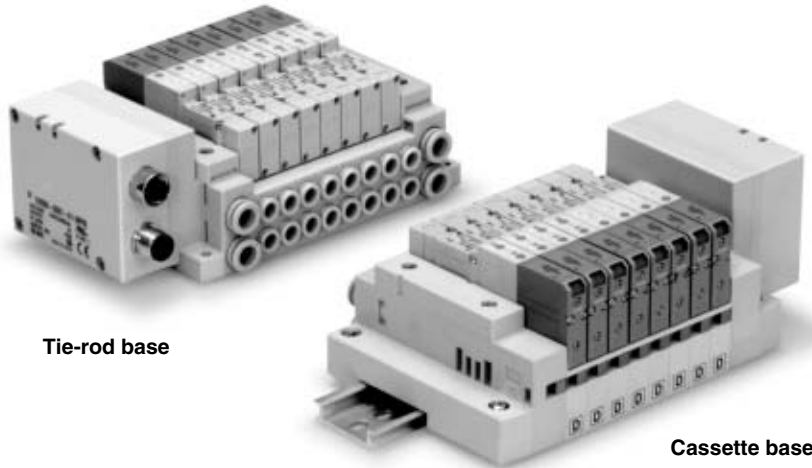
Series	Enclosure (Based on IEC529)
Series EX500 Decentralized serial wiring	IP67 *
Series EX250 Serial wiring with input/output onit	IP67
Series EX120 Dedicated output serial wiring	Dusttight (IP40)
For circular connector	IP67
D-sub connector	Dusttight (IP40)
Flat ribbon cable	Dusttight (IP40)

\* Enclosure of a gateway unit and input manifold is IP65.

# Decentralized Serial Wiring

## Series **EX500**

IP67 compliant



Tie-rod base

Cassette base

Applicable series	Cassette base manifold SV1000/SV2000
	Tie-rod base manifold SV1000/SV2000/SV3000/SV4000
	<ul style="list-style-type: none"><li>• Number of output points: 16 points</li><li>• EX500 gateway unit communication specifications Remote I/O, DeviceNet, PROFIBUS-DP</li></ul>

SV

SZ

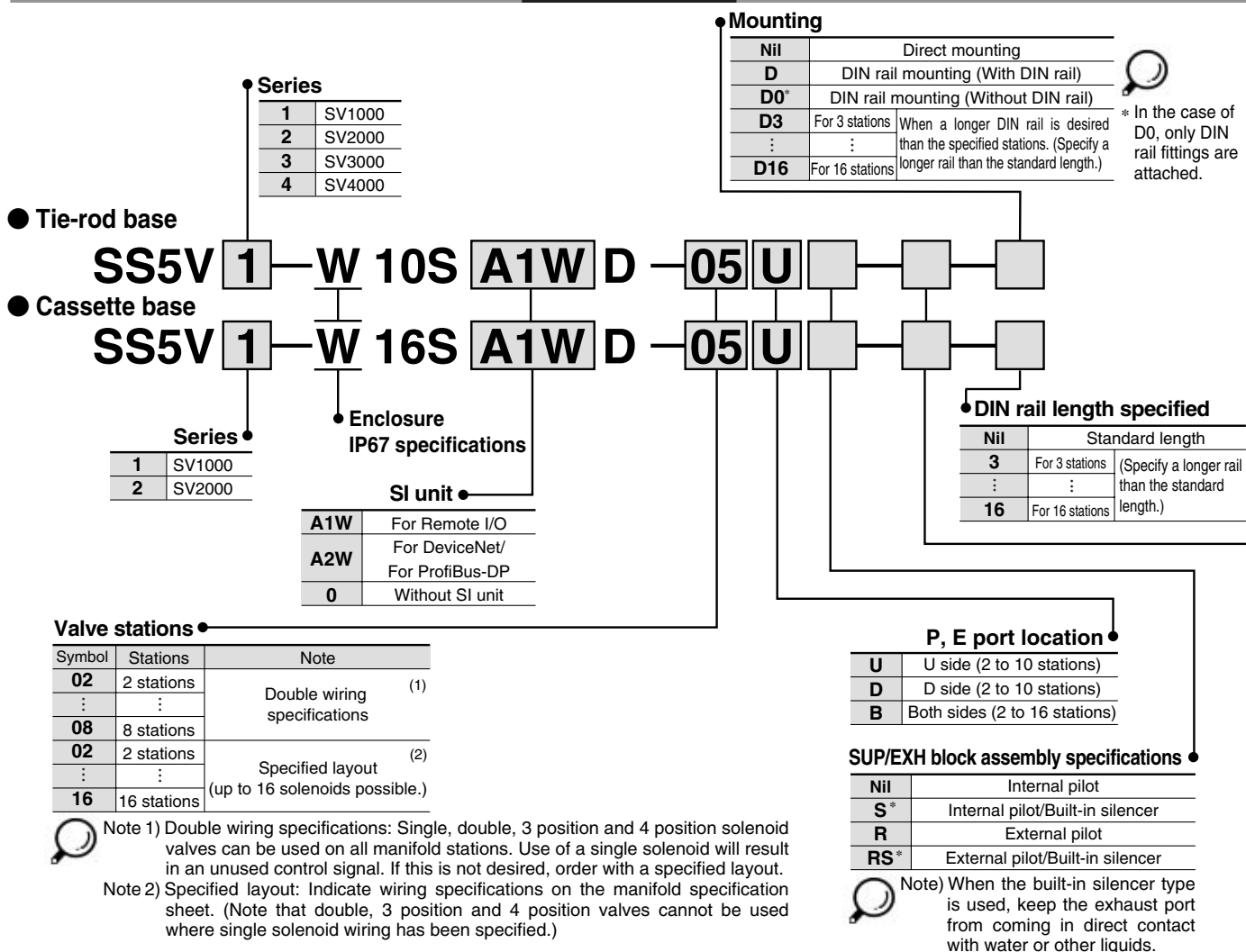
SY

SYJ

SX

# Series EX500 Decentralized Serial Wiring Series SV

## How to Order



### A, B port size (metric)

Symbol	A, B port	P, E port	Applicable series
C3	One-touch fitting for ø3.2	One-touch fitting for ø8	SV1000
C4	One-touch fitting for ø4		
C6	One-touch fitting for ø6		
C4	One-touch fitting for ø4	One-touch fitting for ø10	SV2000
C6	One-touch fitting for ø6		
C8	One-touch fitting for ø8		
C6	One-touch fitting for ø6	One-touch fitting ø12	SV3000
C8	One-touch fitting for ø8		
C10	One-touch fitting for ø10		
C8	One-touch fitting for ø8	One-touch fitting ø12	SV4000
C10	One-touch fitting for ø10		
C12	One-touch fitting for ø12		
02	Rc 1/4	Rc 3/8	
03	Rc3/8		
02F	G 1/4	G 3/8	
03F	G 3/8		
M	A, B ports mixed		

### A, B port size (inch)

Symbol	A, B port	P, E port	Applicable series
N1	One-touch fitting for ø1/8"	One-touch fitting for ø5/16"	SV1000
N3	One-touch fitting for ø5/32"		
N7	One-touch fitting for ø1/4"		
N3	One-touch fitting for ø5/32"	One-touch fitting for ø3/8"	SV2000
N7	One-touch fitting for ø1/4"		
N9	One-touch fitting for ø5/16"		
N7	One-touch fitting for ø1/4"	One-touch fitting for ø3/8"	SV3000
N9	One-touch fitting for ø5/16"		
N11	One-touch fitting for ø3/8"		
N9	One-touch fitting for ø5/16"	One-touch fitting for ø3/8"	SV4000
N11	One-touch fitting for ø3/8"		
02N	NPT 1/4		
03N	NPT 3/8	NPT 3/8	
02T	NPTF 1/4	NPTF 3/8	
03T	NPTF 3/8		
M	A, B ports mixed		

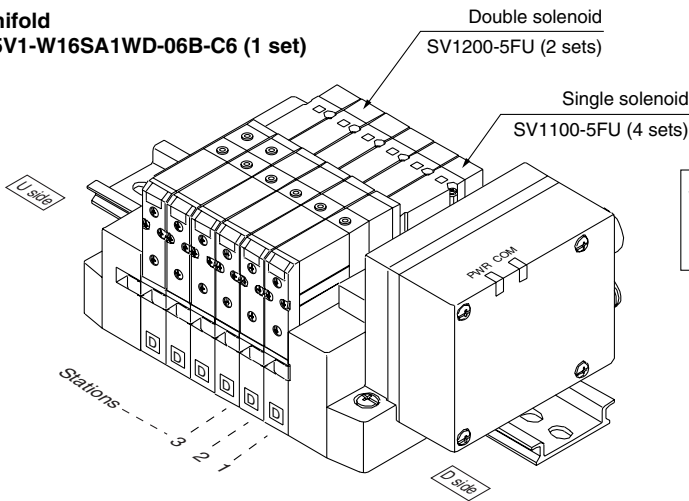
\* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.  
\* Port sizes of X, PE port for external pilot specifications (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6 (metric) and ø1/4" (inch) for SV3000/4000.

## How to Order Valve Manifold Assembly

### Ordering example (SV1000)

Manifold

SS5V1-W16SA1WD-06B-C6 (1 set)



SS5V1-W16SA1WD-06B-C6.....1 set (Manifold part no.)  
 \*SV1100-5FU.....4 sets (Single solenoid part no.)  
 \*SV1200-5FU.....2 sets (Double solenoid part no.)

SV

SZ

SY

SYJ

SX

## How to Order Solenoid Valves

SV 1 1 00 [ ] [ ] — 5 F [ ] [ ] [ ]

**Series**

1	SV1000
2	SV2000
3	SV3000
4	SV4000

**Type of actuation**

1	2 position single solenoid
2	2 position double solenoid
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 Series SV1000 and SV2000 only.

**Pilot type**

Nil	Internal pilot
R	External pilot

\* External pilot specifications is not available for 4 position dual 3 port valves.

**Back pressure check valve**

Nil	None
K	Built-in

\* Built-in back pressure check valve type is applicable to series SV1000 only.

\* Back pressure check valve is not available for 3 position closed center and 3 position pressure

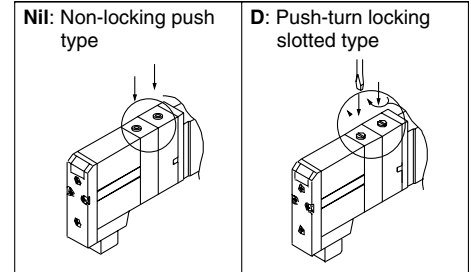
Refer to Precautions 2 on page 1-2-9.

Note)



Note) Available with manifold block for station additions. Refer to pages 1-2-89 and 1-2-93.

**Manual override**



**Light/Surge voltage suppressor**

U	With light/surge voltage suppressor
R	With surge voltage suppressor

**Rated voltage**

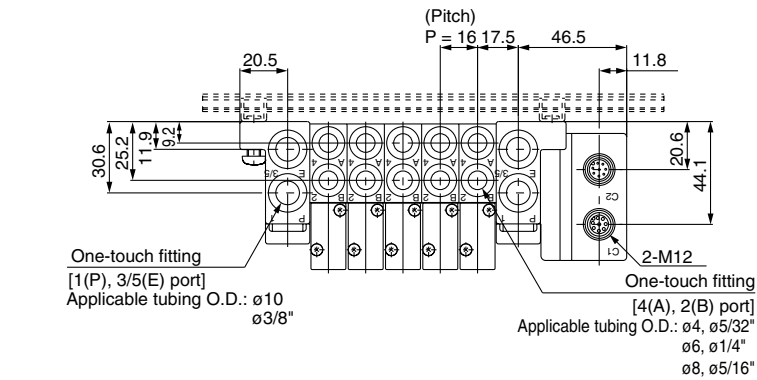
5	24 VDC
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# Series SV

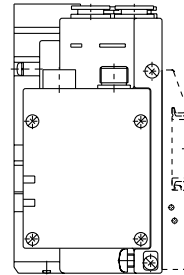
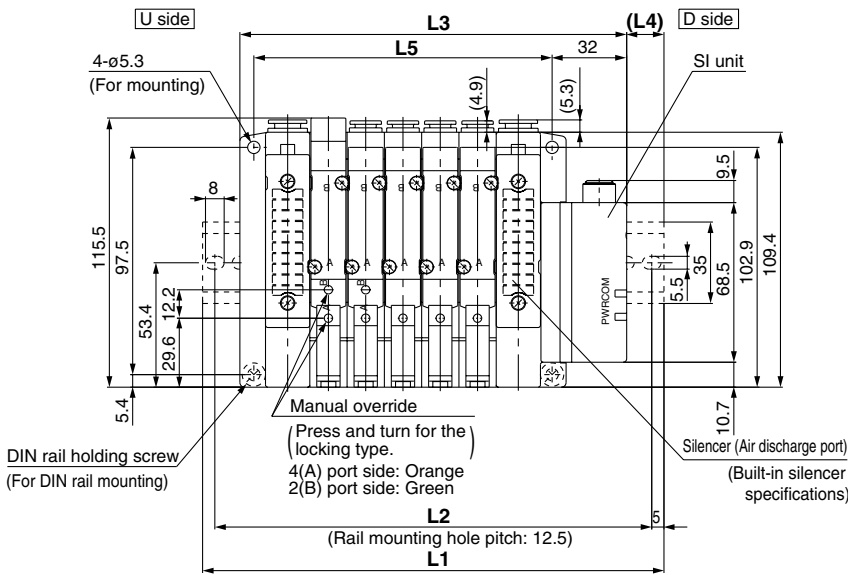
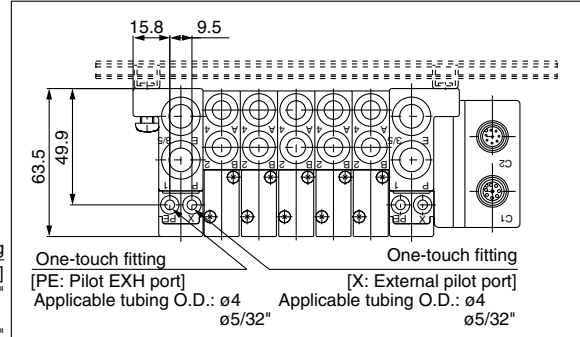
## Dimensions: Series SV2000 for EX500 Decentralized Serial Wiring

● Tie-rod base manifold: SS5V2-W10SA□WD- Stations  $\begin{matrix} U \\ D \end{matrix}$  (S, R, RS)-  $\begin{matrix} C4, N3 \\ C6, N7 \\ C8, N9 \end{matrix}$  (-D)

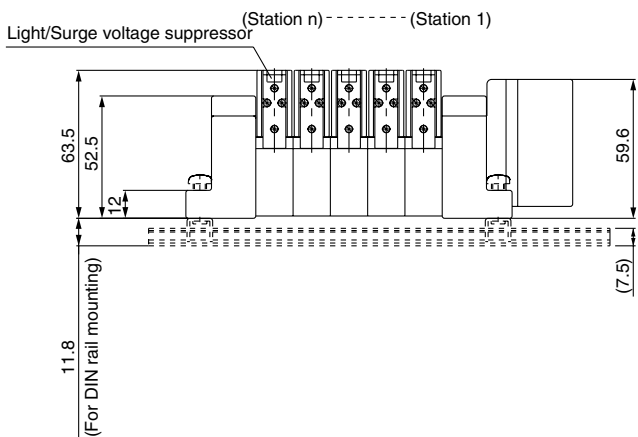
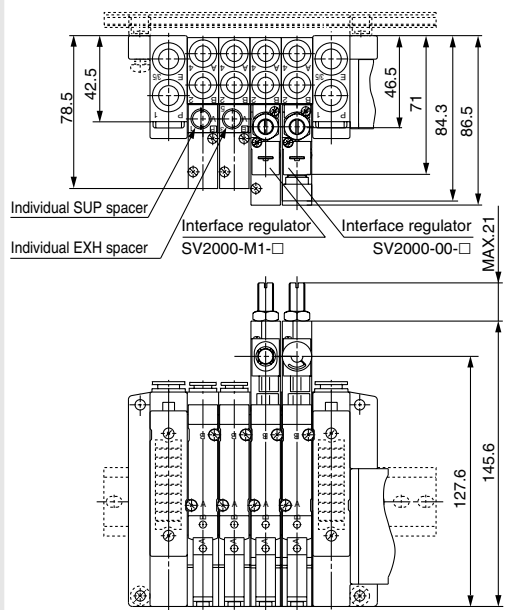
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



### With External Pilot Specifications



### With option



### L Dimension

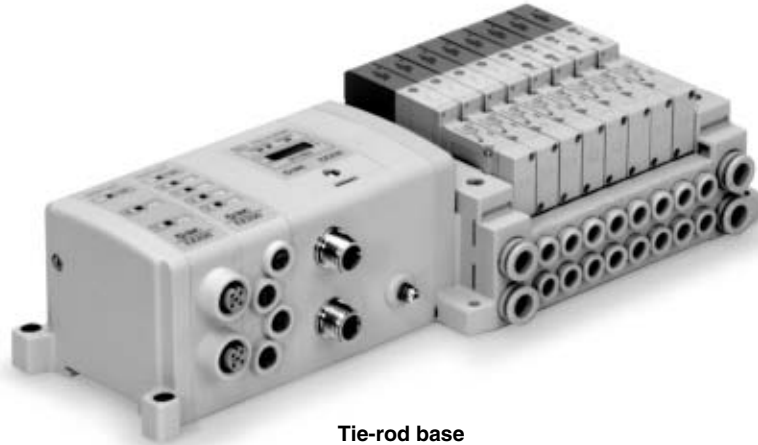
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	148	160.5	185.5	198	210.5	223	248	260.5	273	285.5	310.5	323	335.5	360.5	373
L2	137.5	150	175	187.5	200	212.5	237.5	250	262.5	275	300	312.5	325	350	362.5
L3	118	134	150	166	182	198	214	230	246	262	278	294	310	326	342
L4	15	13.5	18	16	14.5	12.5	17	15.5	13.5	12	16.5	14.5	13	17.5	15.5
L5	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304

n: Stations

# Serial Wiring with Input/Output Unit

## Series *EX250*

IP67 compliant



Tie-rod base

Applicable series	Tie-rod base manifold SV1000/SV2000/SV3000
	• Number of inputs/outputs: 32 each

SV

SZ

SY

SYJ

SX

# Series EX250

## Serial Wiring with Input/Output Unit

# Series SV

### How to Order

#### ● Tie-rod base

**SS5V 1** — **W10S1** **QW** [ ] [ ] [ ] **D** — **05** **U** [ ] [ ] [ ]

**Series**

1	SV1000
2	SV2000
3	SV3000

**Enclosure**  
IP67 specifications

**SI unit**

<b>QW</b>	For DeviceNet
<b>0</b>	Without SI unit

- Input blocks cannot be mounted without SI unit.
- When the DIN rail is included without an SI unit, the DIN rail length will accommodate an SI unit and one input block.

**Input block stations**

Nil	None
1	1 station
⋮	⋮
8	8 stations

Note) Without SI unit, the symbol is nil.

**Input block type**

Nil	Without input block
1	M12: 2 inputs
2	M12: 4 inputs
3	M8: 4 inputs (3 pins)

Note) Without SI unit, the symbol is nil.

**Input block common specifications**

Nil	+COM
N	-COM

#### ● Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring specifications (1)
⋮	⋮	
16	16 stations	
02	2 stations	Specified layout (2) (up to 32 solenoids possible.)
⋮	⋮	
20	20 stations	

Note 1) Double wiring specifications: 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 wiring specifications on the manifold specification sheet. (Note that double and 3 position valves cannot be used where single solenoid wiring has been specified.)

#### ● P, E port location

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

#### ● SUP/EXH block assembly specifications

Nil	Internal pilot
S*	Internal pilot/Built-in silencer
R	External pilot
RS*	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.

#### ● Mounting

Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0*	DIN rail mounting (Without DIN rail)
D3	For 3 stations
⋮	⋮
D20	For 20 stations

\* In the case of D0, only DIN rail fittings are attached.

#### ● A, B port size (metric)

Symbol	A, B port	P, E port	Applicable series
C3	One-touch fitting for ø3.2	One-touch fitting for ø8	SV1000
C4	One-touch fitting for ø4		
C6	One-touch fitting for ø6		
C4	One-touch fitting for ø4	One-touch fitting for ø10	SV2000
C6	One-touch fitting for ø6		
C8	One-touch fitting for ø8		
C6	One-touch fitting for ø6	One-touch fitting for ø12	SV3000
C8	One-touch fitting for ø8		
C10	One-touch fitting for ø10		
M	A, B ports mixed		

#### ● A, B port size (inch)

Symbol	A, B port	P, E port	Applicable series
N1	One-touch fitting for ø1/8"	One-touch fitting for ø5/16"	SV1000
N3	One-touch fitting for ø5/32"		
N7	One-touch fitting for ø1/4"		
N3	One-touch fitting for ø5/32"	One-touch fitting for ø3/8"	SV2000
N7	One-touch fitting for ø1/4"		
N9	One-touch fitting for ø5/16"		
N7	One-touch fitting for ø1/4"	One-touch fitting for ø3/8"	SV3000
N9	One-touch fitting for ø5/16"		
N11	One-touch fitting for ø3/8"		
M	A, B ports mixed		

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

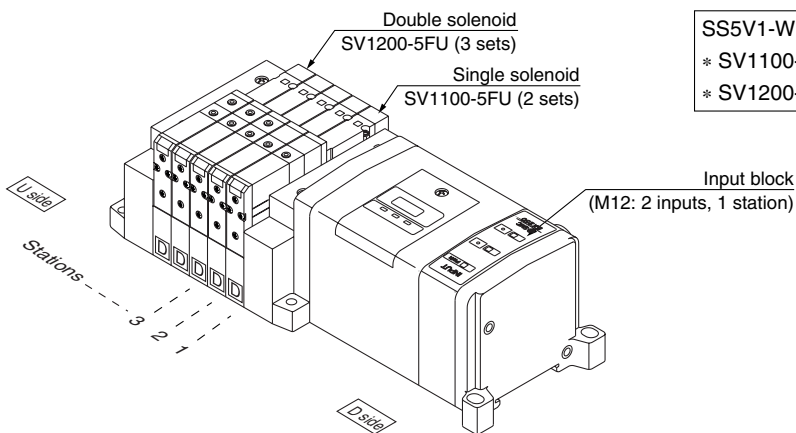
\* Port sizes of X, PE port for external pilot specifications (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6 (metric) and ø1/4" (inch) for SV3000/4000.

## How to Order Valve Manifold Assembly

### Ordering example (SV1000)

Manifold

SS5V1-W10S1QW11ND-05B-C6 (1 set)



SS5V1-W10S1QW11ND-05B-C6....1 set (manifold part no.)  
 \* SV1100-5FU.....2 sets (Single solenoid part no.)  
 \* SV1200-5FU.....3 sets (Double solenoid part no.)

- SV
- SZ
- SY
- SYJ
- SX

## How to Order Solenoid Valves

SV 1 1 00 [ ] [ ] - 5 F [ ] [ ] - [ ]

Note) Available with manifold block for station additions. Refer to page 1-2-93.

**Series**

1	SV1000
2	SV2000
3	SV3000

**Type of actuation**

1	2 position single solenoid
2	2 position double solenoid
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 Series SV1000 and SV2000 only.

**Pilot type**

Nil	Internal pilot
R	External pilot

\* External pilot specifications is not available for 4 position dual 3 port valves.

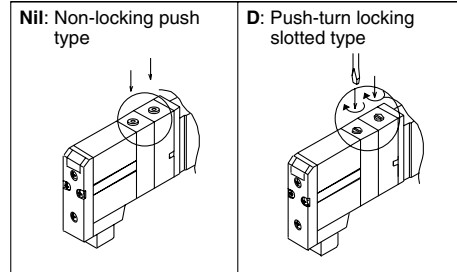
**Back pressure check valve**

Nil	None
K	Built-in

\* Built-in back pressure check valve type is applicable to series SV1000 only.  
 \* Back pressure check valve is not available for 3 position closed center and 3 position pressure center.

Refer to Precautions 2 on page 1-2-9.

**Manual override**



**Light/Surge voltage suppressor**

U	With light/surge voltage suppressor
R	With surge voltage suppressor

**Rated voltage**

5	24 VDC
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### Applicable network: DeviceNet

The serial transmission system reduces wiring work, while minimizing wiring and saving space.

### DeviceNet compatible SI unit

As a DeviceNet slave unit, it is capable of solenoid valve ON/OFF control up to a maximum of 32 points. In addition, by connecting an input block a maximum of 32 sensor signal inputs are possible.

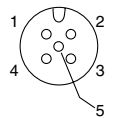
### Input block

This is an expansion block which connects to an SI unit to perform sensor input from auto switches, etc. Two or four sensor inputs can be accommodated by one input block, and the common can be matched to the sensor by an NPN/PNP switch.<sup>Note)</sup> Input connectors are available in both M8 and M12 types.

Note) COM is set at the shipment. Please contact SMC for alteration after shipment.

### Details in connector

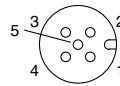
Input connector: M12 5 pins (socket)  
Cable side connector example:  
OMRON Corporation: XS2G 2 input block (EX250-IE1)



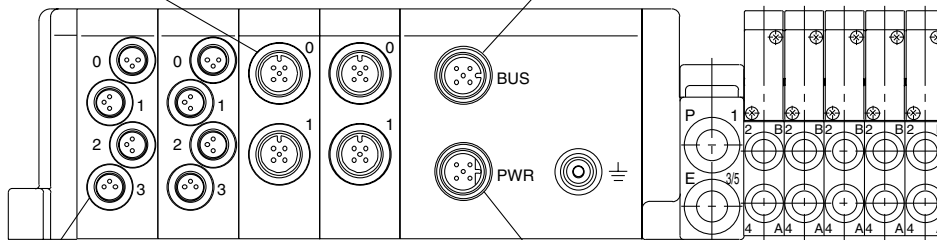
No.	Description	Function
1	SW+	Sensor power supply +
2	N.C (SIGNAL)	Open*
3	SW-	Sensor power supply -
4	SIGNAL	Sensor input signal
5	E	Sensor ground

\* In the case of a 4 input block (EX250-IE2), this is the sensor input signal.

Communication connector: M12 ... 5 pins (socket)  
Example of corresponding cable assemblies with connector:  
OMRON Corporation: DCA1-5CN05F1  
Karl Lumberg GmbH & Co. KG: RKT5-56



No.	Description	Function
1	Drain	Drain/Shield
2	V+	Circuit power supply +
3	V-	Circuit power supply -
4	CAN_H	Signal H
5	CAN_L	Signal L

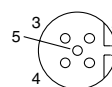


Input connector: M8 3 pins (socket)  
Cable side connector example:  
Franz Binder GmbH: 718, 768 series



No.	Description	Function
1	24V	Sensor power supply +
3	0V	Sensor power supply -
4	IN	Sensor input signal

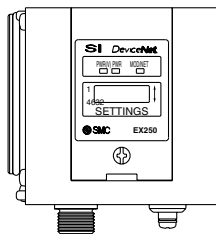
Power connector: M12 ... 5 pins (plug) (boss configuration differs from communication connector)  
Example of corresponding cable assemblies with connector:  
Hans Turck FmbH & Co. KG: WAKW4. 5T-2



No.	Description	Function
1	SV24V	For solenoid valve +24 V
2	SV0V	For solenoid valve 0 V
3	SW24V	For input block +24 V
4	SW0V	For input block 0 V
5	E	Ground

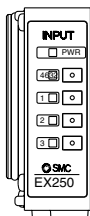
### Indicator unit (LED) descriptions and functions

#### SI unit



Description	Function
PWR(V)	ON when solenoid valve power supply is turned ON
PWR	ON when DeviceNet circuit power supply input is turned ON
MOD/NET	OFF: Power supply off, on line, or when checking duplication of MAC_ID
	Green blinking: Waiting for connection (On line)
	Green ON: Connection established (On line)
	Red blinking: Connection time out (Minor communication abnormality occurs)
	Red ON: MAC_ID duplication error, or BUSOFF error (Major communication abnormality occurs)

#### Input block



Description	Function
PWR	ON when sensor power is turned ON
0 to 3	ON when each sensor input goes ON

#### Weight

Description	weight (g)
SI unit	225
Input block	85
End plate assembly	30

\* For parts composition, refer to page 1-2-90.

# Series SV

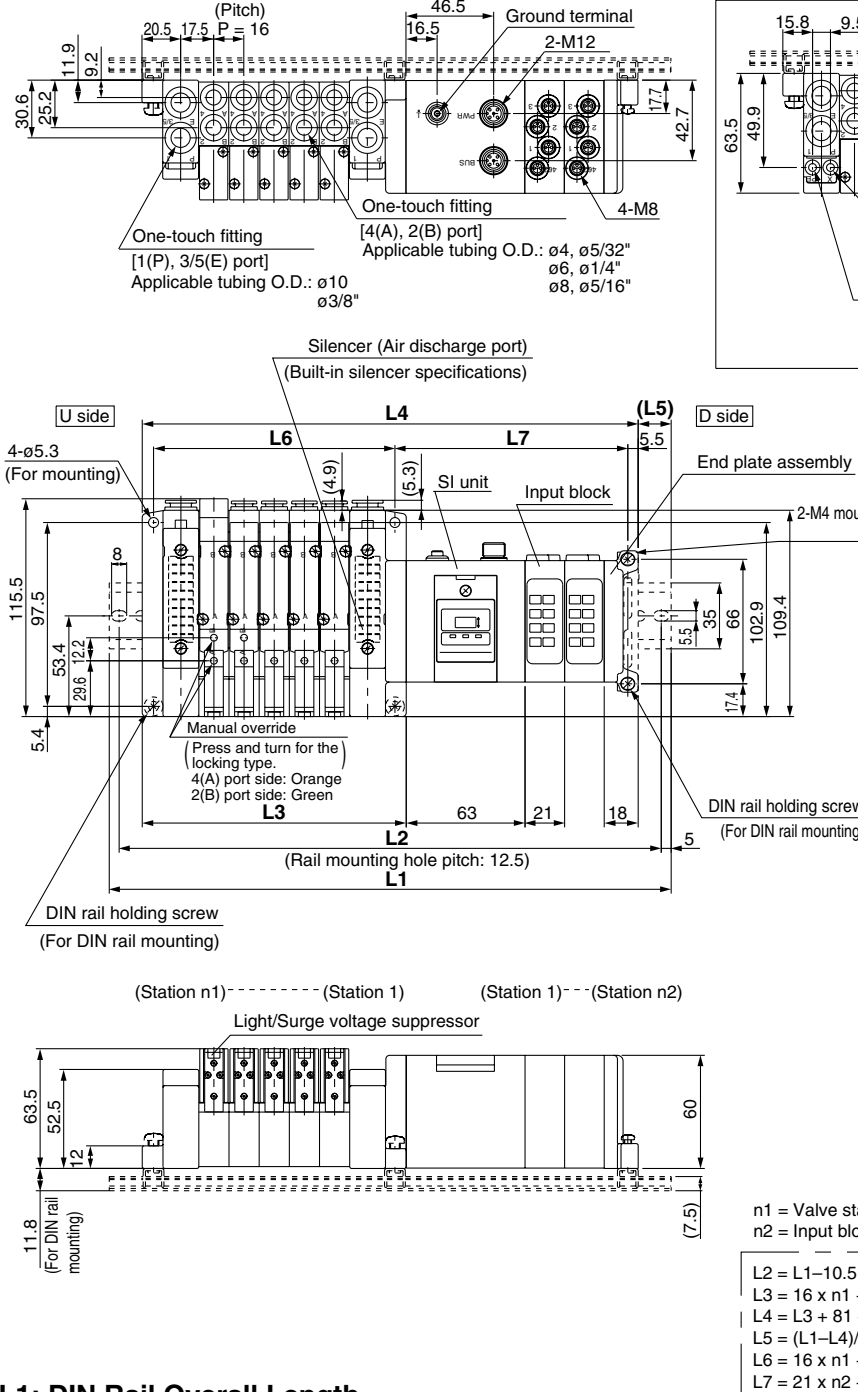
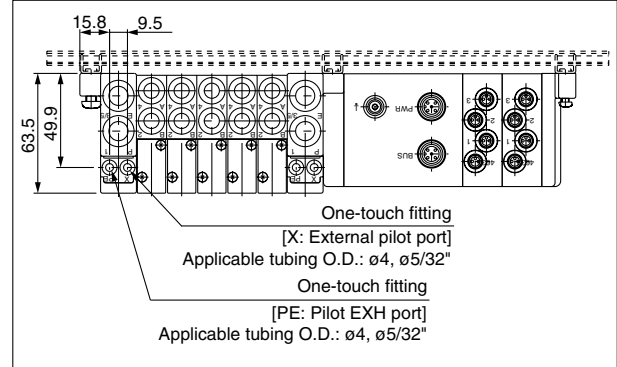
## Dimensions: Series SV2000 for EX250 Serial Wiring with Input/Output Unit

● Tie-rod base manifold: SS5V2-W10S1 □ □ □ □ D- Stations  $\frac{U}{D}$  (S, R, RS)  $\frac{C4, N3}{C6, N7}$  (-D)  $\frac{C8, N9}{C8, N9}$

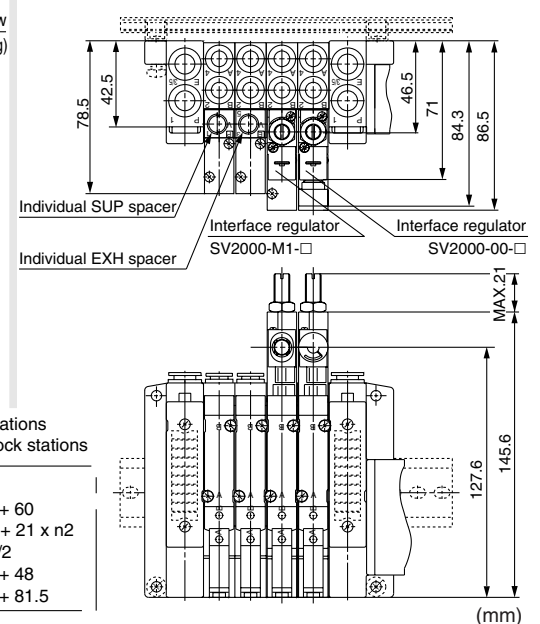
(With 2 input blocks)

- 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.

### With External Pilot Specifications



### With option



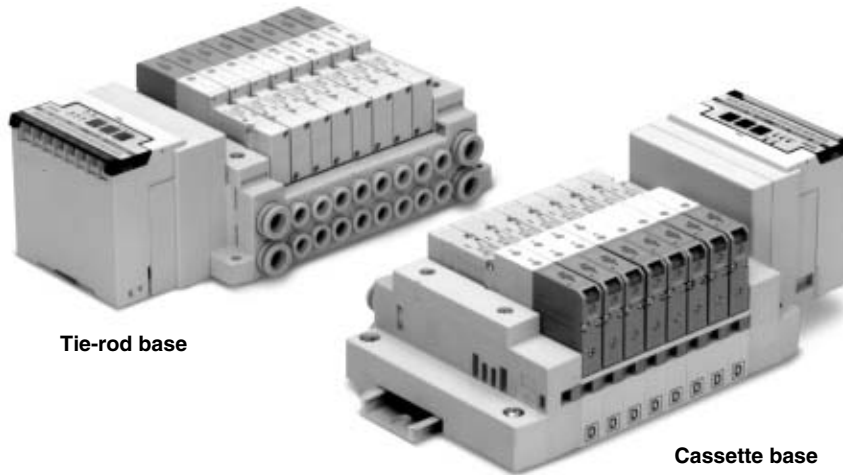
- n1 = Valve stations
- n2 = Input block stations
- L2 = L1 - 10.5
- L3 = 16 x n1 + 60
- L4 = L3 + 81 + 21 x n2
- L5 = (L1 - L4) / 2
- L6 = 16 x n1 + 48
- L7 = 21 x n2 + 81.5

### L1: 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
0	198	223	235.5	248	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5
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
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	510.5	535.5
3	260.5	285.5	298	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
4	285.5	298	323	335.5	348	360.5	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	548	560.5	573
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
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	610.5
7	348	360.5	385.5	398	410.5	435.5	448	460.5	473	498	510.5	523	535.5	560.5	573	585.5	610.5	623	635.5
8	373	385.5	398	423	435.5	448	460.5	485.5	498	510.5	535.5	548	560.5	573	598	610.5	623	648	660.5

# Dedicated Output Serial Wiring

## Series *EX120*



Tie-rod base

Cassette base

Applicable series	Cassette base manifold SV1000/SV2000
	Tie-rod base manifold SV1000/SV2000/SV3000/SV4000
• Number of outputs points: 16 points	

SV

SZ

SY

SYJ

SX



# Series EX120 Dedicated Output Serial Wiring Series SV

## How to Order

**Series**

1	SV1000
2	SV2000
3	SV3000
4	SV4000

**Tie-rod base**

**Cassette base**

**Series**

1	SV1000
2	SV2000

**SI unit**

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

\* For the general purpose type, a transmission unit is require on the CPU side.

**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>:</b>	<b>:</b>
<b>D16</b>	For 16 stations

When a longer DIN rail is desired than the specified stations. (Specify a longer rail than the standard length.)

\* In the case of D0, only DIN rail fittings are attached.

**DIN rail length specified**

<b>Nil</b>	Standard length
<b>3</b>	For 3 stations
<b>:</b>	<b>:</b>
<b>16</b>	For 16 stations

(Specify a longer rail than the standard length.)

**Valve stations**

Symbol	Stations	Note
<b>02</b>	2 stations	Double wiring specifications (1)
<b>:</b>	<b>:</b>	
<b>08</b>	8 stations	
<b>02</b>	2 stations	Specified layout (2) (up to 16 solenoids possible.)
<b>:</b>	<b>:</b>	
<b>16</b>	16 stations	

• Since J2 and R2 type SI units have 8 outputs note that up to 8 solenoids can be accommodated.  
• This also includes the number of blanking plate assemblies.

Note 1) Double wiring specifications: 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 wiring specifications on the manifold specification sheet. (Note that double and 3 position valves cannot be used where single solenoid wiring has been specified.)

**P, E port location**

<b>U</b>	U side (2 to 10 stations)
<b>D</b>	D side (2 to 10 stations)
<b>B</b>	Both sides (2 to 16 stations)

**SUP/EXH block assembly specifications**

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

### SI Unit Part No.

Symbol	Specifications	For SS5V□□□S3
<b>A*</b>	With general type SI unit (Series EX300)	EX320-S001
<b>B</b>	Mitsubishi Electric Corp.: MELSECNET/MINI-S3 Data Link System	EX120-SMB1
<b>C</b>	OMRON Corp.: SYSBUS Wire System	EX120-STA1
<b>D</b>	SHARP Corp.: Satellite I/O Link System	EX120-SSH1
<b>E</b>	Matsushita Electric Works: MEWNET-F System	EX120-SPA1
<b>F1</b>	NKE Corp.: Uni-wire System (16 output points)	EX120-SUW1
<b>G</b>	Rockwell Automation: Allen Bradley Remote I/O (RIO) System	EX120-SAB1

Symbol	Specifications	For SS5V□□□S3
<b>H</b>	NKE Corp.: Uni-wire H System	EX120-SUH1
<b>J1</b>	SUNX Corp.: S-LINK System (16 output points)	EX120-SSL1
<b>J2</b>	SUNX Corp.: S-LINK System (8 output points)	EX120-SSL2
<b>K</b>	Fuji Electric Co.: T-LINK Mini System	EX120-SFU1
<b>Q</b>	DeviceNet, CompoBus/D (OMRON Corp.)	EX120-SDN1
<b>R1</b>	OMRON Corp.: CompoBus/S System (16 output points)	EX120-SCS1
<b>R2</b>	OMRON Corp.: CompoBus/S System (8 output points)	EX120-SCS2
<b>U</b>	JEMANET (JPCN-1)	EX120-SJN1
<b>V</b>	Mitsubishi Electric Corp.: CC-LINK System	EX120-SMJ1

\* For terminal LED descriptions for each SI unit and cable wiring, etc., refer to pages 1-2-46 to 1-2-48.

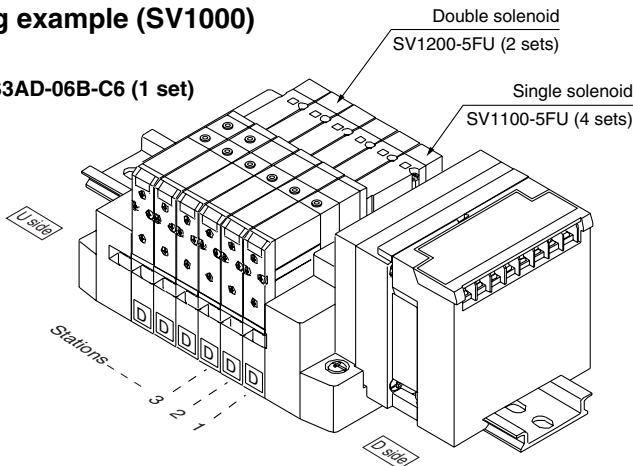


## How to Order Valve Manifold Assembly

### Ordering example (SV1000)

**Manifold**

SS5V1-16S3AD-06B-C6 (1 set)



SS5V1-16S3AD-06B-C6.....1 set (manifold part no.)  
 \*SV1100-5FU.....4 sets (Single solenoid part no.)  
 \*SV1200-5FU.....2 sets (Double solenoid part no.)

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

## How to Order Solenoid Valves

**SV 1 1 0 0** [ ] [ ] - **5 F** [ ] [ ] [ ] (Note)

**Series**

1	SV1000
2	SV2000
3	SV3000
4	SV4000

**Type of actuation**

1	2 position single solenoid
2	2 position double solenoid
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 Series SV1000 and SV2000 only.

**Pilot type**

Nil	Internal pilot
R	External pilot

\* External pilot specifications is not available for 4 position dual 3 port valves.

**Back pressure check valve**

Nil	None
K	Built-in

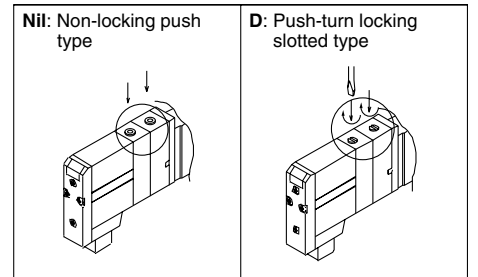
\* Built-in back pressure check valve type is applicable to Series SV1000 only.  
 \* Back pressure check valve is not available for 3 position closed center and 3 position pressure center.



Refer to Precautions 2 on page 1-2-9.

Note) Available with manifold block for station additions. Refer to pages 1-2-89 and 1-2-93.

**Manual override**



**Rated voltage**

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

**Light/Surge voltage suppressor**

U	With light/surge voltage suppressor
R	With surge voltage suppressor

**A, B port size (Metric)**

Symbol	A, B port	P, E port	Applicable series
C3	One-touch fitting for ø3.2	One-touch fitting for ø8	SV1000
C4	One-touch fitting for ø4		
C6	One-touch fitting for ø6		
C4	One-touch fitting for ø4	One-touch fitting for ø10	SV2000
C6	One-touch fitting for ø6		
C8	One-touch fitting for ø8		
C6	One-touch fitting for ø6	One-touch fitting for ø12	SV3000
C8	One-touch fitting for ø8		
C10	One-touch fitting for ø10		
C8	One-touch fitting for ø8	One-touch fitting for ø12	SV4000
C10	One-touch fitting for ø10		
C12	One-touch fitting for ø12		
02	Rc 1/4	Rc 3/8	SV4000
03	Rc 3/8		
02F	G 1/4		
03F	G 3/8	G 3/8	
M	A, B ports mixed		

**A, B port size (Inch)**

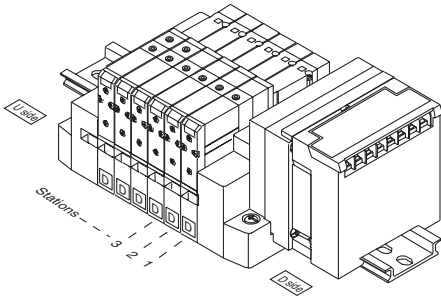
Symbol	A, B port	P, E port	Applicable series
N1	One-touch fitting for ø1/8"	One-touch fitting for ø5/16"	SV1000
N3	One-touch fitting for ø5/32"		
N7	One-touch fitting for ø1/4"		
N3	One-touch fitting for ø5/32"	One-touch fitting for ø3/8"	SV2000
N7	One-touch fitting for ø1/4"		
N9	One-touch fitting for ø5/16"		
N7	One-touch fitting for ø1/4"	One-touch fitting for ø3/8"	SV3000
N9	One-touch fitting for ø5/16"		
N11	One-touch fitting for ø3/8"		
N9	One-touch fitting for ø5/16"	One-touch fitting for ø3/8"	SV4000
N11	One-touch fitting for ø3/8"		
02N	NPT 1/4		
03N	NPT 3/8	NPT 3/8	
02T	NPTF 1/4	NPTF 3/8	
03T	NPTF 3/8		
M	A, B ports mixed		

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

\* Port sizes of X, PE port for external pilot specification (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6 (metric) and ø1/4" (inch) for SV3000/4000.

# Series SV

- The serial transmission system reduces wiring work, while minimizing wiring and saving space.
- Maximum 16 stations (Specify a model with more than 9 stations by means of the manifold specification sheet.)

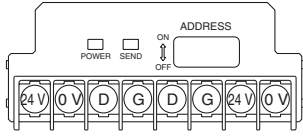
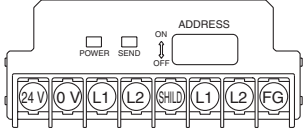
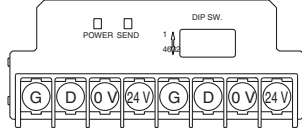
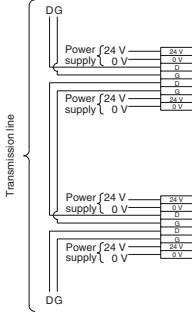
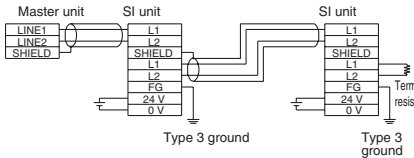
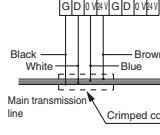
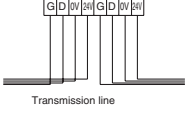


- Stations are counted from D side as the 1st.
- A maximum of 16 solenoids is possible (16 stations with single solenoids).

Item	Specifications
External power supply	24 VDC + 10%/- 5%
Current consumption (Internal unit)	0.1 A A, B, D, E, F1, G, J1, J2, K, R1, R2, H, U, V
	0.3 A C, Q

	Type A Series EX300	Type B Mitsubishi Electric Corporation MELSECNET/mini-S3 Data Link System																		
Name of terminal block, LED	<table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>TRD</td> <td>ON during data reception</td> </tr> <tr> <td>RUN/ERR</td> <td>Blinks for normal data reception, ON for abnormal</td> </tr> </tbody> </table>	LED	Description	TRD	ON during data reception	RUN/ERR	Blinks for normal data reception, ON for abnormal	<table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>ON for power supply input</td> </tr> <tr> <td>RUN</td> <td>ON for normal data traffic with master unit</td> </tr> <tr> <td>RD</td> <td>ON during data reception</td> </tr> <tr> <td>SD</td> <td>ON during data transmission</td> </tr> <tr> <td>ERR</td> <td>ON for data reception error, OFF when normal</td> </tr> </tbody> </table>	LED	Description	POWER	ON for power supply input	RUN	ON for normal data traffic with master unit	RD	ON during data reception	SD	ON during data transmission	ERR	ON for data reception error, OFF when normal
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Note	<ul style="list-style-type: none"> <li>• Connection to T unit PLC manufacturer's I/O card enables serial transmission. EX300-TMB1..... for Mitsubishi Electric Corporation EX300-TTA1..... for OMRON Corporation EX300-TFU1..... for Fuji Electric Co., Ltd. EX300-T001..... General purpose</li> <li>* Each T unit has 32 control points.</li> <li>• No. of output points, 16 points</li> </ul>	<ul style="list-style-type: none"> <li>• MELSECNET/mini-S3 Data Link System Master unit : AJ71PT32-S3 AJ71T32-S3 A1SJ71PT32-S3</li> <li>• No. of output points, 16 points, No. of stations occupied, 2 stations</li> </ul>																		
Cable wiring	<p>* Ground either the reception side or the transmission side of the shielding wire shield.</p>	<p>SI manifold solenoid valve</p> <p>* Ground either the reception side or the transmission side of the shielding wire shield.</p>																		

	Type C OMRON Corporation SYSBUS Wire System	Type D SHARP Corporation Satellite I/O Link System	Type E Matsushita Electric Works, Ltd. MEWNET-F System																								
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Note	<ul style="list-style-type: none"> <li>• SYSBUS Wire System Master unit : Type C500-RM201 Type C200H-RM201</li> <li>• No. of output points, 16 points</li> </ul>	<ul style="list-style-type: none"> <li>• Satellite I/O Link System JW-23LM, JW-23LMH Master unit : ZW-31LM JW-31LM, JW-31LMH</li> <li>• No. of output points, 16 points</li> </ul>	<ul style="list-style-type: none"> <li>• MEWNET-F System Master unit : AFP3740, AFP3742 AFP5740, AFP5742</li> <li>• No. of output points, 16 points</li> </ul>																								
Cable wiring		<p>a) 2-wire type Wiring does not include signal ground line (SG).</p> <p>b) 3-wire type Wiring does not include signal ground line (SG).</p>																									

	Type F1 NKE Corporation Uni-wire System	Type G Rockwell Automation, Inc. Allen Bradley Remote I/O (RIO) System	Type J1, J2 SUNX Corporation S-LINK System																				
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Note	<ul style="list-style-type: none"> <li>• Uni-wire System Send unit : SD-120</li> <li>• No. of output points, 16 points</li> </ul>	<ul style="list-style-type: none"> <li>• Remote I/O (RIO) System</li> <li>• No. of output points, 16 points</li> </ul>	<ul style="list-style-type: none"> <li>• S-LINK System S-LINK controller: SL-CU1A</li> <li>• No. of output points, 16 points (Type J1) No. of output points, 8 points (Type J2)</li> </ul>																				
Cable wiring			<div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p>a) Type T branching multi-drop wiring (S-LINK System)</p>  </div> <div style="width: 45%;"> <p>b) Crossover wiring (Sensor Link System)</p>  </div> </div> <p>The above is the example of using dedicated S-LINK flat ribbon cable SL-RCMI00.</p>																				

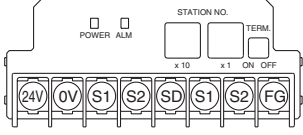
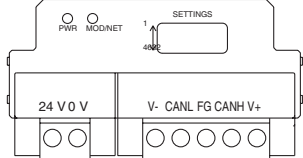
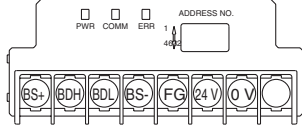
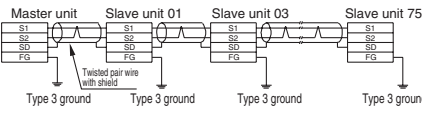
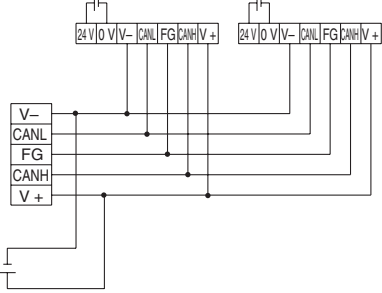
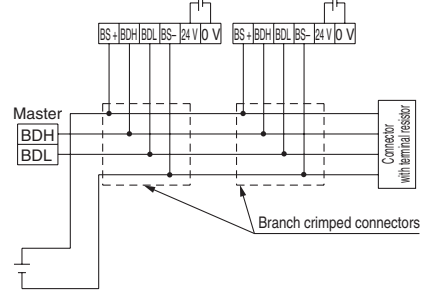
**SV**

**SZ**

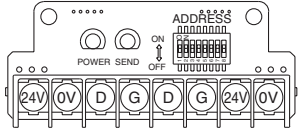
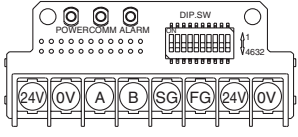
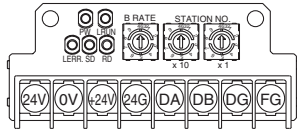
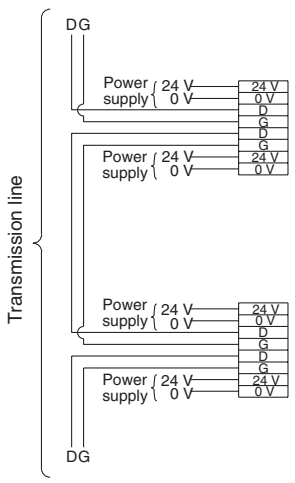
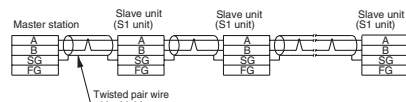
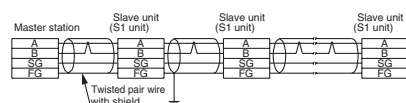
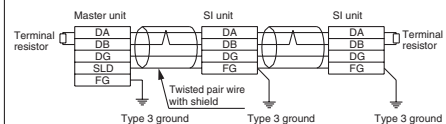
**SY**

**SYJ**

**SX**

	Type K Fuji Electric Co., Ltd. T-LINK Mini System	Type Q DeviceNet	Type R1, R2 OMRON Corporation CompoBus/S																				
Name of terminal block, LED	 <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>ON for power supply input</td> </tr> <tr> <td>ALM</td> <td>ON for abnormal transmission or processor side power supply cut</td> </tr> </tbody> </table>	LED	Description	POWER	ON for power supply input	ALM	ON for abnormal transmission or processor side power supply cut	 <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>PWR</td> <td>Green light ON for DeviceNet circuit power input OFF When this unit is off line or circuit power is OFF Green blinks When waiting for connection (On line) Green ON When connection is established (On line)</td> </tr> <tr> <td>MOD/NET</td> <td>Red blinks When connection time out occurs (recoverable communication abnormality) Red ON For MAC ID duplication error, or BUSOFF error (major communication abnormality)</td> </tr> </tbody> </table>	LED	Description	PWR	Green light ON for DeviceNet circuit power input OFF When this unit is off line or circuit power is OFF Green blinks When waiting for connection (On line) Green ON When connection is established (On line)	MOD/NET	Red blinks When connection time out occurs (recoverable communication abnormality) Red ON For MAC ID duplication error, or BUSOFF error (major communication abnormality)	 <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>PWR</td> <td>ON when communication power is supplied, OFF when power is OFF</td> </tr> <tr> <td>COMM</td> <td>ON for normal communication, OFF for abnormal communication or waiting</td> </tr> <tr> <td>ERR</td> <td>ON for abnormal communication, OFF for normal communication or waiting</td> </tr> </tbody> </table>	LED	Description	PWR	ON when communication power is supplied, OFF when power is OFF	COMM	ON for normal communication, OFF for abnormal communication or waiting	ERR	ON for abnormal communication, OFF for normal communication or waiting
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ERR	ON for abnormal communication, OFF for normal communication or waiting																						
Note	<ul style="list-style-type: none"> <li>• T-LINK Mini System Master unit : FTM100B Converter : FRC100A-G02 Repeater : FRC200A-C10</li> <li>• No. of output points, 16 points</li> </ul>	<ul style="list-style-type: none"> <li>• DeviceNet</li> <li>• OMRON Corporation: CompoBus/D System Master unit : Type C200HW-DRM21-V1 Master unit : Type CS1W-DRM21</li> <li>• No. of output points, 16 points</li> </ul>	<ul style="list-style-type: none"> <li>• CompoBus/S System Master unit : Type C200HW-SRM21-V1 Master unit : Type CQM1-SRM21-V1 No. of output points, 16 points (Type SR1) • No. of output points, 8 points (Type SR2)</li> </ul>																				
Cable wiring	 <p>Connect the shielding wire to the SD terminal. If the shielding wire is not connected to the SD terminal, normal transmission will be impossible even for short distances. Furthermore, do not ground the shielding wire (SD).</p>																						

# Series SV

	Type H NKE Corporation Uni-wire H System	Type U JEMANET (JPCN-1)	Type V Mitsubishi Electric Corporation CC-LINK System																										
Name of terminal block, LED	 <table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>ON for power supply input (ON when normal, flickers when voltage drops)</td> </tr> <tr> <td>SEND</td> <td>Transmission indication: Blinks when normal, OFF or ON when abnormal</td> </tr> </tbody> </table>	LED	Description	POWER	ON for power supply input (ON when normal, flickers when voltage drops)	SEND	Transmission indication: Blinks when normal, OFF or ON when abnormal	 <table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>POWER</td> <td>ON for SI unit power supply input</td> </tr> <tr> <td>COMM</td> <td>On for normal communication</td> </tr> <tr> <td>ALARM</td> <td>ON for abnormal communication</td> </tr> </tbody> </table>	LED	Description	POWER	ON for SI unit power supply input	COMM	On for normal communication	ALARM	ON for abnormal communication	 <table border="1"> <thead> <tr> <th>LED</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>PW</td> <td>ON when communication power is supplied, OFF when power is OFF</td> </tr> <tr> <td>L RUN</td> <td>ON when normal data is being received</td> </tr> <tr> <td>SD</td> <td>ON when data is transmitted</td> </tr> <tr> <td>RD</td> <td>ON when data is received</td> </tr> <tr> <td>L ERR.</td> <td>ON for transmission error/wrong setting, Blinks when station or transmission speed setting changes during operation</td> </tr> </tbody> </table>	LED	Description	PW	ON when communication power is supplied, OFF when power is OFF	L RUN	ON when normal data is being received	SD	ON when data is transmitted	RD	ON when data is received	L ERR.	ON for transmission error/wrong setting, Blinks when station or transmission speed setting changes during operation
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L ERR.	ON for transmission error/wrong setting, Blinks when station or transmission speed setting changes during operation																												
Note	<ul style="list-style-type: none"> <li>• Uni-wire H System Send unit: SD-H2</li> <li>• No. of output points, 16 points</li> </ul>	<ul style="list-style-type: none"> <li>• JEMANET (JPCN-1) (Reference) AJ71J92-S3 (Mitsubishi Electric Corporation) A1SJ71J92-S3 (Mitsubishi Electric Corporation) Type C200HW-JRM21 (OMRON Corporation) NJ-JPCN-1 (Fuji Electric Co., Ltd.) NP1L-JP1 (Fuji Electric Co., Ltd.) No. of output points, 16 points</li> </ul>	<ul style="list-style-type: none"> <li>• CC-Link System Master unit : AJ61BT11 Master unit : A1SJ61BT11 Master unit : AJ61QBT11 Master unit : A1SJ61QBT11</li> <li>• No. of output points, 16 points</li> </ul>																										
Cable wiring		<p>a) 2-wire type</p>  <p>b) 3-wire type</p> 																											

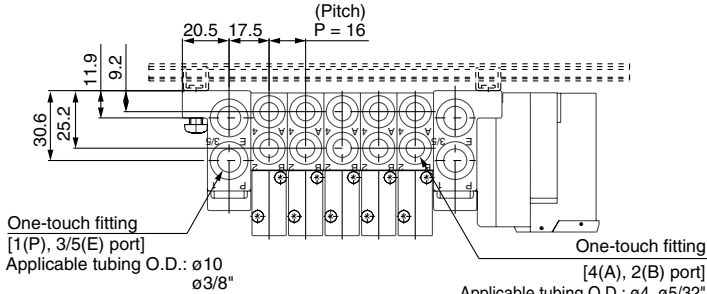


# Series SV

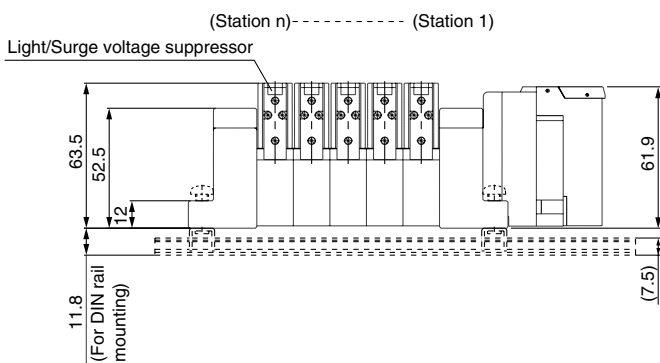
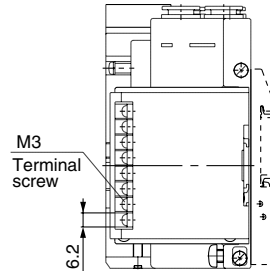
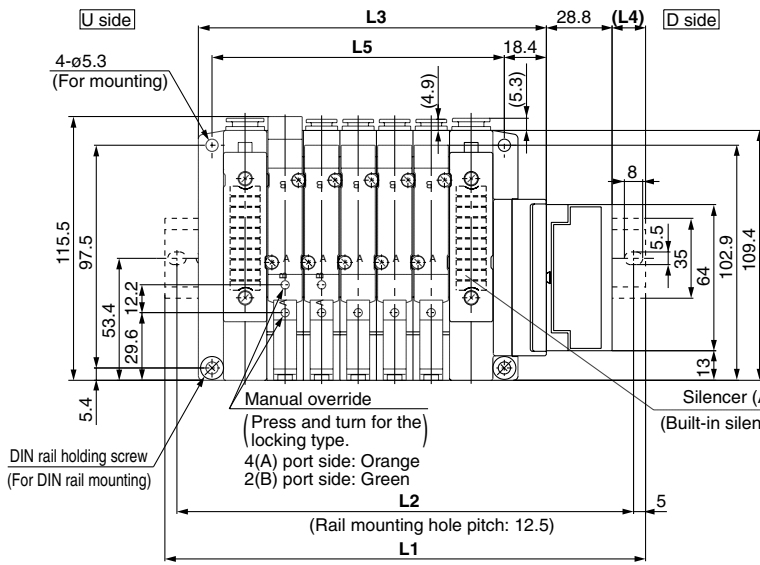
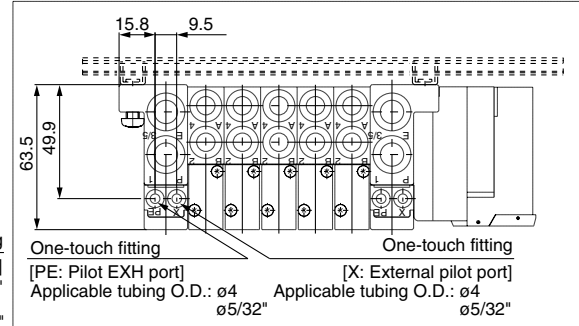
## Dimensions: Series SV2000 for EX120 Dedicated Output Serial Wiring

● Tie-rod base manifold: SS5V2-10S3□D- Stations  $\frac{U}{D}$  (S, R, RS)-  $\frac{C4, N3}{C6, N7}$  (-D)  
 $\frac{C8, N9}{C6, N7}$

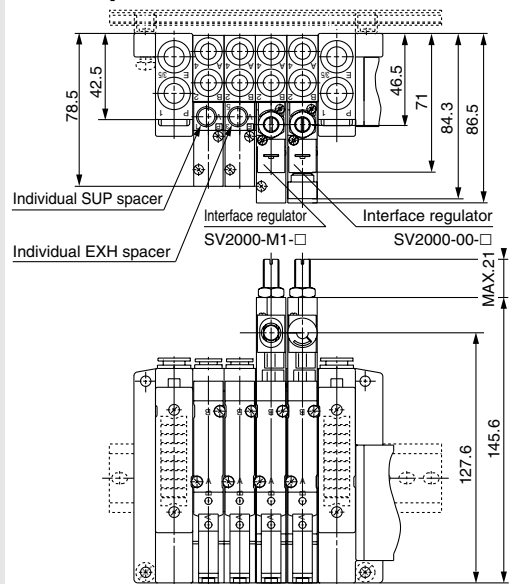
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



### With External Pilot Specifications



### With option



### L Dimension

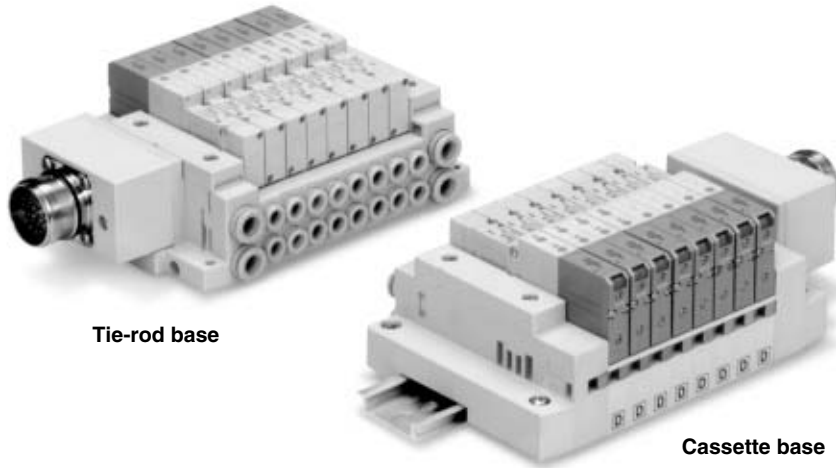
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	160.5	173	198	210.5	223	248	260.5	273	285.5	310.5	323	335.5	360.5	373	385.5
L2	150	162.5	187.5	200	212.5	237.5	250	262.5	275	300	312.5	325	350	362.5	375
L3	104.4	120.4	136.4	152.4	168.4	184.4	200.4	216.4	232.4	248.4	264.4	280.4	296.4	312.4	328.4
L4	13.5	12	16.5	14.5	13	17.5	15.5	14	12	16.5	15	13	17.5	16	14
L5	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304

n: Stations

Note) The width of type E (Matsushita Electric Works, Ltd.) and type G (Rockwell Automation, Inc.) SI units are  $\geq 24.3$  mm greater. For details, please contact SMC.

# Circular Connector

IP67 compliant



Applicable series	Cassette base manifold SV1000/SV2000
	Tie-rod base manifold SV1000/SV2000/SV3000/SV4000
• Number of connectors: 26 pins	

SV

SZ

SY

SYJ

SX

# Circular Connector Series SV

## How to Order

**Series**

1	SV1000
2	SV2000
3	SV3000
4	SV4000

**Valve stations**

Symbol	Stations	Note
02	2 stations	(1) Double wiring specifications
⋮	⋮	
12	12 stations	(2) Specified layout (Up to 24 solenoids possible.)
02	2 stations	
⋮	⋮	
20	20 stations	

Note 1) Double wiring specifications: Single, double, 3 position and 4 position solenoid valves can be used at all of the 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 wiring specifications on the manifold specification sheet. (Note that double, 3 and 4 position valves cannot be used where single solenoid wiring has been specified.)

**● Tie-rod base**  
SS5V 1 — W 10CD — 05 U

**● Cassette base**  
SS5V 1 — W 16CD — 05 U

**● Mounting**

Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0*	DIN rail mounting (Without DIN rail)
D3	For 3 stations <small>(When a longer DIN rail is desired than the specified stations. Specify a longer rail than the standard length.)</small>
⋮	⋮
D20	For 20 stations <small>(Specify a longer rail than the standard length.)</small>

\* In the case of D0, only DIN rail fittings are attached.

**● Enclosure IP67 specifications**

**Series**

1	SV1000
2	SV2000

**● DIN rail length specified**

Nil	Standard length
3	For 3 stations <small>(Specify a longer rail than the standard length.)</small>
⋮	⋮
20 (Note)	For 20 stations

Note) Able to specify the length for 3 stations up to 18 stations for SV1000, which is available with 18 station at the maximum.

**● A, B port size (Metric)**

Symbol	Specifications	P, E port	Applicable series
C3	One-touch fitting for ø3.2	One-touch fitting for ø8	SV1000
C4	One-touch fitting for ø4		
C6	One-touch fitting for ø6		
C4	One-touch fitting for ø4	One-touch fitting for ø10	SV2000
C6	One-touch fitting for ø6		
C8	One-touch fitting for ø8		
C6	One-touch fitting for ø6	One-touch fitting for ø12	SV3000
C8	One-touch fitting for ø8		
C10	One-touch fitting for ø10		
C8	One-touch fitting for ø8	One-touch fitting for ø12	SV4000
C10	One-touch fitting for ø10		
C12	One-touch fitting for ø12		
02	Rc 1/4	Rc 3/8	SV4000
03	Rc 3/8		
02F	G 1/4		
03F	G 3/8	G 3/8	SV4000
M	A, B ports mixed		

**● A, B port size (Inch)**

Symbol	Specifications	P, E port	Applicable series
N1	One-touch fitting for ø1/8"	One-touch fitting for ø5/16"	SV1000
N3	One-touch fitting for ø5/32"		
N7	One-touch fitting for ø1/4"		
N3	One-touch fitting for ø5/32"	One-touch fitting for ø3/8"	SV2000
N7	One-touch fitting for ø1/4"		
N9	One-touch fitting for ø5/16"		
N7	One-touch fitting for ø1/4"	One-touch fitting for ø3/8"	SV3000
N9	One-touch fitting for ø5/16"		
N11	One-touch fitting for ø3/8"		
N9	One-touch fitting for ø5/16"	One-touch fitting for ø3/8"	SV4000
N11	One-touch fitting for ø3/8"		
02N	NPT 1/4		
03N	NPT 3/8	NPT 3/8	SV4000
02T	NPTF 1/4		
03T	NPTF 3/8		
M	A, B ports mixed		

**● P, E port location**

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

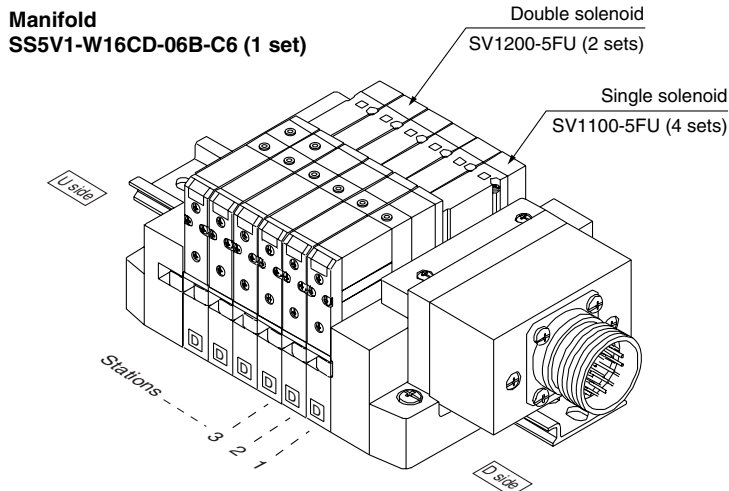
**SUP/EXH block assembly specifications**

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

## How to Order Valve Manifold Assembly

### Ordering example (SV1000)



SS5V1-W16CD-06B-C6.....1 set (manifold part no.)  
 \* SV1100-5FU.....4 sets (Single solenoid part no.)  
 \* SV1200-5FU.....2 sets (Double solenoid part no.)

- SV
- SZ
- SY
- SYJ
- SX

## How to Order Solenoid Valves

SV 1 1 0 0 [ ] [ ] - 5 F [ ] [ ] [ ]

Note



Note) Available with manifold block for station additions. Refer to pages 1-2-89 and 1-2-93.

#### Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

#### Type of actuation

1	2 position single solenoid
2	2 position double solenoid
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 Series SV1000 and SV2000 only.

#### Pilot type

Nil	Internal pilot
R	External pilot

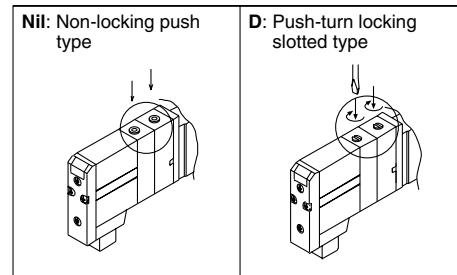
\* External pilot specifications is not available for 4 position dual 3 port valves.

#### Back pressure check valve

Nil	None
K	Built-in

\* Built-in back pressure check valve type is applicable to series SV1000 only.  
 \* Back pressure check valve is not available for 3 position closed center and 3 position pressure center.

#### Manual override



#### Light/Surge voltage suppressor

U	With light/surge voltage suppressor
R	With surge voltage suppressor

#### Rated voltage

5	24 VDC
6	12 VDC

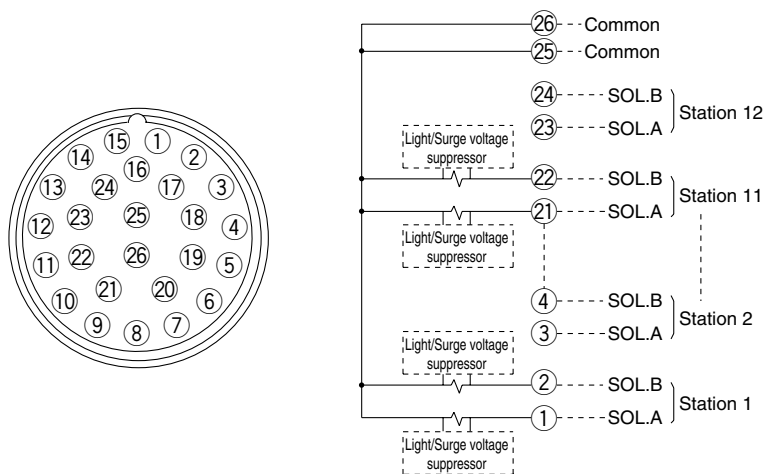


Refer to Precautions 2 on page 1-2-9.

# Series SV

## Manifold Electrical Wiring

### 10C/16C Circular Connector Type (26 pins)



- This circuit has double wiring specifications for up to 12 stations. Since the usable number of solenoids differs depending on the manifold type, refer to the table below. In the case of single solenoids, connect to SOL. A. Furthermore, when wiring is specified on a manifold specification sheet, connections are made without skipping any connectors, and connections are made without skipping any connectors, and signals A for single and A, B for double are in order 1 → 2 → 3 → 4, etc.
- Stations are counted from D side (connector side) as the 1st.
- Since solenoid valves do not have polarity, either the +COM or -COM can be used.

### Usable No. of Solenoids

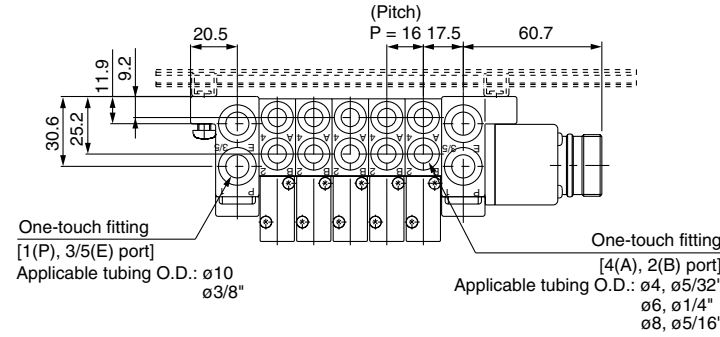
Model		Max. no. of solenoids
Tie-rod base type 10	SV1000 to SV4000	24
	SV1000	18
Cassette base type 16	SV1000	18
	SV2000	24

# Series SV

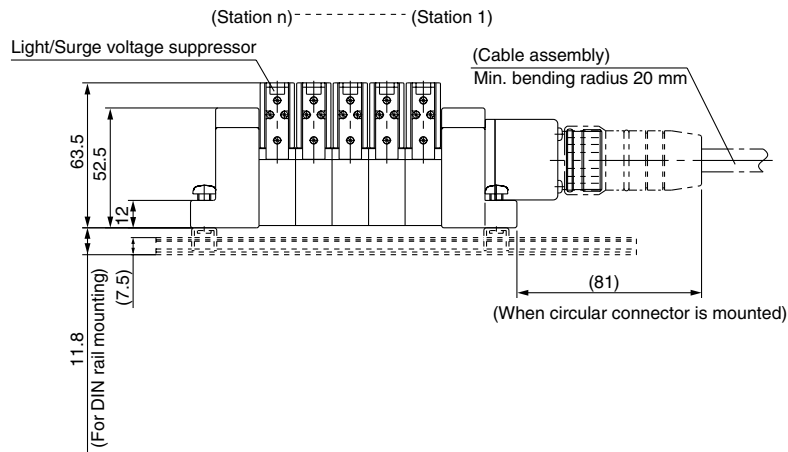
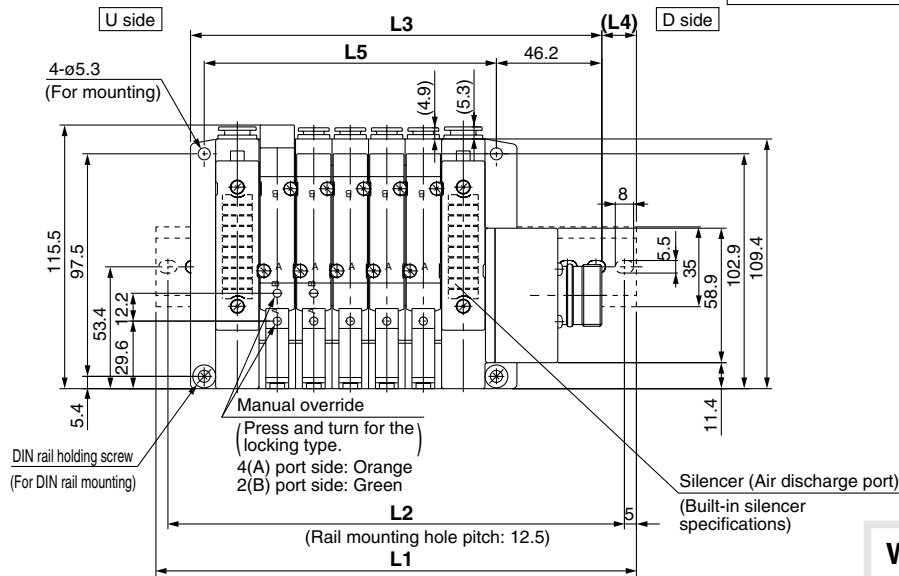
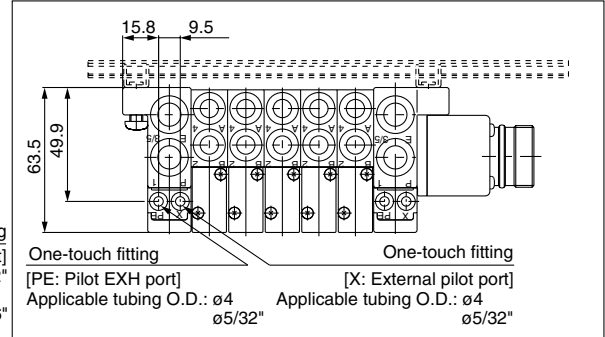
## Dimensions: Series SV2000 for Circular Connector

### ● Tie-rod base manifold: SS5V2-W10CD-Stations<sub>U</sub><sub>D</sub> (S, R, RS)-C4, N3C6, N7C8, N9 (-D)

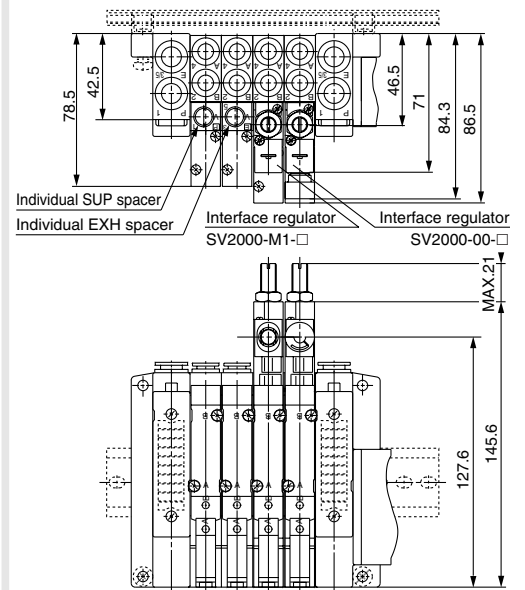
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



### With External Pilot Specifications



### With option



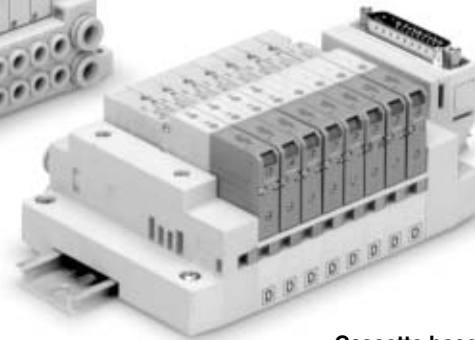
### L Dimension

L	n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1		160.5	173	198	210.5	223	235.5	260.5	273	285.5	310.5	323	335.5	348	373	385.5	398	423	435.5	448
L2		150	162.5	187.5	200	212.5	225	250	262.5	275	300	312.5	325	337.5	362.5	375	387.5	412.5	425	437.5
L3		132.2	148.2	164.2	180.2	196.2	212.2	228.2	244.2	260.2	276.2	292.2	308.2	324.2	340.2	356.2	372.2	388.2	404.2	420.2
L4		14	12.5	17	15	13.5	11.5	16	14.5	12.5	17	15.5	13.5	12	16.5	14.5	13	17.5	15.5	14
L5		80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368

# D-sub Connector



Tie-rod base



Cassette base

Applicable series	Cassette base manifold SV1000/SV2000
	Tie-rod base manifold SV1000/SV2000/SV3000/SV4000
	<ul style="list-style-type: none"><li>• Number of connectors: 25 pins</li><li>• MIL-C-24308</li></ul> Conforming to JIS-X-5101

SV

SZ

SY

SYJ

SX



# D-sub Connector Series SV

## How to Order

**Series**

1	SV1000
2	SV2000
3	SV3000
4	SV4000

**Valve stations**

Symbol	Stations	Note
02	2 stations	Double wiring (1)
⋮	⋮	
11	11 stations	Specified layout (2) (Up to 23 solenoids possible.)
⋮	⋮	
20	20 stations	

**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)
⋮	⋮
D20	For 20 stations

\* In case of D0, only DIN rail fittings are attached.

**DIN rail length specified**

Nil	Standard length
3	For 3 stations (Specify a longer rail than the standard length.)
⋮	⋮
20 (Note)	For 20 stations

Note) Able to specify the length for 3 stations up to 18 stations for SV1000, which is available with 18 stations at the maximum.

**Tie-rod base**

**Cassette base**

**Series**

1	SV1000
2	SV2000

**Connector entry direction**

1	Upward
2	Lateral

**Valve stations**

**Series SV1000**

Symbol	Stations	Note
02	2 stations	Double wiring (1)
⋮	⋮	
09	9 stations	Specified layout (2) (Up to 18 solenoids possible.)
⋮	⋮	
18	18 stations	

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

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

**Series SV2000**

Symbol	Stations	Note
02	2 stations	Double wiring (1)
⋮	⋮	
11	11 stations	Specified layout (2) (Up to 23 solenoids possible.)
⋮	⋮	
20	20 stations	

**P, E port location**

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

**Pilot type**

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

**A, B port size (metric)**

Symbol	A, B port	P, E port	Applicable series
C3	One-touch fitting for ø3.2	One-touch fitting for ø8	SV1000
C4	One-touch fitting for ø4		
C6	One-touch fitting for ø6		
C4	One-touch fitting for ø4	One-touch fitting for ø10	SV2000
C6	One-touch fitting for ø6		
C8	One-touch fitting for ø8		
C6	One-touch fitting for ø6	One-touch fitting for ø12	SV3000
C8	One-touch fitting for ø8		
C10	One-touch fitting for ø10		
C8	One-touch fitting for ø8	One-touch fitting for ø12	SV4000
C10	One-touch fitting for ø10		
C12	One-touch fitting for ø12		
02	Rc 1/4	Rc 3/8	SV4000
03	Rc 3/8		
02F	G 1/4		
03F	G 3/8		
M	A, B ports mixed		

**A, B port size (inch)**

Symbol	A, B port	P, E port	Applicable series
N1	One-touch fitting for ø1/8"	One-touch fitting for ø5/16"	SV1000
N3	One-touch fitting for ø5/32"		
N7	One-touch fitting for ø1/4"		
N3	One-touch fitting for ø5/32"	One-touch fitting for ø3/8"	SV2000
N7	One-touch fitting for ø1/4"		
N9	One-touch fitting for ø5/16"		
N7	One-touch fitting for ø1/4"	One-touch fitting for ø3/8"	SV3000
N9	One-touch fitting for ø5/16"		
N11	One-touch fitting for ø3/8"		
N9	One-touch fitting for ø5/16"	One-touch fitting for ø3/8"	SV4000
N11	One-touch fitting for ø3/8"		
02N	NPT 1/4		
03N	NPT 3/8	NPTF 3/8	SV4000
02T	NPTF 1/4		
03T	NPTF 3/8		
M	A, B ports mixed		

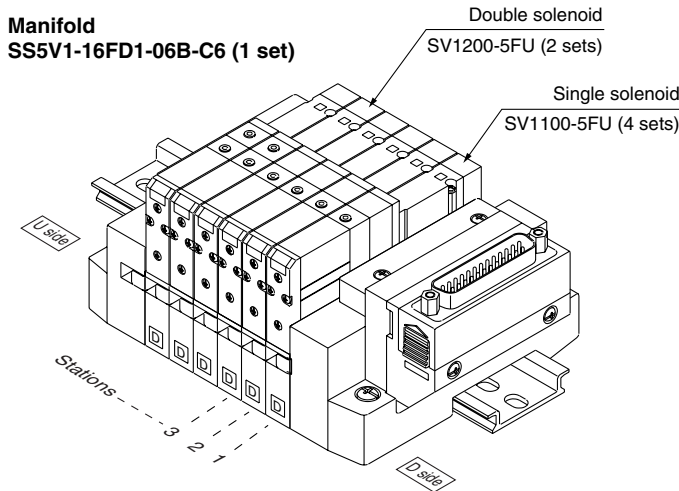
\* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

\* Port sizes of X, PE port for external pilot specifications (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6 (metric) and ø1/4" (inch) for SV3000/4000.



## How to Order Valve Manifold Assembly

### Ordering example (SV1000)



SS5V1-16FD1-06B-C6.....1 set (manifold part no.)  
 \*SV1100-5FU.....4 sets (Single solenoid part no.)  
 \*SV1200-5FU.....2 sets (Double solenoid part no.)

SV  
 SZ  
 SY  
 SYJ  
 SX

## How to Order Solenoid Valves

SV 1 1 0 0 — 5 F

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

1	2 position single solenoid
2	2 position double solenoid
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 Series SV1000 and SV2000 only.

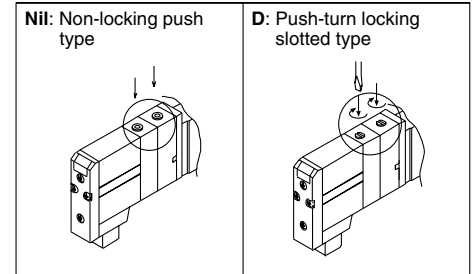
Pilot type

Nil	Internal pilot
R	External pilot

\* External pilot specifications is not available for 4 position dual 3 port valves.

Note  
 Note) Available with manifold block for station additions. Refer to pages 1-2-89 and 1-2-93.

• Manual override



• Light/Surge voltage suppressor

U	With light/surge voltage suppressor
R	With surge voltage suppressor

• Rated voltage

5	24 VDC
6	12 VDC

• Back pressure check valve

Nil	None
K	Built-in

\* Built-in back pressure check valve type is applicable to series SV1000 only.

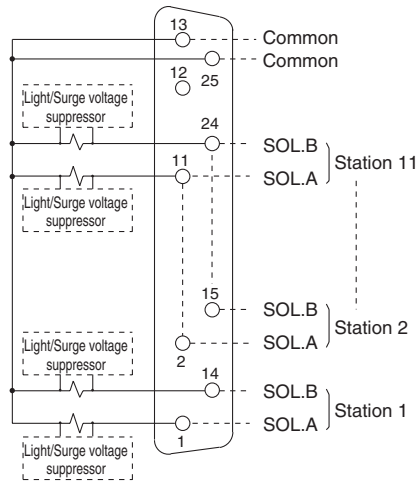
\* Back pressure check valve is not available for 3 position closed center and 3 position pressure center.

Refer to Precautions 2 on page 1-2-9.

# Series SV

## Manifold Electrical Wiring

### 10F/16F D-sub Connector Type (25 pins)



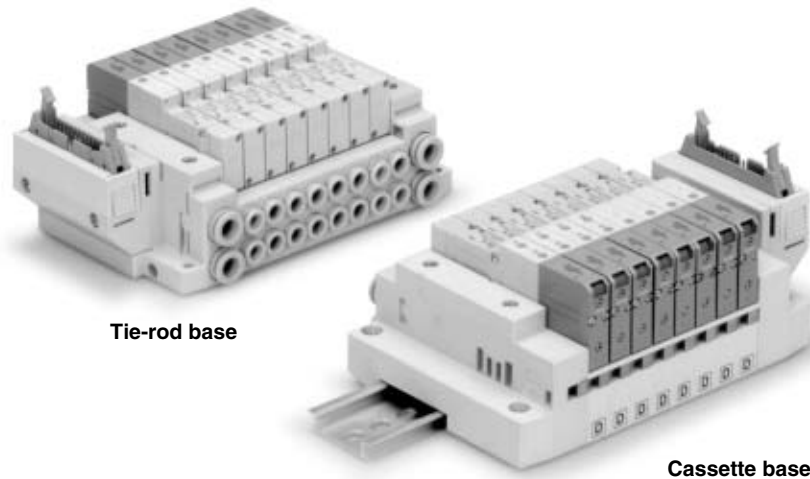
- This circuit has double wiring specifications for up to 11 stations. Since the usable number of solenoids differs depending on the manifold type, refer to the table below.  
In the case of single solenoids, connect to SOL.A. Furthermore, when wiring is specified on the manifold specification sheet, connections are made without skipping any connectors, and signals A for single and A, B for double are in order 1 → 14 → 2 → 15, etc.
- Stations are counted from D side (connector side) as the 1st.
- Since solenoid valves do not have polarity, either the +COM or -COM can be used.

#### Usable No. of Solenoids

Model		Max. no. of solenoids
Tie-rod base type 10	SV1000 to SV4000	23
	SV1000	18
Cassette base type 16	SV1000	18
	SV2000	23



# Flat Ribbon Cable Connector



Tie-rod base

Cassette base

Applicable series	Cassette base manifold SV1000/SV2000
	Tie-rod base manifold SV1000/SV2000/SV3000/SV4000
	<ul style="list-style-type: none"> <li>• Number of connectors: 26, 20, 10 pins</li> <li>• With strain relief</li> </ul> Conforming to MIL-C-83503

SV

SZ

SY

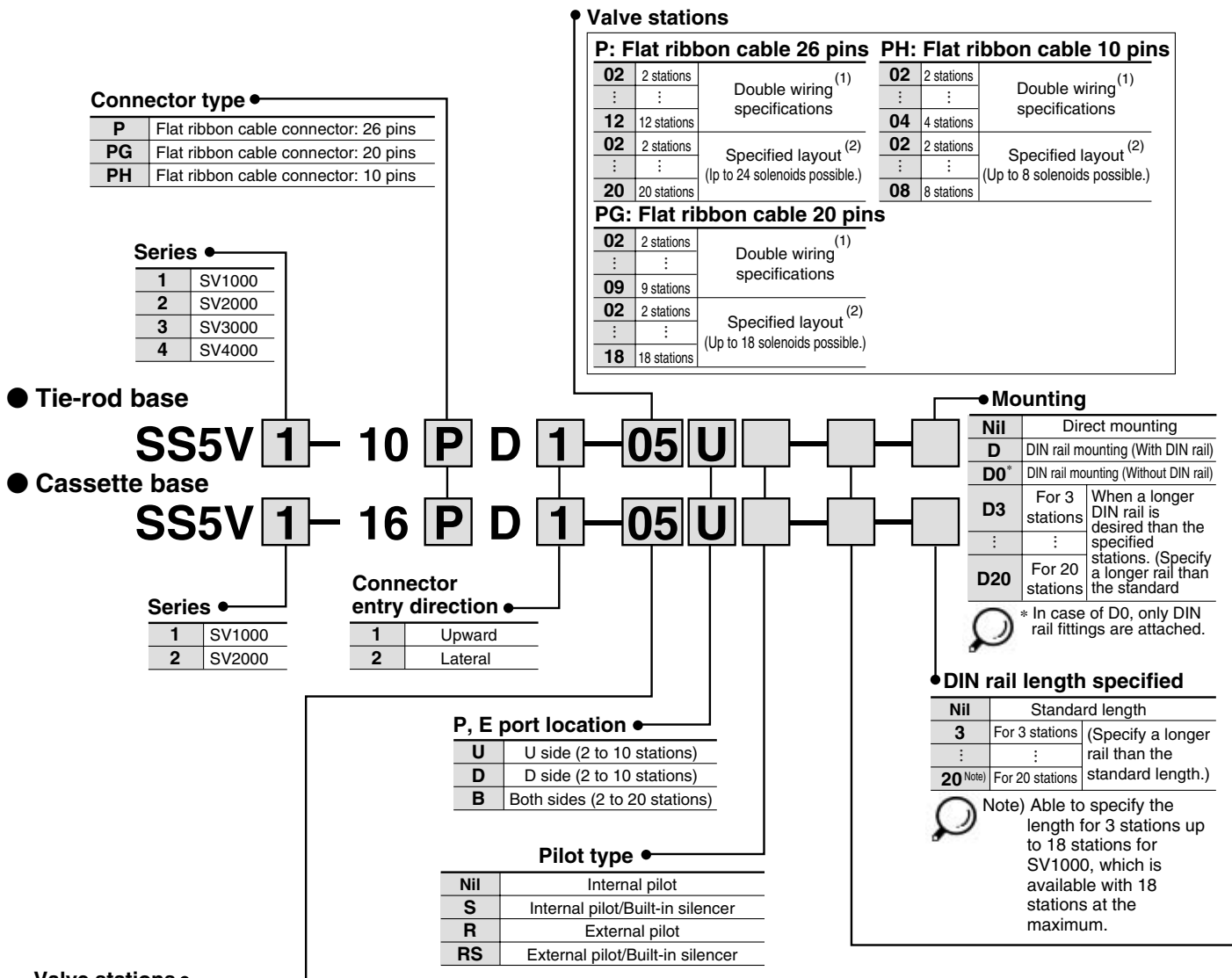
SYJ

SX

# Flat Ribbon Cable Connector

## Series SV

### How to Order



#### Valve stations

##### Series SV1000

<b>P: Flat ribbon cable 26 pins</b>		Double wiring <sup>(1)</sup> specifications
02	2 stations	
09	9 stations	Specified layout <sup>(2)</sup> (Up to 18 solenoids possible.)
02	2 stations	
18	18 stations	
02	2 stations	
<b>PH: Flat ribbon cable 10 pins</b>		Double wiring <sup>(1)</sup> specifications
02	2 stations	
04	4 stations	Specified layout <sup>(2)</sup> (Up to 8 solenoids possible.)
02	2 stations	
08	8 stations	
<b>PG: Flat ribbon cable 20 pins</b>		Double wiring <sup>(1)</sup> specifications
02	2 stations	
09	9 stations	Specified layout <sup>(2)</sup> (Up to 18 solenoids possible.)
02	2 stations	
18	18 stations	
02	2 stations	

#### Series SV2000

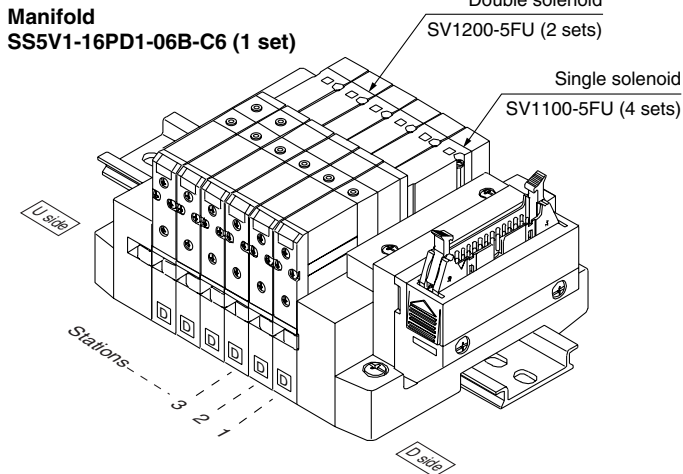
<b>P: Flat ribbon cable 26 pins</b>		Double wiring <sup>(1)</sup> specifications
02	2 stations	
12	12 stations	Specified layout <sup>(2)</sup> (Up to 24 solenoids possible.)
02	2 stations	
20	20 stations	
02	2 stations	
<b>PH: Flat ribbon cable 10 pins</b>		Double wiring <sup>(1)</sup> specifications
02	2 stations	
04	4 stations	Specified layout <sup>(2)</sup> (Up to 8 solenoids possible.)
02	2 stations	
08	8 stations	
<b>PG: Flat ribbon cable 20 pins</b>		Double wiring <sup>(1)</sup> specifications
02	2 stations	
09	9 stations	Specified layout <sup>(2)</sup> (Up to 18 solenoids possible.)
02	2 stations	
18	18 stations	
02	2 stations	

Note 1) Double wiring specifications: Single, double and 3 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 wiring specifications on a manifold specification sheet.

## How to Order Valve Manifold Assembly

### Ordering example (SV1000)



SS5V1-16PD1-06B-C6.....1 set (manifold part no.)  
 \*SV1100-5FU.....4 sets (Single solenoid part no.)  
 \*SV1200-5FU.....2 sets (Double solenoid part no.)

SV  
SZ  
SY  
SYJ  
SX

## How to Order Solenoid Valves

SV 1 1 0 0 — 5 F

**Series**

1	SV1000
2	SV2000
3	SV3000
4	SV4000

**Type of actuation**

1	2 position single solenoid
2	2 position double solenoid
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 Series SV1000 and SV2000 only.

**Pilot type**

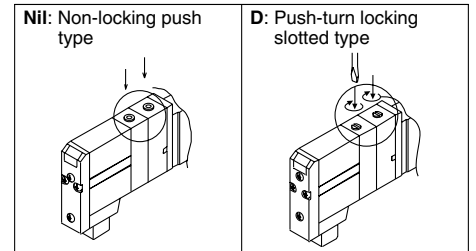
Nil	Internal pilot
R	External pilot

\* External pilot specifications is not available for 4 position dual 3 port valves.



Note) Available with manifold block for station additions. Refer to pages 1-2-89 and 1-2-93.

**Manual override**



**Light/Surge voltage suppressor**

U	With light/surge voltage suppressor
R	With surge voltage suppressor

**Rated voltage**

5	24 VDC
6	12 VDC

**Back pressure check valve**

Nil	None
K	Built-in

\* Built-in back pressure check valve type is applicable to series SV1000 only.  
 \* Back pressure check valve is not available for 3 position closed center and 3 position pressure center.



Refer to Precautions 2 on page 1-2-9.

**A, B port size (Metric)**

Symbol	A, B port	P, E port	Applicable series
C3	One-touch fitting for ø3.2	One-touch fitting for ø8	SV1000
C4	One-touch fitting for ø4		
C6	One-touch fitting for ø6		
C4	One-touch fitting for ø4	One-touch fitting for ø10	SV2000
C6	One-touch fitting for ø6		
C8	One-touch fitting for ø8		
C6	One-touch fitting for ø6	One-touch fitting for ø12	SV3000
C8	One-touch fitting for ø8		
C10	One-touch fitting for ø10		
C8	One-touch fitting for ø8	One-touch fitting for ø12	SV4000
C10	One-touch fitting for ø10		
C12	One-touch fitting for ø12		
02	Rc 1/4	Rc 3/8	SV4000
03	Rc 3/8		
02F	G 1/4		
03F	G 3/8	G 3/8	
M	A, B ports mixed		

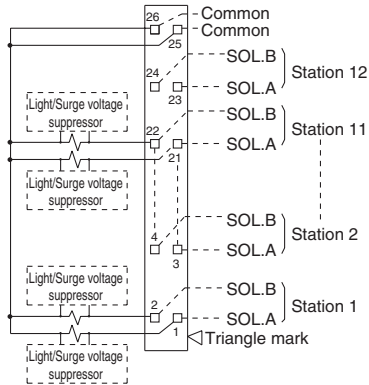
**A, B port size (Inch)**

Symbol	A, B port	P, E port	Applicable series
N1	One-touch fitting for ø1/8"	One-touch fitting for ø5/16"	SV1000
N3	One-touch fitting for ø5/32"		
N7	One-touch fitting for ø1/4"		
N3	One-touch fitting for ø5/32"	One-touch fitting for ø3/8"	SV2000
N7	One-touch fitting for ø1/4"		
N9	One-touch fitting for ø5/16"		
N7	One-touch fitting for ø1/4"	One-touch fitting for ø3/8"	SV3000
N9	One-touch fitting for ø5/16"		
N11	One-touch fitting for ø3/8"		
N9	One-touch fitting for ø5/16"	One-touch fitting for ø3/8"	SV4000
N11	One-touch fitting for ø3/8"		
02N	NPT 1/4		
03N	NPT 3/8	NPT 3/8	SV4000
02T	NPTF 1/4		
03T	NPTF 3/8		
M	A, B ports mixed		

\* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.  
 \* Port sizes of X, PE port for external pilot specification (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6 (metric) and ø1/4" (inch) for SV3000/4000.

## Manifold Electrical Wiring

**10P/16P Flat Ribbon Cable Type (26 pins)**

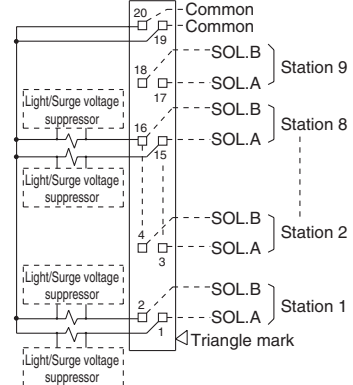


- This circuit has double wiring specifications for up to 12 stations. Since the usable number of solenoids differs depending on the manifold type, refer to the table below. In the case of single solenoids, connect to SOL. A. Furthermore, when wiring is specified on a manifold specification sheet, connections are made without skipping any connectors, and connections are made without skipping any connectors, and connections are made without skipping any connectors, and signals A for single and A, B for double are in order 1 → 2 → 3 → 4, etc.
- Stations are counted from D side (connector side) as the 1st one.
- Since terminal numbers are not indicated on the flat cable, use the triangle mark as a reference for wiring.
- Since solenoid valves do not have polarity, either the +COM or –COM can be used.

**Usable No. of Solenoids**

Model		Max. no. of solenoids
Tie-rod base type 10	SV1000 to SV4000	24
	SV1000 to SV2000	18
Cassette base type 16		24

**10PG/16PG Flat Ribbon Cable Type (20 pins)**

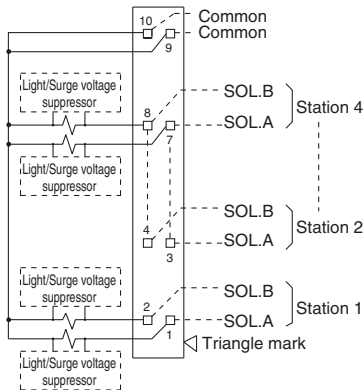


- This circuit has double wiring specifications for up to 9 stations. Since the usable number of solenoids differs depending on the manifold type, refer to the table below. In the case of single solenoids, connect to SOL. A. Furthermore, when wiring is specified on a manifold specification sheet, connections are made without skipping any connectors, and connections are made without skipping any connectors, and connections are made without skipping any connectors, and signals A for single and A, B for double are in order 1 → 2 → 3 → 4, etc.
- Stations are counted from D side (connector side) as the 1st one.
- Since terminal numbers are not indicated on the flat cable, use the triangle mark as a reference for wiring.
- Since solenoid valves do not have polarity, either the +COM or –COM can be used.

**Usable No. of Solenoids**

Model		Max. no. of solenoids
Tie-rod base type 10	SV1000 to SV4000	18
	SV1000 to SV2000	18
Cassette base type 16		18

**10PH/16PH Flat Ribbon Cable Type (10 pins)**



- This circuit has double wiring specifications for up to 4 stations. Since the usable number of solenoids differs depending on the manifold type, refer to the table below. In the case of single solenoids, connect to SOL. A. Furthermore, when wiring is specified on a manifold specification sheet, connections are made without skipping any connectors, and connections are made without skipping any connectors, and connections are made without skipping any connectors, and signals A for single and A, B for double are in order 1 → 2 → 3 → 4, etc.
- Stations are counted from D side (connector side) as the 1st one.
- Since terminal numbers are not indicated on the flat cable, use the triangle mark as a reference for wiring.
- Since solenoid valves do not have polarity, either the +COM or –COM can be used.

**Usable No. of Solenoids**

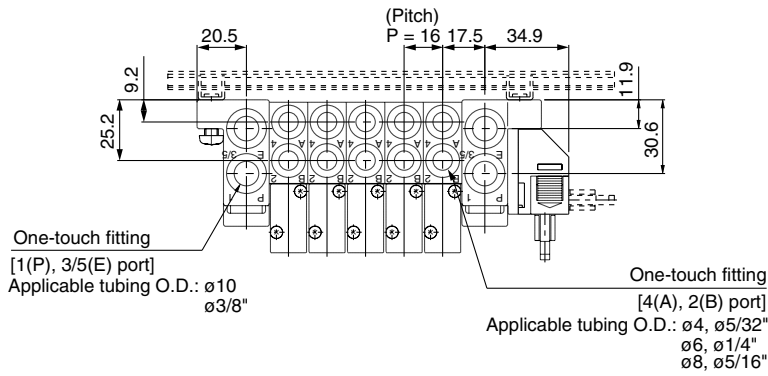
Model		Max. no. of solenoids
Tie-rod base type 10	SV1000 to SV4000	8
	SV1000 to SV2000	8
Cassette base type 16		8

# Series SV

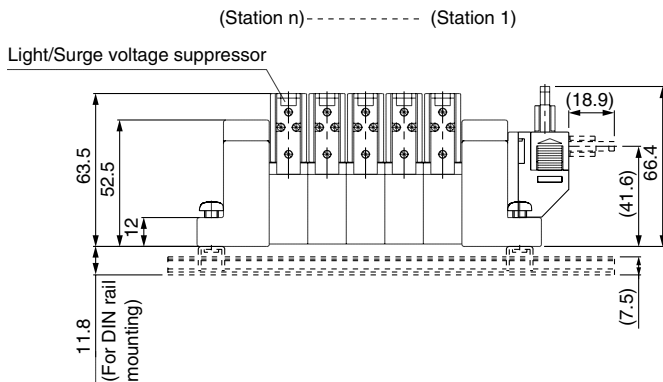
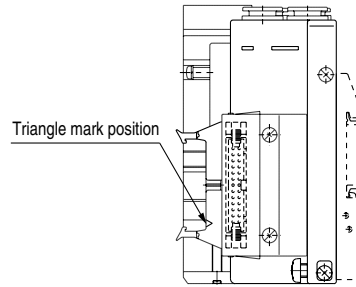
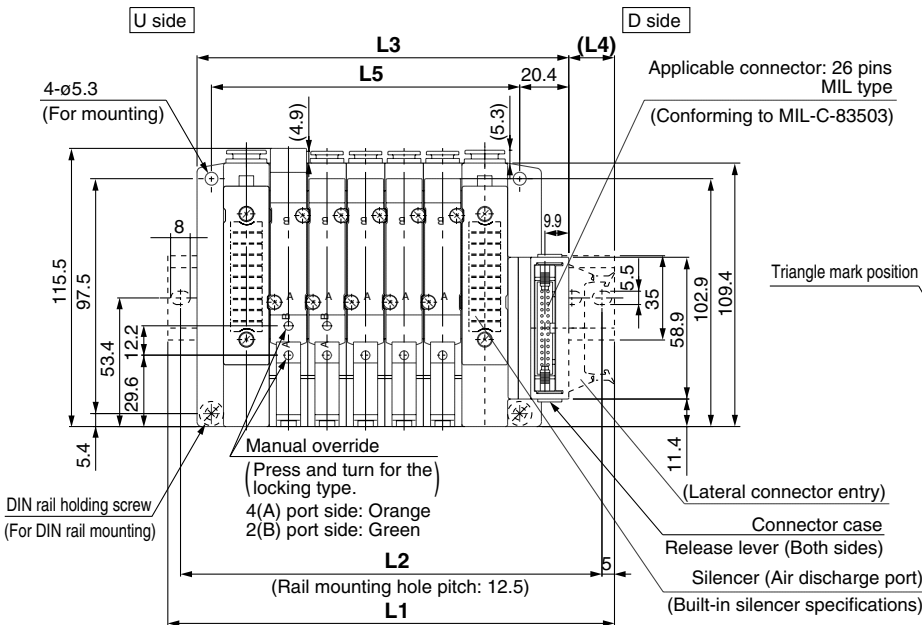
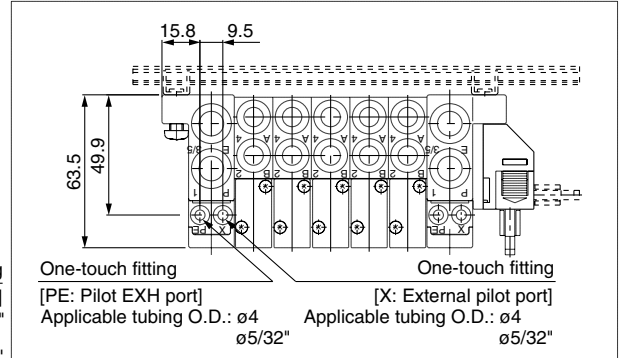
## Dimensions: Series SV2000 for Flat Ribbon Cable

● Tie-rod manifold: SS5V2-10 <sup>P</sup>PG <sup>D</sup>D<sub>2</sub> - Stations <sup>U</sup>U <sup>D</sup>D (S, R, RS) - C4, N3  
<sup>PH</sup>PH C6, N7 (-D)  
 C8, N9

- 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.

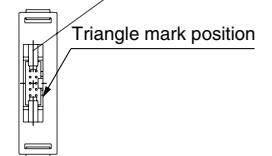
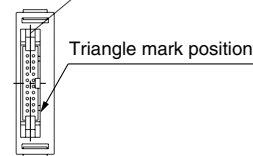


### With External Pilot Specifications



Applicable connector: 20 pins MIL type (Conforming to MIL-C-83503)

Applicable connector: 10 pins MIL type (Conforming to MIL-C-83503)



10PG (20 pins)

10PH (10 pins)



Refer to page 1-2-72 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

### L Dimension

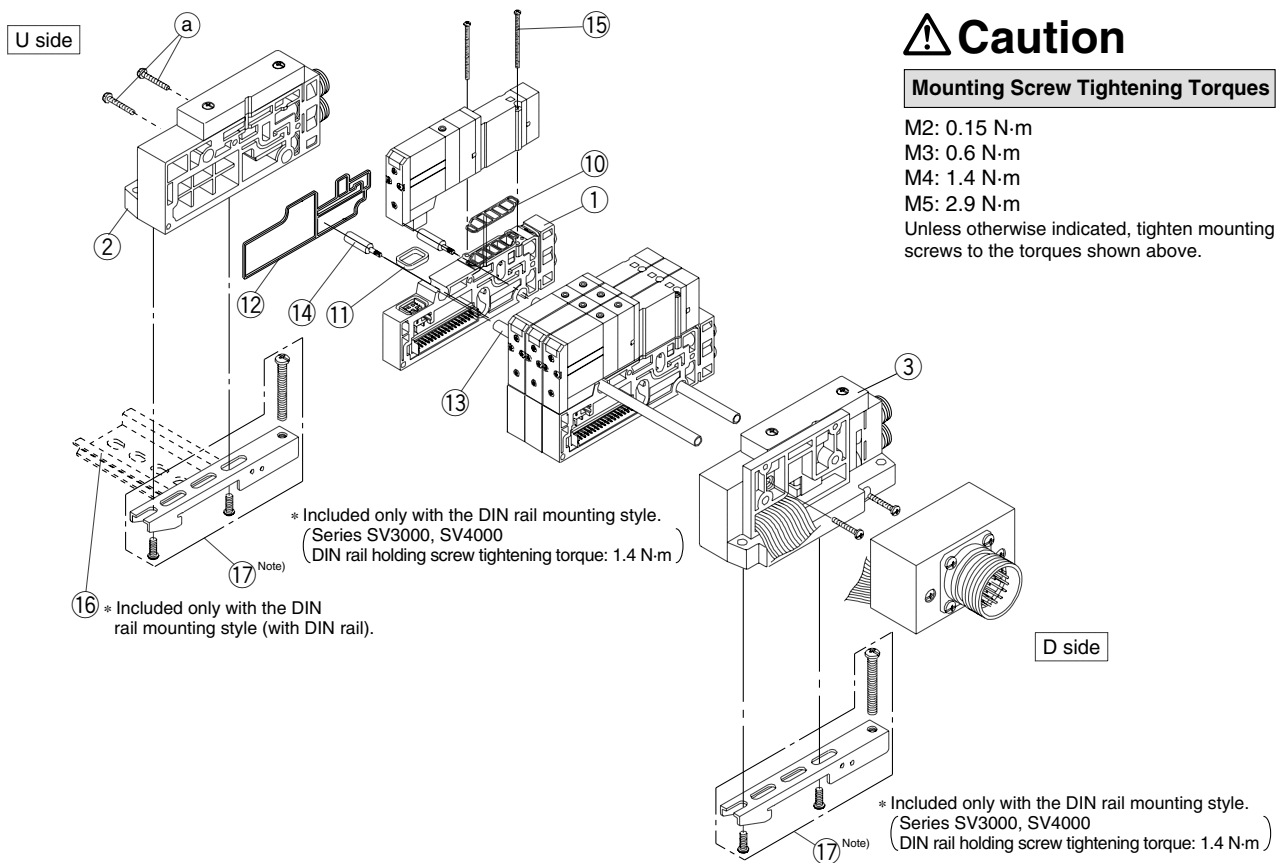
n: Stations

L <sub>n</sub>	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L <sub>1</sub>	148	160.5	173	185.5	210.5	223	235.5	248	273	285.5	298	323	335.5	348	360.5	385.5	398	410.5	435.5
L <sub>2</sub>	137.5	150	162.5	175	200	212.5	225	237.5	262.5	275	287.5	312.5	325	337.5	350	375	387.5	400	425
L <sub>3</sub>	106.4	122.4	138.4	154.4	170.4	186.4	202.4	218.4	234.4	250.4	266.4	282.4	298.4	314.4	330.4	346.4	362.4	378.4	394.4
L <sub>4</sub>	24	22.5	20.5	19	23.5	21.5	20	18	22.5	21	19	23.5	22	20	18.5	23	21	19.5	24
L <sub>5</sub>	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368



# Series SV

## Type 10: Tie-rod Base Manifold Exploded View



③ SUP/EXH block assembly		
<p><b>EX250 (Type 10S1□W)</b></p> <p>* ⑤, ⑥, ⑦ and ⑧ are not included in the SUP/EXH block assembly.</p> <p>* Included only with the DIN rail mounting style. (Tightening torque of DIN rail holding screw: 0.5 N·m)</p>	<p><b>Circular connector (Type 10C)</b></p>	<p><b>D-sub connector (Type 10F)</b></p>
<p><b>EX500 (Type 10SA□W)</b></p> <p>* ④ is not included in the SUP/EXH block assembly.</p>	<p><b>EX120 (Type 10S3□)</b></p> <p>* ⑨ is not included in the SUP/EXH block assembly.</p>	<p><b>For flat ribbon cable connector (Type 10P□)</b></p>

Note) ⑧ and ⑬ are for SV2000. Mounting orientation onto DIN rail gets reversed.

# Series SV

## Type 10: Tie-rod Base Manifold

### How to increase manifold bases (Type 10)

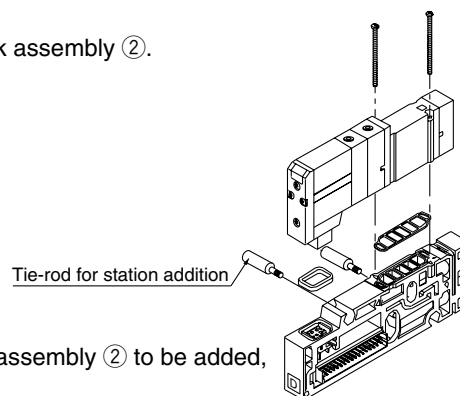
(1) Loosen the U side screws (a), and remove the SUP/EXH end block assembly (2).



(2) Screw in the tie-rods for station addition.  
(Screw them in until there is no gap between the tie-rods.)



(3) Connect the manifold assembly (1) and supply/exhaust end block assembly (2) to be added, and tighten the screws (a).



**⚠ Caution** Tightening torques (a)

SV1000, SV2000	0.6 N·m
SV3000	1.4 N·m
SV4000	2.9 N·m

**🔍 Note** When eliminating manifold stations, the appropriate tie-rods (13) for the desired change should be ordered separately.  
(When equipped with a DIN rail, be sure to tighten the DIN rail holding screws after tightening the tension bolts.)

## ⚠ Caution

### Fitting Assembly Replacement

By replacing manifold fitting assemblies, it is possible to change the size of the A, B ports and P, E ports. To replace them, remove the clip with a flat head screwdriver, etc., and pull out the fitting assembly. Mount the new fitting assembly by inserting it and then replacing the clip to its fully inserted position.

### Fitting Assembly Part No.

Port size		SV1000	SV2000	SV3000	SV4000
A, B Port	One-touch fitting for $\phi 3.2$	VVQ1000-50A-C3	—	—	—
	One-touch fitting for $\phi 4$	VVQ1000-50A-C4	VVQ1000-51A-C4	—	—
	One-touch fitting for $\phi 6$	VVQ1000-50A-C6	VVQ1000-51A-C6	VVQ2000-51A-C6	—
	One-touch fitting for $\phi 8$	—	VVQ1000-51A-C8	VVQ2000-51A-C8	VVQ4000-50B-C8
	One-touch fitting for $\phi 10$	—	—	VVQ2000-51A-C10	VVQ4000-50B-C10
	One-touch fitting for $\phi 12$	—	—	—	VVQ4000-50B-C12
	One-touch fitting for $\phi 1/8$ "	VVQ1000-50A-N1	—	—	—
	One-touch fitting for $\phi 5/32$ "	VVQ1000-50A-N3	VVQ1000-51A-N3	—	—
	One-touch fitting for $\phi 1/4$ "	VVQ1000-50A-N7	VVQ1000-51A-N7	VVQ2000-51A-N7	—
	One-touch fitting for $\phi 5/16$ "	—	VVQ1000-51A-N9	VVQ2000-51A-N9	VVQ4000-50B-N9
	One-touch fitting for $\phi 3/8$ "	—	—	VVQ2000-51A-N11	VVQ4000-50B-N11
	1/4 threaded type port block assembly	—	—	—	SY9000-58A-02□
	3/8 threaded type port block assembly	—	—	—	SY9000-58A-03□
P, E Port	One-touch fitting for $\phi 8$	VVQ1000-51A-C8	—	—	—
	One-touch fitting for $\phi 10$	—	VVQ2000-51A-C10	—	—
	One-touch fitting for $\phi 12$	—	—	VVQ4000-50B-C12	VVQ4000-50B-C12
	One-touch fitting for $\phi 5/16$ "	VVQ1000-51A-N9	—	—	—
	One-touch fitting for $\phi 3/8$ "	—	VVQ2000-51A-N11	VVQ4000-50B-N11	VVQ4000-50B-N11
3/8 threaded type port block assembly	—	—	—	SY9000-58B-03□	

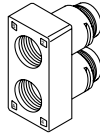
## 1/4, 3/8 thread type port block assembly

For A, B port

**SY9000 – 58A – 02 03**

For P, E port

**SY9000 – 58B – 03**

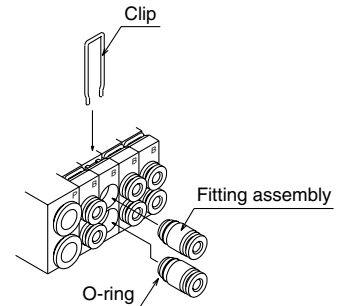


### Thread type

Nil	Rc
F	G
N	NPT
T	NPTF



- Note 1) Be careful to avoid damage or contamination of O-rings, as this can cause air leakage.
- Note 2) When removing a fitting assembly from a valve, after removing the clip, attach tubing or a plug (KQP-□□) to the One-touch fitting, and pull it out while holding the tubing (or plug). If it is pulled out while holding the release button of the fitting assembly (resin part), the release button may be damaged. However, 02 and 03 port block assemblies should be pulled out as they are.
- Note 3) 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.



SV

SZ

SY

SYJ

SX

## How to order tie-rod type 10 solenoid valves with manifold block

[Series SV1000 to SV4000]

- Type with manifold block is used when adding stations, etc.

SV 1 1 0 0 — 5 F

### Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

### Type of actuation

1	2 position single solenoid
2	2 position double solenoid
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 Series SV1000 and SV2000 only.

### Pilot type

Nil	Internal pilot
R	External pilot

\* External pilot specifications is not available for 4 position dual 3 port valves.

### Back pressure check valve

Nil	None
K	Built-in

\* Built-in back pressure check valve type is applicable to series SV1000 only.

\* Back pressure check valve is not available for 3 position closed center and 3 position pressure center.



Refer to Precautions 2 on page 1-2-9.

### A, B port size

Refer to A, B port size table on pages 1-2-20, 36, 44, and 76.

### Manifold wiring specifications

Nil	Double wiring
S	Single wiring

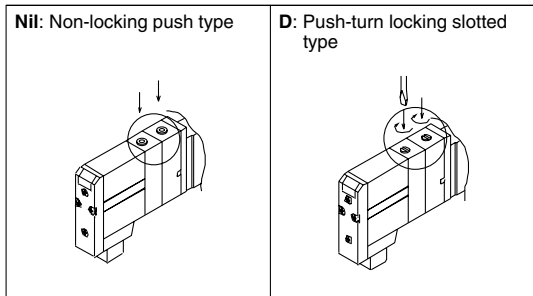
### Manifold block type

T	For Tie-rod base type 10 with manifold block
---	--



Note) Tie-rod type 10 includes tie-rods for station additions.

### Manual override



### Light/Surge voltage suppressor

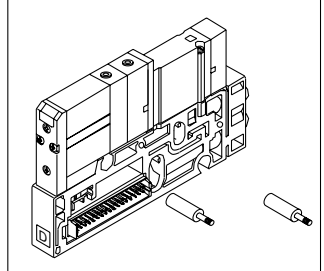
U	With light/surge voltage suppressor
R	With surge voltage suppressor

### Rated voltage

5	24 VDC
6	12 VDC

\* Note that serial wiring (EX500, EX250 and EX120) are only available with 24 VDC.

Example (SV1000)  
SV1200-5FU-T-C6



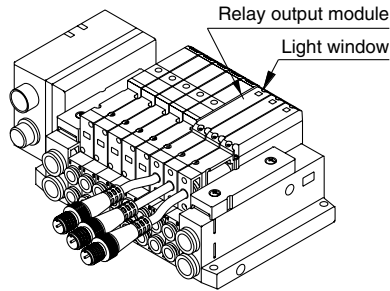
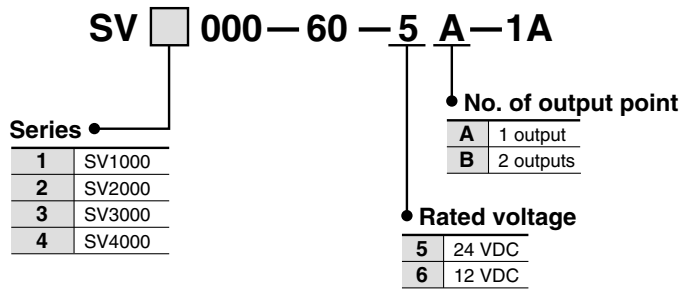
# Series SV

# Manifold Option (Common for Type 16 and 10)

## Relay output module

By adding a relay output module to a series SV manifold, devices up to 110 VAC, 3 A (large type solenoid valves, etc.) can be controlled together with Series SV valves.

### How to Order



\* Note that serial wiring manifolds (EX500, EX250 and EX120) are available with 24 VDC only.

## Relay Output Module Specifications

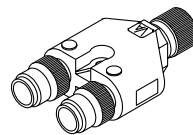
Item	Specifications			
	1 output [connector with lead wire (M12)]		2 outputs [connector with lead wire (M12)]	
No. of output points	1 output [connector with lead wire (M12)]		2 outputs [connector with lead wire (M12)]	
Output type	4 pins connector (M12) plug 1. — 2. Output A 3. — 4. Output A  Contact type ("a" contact)	 Relay output module side pin arrangement	4 pins connector (M12) plug 1. Output B 2. Output A 3. Output B 4. Output A  Contact type ("a" contact)	 Relay output module side pin arrangement
Load voltage	110 VAC	30 VDC	110 VAC	30 VDC
Load current	3 A	3 A	0.3 A	1 A
Indicator light	Orange		A side: Orange B side: Green	
Enclosure	Based on IP67 (IEC529)			
Current consumption	20 mA or less			
Polarity	Non-polar			
weight (g)	48			

## Y type connector

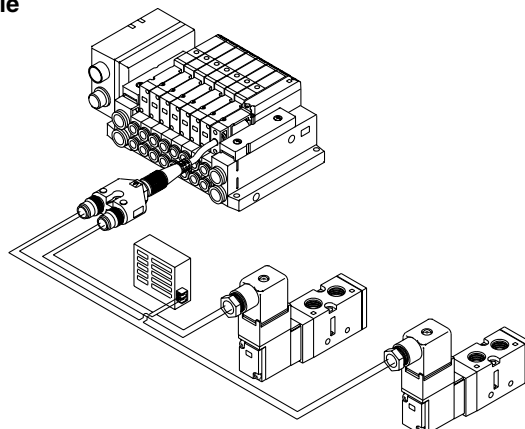
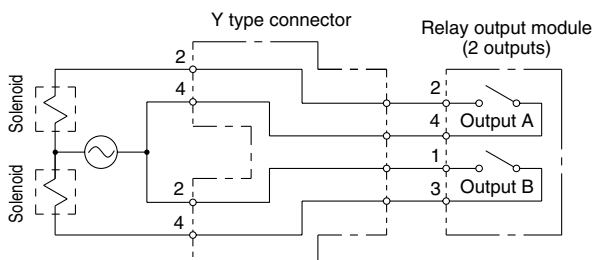
Used to branch a two output relay output module to two separate systems.

### How to Order

EX500—ACY00—S



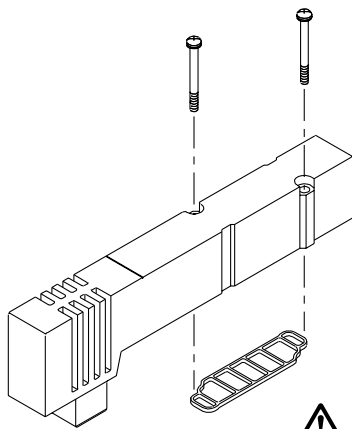
### Relay output module and Y type connector wiring example



## Manifold Option

### ■ Blanking plate assembly

Used in situations where valves will be added in the future.



Series	Blanking plate assembly part no.
SV1000	SV1000-67-1A
SV2000	SV2000-67-1A
SV3000	SV3000-67-1A
SV4000	SV4000-67-1A

### ⚠ Caution

**Mounting screw tightening torques**

M2: 0.15 N·m  
M3: 0.6 N·m  
M4: 1.4 N·m

### ■ SUP/EXH block disk

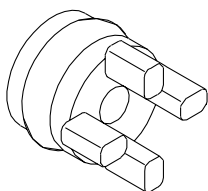
[SUP block disk]

By placing a SUP block disk in a manifold valve's pressure supply passage, two different high and low pressures can be supplied to one manifold.

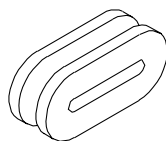
[EXH block disk]

By installing an EXH block disk in a manifold valve's exhaust passage, the valve's exhaust can be separated so that it will not affect other valves. It can also be used on a manifold with mixed positive pressure and vacuum.

(Two pieces are required to block EXH on both sides. However, Series SV1000 and 2000 type 10 manifolds require only one piece.)



Cassette base type 16



Tie-rod base type 10

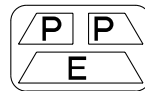
Series	Manifold Model	SUP block disk	EXH block disk
SV1000	10	SV1000-59-1A	SV1000-59-2A
	16	SX3000-77-1A	SX3000-77-1A
SV2000	10	SV2000-59-1A	SV2000-59-2A
	16	SV2000-59-3A	SV2000-59-3A
SV3000	10	SV3000-59-1A	SV3000-59-1A
SV4000	10	SY9000-57-1A	SY9000-57-1A

### ■ Label for block disk

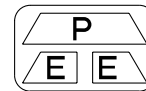
These labels are attached to manifolds in which SUP and EXH block disks have been installed, in order to identify the installed locations. (Three sheets each included.)

#### SV1000 – 74 – 1A

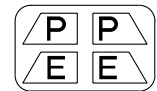
Label for SUP block disk



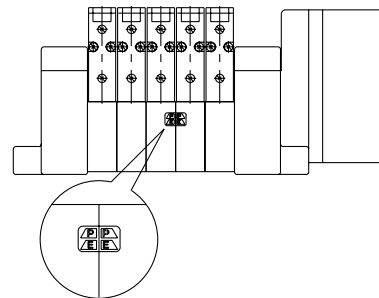
Label for EXH block disk



Label for SUP/EXH block disk

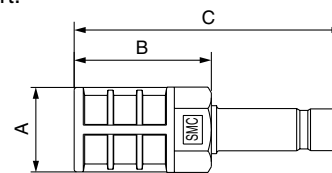


\* When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.



### ■ Silencer with One-touch fitting

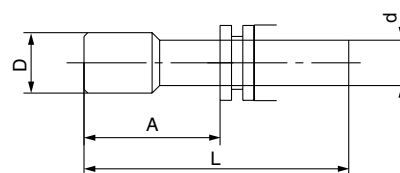
This silencer can be quickly mounted on the manifold's E (exhaust) port.



Series	Model	Effective area	A	B	C
SV1000 (For ø8)	AN203-KM8	14 mm <sup>2</sup>	ø16	26	51
	AN200-KM10	26 mm <sup>2</sup>	ø22	53.8	80.8
SV2000 (For ø10)	AN300-KM10	30 mm <sup>2</sup>	ø25	70	97
	AN300-KM12	41 mm <sup>2</sup>	ø25	70	98

### ■ Plug (White)

These are inserted in unused cylinder ports and P, E ports.



Applicable fitting size d	Model	A	L	D
ø4	KQP-04	16	32	ø6
ø6	KQP-06	18	35	ø8
ø8	KQP-08	20.5	39	ø10
ø10	KQ2P-10	22	43	ø12
ø12	KQ2P-12	24	44.5	ø14
ø1/8"	KQ2P-01	16	31.5	ø5
ø5/32"	KQ2P-03	16	32	ø6
ø1/4"	KQ2P-07	18	35	ø8.5
ø5/16"	KQ2P-09	20.5	39	ø10
ø3/8"	KQ2P-11	22	43	ø11.5

# Series SV

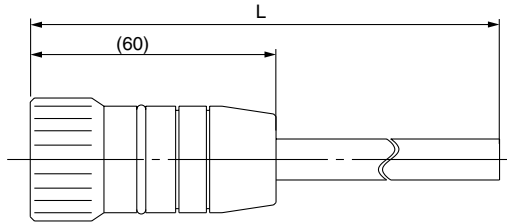
## Manifold Option

### ■ Circular connector/Cable assembly (26 pins)

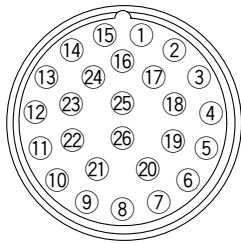
#### AXT100 – MC26 – □

##### Lead Wire Length

Part no.	L dimension
AXT100-MC26-015	1.5 m
AXT100-MC26-030	3 m
AXT100-MC26-050	5 m



Plug terminal no.  
(arrangement as seen from lead wire side)



### Circular Connector Cable Assembly Terminal No.

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

Note) Terminal no. ㉖ is connected to ㉕ inside the connector.

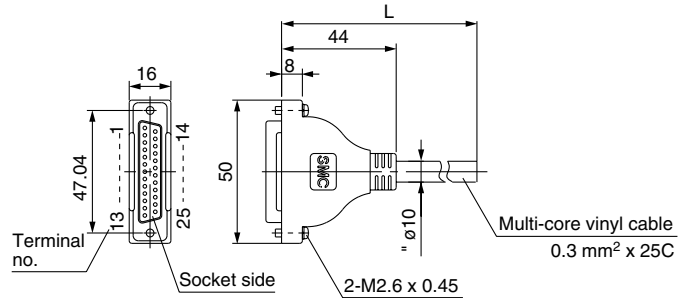
### ■ D-sub connector/Cable assembly (25 pins)

#### AXT100 – DS25 – □

##### Lead Wire Length

Part no.	L dimension
AXT100-DS25-015	1.5 m
AXT100-DS25-030	3 m
AXT100-DS25-050	5 m

When a commercially available connector is required, use a 25 pin female connector conforming to MIL-C24308.



### D-sub Connector Cable Assembly Terminal No.

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

### Circular Connector, D-sub Connector Cable Assembly Electric Characteristics

Item	Characteristics
Conductor resistance W/km, 20°C	65 or less
Withstand voltage VAC, 1 min.	1000
Insulation resistance, M/km, 20°C	5 or less

Note) The minimum inside bending radius for each cable is 20 mm.



# Series SV

## Manifold Option

### Interface regulator

#### How to order interface regulator

Series SV1000

SV1 0 00 — P — 05

#### Applicable valve

0	For single, double
3	For 3 position

#### Option

05	With pressure gauge [For odd number station]
06	With pressure gauge [For even number station]
M1	Without pressure gauge

#### Regulating port

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



Note) In the case of Series SV1000 with a pressure gauge when mounting on the manifold, use caution that the part numbers are different between the odd no. stations and the even no. stations to avoid pressure gauges from interfering from each others.

Note) Use caution that the part numbers will be differed depending on the one for single/double and 3 position due to the different length of solenoid valves. Also, when at least the one for 3 position is included in the same manifold, use all the ones for 3 position.

Series SV2000/SV3000/SV4000

SV 2 000 — P — 00

#### Series

2	SV2000
3	SV3000
4	SV4000

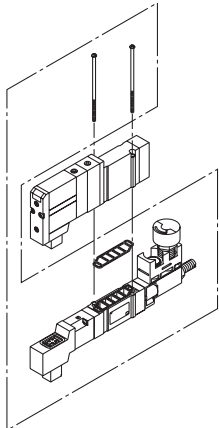
#### Option

00	With pressure gauge
M1	Without pressure gauge

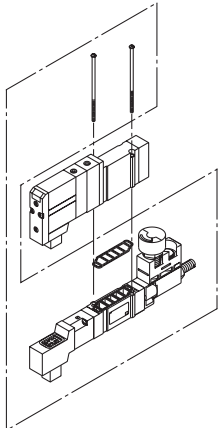
#### Regulating port

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

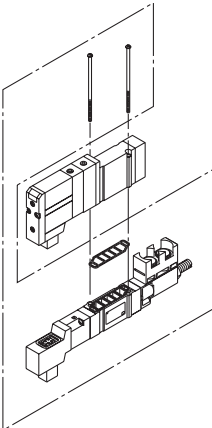
SV1000-□-05  
(For mounting odd number stations)



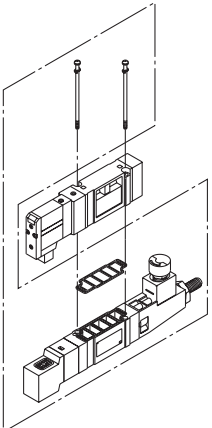
SV1000-□-06  
(For mounting even number stations)



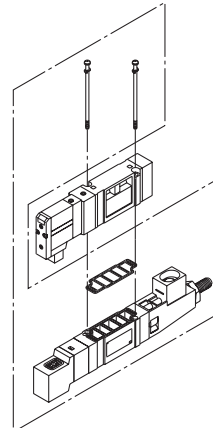
SV1000-□-M1



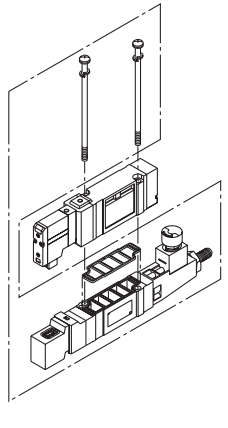
SV2000-□-00



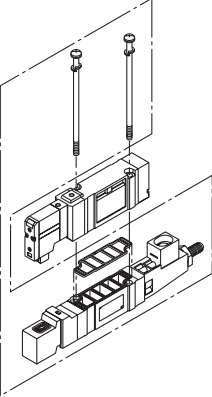
SV2000-□-M1



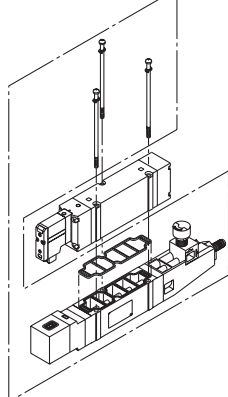
SV3000-□-00



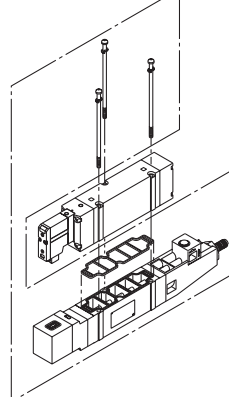
SV3000-□-M1



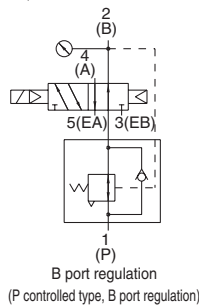
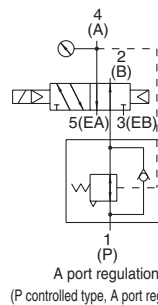
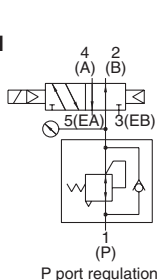
SV4000-□-00



SV4000-□-M1



#### JIS Symbol



#### Accessory

Series	Round head combination screw	Gasket
SV1000	SX3000-22-9 (M2 x 39.5)	SX3000-57-4
SV2000	SV2000-21-7 (M3 x 53)	SX5000-57-6
SV3000	SV3000-21-4 (M4 x 57)	SX7000-57-5
SV4000	SV2000-21-8 (M3 x 69.5)	SY9000-11-2

### Caution

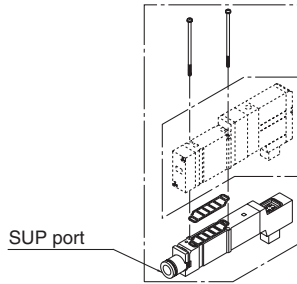
#### Mounting Screw Tightening Torques

M2: 0.15 N·m  
M3: 0.6 N·m  
M4: 1.4 N·m

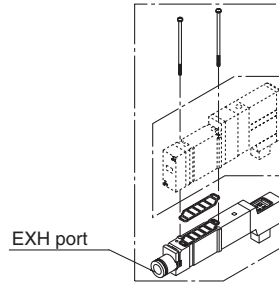


## Manifold Option

### ■ Individual SUP spacer assembly



### ■ Individual EXH spacer assembly



### How to order individual SUP/EXH spacer assembly

Series SV1000

**SV1000** — **38** — **1A** — **C6**

#### • Port size

<b>C3</b>	One-touch fitting for $\phi 3.2$
<b>C4</b>	One-touch fitting for $\phi 4$
<b>C6</b>	One-touch fitting for $\phi 6$
<b>N1</b>	One-touch fitting for $\phi 1/8''$
<b>N3</b>	One-touch fitting for $\phi 5/32''$
<b>N7</b>	One-touch fitting for $\phi 1/4''$

#### • Spacer type

<b>38</b>	Individual SUP spacer
<b>39</b>	Individual EXH spacer

Series SV2000/SV3000/SV4000

**SV** **2** **000** — **38** — **1** **A**

#### • Series

<b>2</b>	SV2000
<b>3</b>	SV3000
<b>4</b>	SV4000

#### • Thread type <sup>Note)</sup>

<b>Nil</b>	Rc
<b>F</b>	G
<b>N</b>	NPT
<b>T</b>	NPTF



Note) SV2000/3000/4000 port size

Series	Port size
<b>SV2000</b>	1/8
<b>SV3000</b>	1/4
<b>SV4000</b>	

### Accessory

Series	Round head combination screw	Gasket
<b>SV1000</b>	SX3000-22-9 (M2 x 39.5)	SX3000-57-4
<b>SV2000</b>	SV2000-21-6 (M3 x 46)	SY5000-11-15
<b>SV3000</b>	SV3000-21-3 (M4 x 53)	SY7000-11-11
<b>SV4000</b>	SV2000-21-5 (M3 x 60)	SY9000-11-2

SV

SZ

SY

SYJ

SX