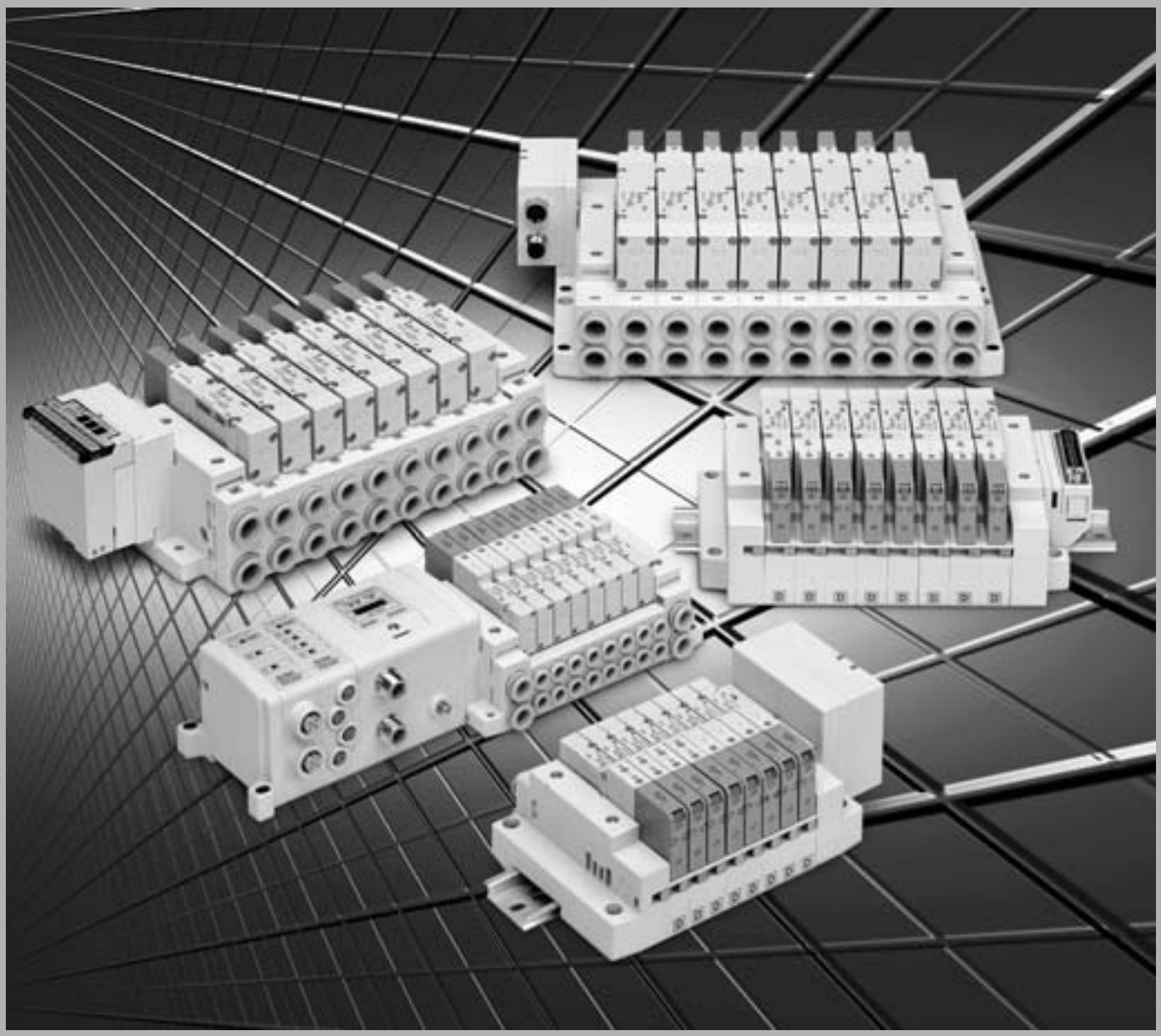
5 Port Solenoid Valve

Series SV1000/2000/3000/4000

Rubber Seal



New Concept **Connector Type Manifold**

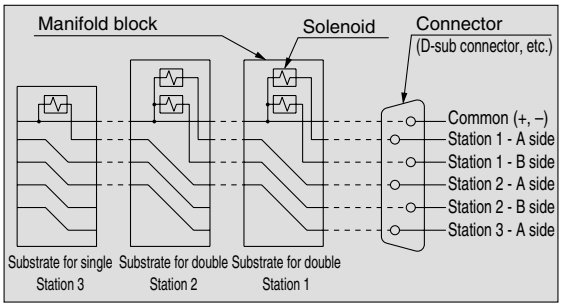
New Concept Connector Type Manifold
Series SV1000/2000/3000/4000

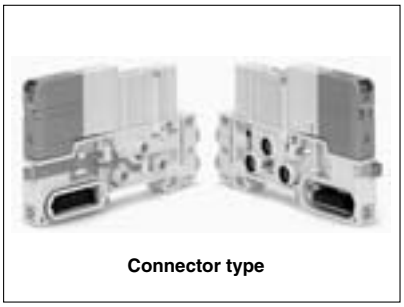
■ The use of multi-pin connectors to replace wiring inside manifold blocks provides flexibility when adding stations or changing manifold configuration.

Series SV employs a multi-connector instead of the conventional lead wires for internal.
By connecting each block with a connector, changes to manifold stations are greatly simplified.

Connector wiring diagram

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



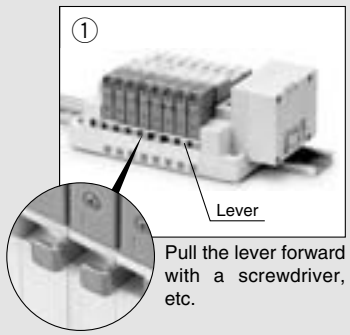


Connector type

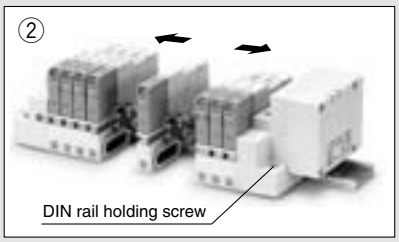
Service life of 50 million cycles or more (Based on SMC life test conditions)

■ Cassette base type manifold (For SV1000/2000)

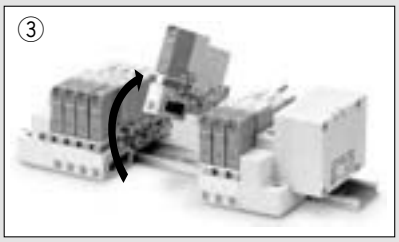
Cassette base type manifolds offer the ultimate in flexibility.
Manifold sections can be added using a simple release mechanism.



Pull the lever forward with a screwdriver, etc.



Loosen the screws that hold the DIN rail at both sides and separate the manifold to the right and left.



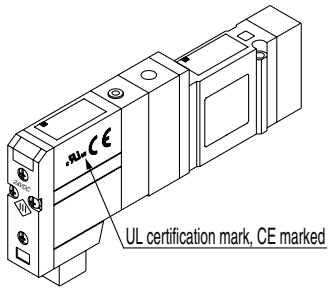
Pull the valve up at the front.

■ A relay output module control of devices up

■ Tie-rod base manifold (For SV1000/2000/3000/4000)

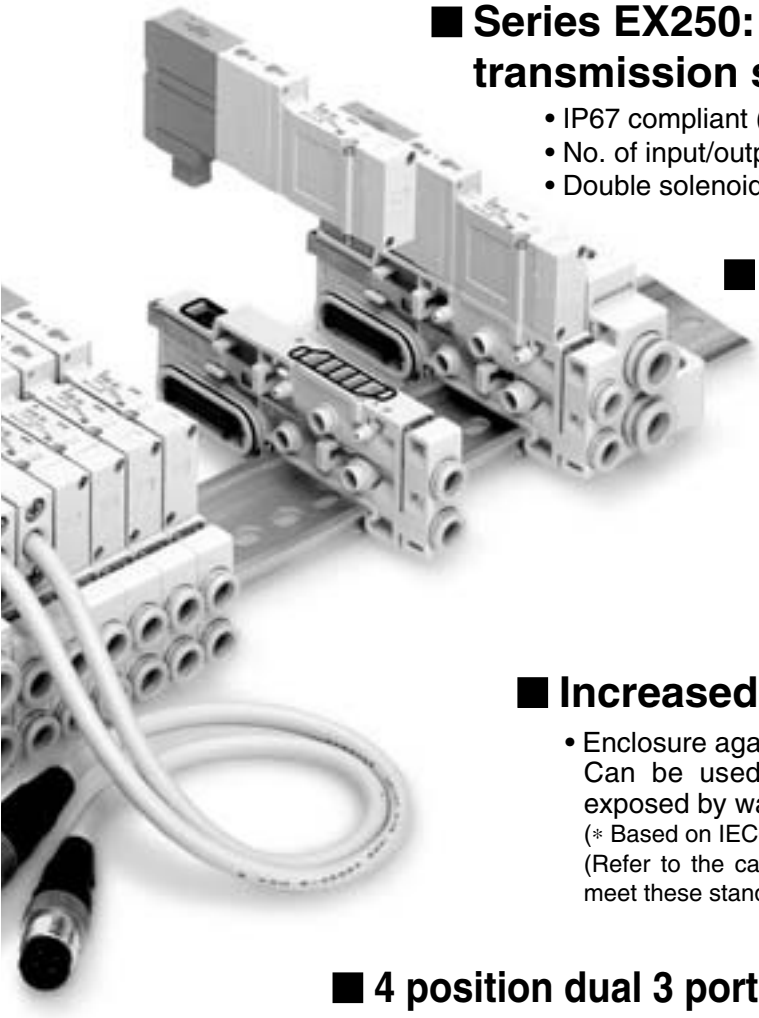
Conventional tie-rod base type manifolds are also available.
34 pins connector allows up to 16 stations with double solenoids.
(Refer to the tie-rod base manifold exploded view on page 430.)

■ The standard product is CE-compliant and UL-standard.



■ Series EX500: Gateway system, serial transmission system

- IP67 compliant (Gateway unit and input manifold are compliant with IP65.)
- No. of input/output point: 128 points (Output 64 points, Input 64 points)
- Controls up to 4 branches with 32 I/O per branch
- A single cable from the gateway provides both signal and power for each branch, eliminating the need for separate power connections for each manifold.

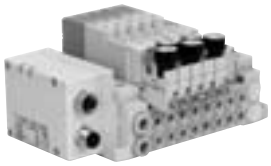


■ Series EX250: Integrated type (for I/O), serial transmission system

- IP67 compliant (compliant with IP40.)
- No. of input/output point: 64 points (Output 32 points, Input 32 points)
- Double solenoid allows up to 16 stations (up to 32 solenoids).

■ Interface regulator Series SV1000, 2000, 3000, 4000

- P port regulation, A port regulation and B port regulation are selectable, depending on an application.
  Able to set the pressure arbitrarily for each station of the manifold just by inserting between manifold base and valve.



■ Increased moisture and dust resistance.

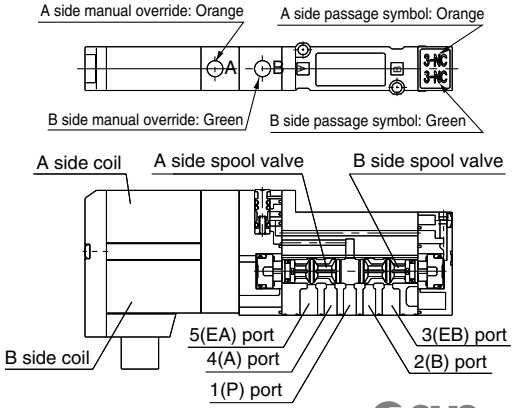
- Enclosure against foreign matters and water is conforming to IP67 *. Can be used in an atmosphere where the valve or manifold is exposed by water, etc. directly.
  (* Based on IEC60529)
  (Refer to the catalog contents for details, as some types of connectors do not meet these standards.)

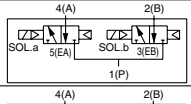
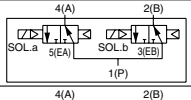
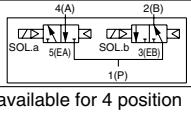
■ 4 position dual 3 port valves available for Series SV1000/2000

- Two 3 port valves built into a single valve body.
- A and B ports can be individually controlled.
- Three combinations are available: [N.C./N.C.], [N.O./N.O.], and [N.C./N.O.].
- Mixed mounting with 5 port valves is also possible.
- Labels are attached to indicate A and B side functions, using the same color as the manual override.

Power consumption: 0.6 W (Current: 25 mA, 24 VDC)

is available for to 110 VAC, 3 A.



Model	A side	B side	JIS Symbol
$SV^{1}_{2}A00$	N.C. valve	N.C. valve	
$SV^{1}_{2}B00$	N.O. valve	N.O. valve	
$SV^{1}_{2}C00$	N.C. valve	N.O. valve	

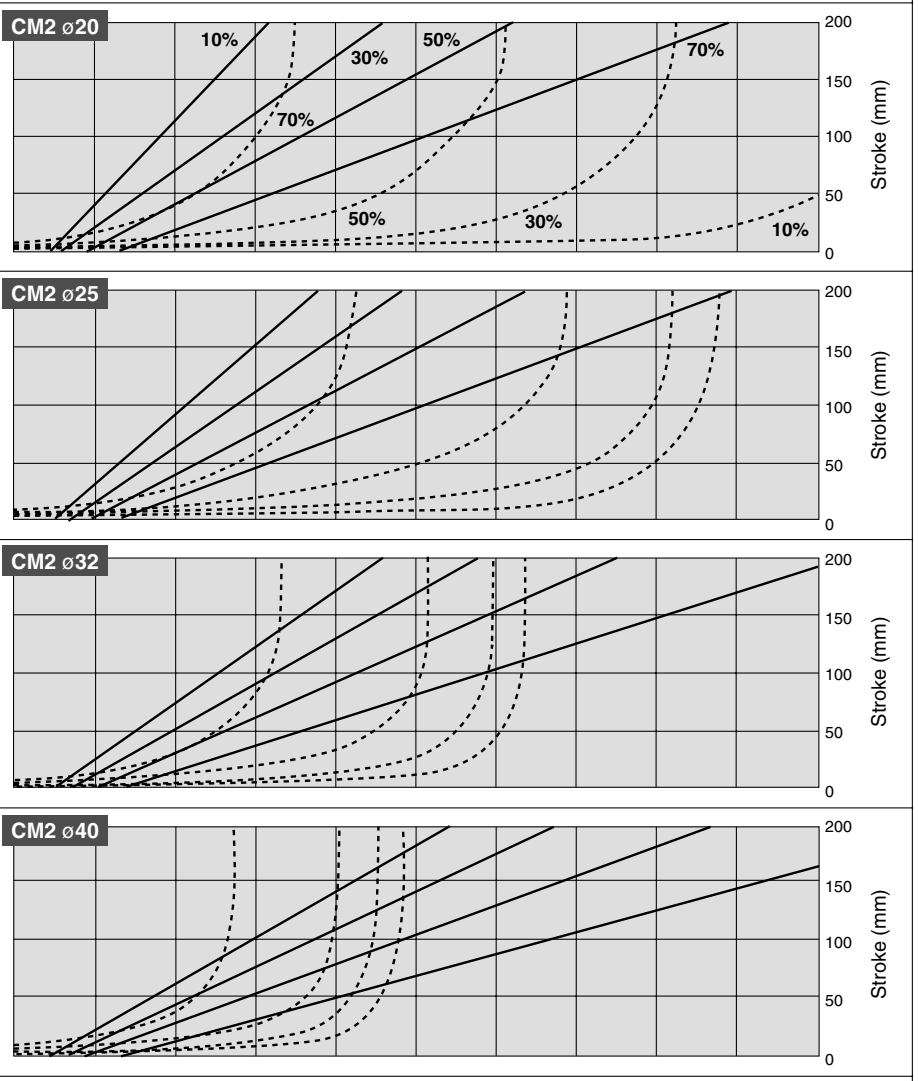
* External pilot specifications is not available for 4 position dual 3 port valves.

Air Cylinders Drive System
Full Stroke Time and Speed at the End

Series SV1000

Applicable bore size: ø20, ø25, ø32, ø40

Applicable related components				Total stroke time (s)
Solenoid valve	Silencer	Tubing	Speed controller	0.0 0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0
SV1□00	ANA1 -C08	T0604	AS2201F -01-06 AS2200-01	CM2 ø20
			AS2201F -01-06 AS2200-01	CM2 ø25
			AS2201F -01-06 AS2200-01	CM2 ø32
			AS2201F -02-06 AS2200-02	CM2 ø40
Solenoid valve	Silencer	Tubing	Speed controller	200 300 400 500 600 700 800 900 1000 1100 1200
Applicable related components				Speed at the end (mm/s)



For details regarding different conditions, make determinations after using the SMC Model Selection Program - Pneumatic Cylinder Drive Systems.

How to Read the Graph

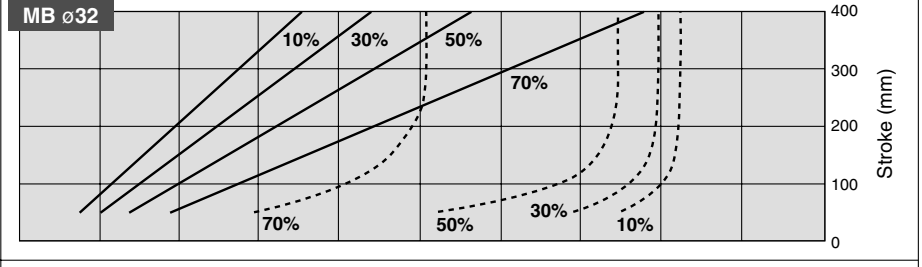
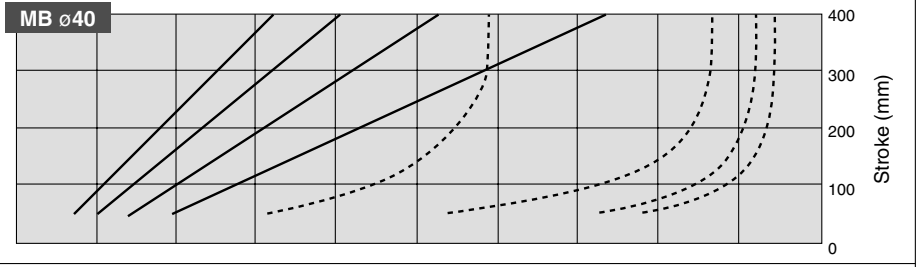
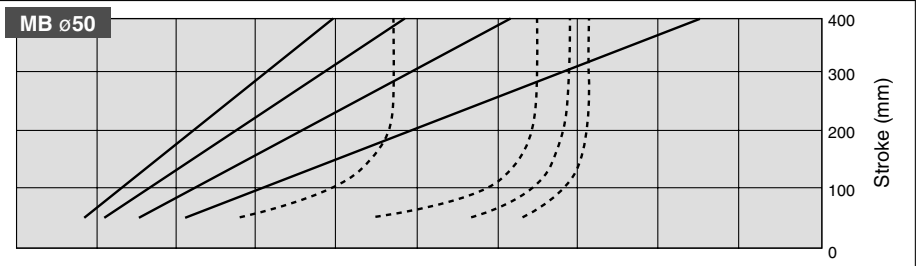
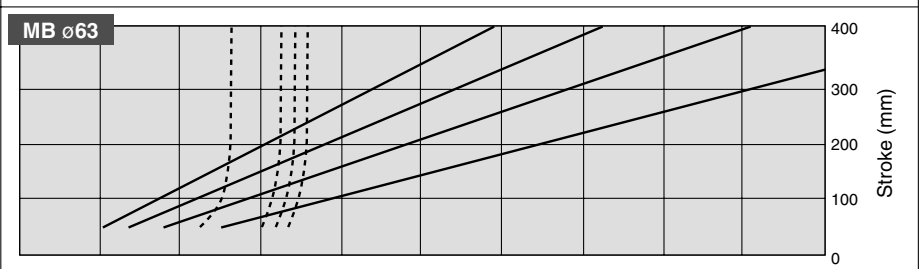
These graphs show the total stroke time and speed at the end when a cylinder drive system is composed of the ideal components. The graphs above indicate the total stroke time and speed at the end with respect to various load ratios and strokes for each cylinder bore size.

Common Conditions

Inlet pressure	0.5 MPa
Piping length	SV1000: 1 m, SV2000/3000: 2 m, SV4000: 3 m
Cylinder direction	Vertical upward
Speed controller	Meter-out, Directly connected to cylinder, Needle fully open
Load ratio	{(Load weight x 9.8) Theoretical output} x 100%

Series SV2000

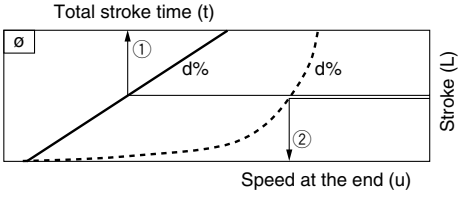
Applicable bore size: ø32, ø40, ø50, ø63

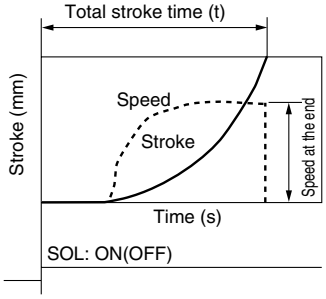
Applicable related components				Total stroke time (s)
Solenoid valve	Silencer	Tubing	Speed controller	0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0
SV2□00	ANA1 -C10	T0806	AS2201F -01-08 AS2200-01	
			AS2201F -02-08 AS2200-02	
			AS3201F -02-08 AS3000-02	
			AS4000-03	
Solenoid valve	Silencer	Tubing	Speed controller	200 300 400 500 600 700 800 900 1000 1100 1200
Applicable related components				Speed at the end (mm/s)

For details regarding different conditions, make determinations after using the SMC Model Selection Program - Pneumatic Cylinder Drive Systems.

Example

Go to the chart for the bore size cylinder you are using (ø). To find the total stroke time (t), follow arrow (1) from your stroke length (L) to the solid line representing the load ratio (d%) for the application then up to the total stroke time (t). To find the ending cylinder speed (u), follow arrow (2) from your stroke length (L) to the dotted line representing the load ratio (d%) then down to the ending cylinder speed (u).



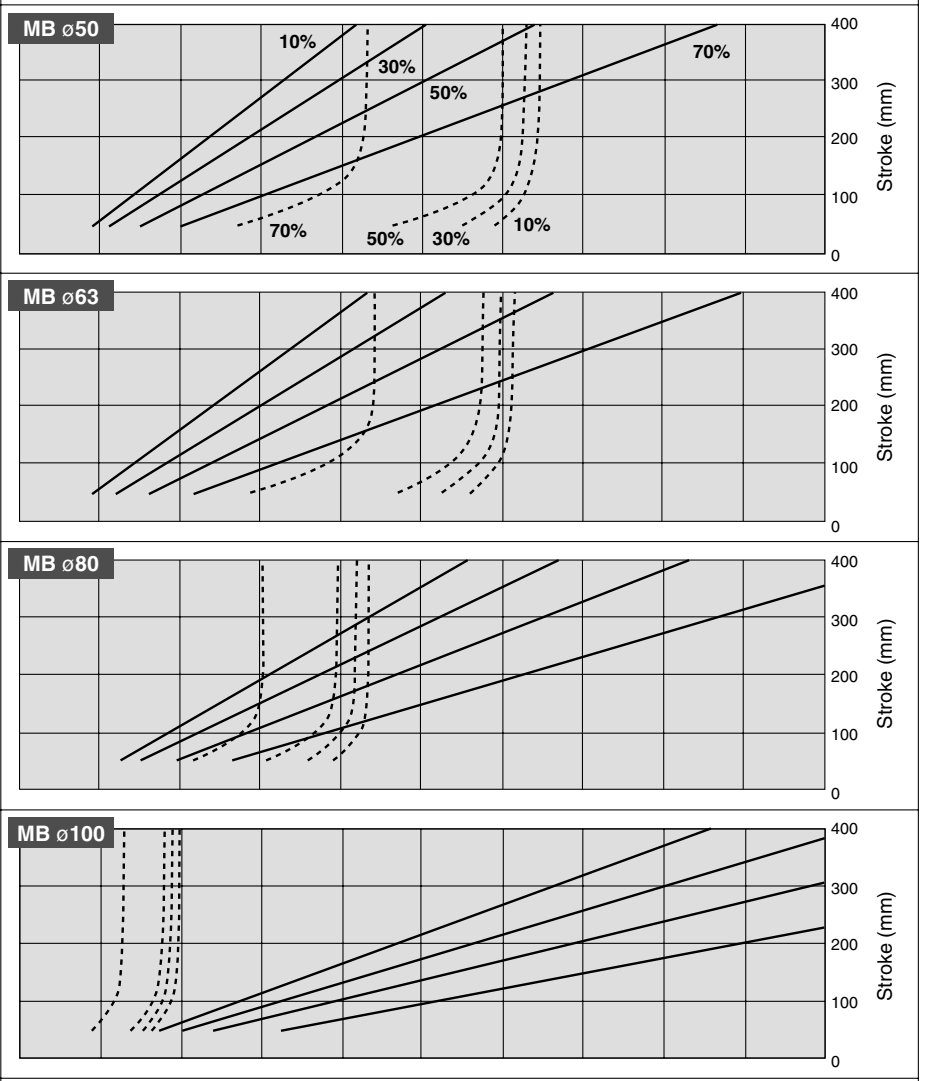


Air Cylinders Drive System
Full Stroke Time and Speed at the End

Series SV3000

Applicable bore size: ø50, ø63, ø80, ø100

Applicable related components				Total stroke time (s)
Solenoid Valve	Silencer	Tubing	Speed controller	0.0 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0
SV3□00	ANA1 -C12	T1075	AS2201F -02-10	MB ø50
			AS3201F -03-10	MB ø63
			AS4000-03	MB ø80
			AS4000-04	MB ø100
Solenoid valve	Silencer	Tubing	Speed controller	200 300 400 500 600 700 800 900 1000 1100 1200
Applicable related components				Speed at the end (mm/s)



For details regarding different conditions, make determinations after using the SMC Model Selection Program - Pneumatic Cylinder Drive Systems.

How to Read the Graph

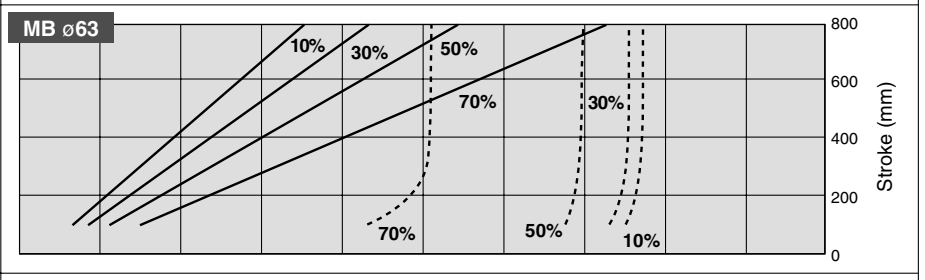
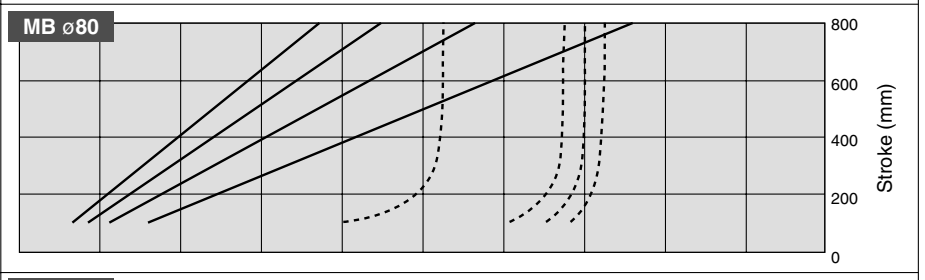
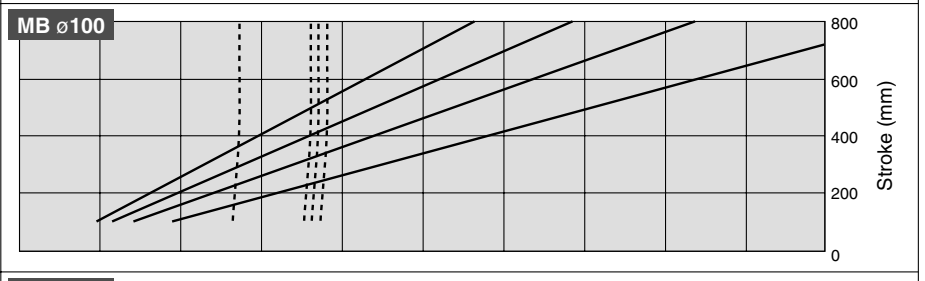
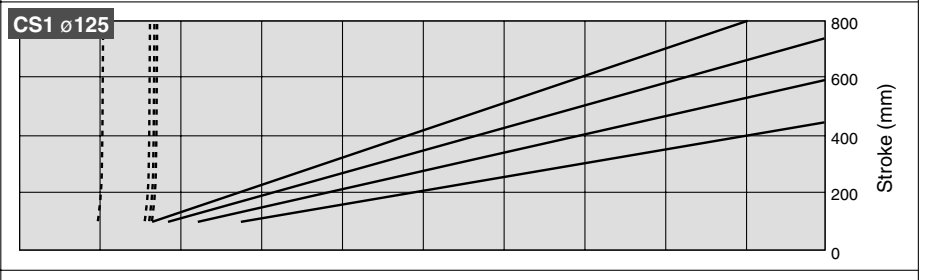
These graphs show the total stroke time and speed at the end when a cylinder drive system is composed of the ideal components. The graphs above indicate the total stroke time and speed at the end with respect to various load ratios and strokes for each cylinder bore size.

Common Conditions

Inlet pressure	0.5 MPa
Piping length	SV1000: 1 m, SV2000/3000: 2 m, SV4000: 3 m
Cylinder direction	Vertical upward
Speed controller	Meter-out, Directly connected to cylinder, Needle fully open
Load ratio	{(Load weight x 9.8) Theoretical output} x 100%

Series SV4000

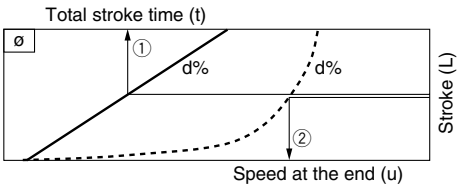
Applicable bore size: ø63, ø80, ø100, ø125

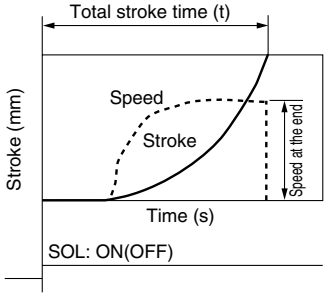
Applicable related components				Total stroke time (s)
Solenoid valve	Silencer	Tubing	Speed controller	0.0 0.4 0.8 1.2 1.6 2.0 2.4 2.8 3.2 3.6 4.0
SV4□00	AN300 -KM12	T1209	AS3201F -02-12	
			AS5000-02 AS420-02	
			AS5000-02 AS420-02	
			AS5000-02 AS420-02	
Solenoid valve	Silencer	Tubing	Speed controller	200 300 400 500 600 700 800 900 1000 1100 1200
Applicable related components				Speed at the end (mm/s)

For details regarding different conditions, make determinations after using the SMC Model Selection Program - Pneumatic Cylinder Drive Systems.

Example

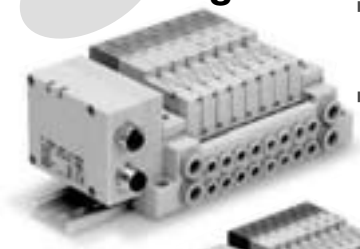
Go to the chart for the bore size cylinder you are using (ø). To find the total stroke time (t), follow arrow (1) from your stroke length (L) to the solid line representing the load ratio (d%) for the application then up to the total stroke time (t). To find the ending cylinder speed (u), follow arrow (2) from your stroke length (L) to the dotted line representing the load ratio (d%) then down to the ending cylinder speed (u).

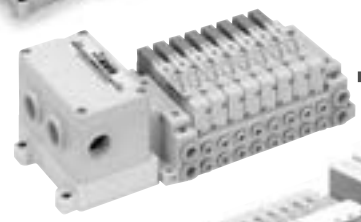


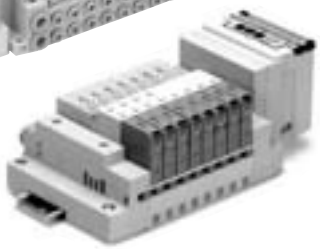


INDEX
Series SV Manifold Variations

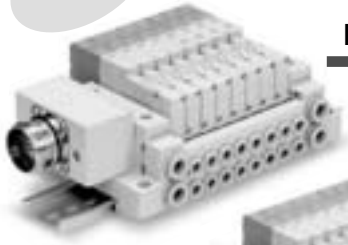
Serial Wiring





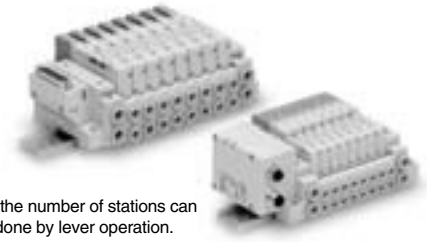


Parallel Wiring



Valve Manifold
Common Specifications
Series SV

Cassette base manifold



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

Manifold Specifications

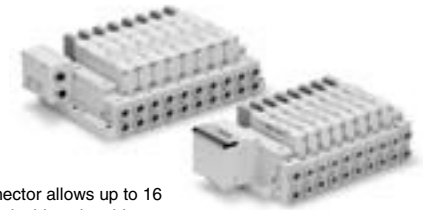
Applicable series		SV1000	SV2000
Manifold type		Stacking type cassette base manifold	
1 (P: SUP), 3/5 (E: EXH) type		Common SUP, EXH	
Valve stations (maximum)		18 stations	20 stations
Max. number of solenoids		18 points	26 points
Port size	**1(P), 3/5(E) port**	C8, N9	C10, N11
	4(A), 2(B) port	C3, C4,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

Flow Characteristics

Model	Port size		Flow characteristics					
	1, 5, 3	4, 2	1→4/2 (P→A/B)			4/2→3/5 (A/B→E)		
	(P,EA,EB)	(A,B)	C〔dm³/(s·bar)〕	b	Cv	C〔dm³/(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	4, 2	1→4/2 (P→A/B)			4/2→3/5 (A/B→E)		
	(P,EA,EB)	(A,B)	C〔dm³/(s·bar)〕	b	Cv	C〔dm³/(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 IEC60529)
EX500 Gateway System Serial Transmission System	IP67 *
EX250 Integrated Type (for I/O) Serial Transmission System	IP67 (partly IP40)
EX126 Integrated Type (for output) Serial Transmission System	IP67
EX120 Integrated Type (for output) Serial Transmission System	IP20
Circular connector	IP67
D-sub connector	Dusttight (IP40)
Flat ribbon cable	Dusttight (IP40)

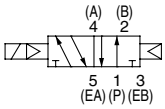
* Enclosure of a gateway unit and input manifold is IP65.

Series SV Solenoid Valve Specifications

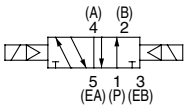
Made to Order Specifications
(For details, refer to page 448.)

JIS Symbol

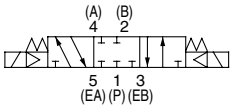
2 position single solenoid



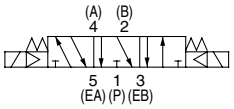
2 position double solenoid



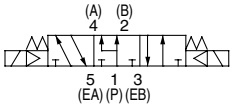
3 position closed center



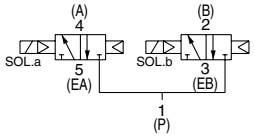
3 position exhaust center



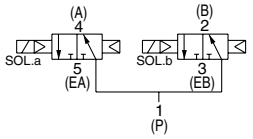
3 position pressure center



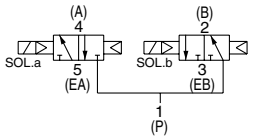
4 position dual 3 port valve: N.C./N.C.



4 position dual 3 port valve: N.O./N.O.



4 position dual 3 port valve: N.C./N.O.



Fluid		Air
Internal pilot Operating pressure range (MPa)	**2 position single 4 position dual 3 port valve**	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.2 to 0.7
External pilot Operating pressure range (MPa)	**Operating pressure range**	–100 kPa to 0.7
	2 position single, double 3 position	0.25 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (No freezing. Refer to page 5.)
Max. operating frequency (Hz)	**2 position single, double 4 position dual 3 port valve**	5
	3 position	3
Manual override		Non-locking push type
		Push-turn locking slotted type
Pilot exhaust method	**Internal pilot**	Common exhaust type for main and pilot valve
	External pilot	Pilot valve individual exhaust
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance (ms^2)		150/30
Enclosure		IP67 (Based on IEC60529)
Coil rated voltage		24 VDC, 12 VDC
Allowable voltage fluctuation		±10% of rated voltage
Power consumption		0.6 (With indicator light: 0.65)
Surge voltage suppressor		Zener diode
Indiator light		LED

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

Response Time

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)			
	SV1000	**SV2000**	**SV3000**	**SV4000**
2 position single	11 or less	25 or less	28 or less	40 or less
2 position double	10 or less	17 or less	26 or less	40 or less
3 position	18 or less	29 or less	32 or less	82 or less
4 position dual 3 port valve	15 or less	33 or less	—	—

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

Mass

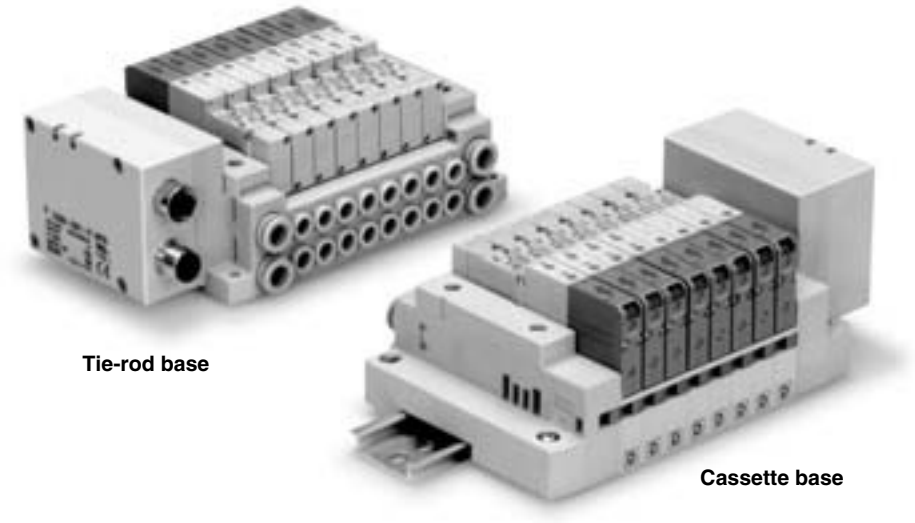
Series	Type of actuation	Mass (g)
SV1000	Single solenoid	66
	Double solenoid	71
	3 position	73
	4 position dual 3 port	71
SV2000	Single solenoid	74
	Double solenoid	78
	3 position	83
	4 position dual 3 port	78
SV3000	Single solenoid	99
	Double solenoid	102
	3 position	110
SV4000	Single solenoid	186
	Double solenoid	190
	3 position	211

Note) Mass of solenoid valve only.

Gateway System Serial Transmission System

Series EX500

IP67 compliant



Tie-rod base

Cassette base

Applicable series	**Cassette base manifold** **SV1000/SV2000**
	Tie-rod base manifold **SV1000/SV2000/SV3000/SV4000**
	• Number of output points: 16 points • Connected to the EX500GW unit

EX500 Gateway System
Serial Transmission System
Series SV

How to Order Manifold

Mounting

Nil	Direct mounting
D	DIN rail mounting (With DIN rail)
D0*	DIN rail mounting (Without DIN rail)
D3	For 3 stations — When a longer DIN rail is desired than the specified stations. (Specify a longer rail than the standard length.)
⋮	⋮
D16	For 16 stations

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

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

● **Tie-rod base**

SS5V 1 – W 10S A2W D – 05 U □ – □ – □

● **Cassette base**

SS5V 1 – W 16S A2W D – 05 U □ – □ – □

Enclosure
IP67 specifications

Series

1	SV1000
2	SV2000

SI unit

0	Without SI unit
A2W	DeviceNet/PROFIBUS DP/ CC-Link/EtherNet/IP

DIN rail length specified

Nil	Standard length
3	For 3 stations — Specify a longer rail than the standard length.
⋮	⋮
16	For 16 stations

Valve stations

Symbol	Stations	Note
02	2 stations	Double wiring specifications (1)
⋮	⋮	
08	8 stations	
02	2 stations	Specified layout (up to 16 solenoids possible.) (2)
⋮	⋮	
16	16 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, 3 position and 4 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 16 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.

SI unit part no.

Symbol	Protocol type	SI unit
A2W	DeviceNet	EX500-S001
	PROFIBUS DP	
	CC-Link	
	EtherNet/IP	

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	
03	Rc 3/8		
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	NPT 3/8	
03N	NPT 3/8		
02T	NPTF 1/4	NPTF 3/8	
03T	NPTF 3/8		
M	A, B ports mixed		

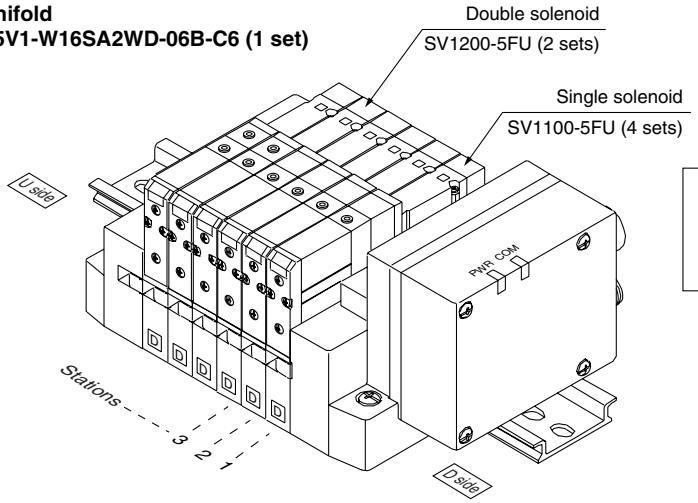
* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
* Port sizes of X, PE port for external pilot specifications (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6 (metric) and ø1/4" (inch) for SV3000/4000.

Refer to pages 1680 to 1694 for the details of EX500 gateway system serial transmission system.

How to Order Manifold Assembly

Ordering example (SV1000)

Manifold
SS5V1-W16SA2WD-06B-C6 (1 set)



SS5V1-W16SA2WD-06B-C6·····1 set (Manifold part no.)
∗ SV1100-5FU·····4 sets (Single solenoid part no.)
∗ SV1200-5FU·····2 sets (Double solenoid part no.)

How to Order Valve

SV 1 1 00 □ □ – 5 F □ □ – □ (Note) – □

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

∗ 4 position dual 3 port valves are applicable to 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 valve.

Rated voltage

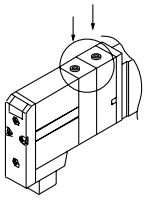
5	24 VDC

Light/Surge voltage suppressor

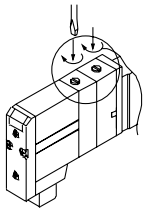
U	With light/surge voltage suppressor
R	With surge voltage suppressor

Manual override

Nil: Non-locking push type



D: Push-turn locking slotted type



Note) Available with manifold block for station additions. Refer to pages 429 and 443.

Made to Order

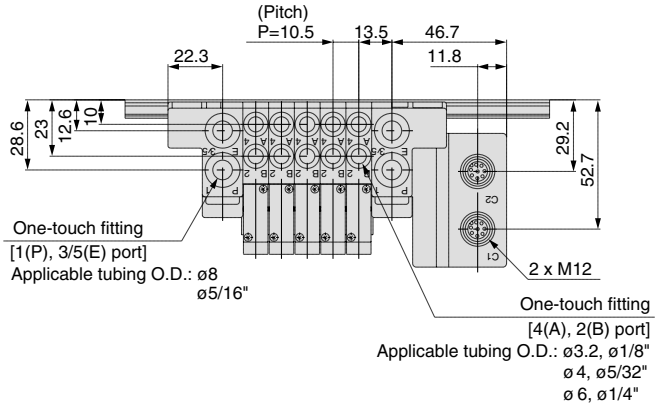
Nil	—
X90	Main valve fluoro rubber (Refer to page 448.)

Refer to Specific Product Precautions 2 on page 450.

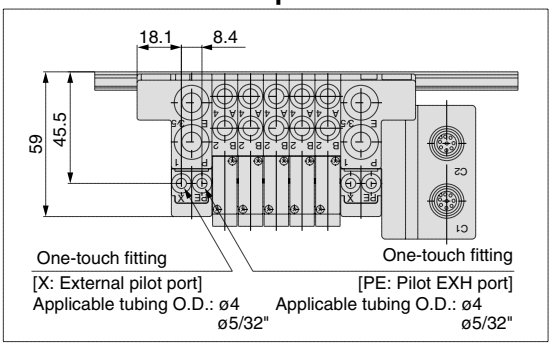
Dimensions: Series SV1000 for EX500 Gateway System Serial Transmission System

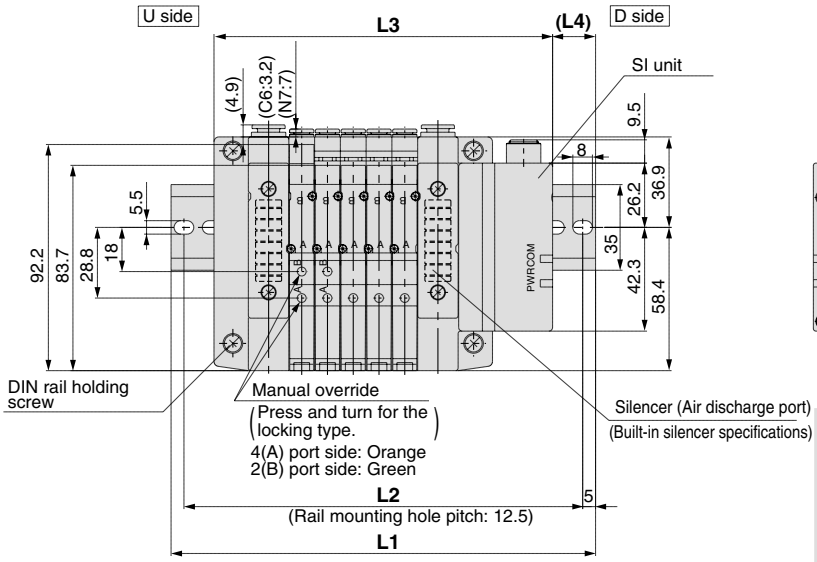
● Cassette base manifold: SS5V1-W16SA2WD-[Stations][U/D/B](S, R, RS)-[C3, N1 / C4, N3 / C6, N7]

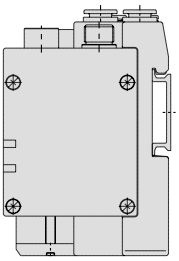
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

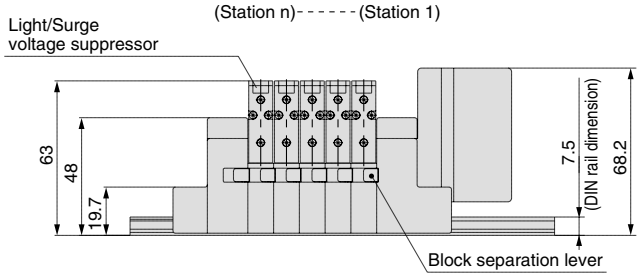


With External Pilot Specifications

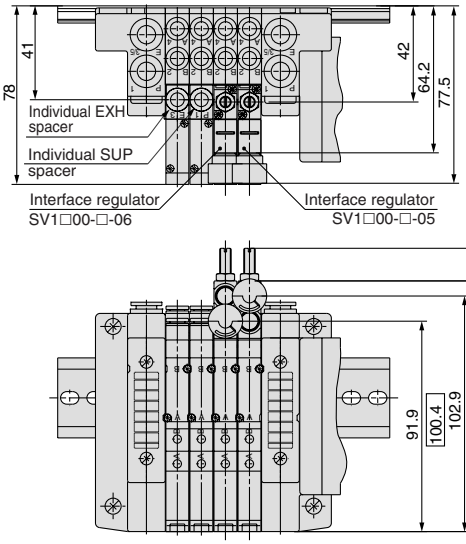








With option



L Dimension

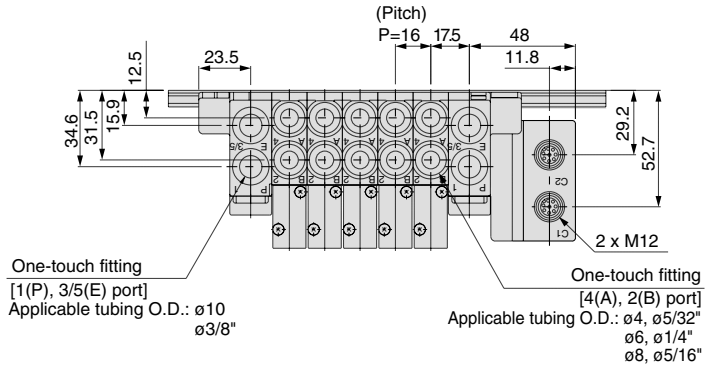
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	235.5	248	260.5	273	285.5
L2	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5	275
L3	106.5	117	127.5	138	148.5	159	169.5	180	190.5	201	211.5	222	232.5	243	253.5
L4	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13	14	15	16

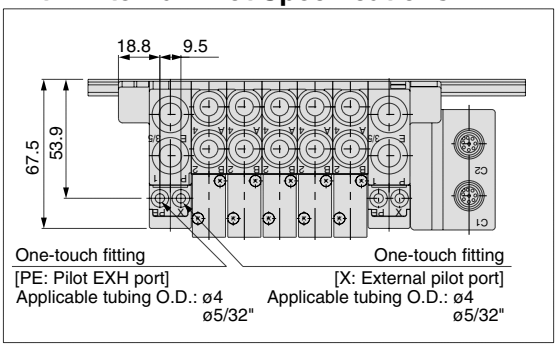
Dimensions: Series SV2000 for EX500 Gateway System Serial Transmission System

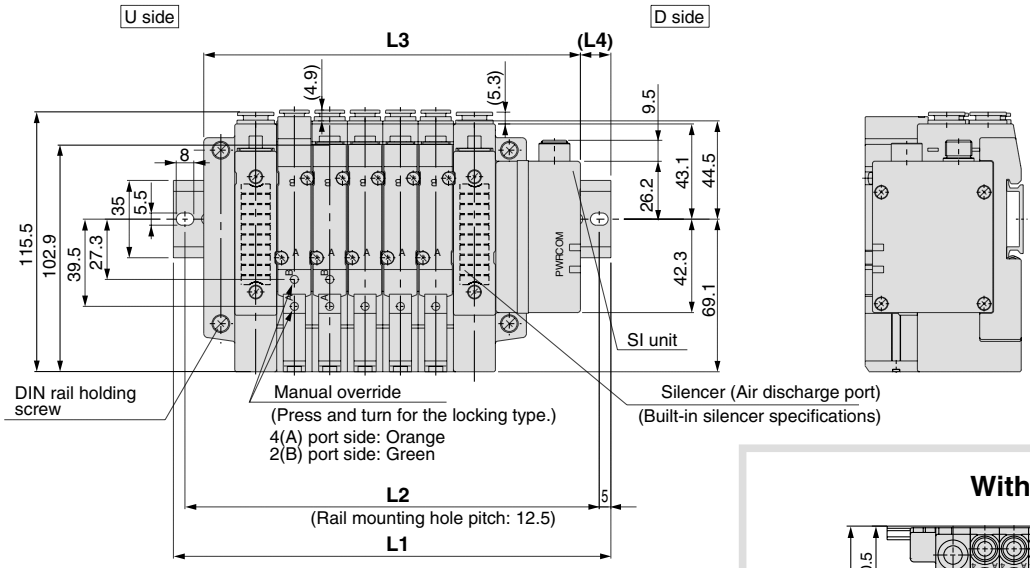
● Cassette base manifold: SS5V2-W16SA2WD-Stations U/D/B (S, R, RS)-C4, N3 / C6, N7 / C8, N9

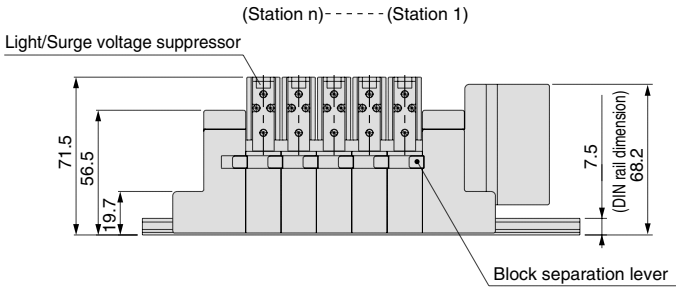
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



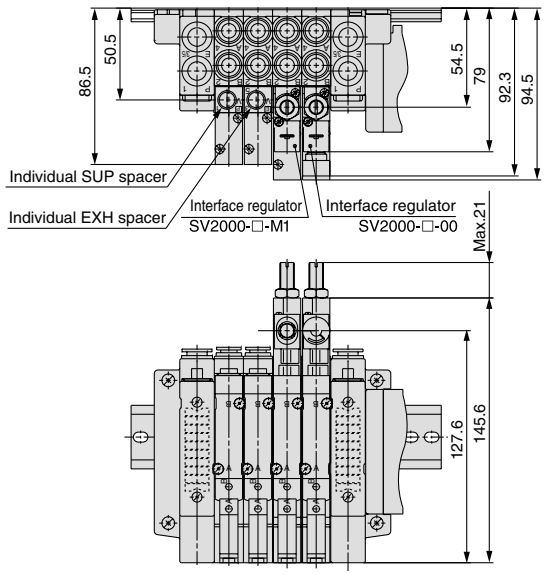
With External Pilot Specifications







With option



L Dimension

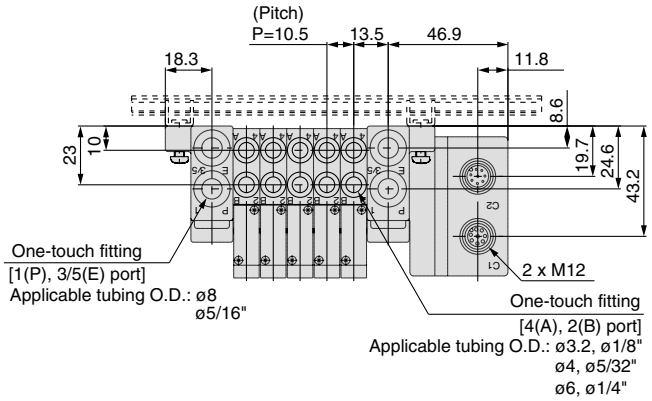
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	148	173	185.5	198	210.5	235.5	248	260.5	285.5	298	310.5	323	348	360.5	373
L2	137.5	162.5	175	187.5	200	225	237.5	250	275	287.5	300	312.5	337.5	350	362.5
L3	122.5	138.5	154.5	170.5	186.5	202.5	218.5	234.5	250.5	266.5	282.5	298.5	314.5	330.5	346.5
L4	13	17.5	15.5	14	12	16.5	15	13	17.5	16	14	12.5	17	15	13.5

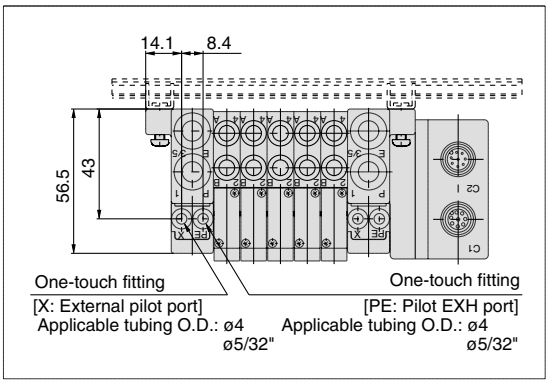
Dimensions: Series SV1000 for EX500 Gateway System Serial Transmission System

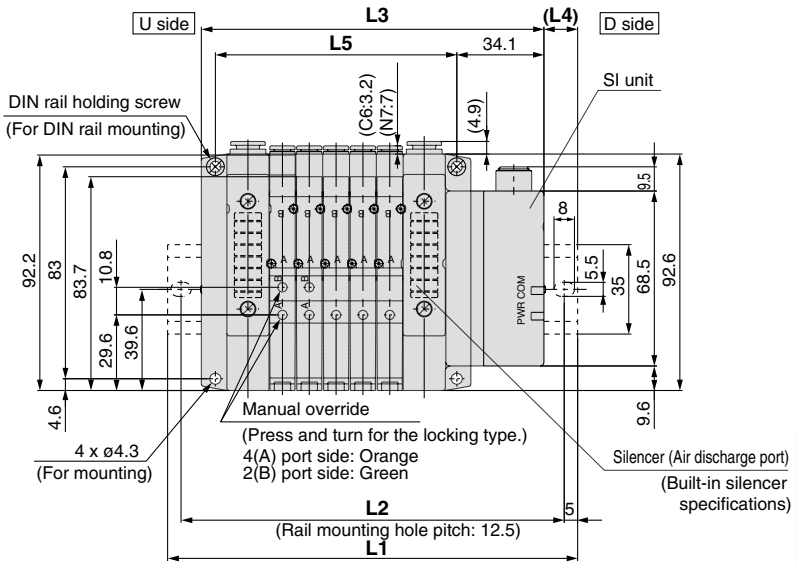
● Tie-rod base manifold: SS5V1-W10SA2WD-Stations U/D/B (S, R, RS)-C3, N1 / C4, N3 / C6, N7 (-D)

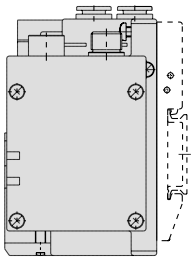
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



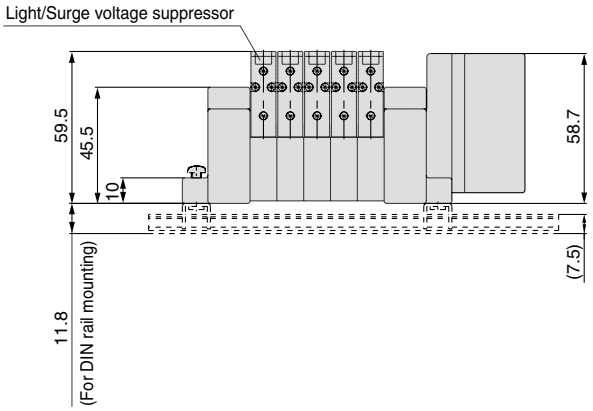
With External Pilot Specifications



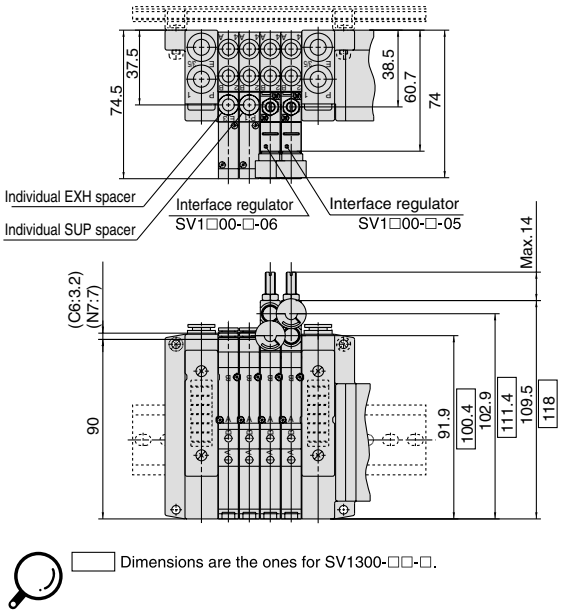




(Station n) - - - - - - (Station 1)



With option



Dimensions are the ones for SV1300-□□-□.

L Dimension

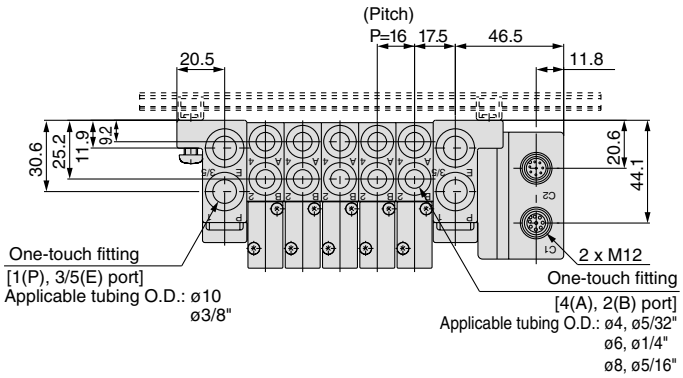
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	135.5	148	148	160.5	173	185.5	198	210.5	210.5	223	235.5	248	260.5	273	273
L2	125	137.5	137.5	150	162.5	175	187.5	200	200	212.5	225	237.5	250	262.5	262.5
L3	102.6	113.1	123.6	134.1	144.6	155.1	165.6	176.1	186.6	197.1	207.6	218.1	228.6	239.1	249.6
L4	16.5	17.5	12	13	14	15	16	17	12	13	14	15	16	17	11.5
L5	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210

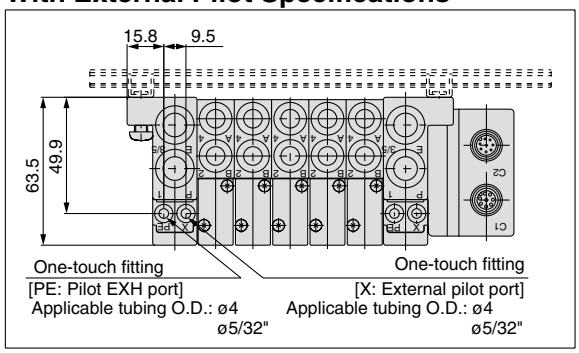
Dimensions: Series SV2000 for EX500 Gateway System Serial Transmission System

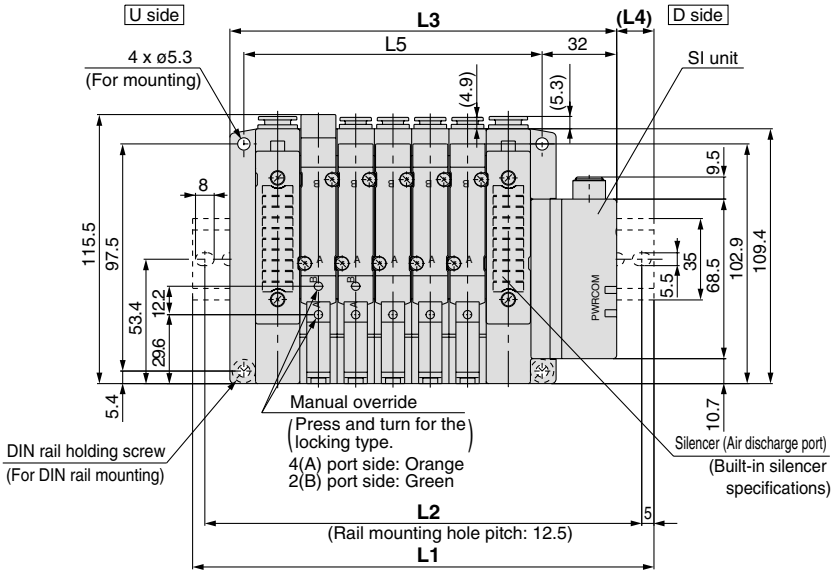
● Tie-rod base manifold: SS5V2-W10SA2WD-Stations U/D/B (S, R, RS)-C4, N3 / C6, N7 / C8, N9 (-D)

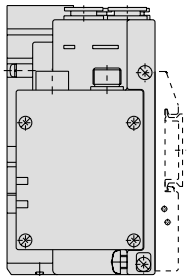
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

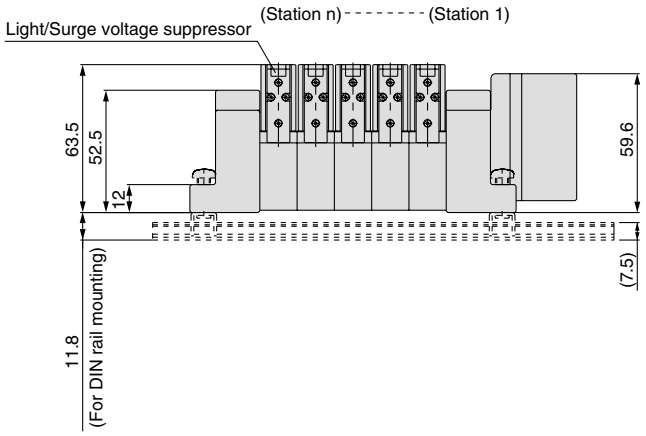


With External Pilot Specifications

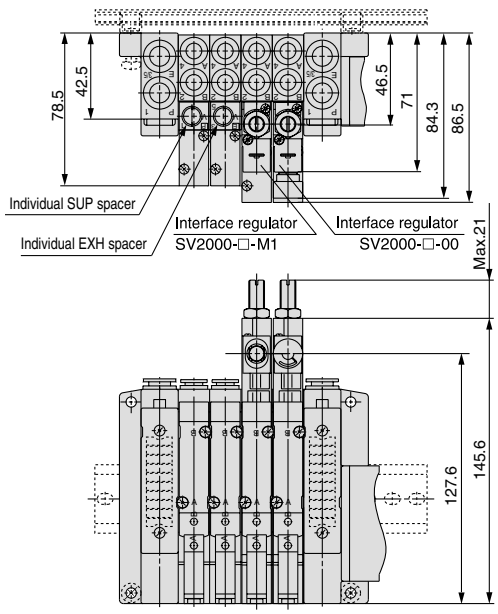








With option



L Dimension

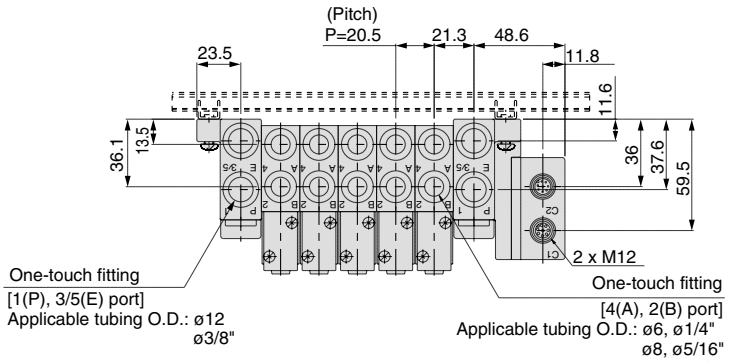
n: Stations

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

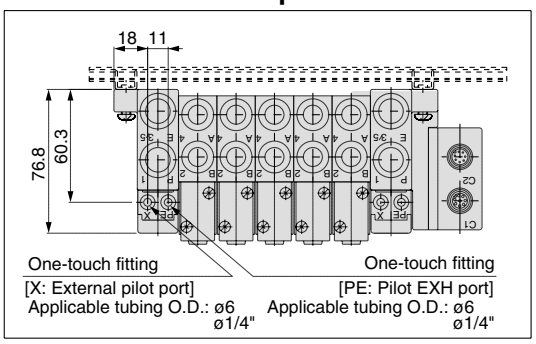
Dimensions: Series SV3000 for EX500 Gateway System Serial Transmission System

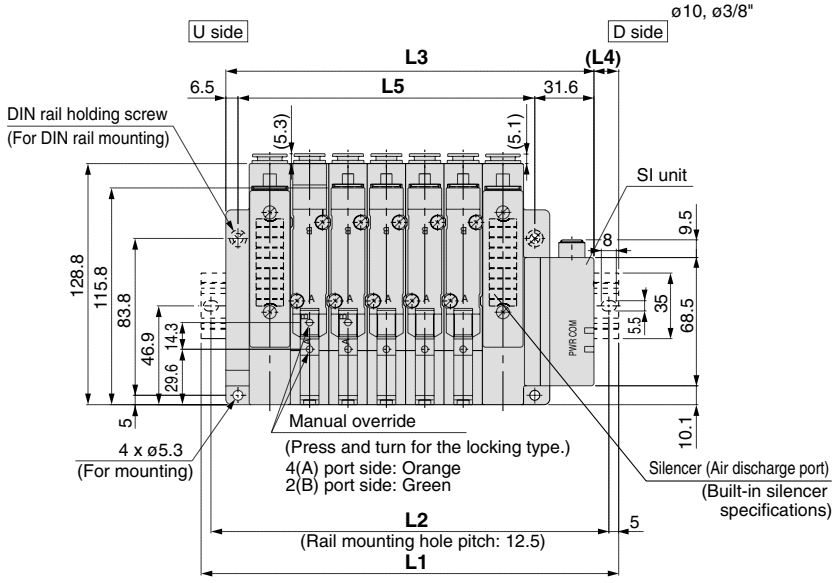
● Tie-rod base manifold: SS5V3-W10SA2WD-[Stations][U/D/B](S, R, RS)-[C6, N7 / C8, N9 / C10, N11](-D)

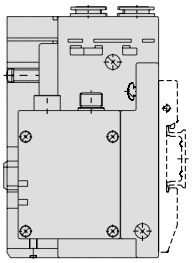
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

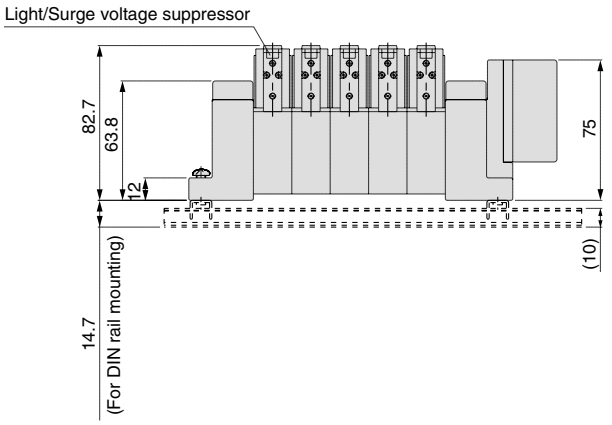


With External Pilot Specifications

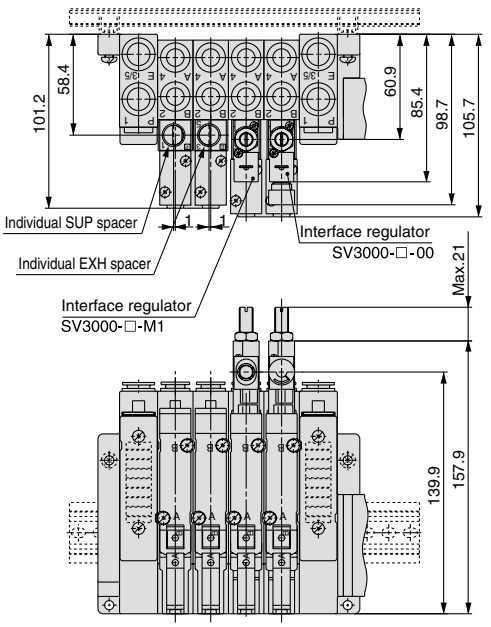








With option



L Dimension

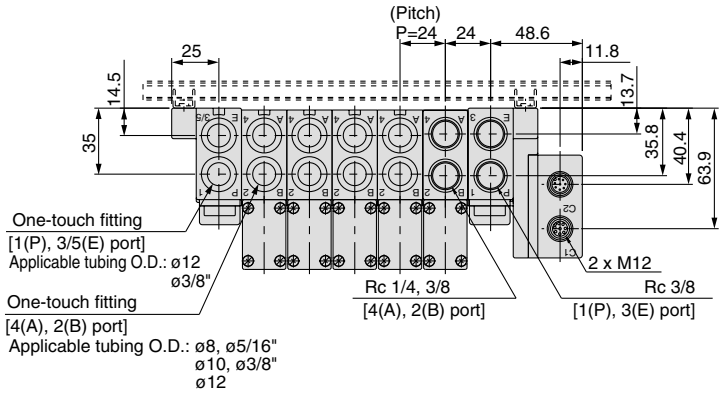
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	160.5	185.5	210.5	223	248	273	285.5	310.5	323	348	373	385.5	410.5	435.5	448
L2	150	175	200	212.5	237.5	262.5	275	300	312.5	337.5	362.5	375	400	425	437.5
L3	135.1	155.6	176.1	196.6	217.1	237.6	258.1	278.6	299.1	319.6	340.1	360.6	381.1	401.6	422.1
L4	12.5	15	17	13	15.5	17.5	13.5	16	12	14	16.5	12.5	14.5	17	13
L5	97	117.5	138	158.5	179	199.5	220	240.5	261	281.5	302	322.5	343	363.5	384

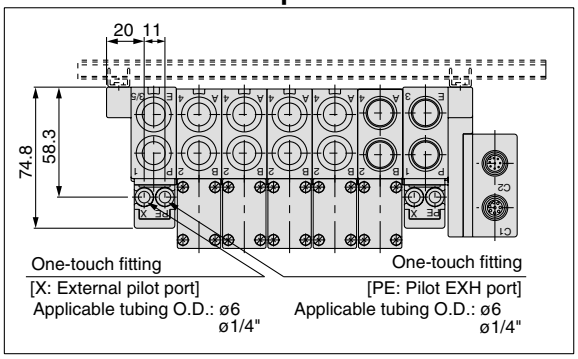
Dimensions: Series SV4000 for EX500 Gateway System Serial Transmission System

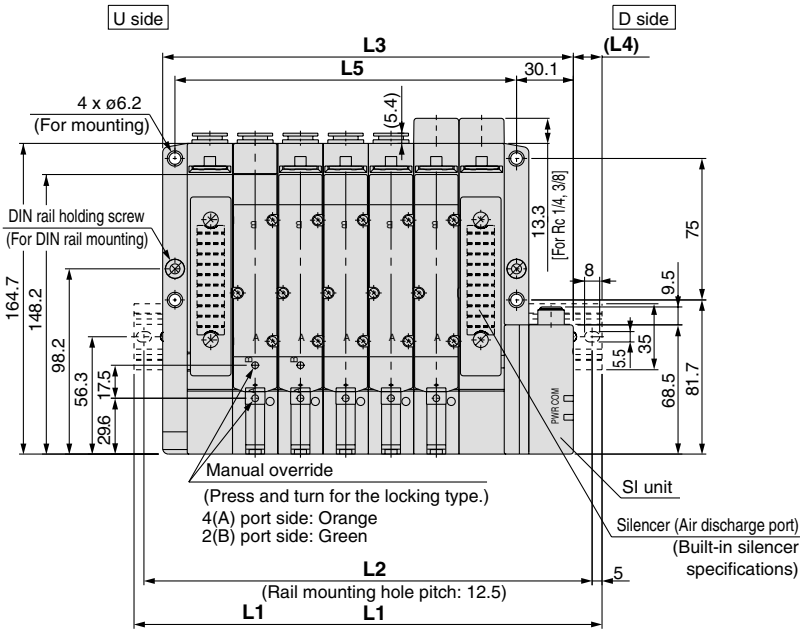
● Tie-rod base manifold: SS5V4-W10SA2WD-Stations $\frac{U}{D}$(S, R, RS)-$^{02,\ C8,\ N9}_{03,\ C10,\ N11,\ C12,}$(-D)

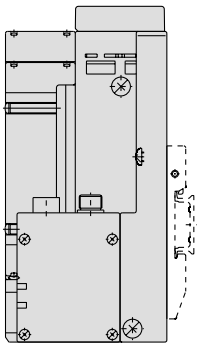
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

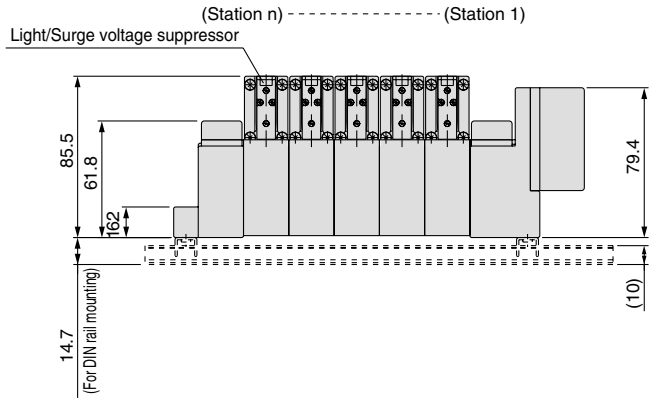


With External Pilot Specifications

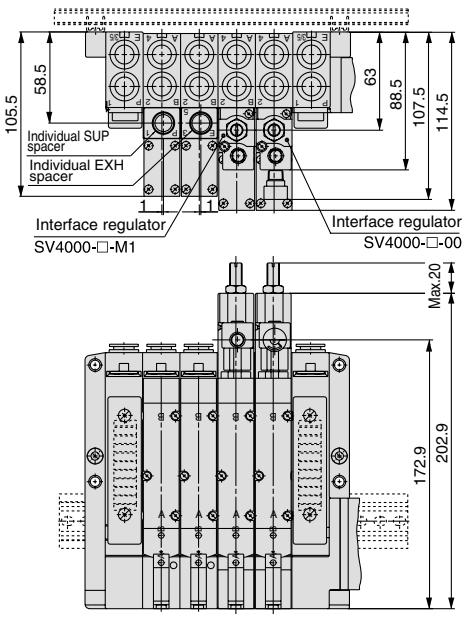








With option



L Dimension

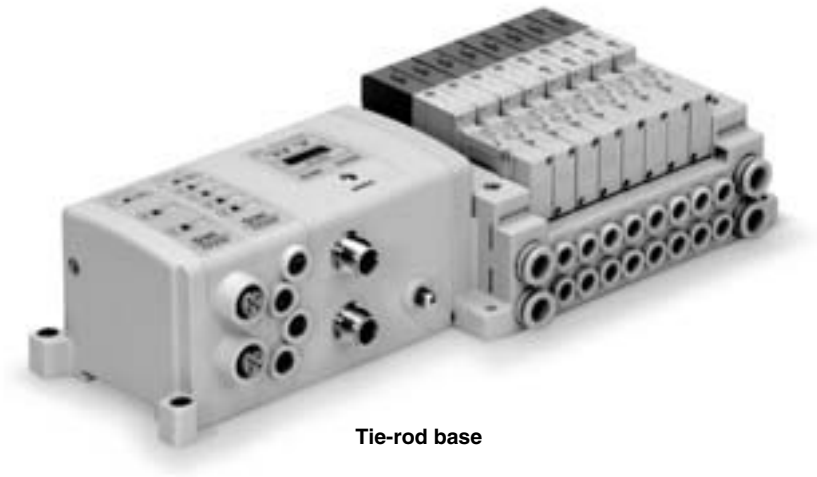
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	173	198	223	248	273	298	323	348	373	385.5	410.5	435.5	460.5	485.5	510.5
L2	162.5	187.5	212.5	237.5	262.5	287.5	312.5	337.5	362.5	375	400	425	450	475	500
L3	145.6	169.6	193.6	217.6	241.6	265.6	289.6	313.6	337.6	361.6	385.6	409.6	433.6	457.6	481.6
L4	13.5	14	14.5	15	15.5	16	16.5	17	17.5	12	12.5	13	13.5	14	14.5
L5	109	133	157	181	205	229	253	277	301	325	349	373	397	421	445

Integrated Type (for I/O) Serial Transmission System

Series EX250

IP67 (partly IP40) compliant



Tie-rod base

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

EX250 Integrated Type (for I/O) Serial Transmission System

Series SV

How to Order Manifold

● **Tie-rod base**

SS5V 1 – W10S1QW □ □ □ D – 05 U □ – □ – □

Series

1	SV1000
2	SV2000
3	SV3000

SI unit

Symbol	Protocol type
W10S10	Without SI unit
W10S1QW	DeviceNet
W10S1NW	PROFIBUS DP
W10S1VW	CC-Link
W10S1TAW	AS-Interface (8in/8out 31Slave Mode 2 power supply systems)
W10S1TBW	AS-Interface (4in/4out 31Slave Mode 2 power supply systems)
W10S1TCW (1)	AS-Interface (8in/8out 31Slave Mode 1 power supply systems)
W10S1TDW (1)	AS-Interface (4in/4out 31Slave Mode 1 power supply systems)
W10S1YW	CANopen
10S1ZCN (2)	ControlNet (IP40)
W10S1ZEN	EtherNet/IP

•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.
Note 1) There is a limit to the supply current to the input block and valve from SI units that have AS-Interface-compliant 1 power supply systems. Refer to page 1667 for details.
Note 2) When the SI unit is ControlNet compliant, it is also IP40-compilant. (All other SI units are IP67-compliant.)

Input block stations

Nil	None
1	1 station
⋮	⋮
8	8 stations

Note) Without SI unit, the symbol is nil. When the SI unit is AS Interface compliant, the maximum number of stations is limited. Refer to page 1667 for details.

Input block type

Nil	Without input block	
1	M12: 2 inputs	EX250-IE1
2	M12: 4 inputs	EX250-IE2
3	M8: 4 inputs	EX250-IE3

Note) Without SI unit, the symbol is nil.

Input block specifications

Nil	PNP input (+COM) or without input block
N	NPN input (–COM)

Mounting

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

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

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.

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)

Valve stations

Symbol	Stations	Note
02	2 stations	(1) Double wiring specifications
⋮	⋮	
16	16 stations	
02	2 stations	(2) Specified layout (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, 3 and 4 position valves cannot be used where single solenoid wiring has been specified.)
When the SI unit is AS-Interface compliant, the maximum number of solenoids is as shown below, so please be careful of the number of stations.
• 8in/8out: Max. 8 solenoids
• 4in/4out: Max. 4 solenoids

SI Unit Part No.

Symbol	Protocol type	Solenoid part not.
W10S1QW	DeviceNet	EX250-SDN1
W10S1NW	PROFIBUS DP	EX250-SPR1
W10S1VW	CC-Link	EX250-SMJ2
W10S1TAW	AS-Interface (8in/8out 31Slave Mode 2 power supply systems)	EX250-SAS3
W10S1TBW	AS-Interface (4in/4out 31Slave Mode 2 power supply systems)	EX250-SAS5
W10S1TCW	AS-Interface (8in/8out 31Slave Mode 1 power supply systems)	EX250-SAS7
W10S1TDW	AS-Interface (4in/4out 31Slave Mode 1 power supply systems)	EX250-SAS9
W10S1YW	CANopen	EX250-SCA1A
10S1ZCN	ControlNet (IP40)	EX250-SCN1
W10S1ZEN	EtherNet/IP	EX250-SEN1

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		

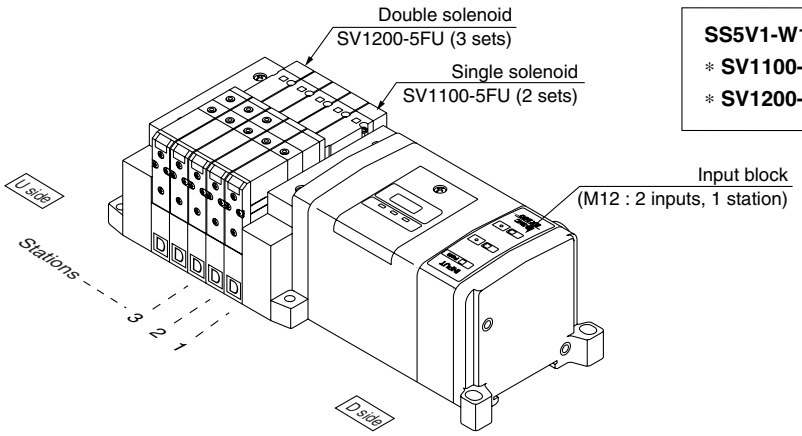
* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
* Port sizes of X, PE port for external pilot specifications (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6(metric) and ø1/4" (inch) for SV3000.

Refer to pages 1664 to 1679 for the details of EX250 integrated type serial transmission system.

How to Order 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.)

How to Order Valve

SV 1 1 00 □ □ – 5 F □ □ – □ – □ Note)

Note) Available with manifold block for station additions. Refer to page 433.

Series

1	SV1000
2	SV2000
3	SV3000

Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 448.)

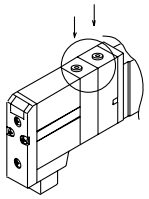
Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

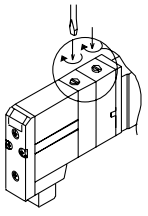
∗4 position dual 3 port valves are applicable to Series SV1000 and SV2000 only.

Manual override

Nil: Non-locking push type



D: Push-turn locking slotted type



Pilot type

Nil	Internal pilot
R	External pilot

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

Light/Surge voltage suppressor

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

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 valve.

Rated voltage

5	24 VDC

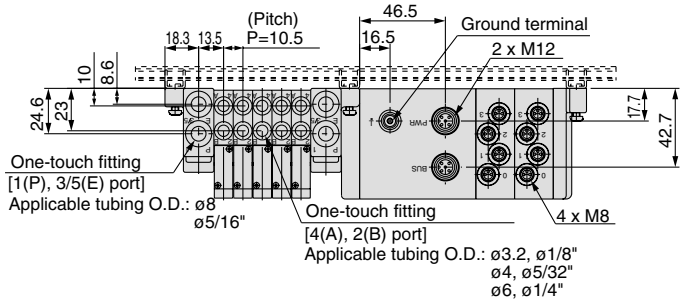
Refer to Specific Product Precautions 2 on page 450.

Dimensions: Series SV1000 for EX250 Integrated Type (for I/O) Serial Transmission System

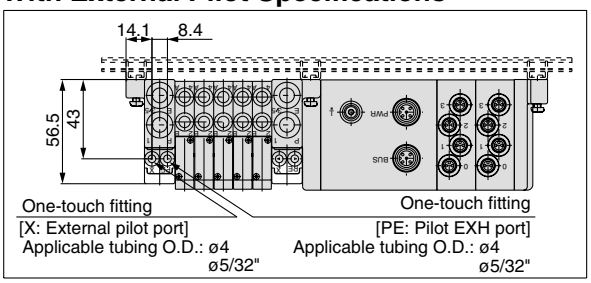
● Tie-rod base manifold: SS5V1-W10S1□□□□D- Stations U/D/B (S, R, RS)- C3, N1 / C4, N3 / C6, N7 (-D)

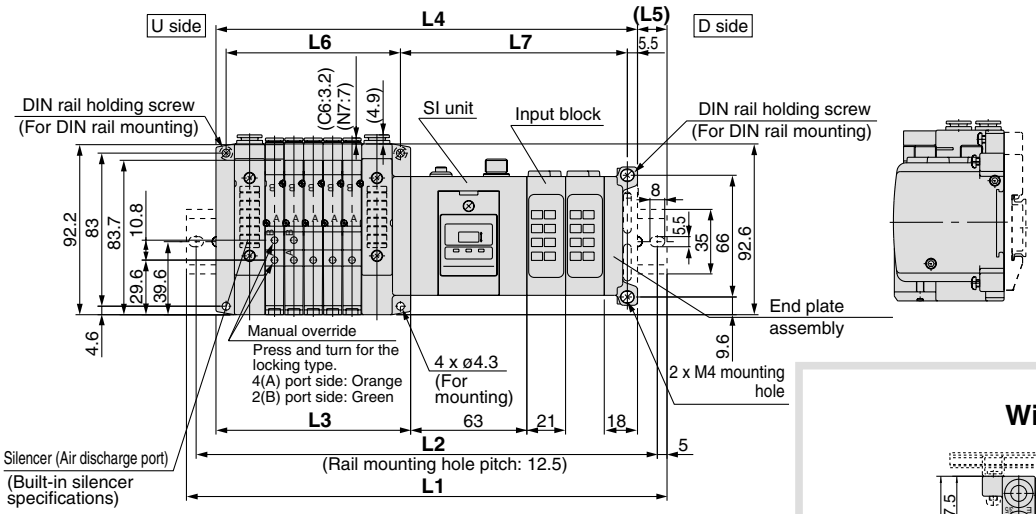
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

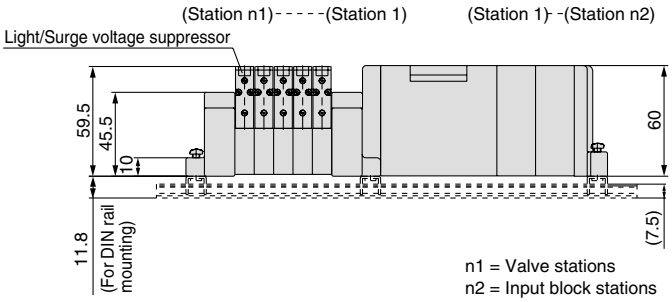
(With 2 input blocks)



With External Pilot Specifications



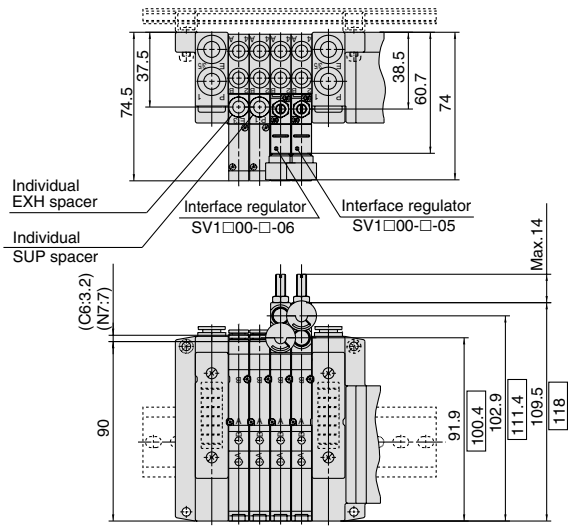




n1 = Valve stations
n2 = Input block stations

L2 = L1–10.5
L3 = 10.5 x n1 + 53
L4 = L3 + 81 + 21 x n2
L5 = (L1–L4)/2
L6 = 10.5 x n1 + 42
L7 = 21 x n2 + 81

With option



Dimensions are the ones for SV1300-□□-□.

L1: DIN Rail Overall Length

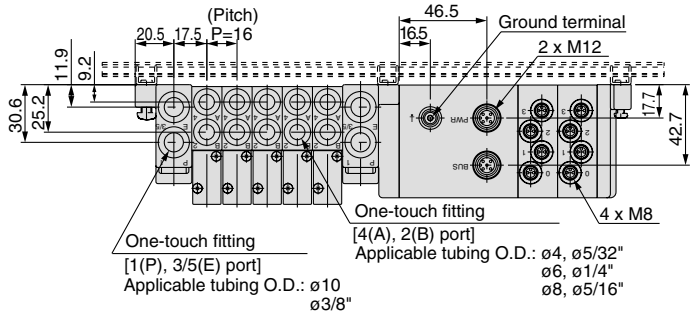
Input block Stations (n2) \ Valve stations (n1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0	185.5	198	210.5	210.5	223	235.5	248	260.5	273	273	285.5	298	310.5	323	335.5	348	348	360.5	373
1	210.5	210.5	223	235.5	248	260.5	273	273	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398
2	223	235.5	248	260.5	273	273	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	410.5
3	248	260.5	273	273	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	410.5	423	435.5
4	273	273	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	410.5	423	435.5	448	460.5
5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	410.5	423	435.5	448	460.5	473	473
6	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	410.5	423	435.5	448	460.5	473	473	485.5	498
7	335.5	348	348	360.5	373	385.5	398	410.5	410.5	423	435.5	448	460.5	473	473	485.5	498	510.5	523
8	348	360.5	373	385.5	398	410.5	410.5	423	435.5	448	460.5	473	473	485.5	498	510.5	523	535.5	535.5

Dimensions: Series SV2000 for EX250 Integrated Type (for I/O) Serial Transmission System

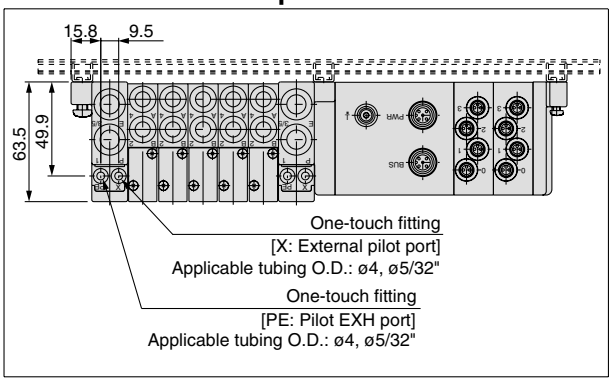
● Tie-rod base manifold: SS5V2-W10S1□□□□D-Stations U/D/B (S, R, RS)-C4, N3 / C6, N7 / C8, N9 (-D)

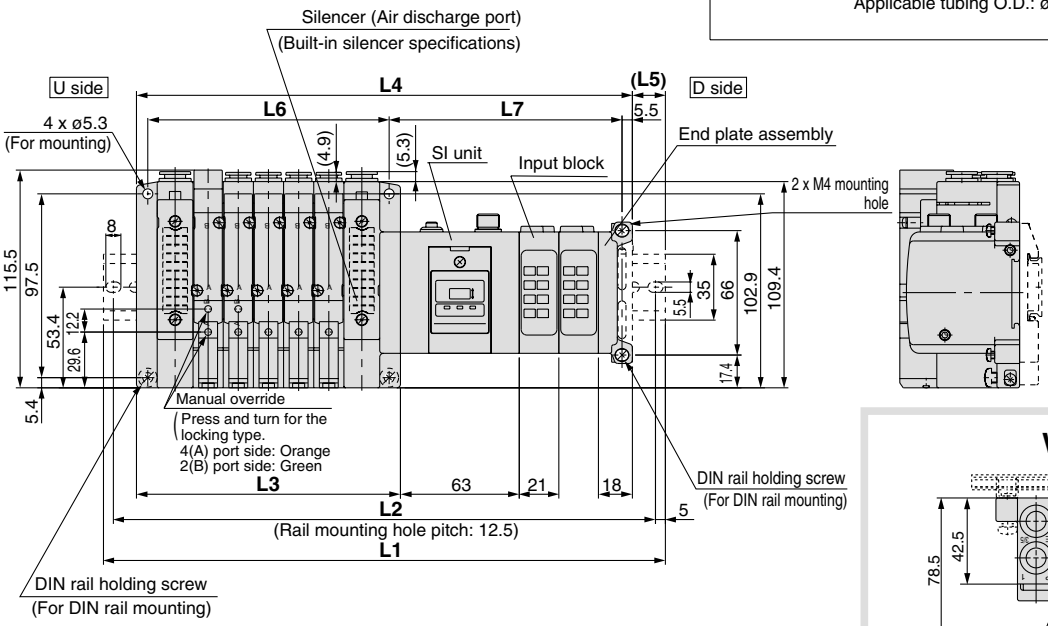
(With 2 input blocks)

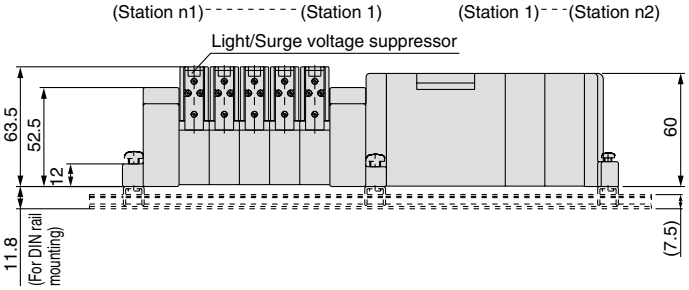
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



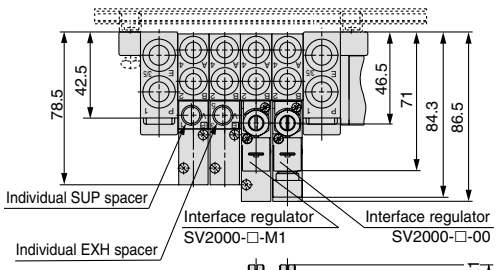
With External Pilot Specifications

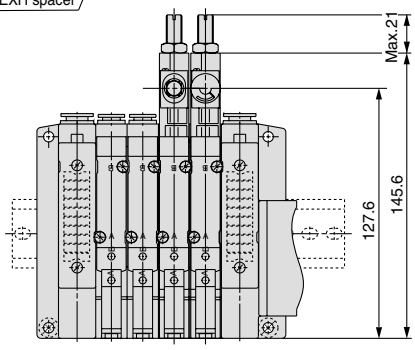






With option





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

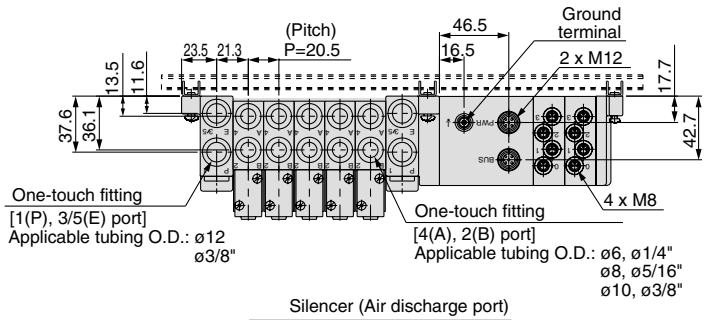
Input block Stations (n2) \ Valve stations (n1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0	198	223	235.5	248	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5
1	223	235.5	260.5	273	285.5	298	323	335.5	348	373	385.5	398	410.5	435.5	448	460.5	485.5	498	510.5
2	248	260.5	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

Dimensions: Series SV3000 for EX250 Integrated Type (for I/O) Serial Transmission System

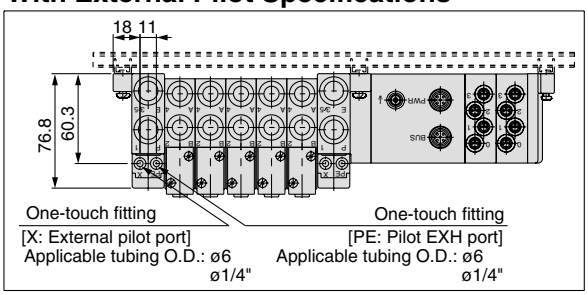
● Tie-rod base manifold: SS5V3-W10S1□□□□D-[Stations] [U/D/B] (S, R, RS)- [C6, N7 / C8, N9 / C10, N11] (-D)

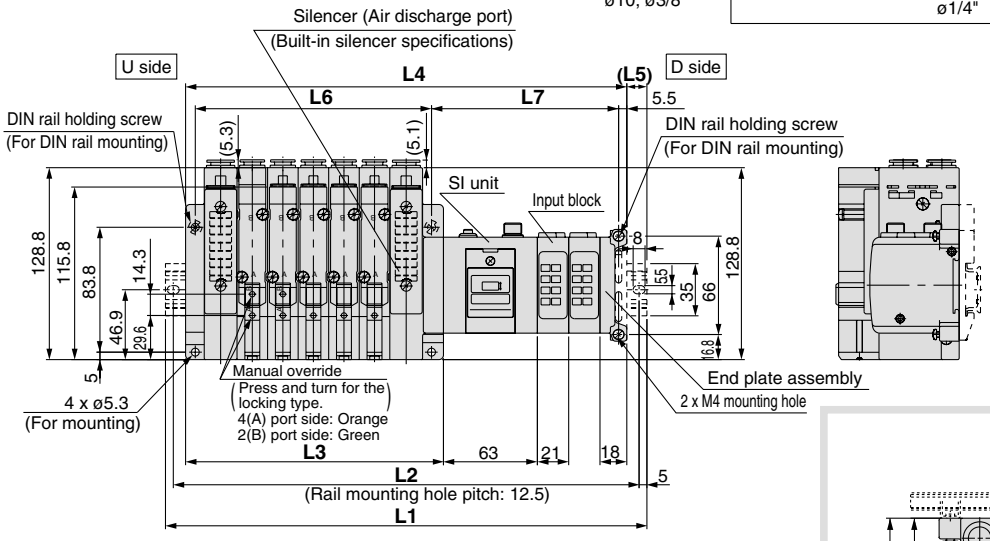
(With 2 input blocks)

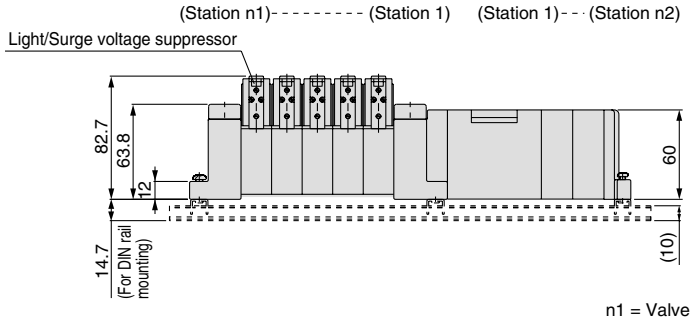
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



With External Pilot Specifications



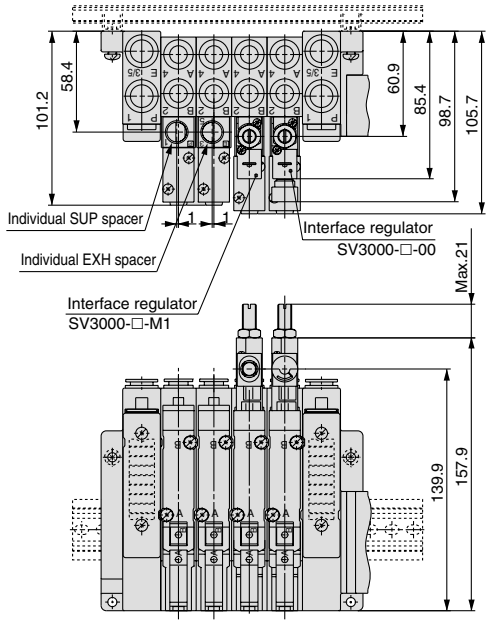




n1 = Valve stations
n2 = Input block stations

L2 = L1 – 10.5
L3 = 20.5 x n1 + 70.5
L4 = L3 + 81 + 21 x n2
L5 = (L1 – L4) /2
L6 = 20.5 x n1 + 56
L7 = 21 x n2 + 83.5

With option



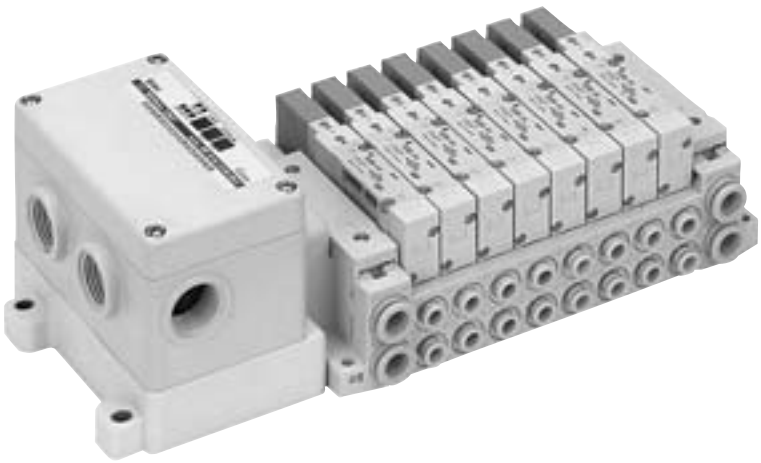
L1: DIN Rail Overall Length

Input block Stations (n2) \ Valve stations (n1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0	223	248	260.5	285.5	298	323	348	360.5	385.5	410.5	423	448	473	485.5	510.5	535.5	548	573	585.5
1	248	260.5	285.5	310.5	323	348	360.5	385.5	410.5	423	448	473	485.5	510.5	535.5	548	573	585.5	610.5
2	260.5	285.5	310.5	323	348	360.5	385.5	410.5	423	448	473	485.5	510.5	535.5	548	573	598	610.5	635.5
3	285.5	310.5	323	348	373	385.5	410.5	423	448	473	485.5	510.5	535.5	548	573	598	610.5	635.5	648
4	310.5	323	348	373	385.5	410.5	423	448	473	485.5	510.5	535.5	548	573	598	610.5	635.5	660.5	673
5	323	348	373	385.5	410.5	435.5	448	473	485.5	510.5	535.5	548	573	598	610.5	635.5	660.5	673	698
6	348	373	385.5	410.5	435.5	448	473	485.5	510.5	535.5	548	573	598	610.5	635.5	660.5	673	698	723
7	373	385.5	410.5	435.5	448	473	498	510.5	535.5	548	573	598	610.5	635.5	660.5	673	698	723	735.5
8	385.5	410.5	435.5	448	473	498	510.5	535.5	548	573	598	610.5	635.5	660.5	673	698	723	735.5	760.5

Integrated Type (for Output) Serial Transmission System

Series EX126

IP67 compliant



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

EX126 Integrated Type (for Output) Serial Transmission System

Series SV

How to Order

● Tie-rod base

SS5V 1 – W 10S4 ☐ D – 05 U ☐ – ☐ – ☐

Series

1	SV1000
2	SV2000
3	SV3000

Enclosure
IP67 specifications

SI unit

0	Without SI unit and end plate
VW	CC-Link

● When the SI unit is not included, only the terminal block plate is included.

Valve stations

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

Note2) Specified layout: Indicate wiring specifications on a manifold specification sheet. (Note that double, 3 and 4 position valves cannot be used where single solenoid wiring has been specified.)

Mounting

Nil	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0*	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	When a longer DIN rail is desired than the specified stations. (Specify a longer rail than the standard length.)
⋮	⋮	
D16	For 16 stations	

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

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.

P, E port location

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

SI Unit Part No.

Symbol	Protocol type	SI unit part no.
VW	CC-Link	EX126D-SMJ1

Refer to pages 1653 to 1655 for the details of the EX126 integrated type (for output) serial transmission system.

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)

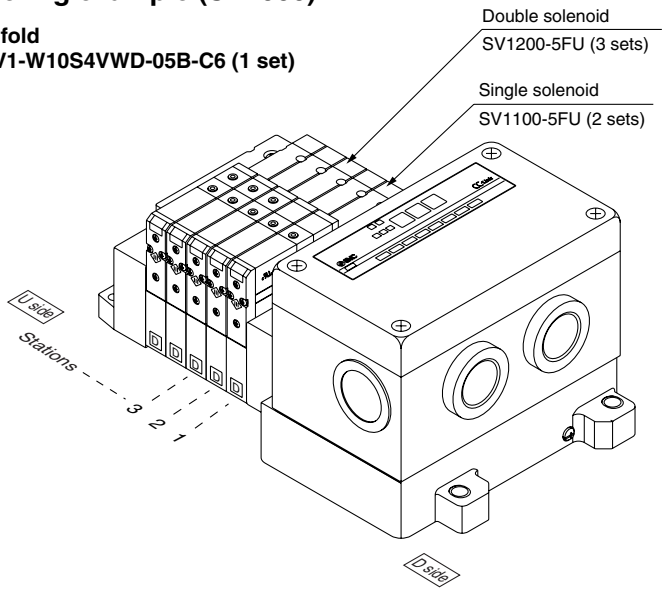
Symbol	A, B port	P, E port	Applicable series
N1	One-touch fitting for ø1/8"	One-touch fitting for ø5/16"	SV1000
N3	One-touch fitting for ø5/32"		
N7	One-touch fitting for ø1/4"		
N3	One-touch fitting for ø5/32"	One-touch fitting for ø3/8"	SV2000
N7	One-touch fitting for ø1/4"		
N9	One-touch fitting for 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 specification (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6 (metric) and ø1/4" (inch) for SV3000.

How to Order Manifold Assembly

Ordering example (SV1000)

Manifold
SS5V1-W10S4VWD-05B-C6 (1 set)



SS5V1-W10S4VWD-05B-C6 ····· **1 set (manifold part no.)**
* **SV1100-5FU** ····· **2 sets (manifold part no.)**
* **SV1200-5FU** ····· **3 sets (manifold part no.)**

How to Order Valve

SV 1 1 00 ☐ ☐ – 5 F ☐ ☐ – ☐ – ☐ Note)

Note) Available with manifold block for station additions. Refer to page 433.

Series

1	SV1000
2	SV2000
3	SV3000

Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 448.)

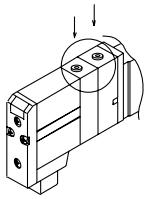
Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

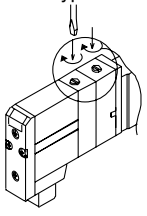
* 4 position dual 3 port valves are applicable to Series SV1000 and SV2000 only.

Manual override

Nil: Non-locking push type



D: Push-turn locking slotted type



Pilot type

Nil	Internal pilot
R	External pilot

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

Light/Surge voltage suppressor

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

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 valve.

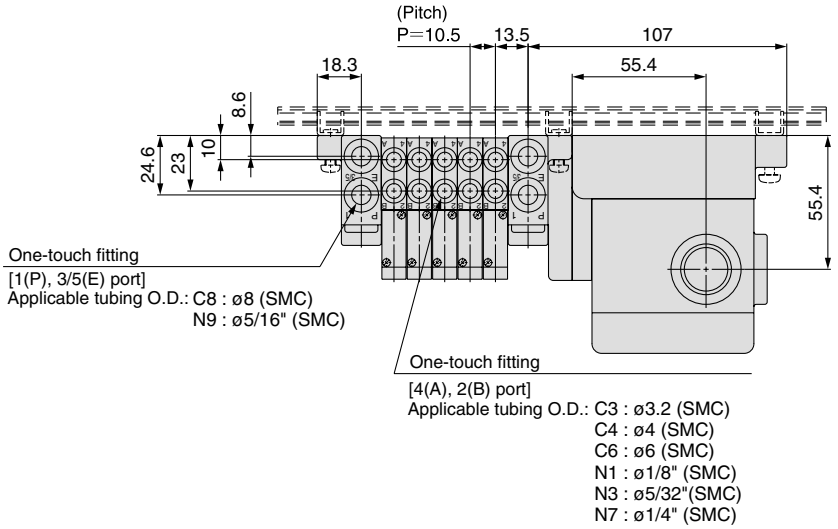
Rated voltage

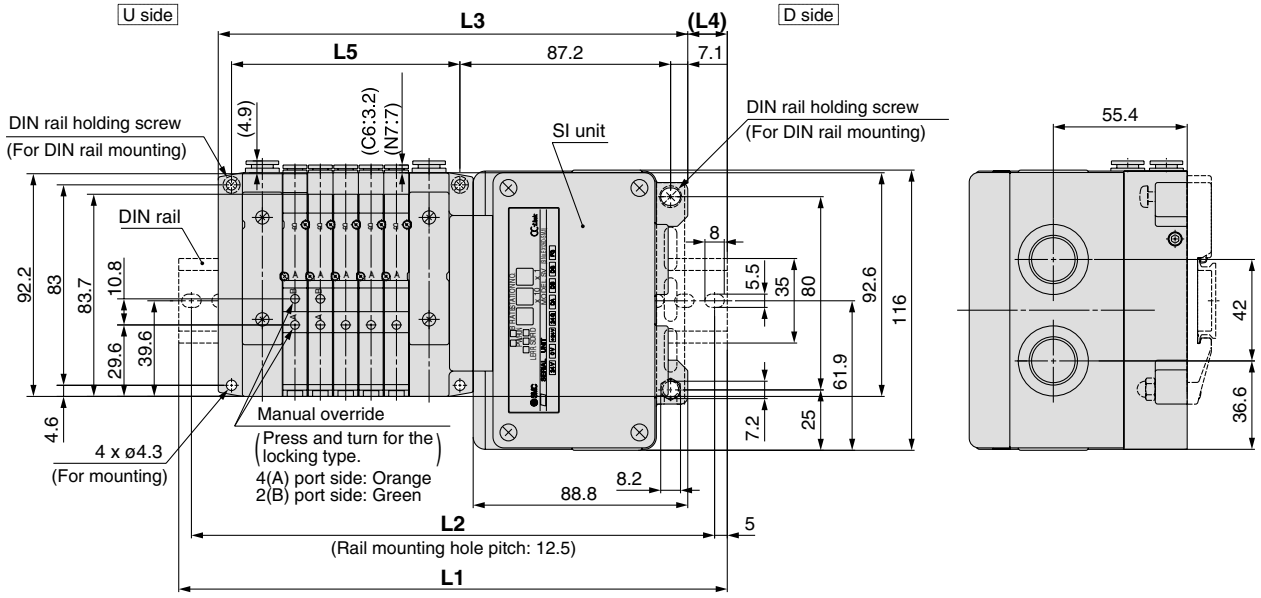
5	24 VDC

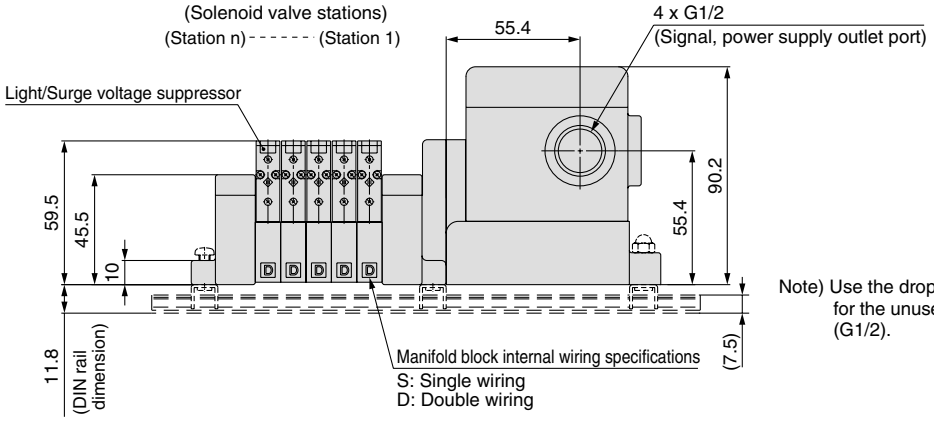
Refer to Specific Product Precautions 2 on page 450.

Dimensions: Series SV1000 for EX126 Integrated Type (for Output) Serial Transmission System

● Tie-rod base manifold : SS5V1-W10S4□D-Stations $^{U}_{D}$(S, R, RS)-$^{C3, N1}_{C4, N3}$ (-D)







Note) Use the dropproof plug assembly (AXT100-B04A) for the unused signal and power supply outlet port (G1/2).

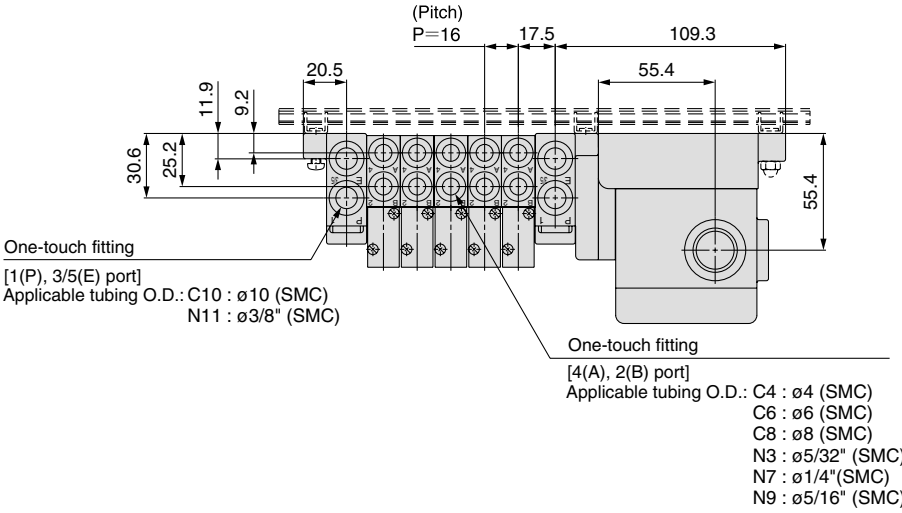
L Dimension

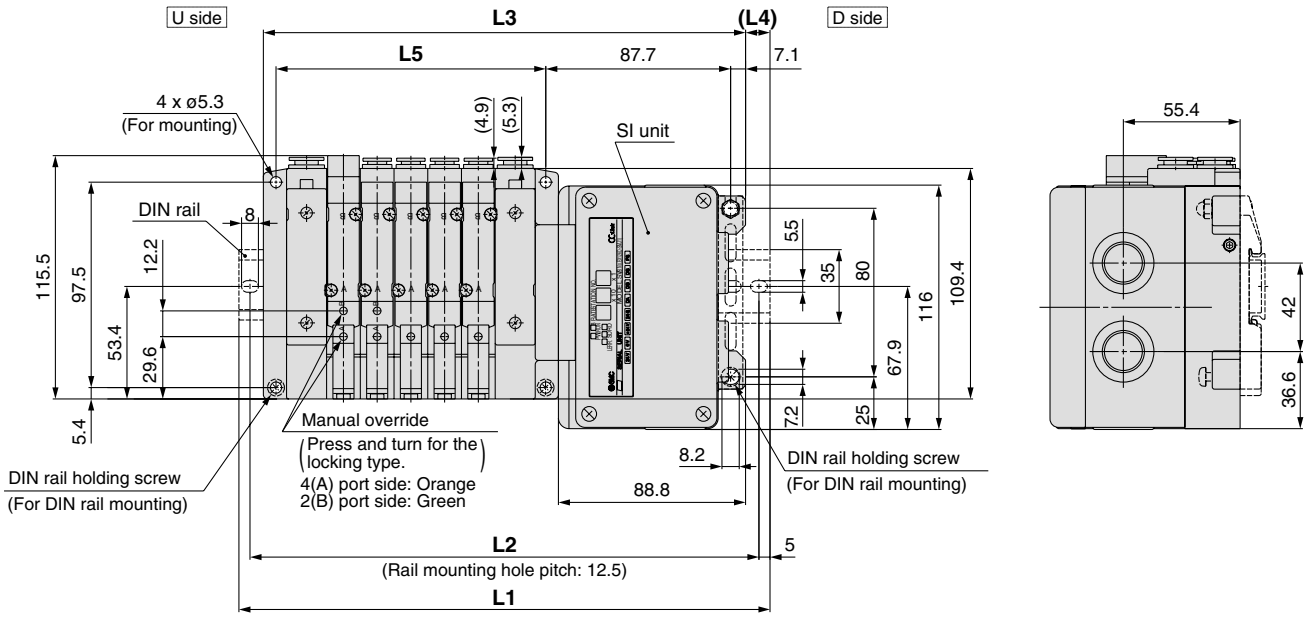
n: Stations

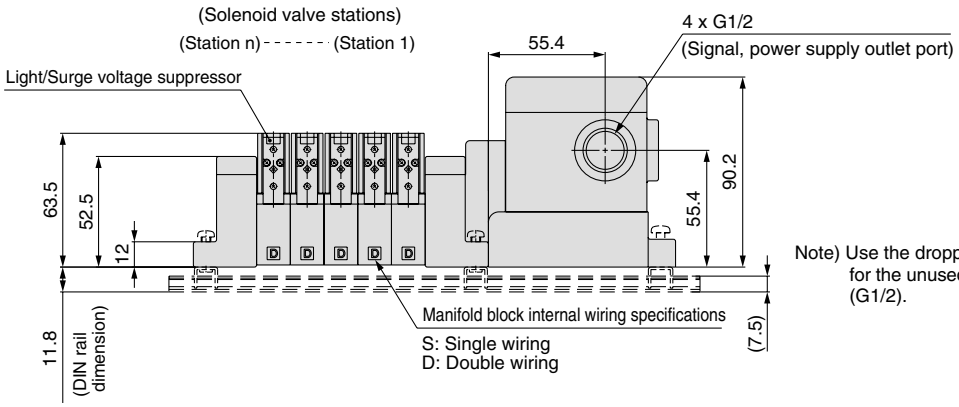
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298	310.5	323	323	335.5
L2	187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5	300	312.5	312.5	325
L3	162.8	173.3	183.8	194.3	204.8	215.3	225.8	236.3	246.8	257.3	267.8	278.3	288.8	299.3	309.8
L4	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13	14	15	16	17	12	13
L5	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210

Dimensions: Series SV2000 for EX126 Integrated Type (for Output) Serial Transmission System

●Tie-rod base manifold : SS5V2-W10S4□D-Stations $^{U}_{D}$(S, R, RS)-$^{C4, N3}_{C6, N7}$(-D)







Note) Use the dropproof plug assembly (AXT100-B04A) for the unused signal and power supply outlet port (G1/2).

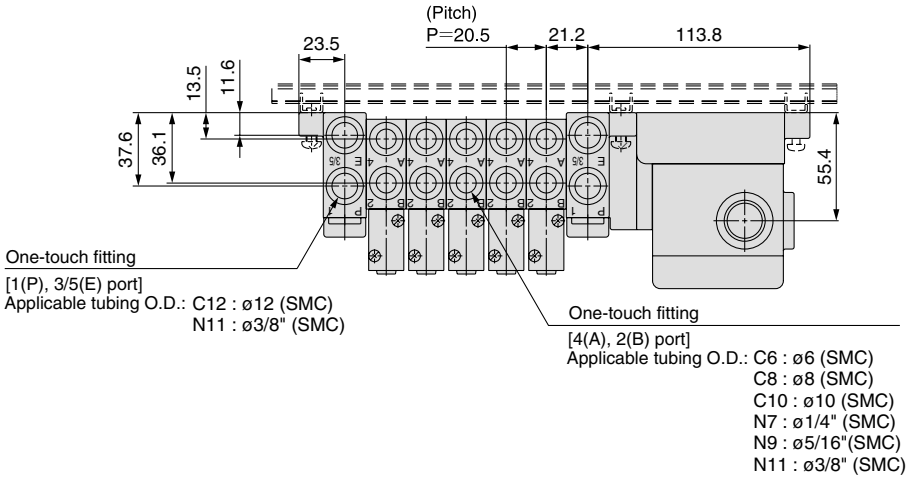
L Dimension

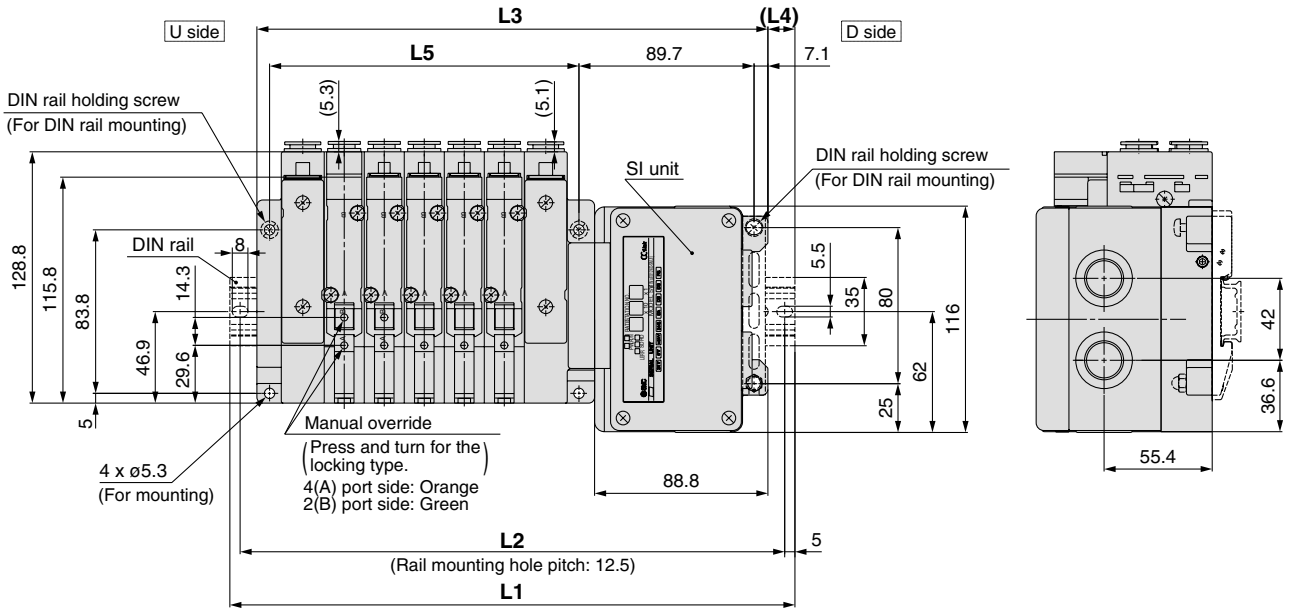
n : Stations

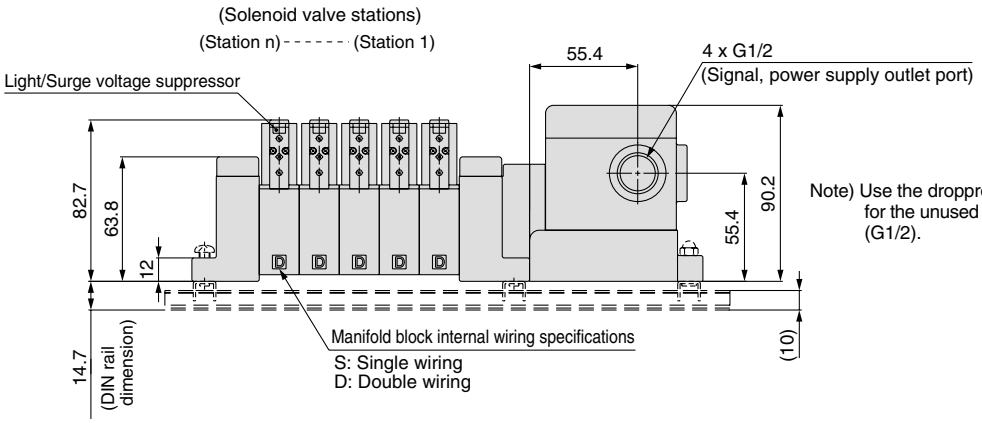
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	210.5	223	248	260.5	273	285.5	310.5	323	335.5	348	373	385.5	398	423	435.5
L2	200	212.5	237.5	250	262.5	275	300	312.5	325	337.5	362.5	375	387.5	412.5	425
L3	180.8	196.8	212.8	228.8	244.8	260.8	276.8	292.8	308.8	324.8	340.8	356.8	372.8	388.8	404.8
L4	15	13	17.5	16	14	12.5	17	15	13.5	11.5	16	14.5	12.5	17	15.5
L5	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304

Dimensions: Series SV3000 for EX126 Integrated Type (for Output) Serial Transmission System

● Tie-rod base manifold : SS5V3-W10S4□D-Stations U/D/B (S, R, RS)-C6, N7 / C8, N9 / C10, N11 (-D)







Note) Use the dropproof plug assembly (AXT100-B04A) for the unused signal and power supply outlet port (G1/2).

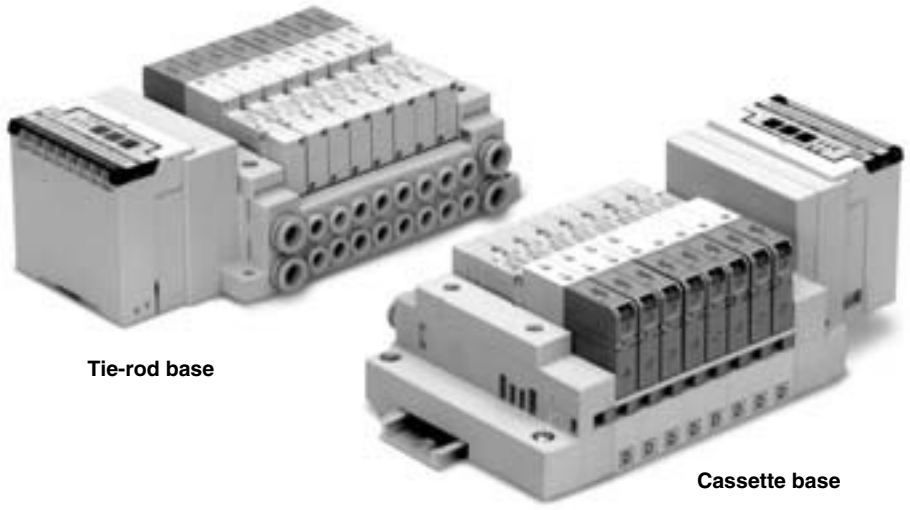
L Dimension

n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	235.5	248	273	285.5	310.5	335.5	348	373	398	410.5	435.5	460.5	473	498	510.5
L2	225	237.5	262.5	275	300	325	337.5	362.5	387.5	400	425	450	462.5	487.5	500
L3	200.3	220.8	241.3	261.8	282.3	302.8	323.3	343.8	364.3	384.8	405.3	425.8	446.3	466.8	487.3
L4	17.5	13.5	16	12	14	16.5	12.5	14.5	17	13	15	17.5	13.5	15.5	11.5
L5	97	117.5	138	158.5	179	199.5	220	240.5	261	281.5	302	322.5	343	363.5	384

Integrated Type (for Output) Serial Transmission System

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

EX120 Integrated Type (for Output) Serial Transmission System

Series SV

CE

How to Order Manifold

Mounting

Nil	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0*	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	When a longer DIN rail is desired than the specified stations. (Specify a longer rail than the standard length.)
⋮	⋮	
D16	For 16 stations	

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

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

● Tie-rod base

SS5V 1 – 10S3 V D – 05 U □ – □ – □

● Cassette base

SS5V 1 – 16S3 V D – 05 U □ – □ – □

Series

1	SV1000
2	SV2000

DIN rail length specified

Nil	Standard length	
3	For 3 stations	(Specify a longer rail than the standard length.)
⋮	⋮	
16	For 16 stations	

SI Unit

Symbol	Specifications
0	Without SI unit
F1	NKE Corp.: Uni-wire System
H	NKE Corp.: Uni-wire H System
J1	SUNX Corp.: S-LINK (16 output points)
J2	SUNX Corp.: S-LINK (8 output points)
Q	DeviceNet
R1	OMRON Corp.: CompoBus/S (16 output points)
R2	OMRON Corp.: CompoBus/S (8 output points)
V	CC-LINK
ZB	CompoNet™ (Positive common)
ZBN	CompoNet™ (Negative common)

Valve stations

Symbol	Stations	Note
02	2 stations	(1) Double wiring specifications
⋮	⋮	
08	8 stations	
02	2 stations	(2) Specified layout (up to 16 solenoids possible.)
⋮	⋮	
16	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 a manifold specification sheet. (Note that double, 3 and 4 position valves cannot be used where single solenoid wiring has been specified.)

SUP/EXH block assembly specifications

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

P, E port location

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

SI Unit Part No.

Symbol	Protocol type	SI unit part no.	CE-compliant
F1	NKE Corp.: Uni-wire System	EX120-SUW1	—
H	NKE Corp.: Uni-wire H System	EX120-SUH1	—
J1	SUNX Corp.: S-LINK (16 output points)	EX120-SSL1	—
J2	SUNX Corp.: S-LINK (8 output points)	EX120-SSL2	—
Q	DeviceNet	EX120-SDN1	○
R1	OMRON Corp.: CompoBus/S (16 output points)	EX120-SCS1	○
R2	OMRON Corp.: CompoBus/S (8 output points)	EX120-SCS2	○
V	CC-LINK	EX120-SMJ1	○
ZB	CompoNet™ (Positive common)	EX120-SCM1	○
ZBN	CompoNet™ (Negative common)	EX120-SCM3	○

Refer to pages 1650 to 1652 for the details of EX120 integrated type (For output) serial transmission system.
* Refer to SMC Information (08-E543) for details on CompoNet™.

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	
03	Rc 3/8		
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	NPT 3/8	
03N	NPT 3/8		
02T	NPTF 1/4	NPTF 3/8	
03T	NPTF 3/8		
M	A, B ports mixed		

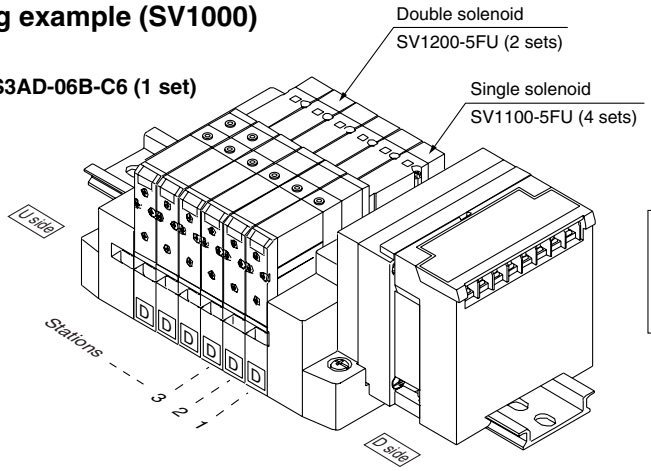
* In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
* Port sizes of X, PE port for external pilot specification (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6 (metric) and ø1/4" (inch) for SV3000/4000.

SMC

How to Order Manifold Assembly

Ordering example (SV1000)

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



SS5V1-16S3CD-06B-C6 ····· **1 set (manifold part no.)**
∗ **SV1100-5FU** ····· **4 sets (Single solenoid part no.)**
∗ **SV1200-5FU** ····· **2 sets (Double solenoid part no.)**

How to Order Solenoid Valves

SV 1 1 00 – 5 F – Note)

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

∗ 4 position dual 3 port valves are applicable to 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.

Rated voltage

5	24 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 Valve.

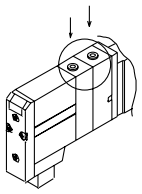
Refer to Specific Product Precautions 2 on page 450.

Light/Surge voltage suppressor

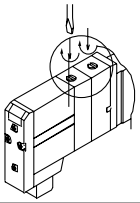
U	With light/surge voltage suppressor
R	With surge voltage suppressor

Manual override

Nil: Non-locking push type



D: Push-turn locking slotted type



Note) Available with manifold block for station additions. Refer to pages 429 and 433.

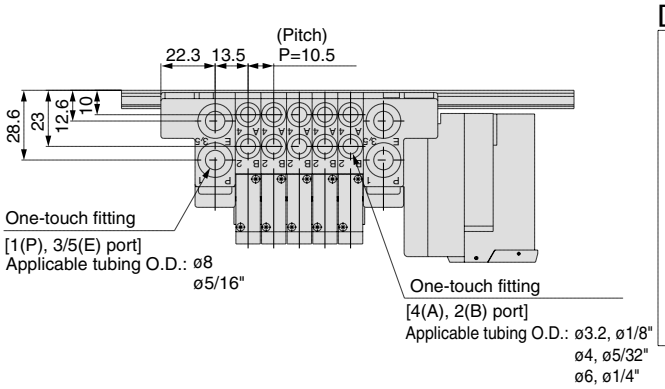
Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 448.)

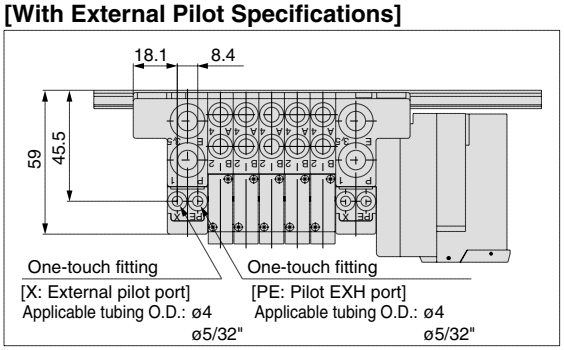
Dimensions: Series SV1000 for EX120 Integrated Type (for Output) Serial Transmission System

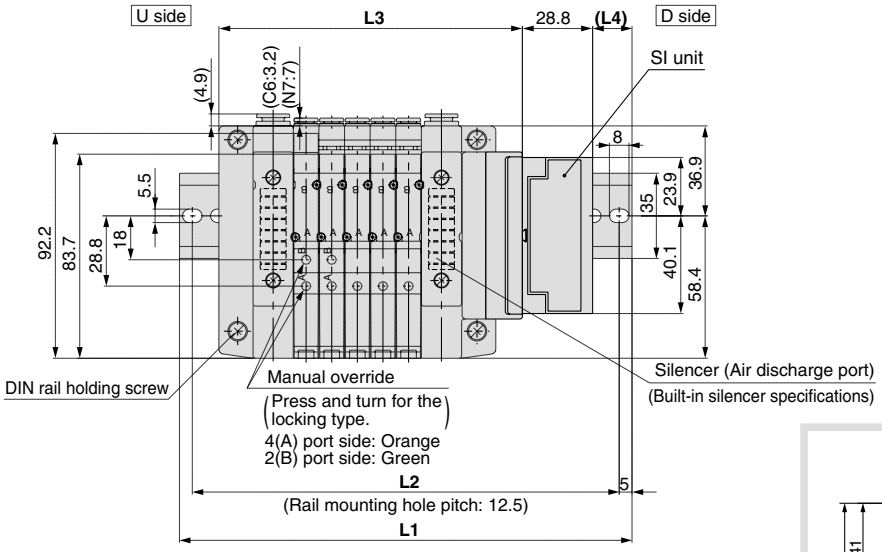
● Cassette base manifold : SS5V1-16S3□D- Stations $^{U}_{D}$(S, R, RS)-$^{C3, N1}_{C4, N3}$ $^{}_{C6, N7}$

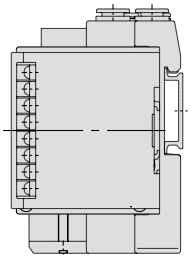
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

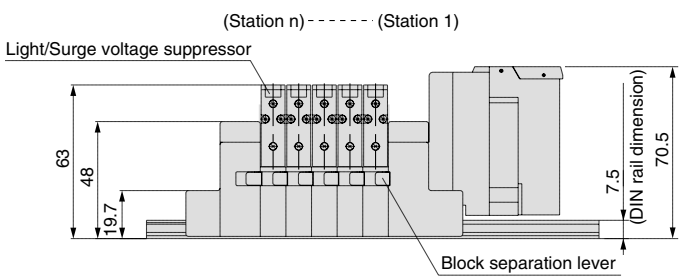


[With External Pilot Specifications]

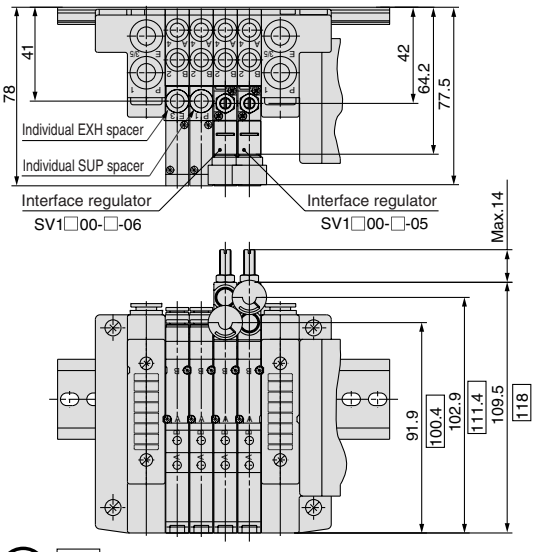








[With option]



L Dimension

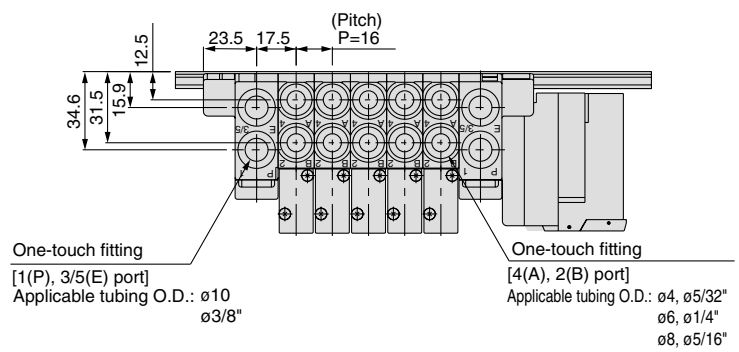
n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	148	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298
L2	137.5	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5
L3	92.9	103.4	113.9	124.4	134.9	145.4	155.9	166.4	176.9	187.4	197.9	208.4	218.9	229.4	239.9
L4	13	14	15	16	17	12	13	14	15	16	17	11.5	12.5	13.5	14.5

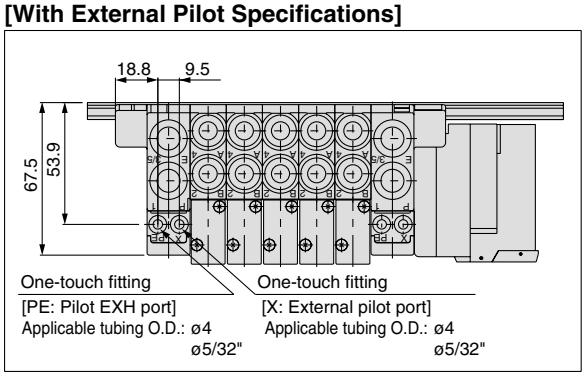
Dimensions: Series SV2000 for EX120 Integrated Type (for Output) Serial Transmission System

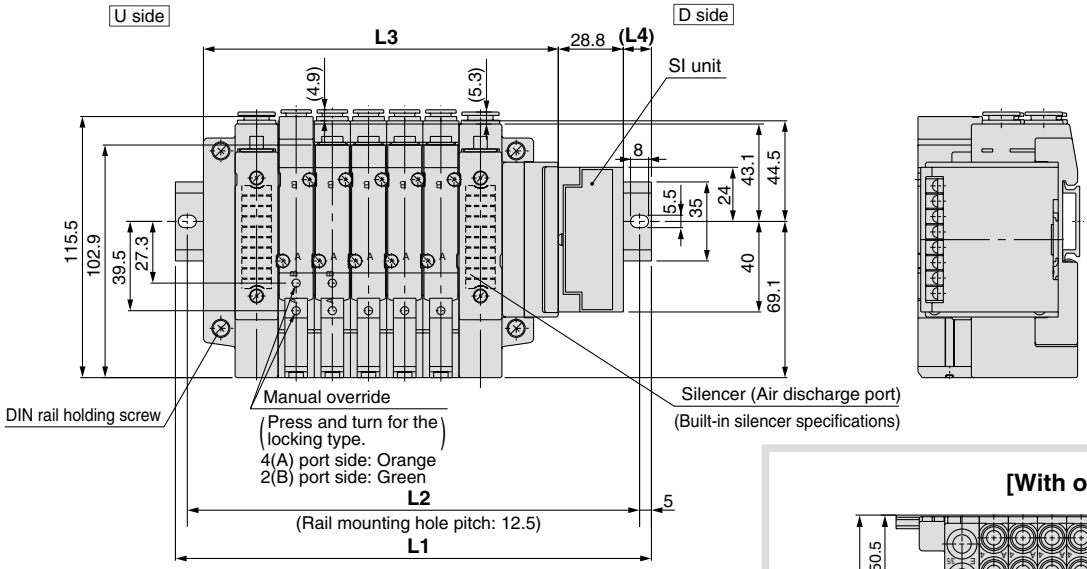
● Cassette base manifold : SS5V2-16S3□D- Stations U/D/B (S, R, RS)- C4, N3 / C6, N7 / C8, N9

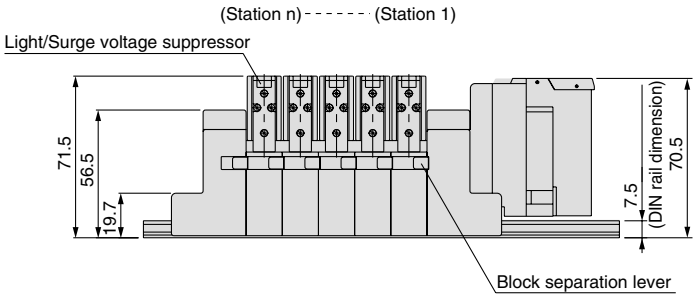
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



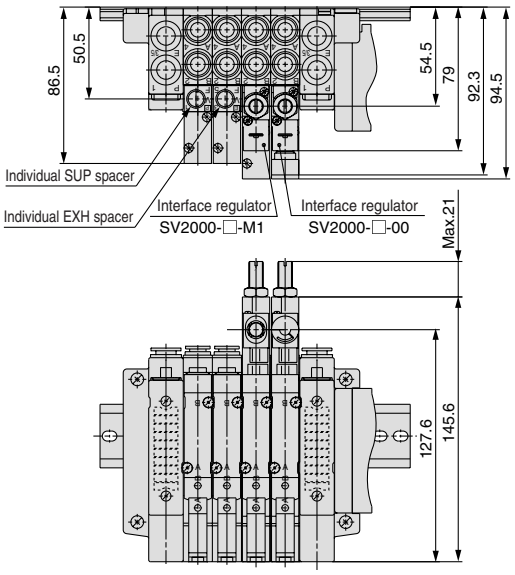
[With External Pilot Specifications]







[With option]



L Dimension

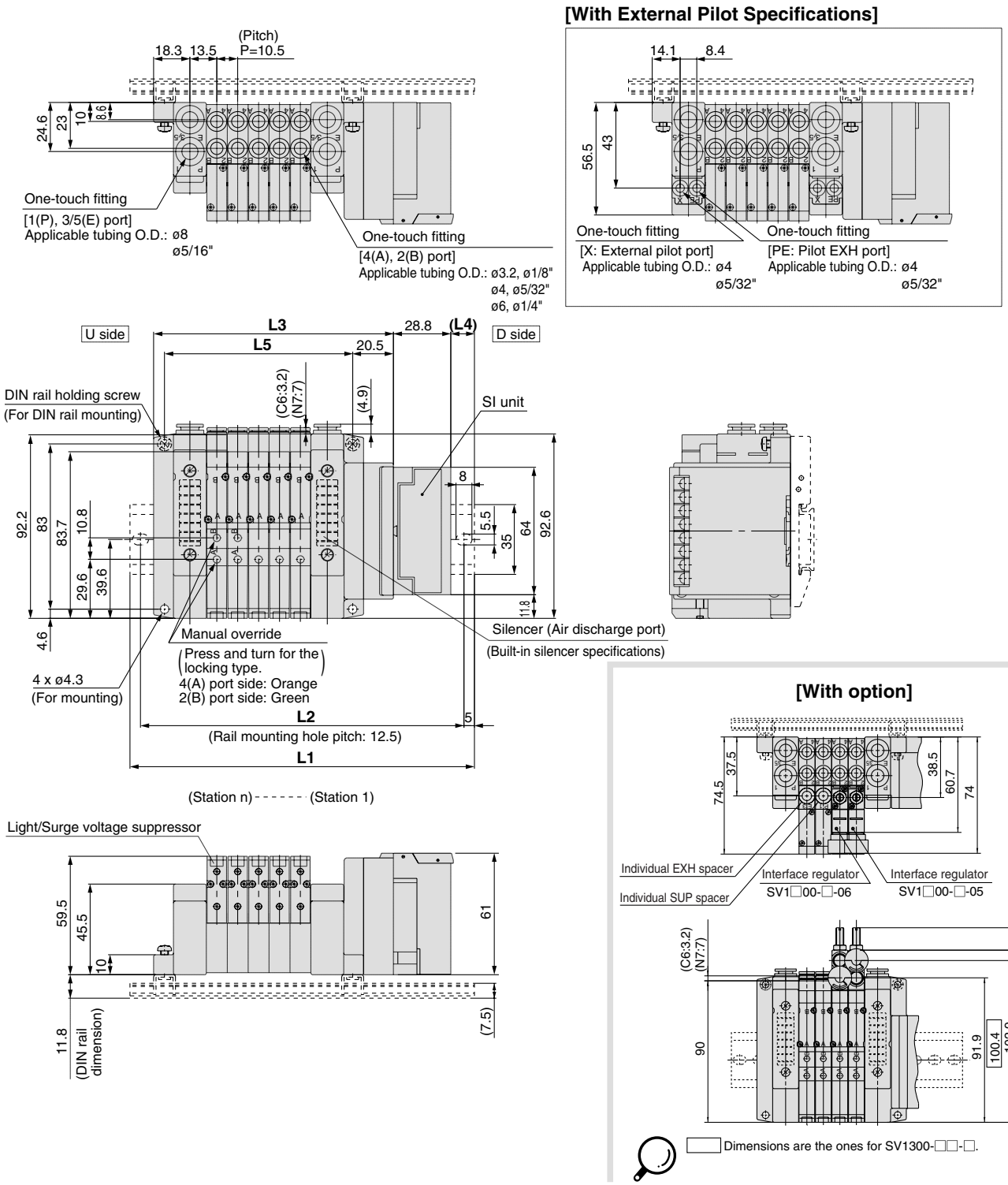
n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	173	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373	385.5
L2	162.5	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5	375
L3	108.9	124.9	140.9	156.9	172.9	188.9	204.9	220.9	236.9	252.9	268.9	284.9	300.9	316.9	332.9
L4	17.5	16	14	12.5	17	15	13.5	11.5	16	14.5	12.5	17	15.5	13.5	12

Dimensions: Series SV1000 for EX120 Integrated Type (for Output) Serial Transmission System

● Tie-rod base manifold : SS5V1-10S3□D- Stations U/D/B (S, R, RS)- C3, N1 / C4, N3 / C6, N7 (-D)

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



L Dimension

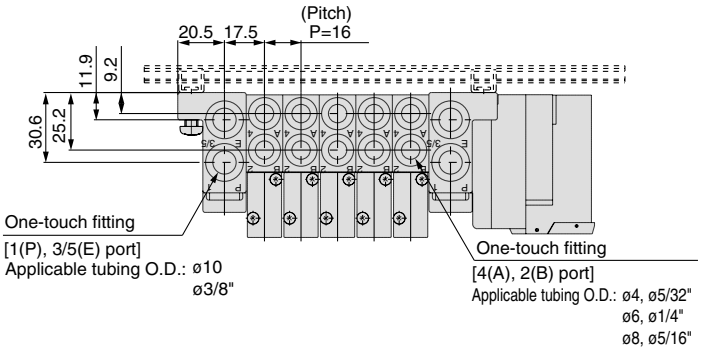
n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	148	160.5	173	173	185.5	198	210.5	223	235.5	235.5	248	260.5	273	285.5	298
L2	137.5	150	162.5	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5	275	287.5
L3	89	99.5	110	120.5	131	141.5	152	162.5	173	183.5	194	204.5	215	225.5	236
L4	15	16	17	12	13	14	15	16	17	11.5	12.5	13.5	14.5	15.5	16.5
L5	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210

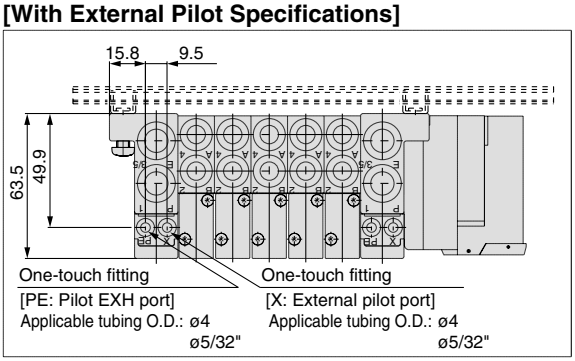
Dimensions: Series SV2000 for EX120 Integrated Type (for Output) Serial Transmission System

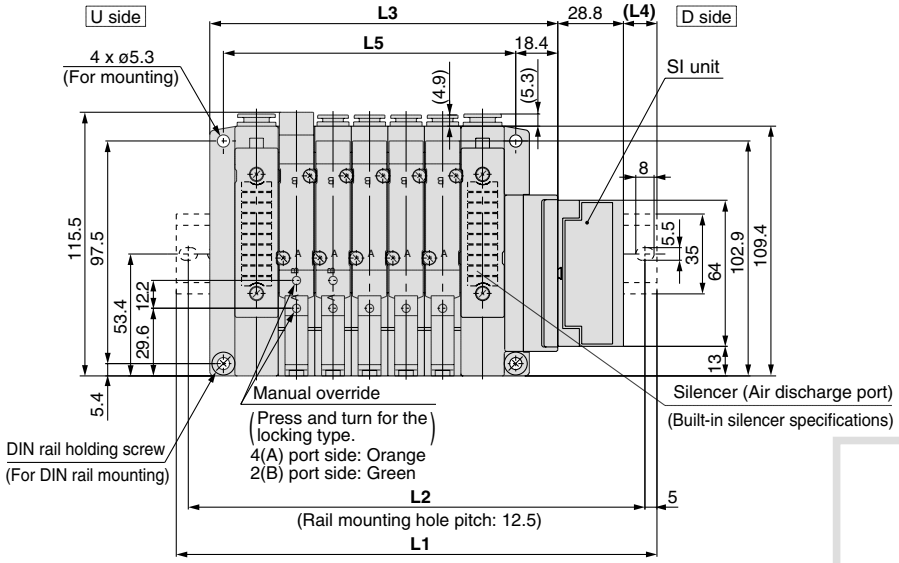
● Tie-rod base manifold : SS5V2-10S3□D-Stations $^{U}_{D}$(S, R, RS)-$^{C4, N3}_{C6, N7}$(-D)

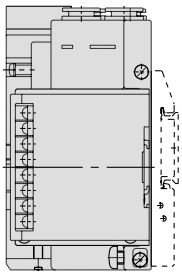
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



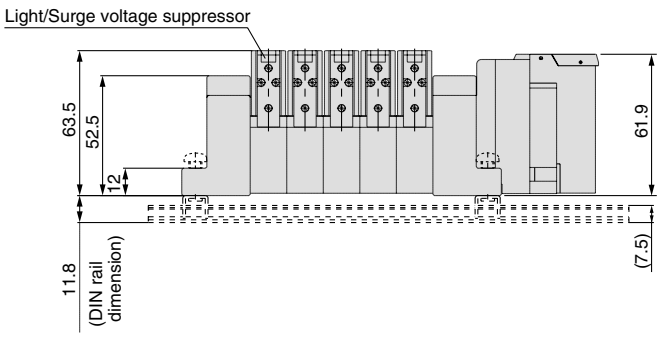
[With External Pilot Specifications]



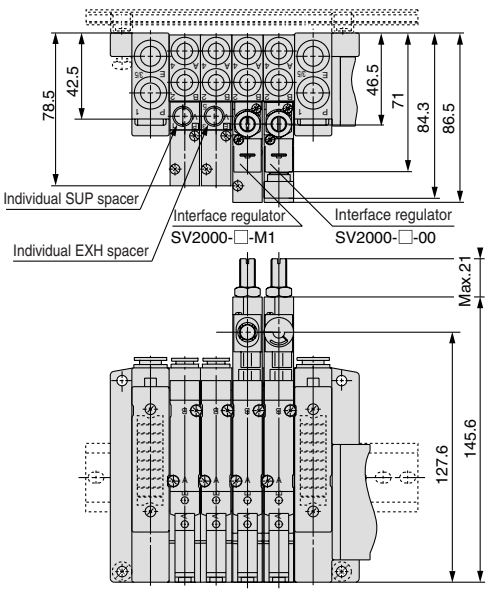




(Station n) - - - - - - (Station 1)



[With option]



L Dimension

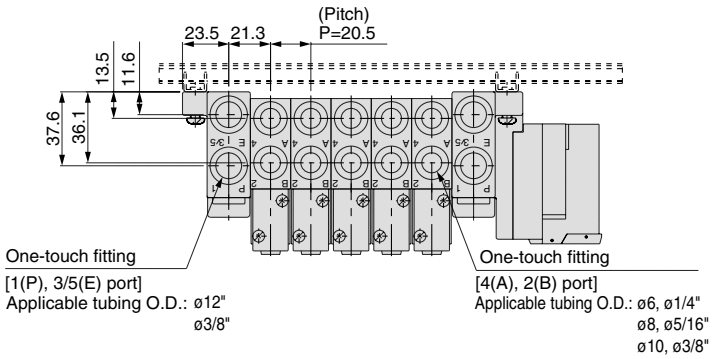
n : Stations

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

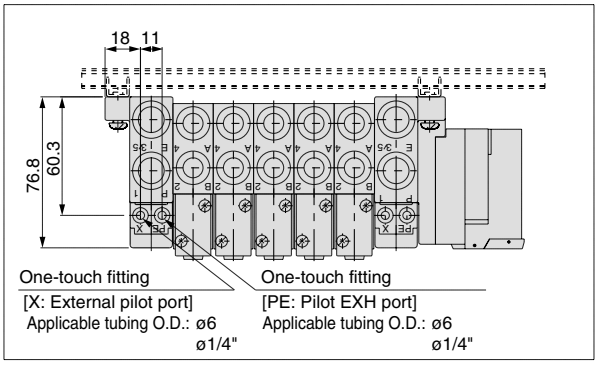
Dimensions: Series SV3000 for EX120 Integrated Type (for Output) Serial Transmission System

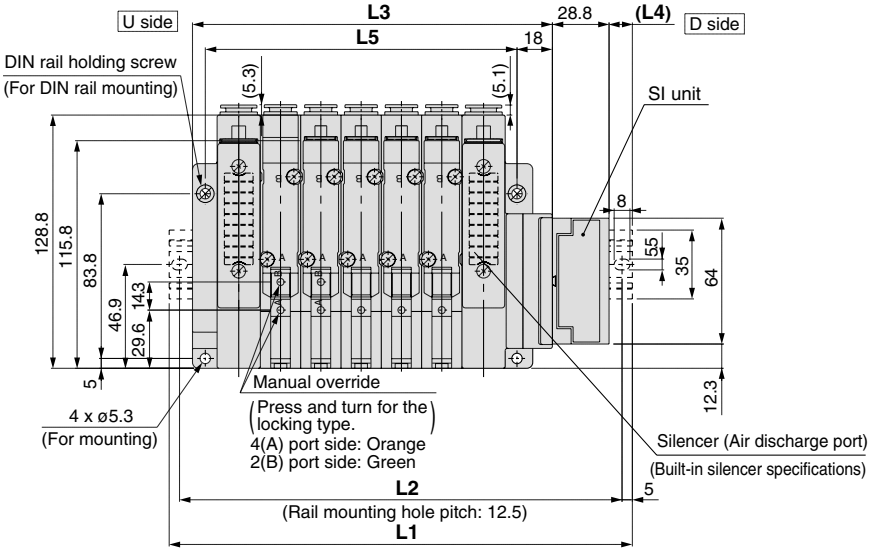
● Tie-rod base manifold : SS5V3-10S3□D- Stations U/D B (S, R, RS)- C6, N7 / C8, N9 / C10, N11 (-D)

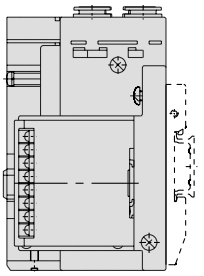
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

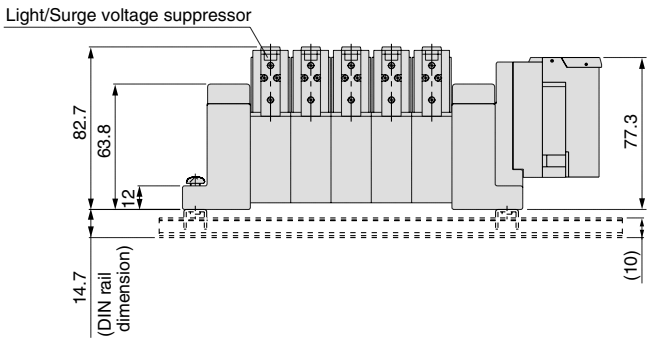


[With External Pilot Specifications]

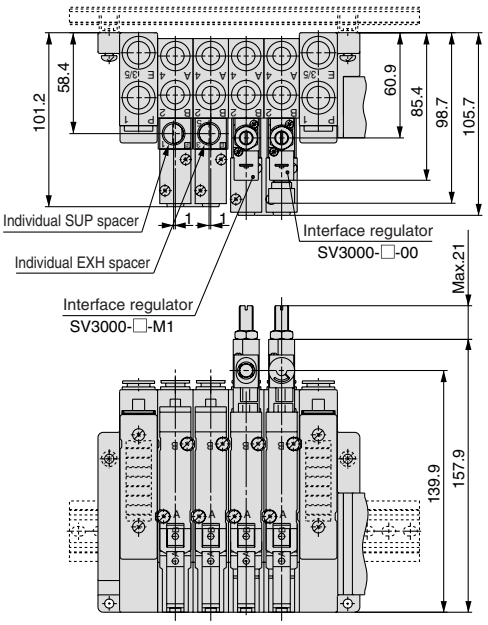








[With option]



L Dimension

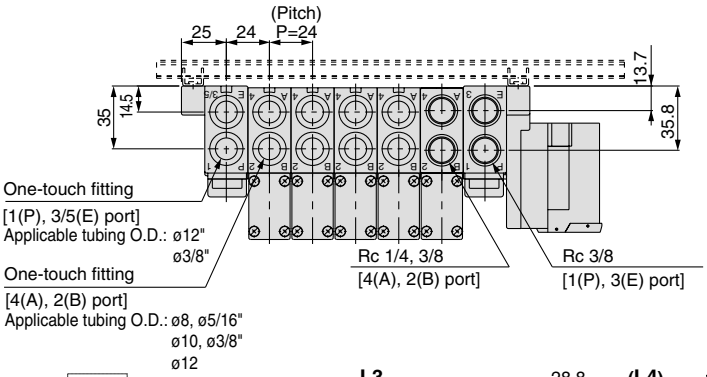
n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	185.5	198	223	235.5	260.5	285.5	298	323	348	360.5	385.5	410.5	423	448	460.5
L2	175	187.5	212.5	225	250	275	287.5	312.5	337.5	350	375	400	412.5	437.5	450
L3	121.5	142	162.5	183	203.5	224	244.5	265	285.5	306	326.5	347	367.5	388	408.5
L4	17.5	13.5	16	12	14	16.5	12.5	14.5	17	13	15	17.5	13.5	15.5	11.5
L5	97	117.5	138	158.5	179	199.5	220	240.5	261	281.5	302	322.5	343	363.5	384

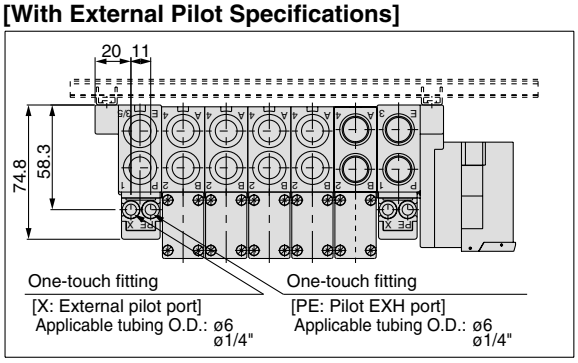
Dimensions: Series SV4000 for EX120 Integrated Type (for Output) Serial Transmission System

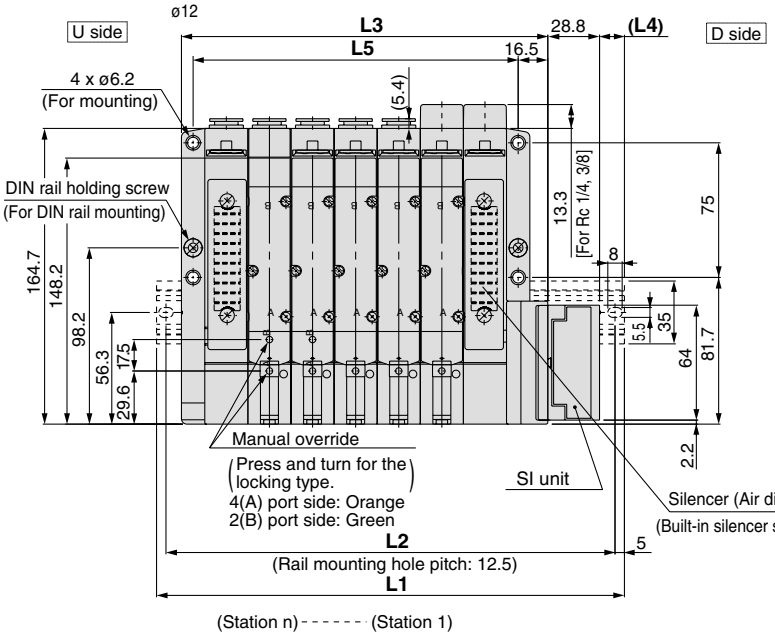
●Tie-rod base manifold : SS5V4-10S3□D-Stations $^{U}_{D}$(S, R, RS)-$^{02,\ C8,\ N9,}_{03,\ C10,\ N11,\ C12,}$(-D)

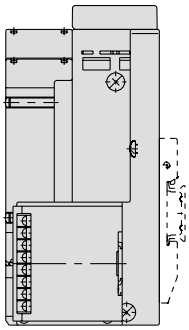
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



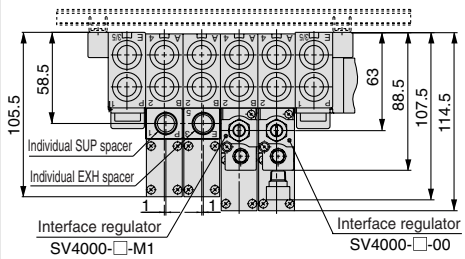
[With External Pilot Specifications]

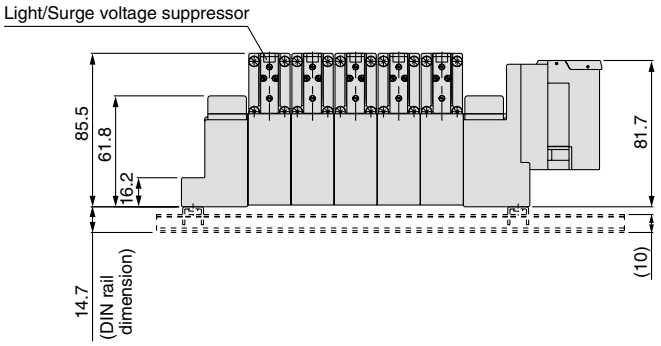


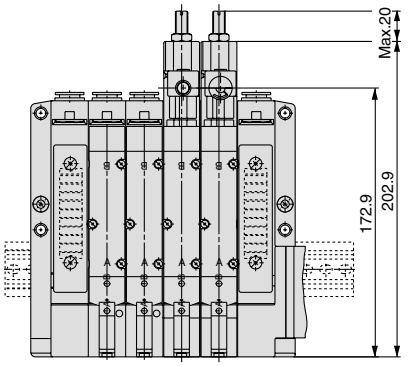




[With option]







L Dimension

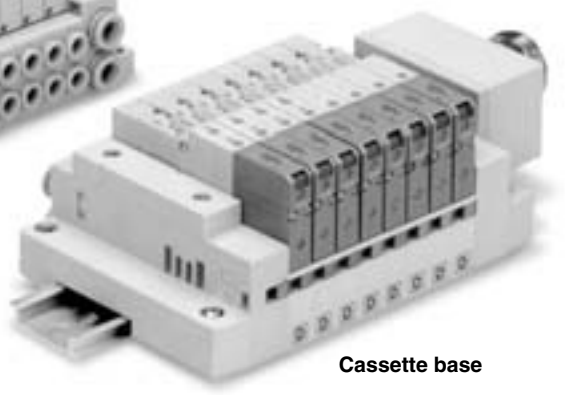
n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	185.5	210.5	235.5	260.5	285.5	310.5	335.5	360.5	385.5	410.5	435.5	448	473	498	523
L2	175	200	225	250	275	300	325	350	375	400	425	437.5	462.5	487.5	512.5
L3	132	156	180	204	228	252	276	300	324	348	372	396	420	444	468
L4	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5	11.5	12	12.5	13
L5	109	133	157	181	205	229	253	277	301	325	349	373	397	421	445

Circular Connector

IP67 compliant

Tie-rod base



Cassette base

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

Circular Connector
Series SV

How to Order Manifold

● **Tie-rod base**

SS5V 1 – W 10CD – 05 U □ – □ – □

● **Cassette base**

SS5V 1 – W 16CD – 05 U □ – □ – □

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Valve stations

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

Mounting

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

∗ In the 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 station at the maximum.

Series

1	SV1000
2	SV2000

Enclosure
IP67 specifications

Valve stations

Type 16: Series SV1000

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

Type 16: Series SV2000

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

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.

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	
03	Rc 3/8		
02F	G 1/4	G 3/8	
03F	G 3/8		
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	NPT 3/8	
03N	NPT 3/8		
02T	NPTF 1/4	NPTF 3/8	
03T	NPTF 3/8		
M	A, B ports mixed		

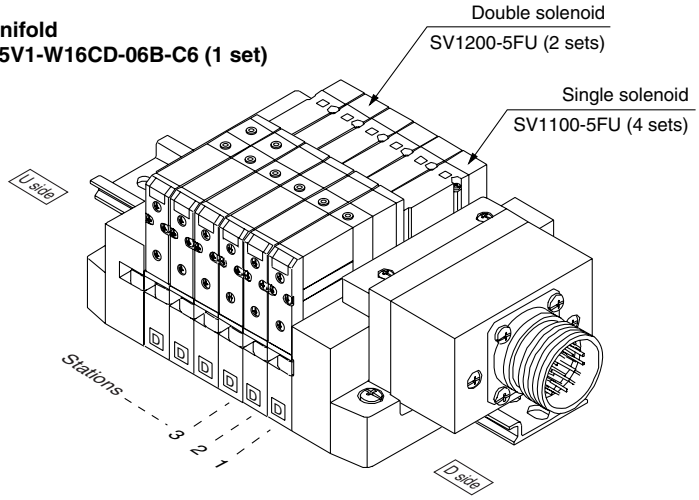
∗ In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

∗ 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.

How to Order Manifold Assembly

Ordering example (SV1000)

Manifold
SS5V1-W16CD-06B-C6 (1 set)



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.)

How to Order Solenoid Valves

SV 1 1 0 0 □ □ – 5 F □ □ – □ – □

Note)

Note) Available with manifold block for station additions. Refer to pages 429 and 433.

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

∗ 4 position dual 3 port valves are applicable to 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

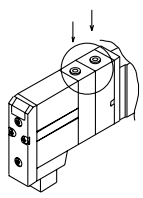
∗ Built-in back pressure check valve type is applicable to series SV1000 only.
∗ Back pressure check valve is not available for 3 position valve.

Rated voltage

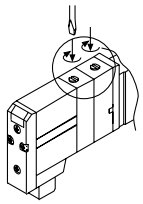
5	DC24V
6	DC12V

Manual override

Nil: Non-locking push type



D: Push-turn locking slotted type



Light/Surge voltage suppressor

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

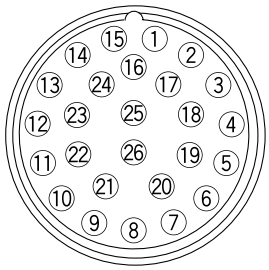
Made to Order

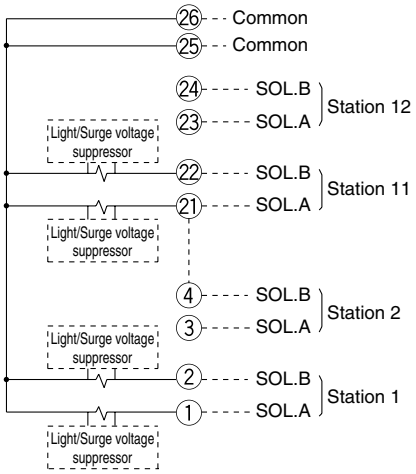
Nil	—
X90	Main valve fluoro rubber (Refer to page 448.)

Refer to Specific Product Precautions 2 on page 450.

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.

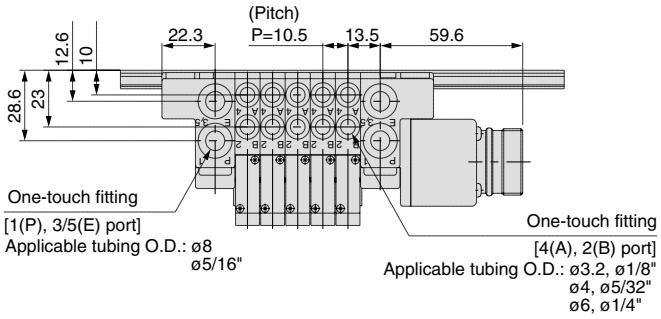
Usable No. of Solenoids

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

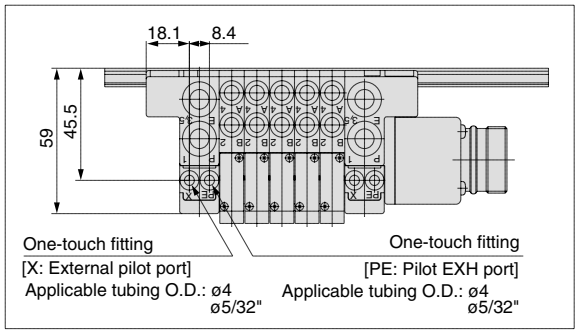
Dimensions: Series SV1000 for Circular Connector

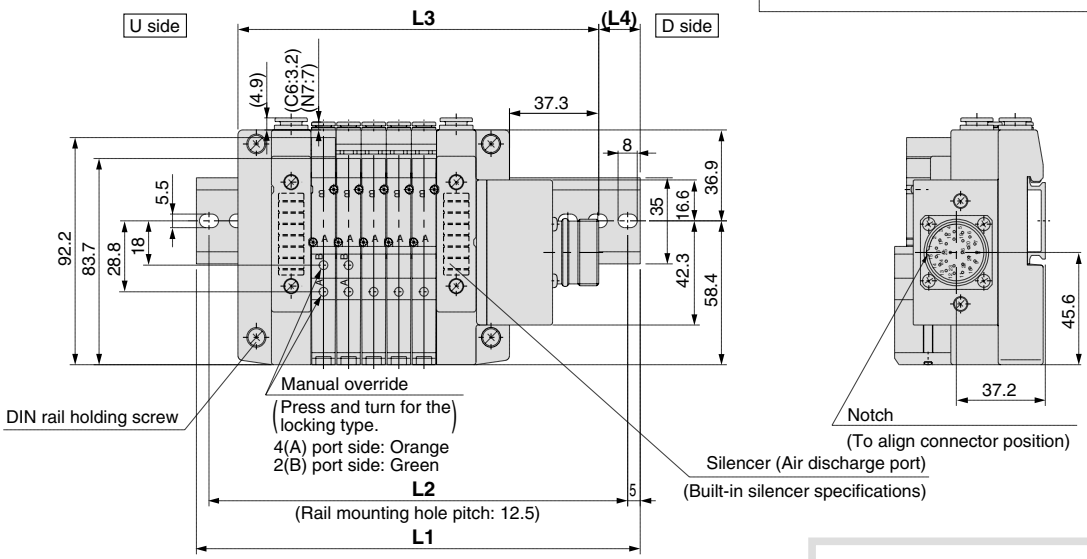
● Cassette base manifold: SS5V1-W16CD-[Stations] [U/D/B] (S, R, RS)- [C3, N1 / C4, N3 / C6, N7]

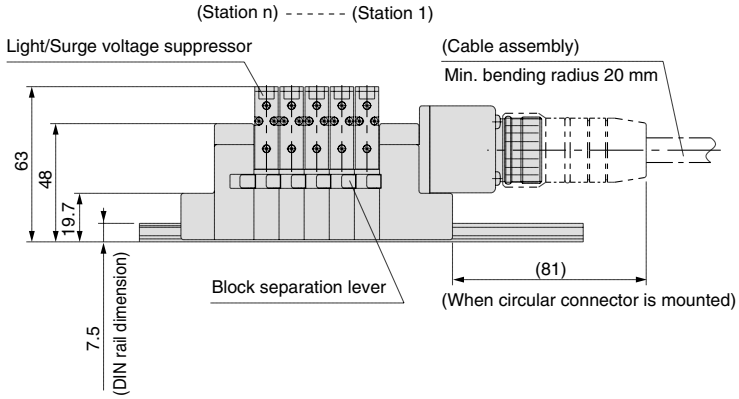
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



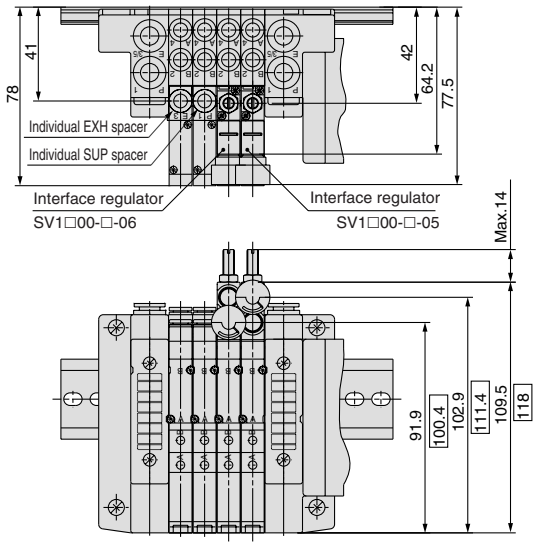
With External Pilot Specifications







With option



Dimensions are the ones for SV1300-□□-□.

L Dimension

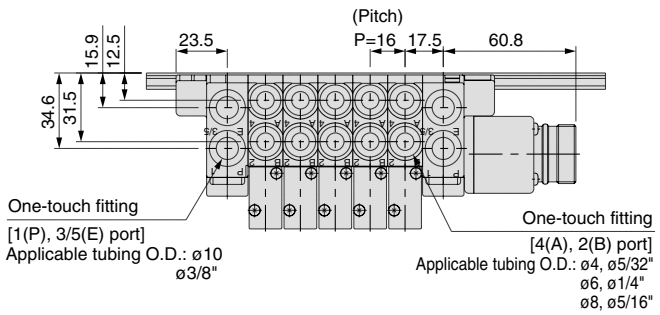
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L1	148	160.5	173	185.5	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5	310.5
L2	137.5	150	162.5	175	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300	300
L3	119.3	129.8	140.3	150.8	161.3	171.8	182.3	192.8	203.3	213.8	224.3	234.8	245.3	255.8	266.3	276.8	287.3
L4	14.5	15.5	16.5	17.5	12	13	14	15	16	17	12	13	14	15	16	17	11.5

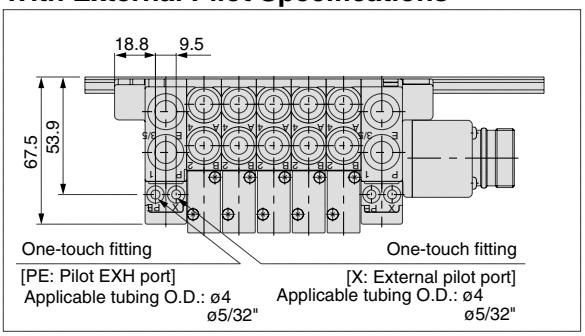
Dimensions: Series SV2000 for Circular Connector

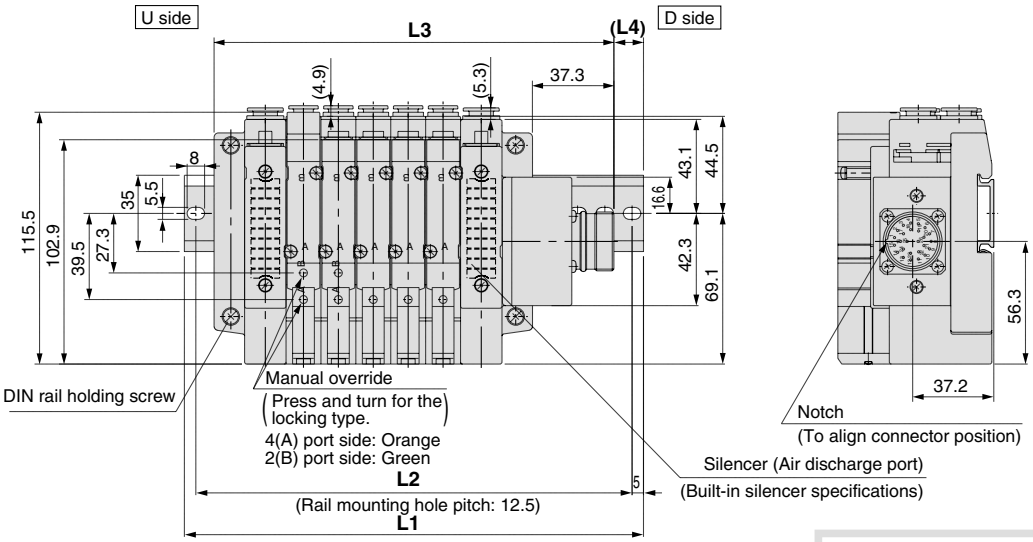
● Cassette base manifold: SS5V2-W16CD-[Stations] [U/D/B] (S, R, RS)- [C4, N3 / C6, N7 / C8, N9]

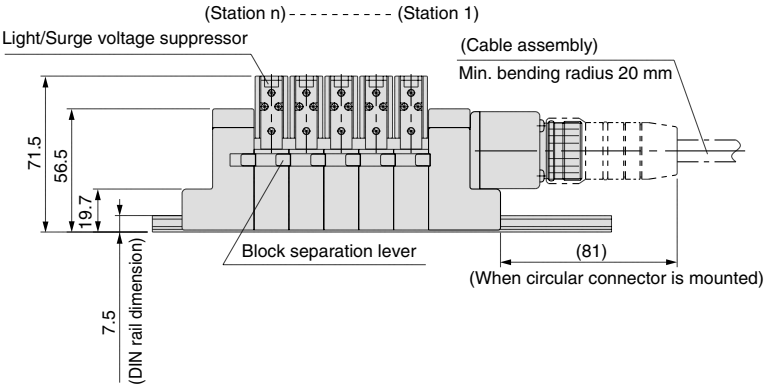
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



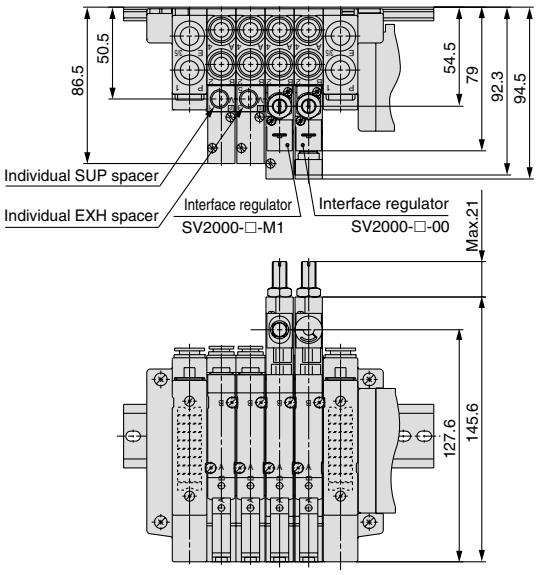
With External Pilot Specifications







With option



L Dimension

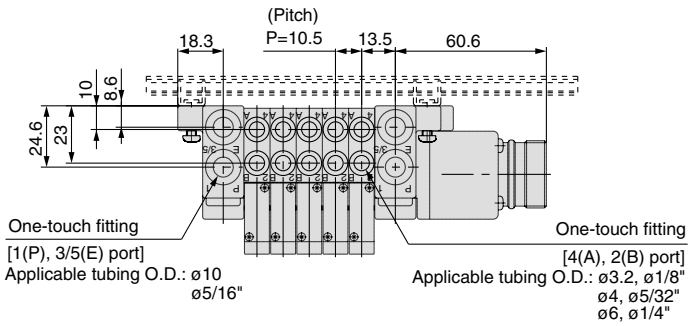
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	160.5	185.5	198	210.5	223	248	260.5	273	298	310.5	323	335.5	360.5	373	385.5	410.5	423	435.5	448
L2	150	175	187.5	200	212.5	237.5	250	262.5	287.5	300	312.5	325	350	362.5	375	400	412.5	425	437.5
L3	135.3	151.3	167.3	183.3	199.3	215.3	231.3	247.3	263.3	279.3	295.3	311.3	327.3	343.3	359.3	375.3	391.3	407.3	423.3
L4	12.5	17	15.5	13.5	12	16.5	14.5	13	17.5	15.5	14	12	16.5	15	13	17.5	16	14	12.5

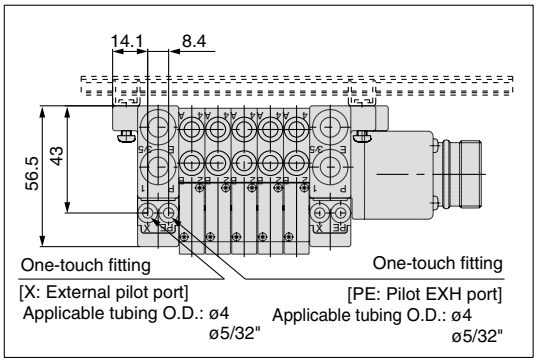
Dimensions: Series SV1000 for Circular Connector

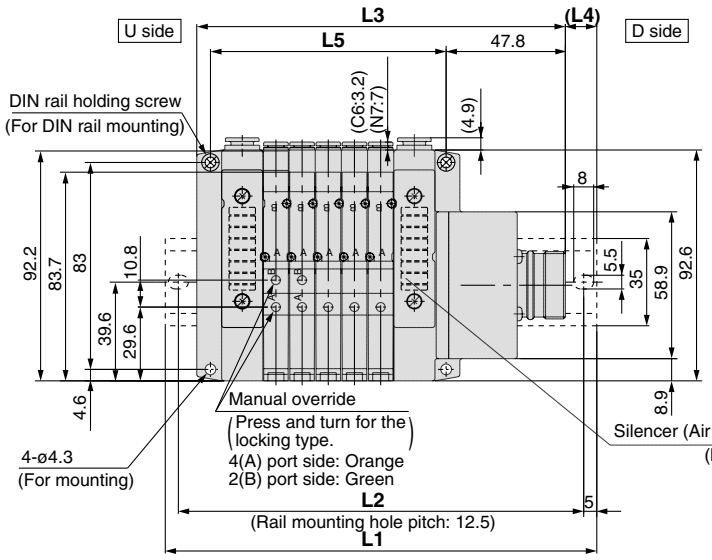
● Tie-rod base manifold: SS5V1-W10CD-[Stations] [U/D/B] (S, R, RS)- [C3, N1 / C4, N3 / C6, N7] (-D)

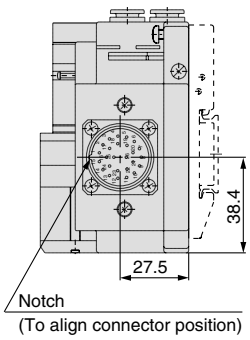
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

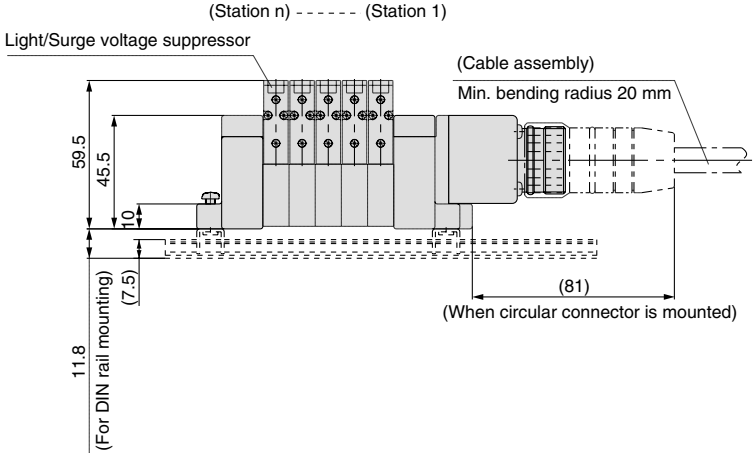


With External Pilot Specifications

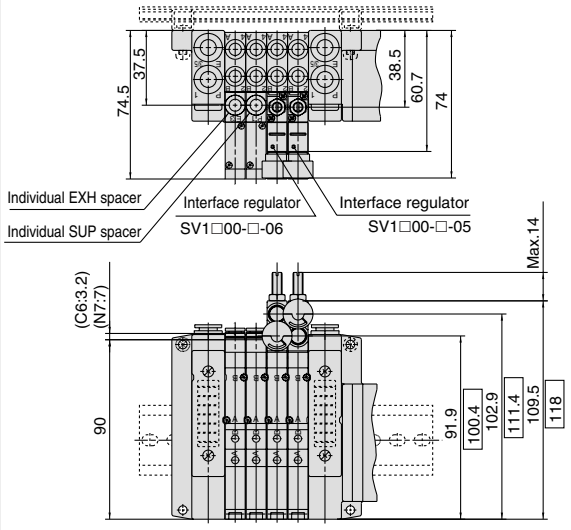








With option



Dimensions are the ones for SV1300-□□-□.

L Dimension

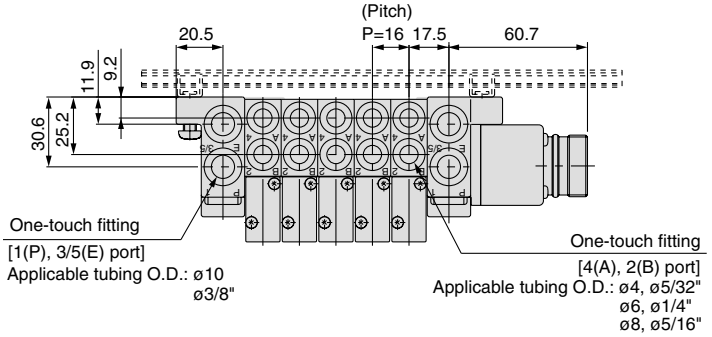
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	148	160.5	160.5	173	185.5	198	210.5	223	235.5	235.5	248	260.5	273	285.5	298	298	310.5	323	335.5
L2	137.5	150	150	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5	275	287.5	287.5	300	312.5	325
L3	116.3	126.8	137.3	147.8	158.3	168.8	179.3	189.8	200.3	210.8	221.3	231.8	242.3	252.8	263.3	273.8	284.3	294.8	305.3
L4	16	17	11.5	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13	14	15
L5	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252

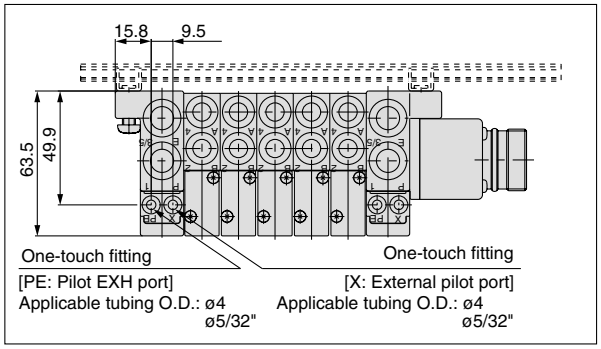
Dimensions: Series SV2000 for Circular Connector

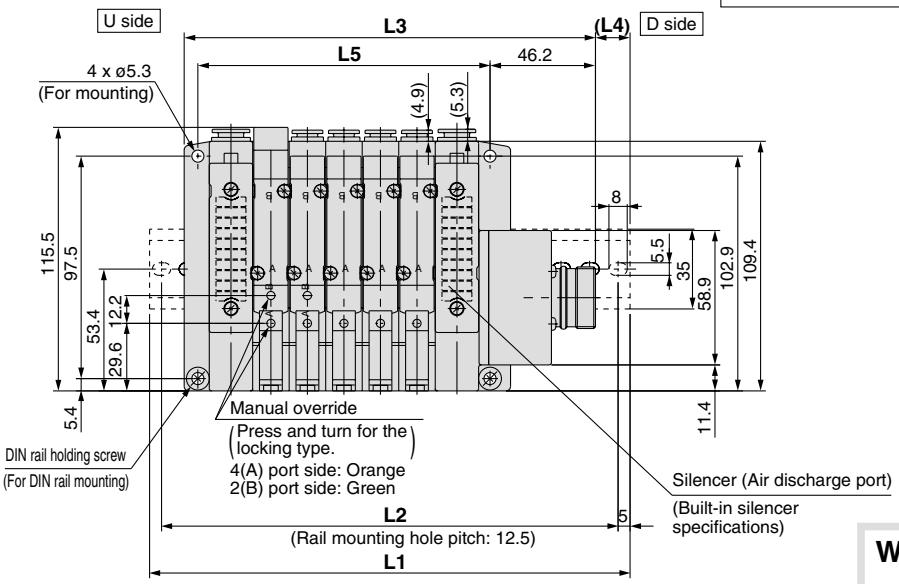
● Tie-rod base manifold: SS5V2-W10CD-[Stations][U/D/B] (S, R, RS)-[C4, N3 / C6, N7 / C8, N9] (-D)

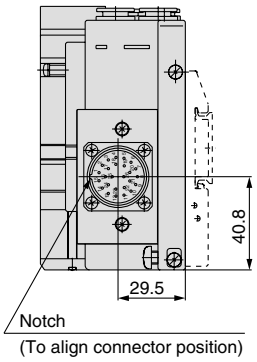
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

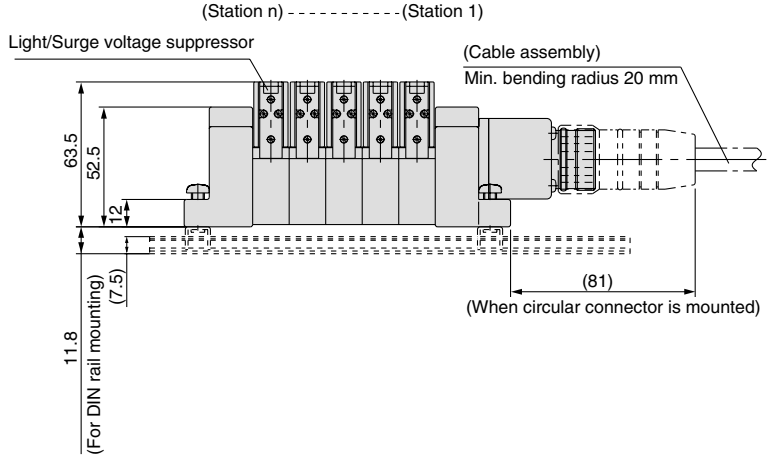


With External Pilot Specifications

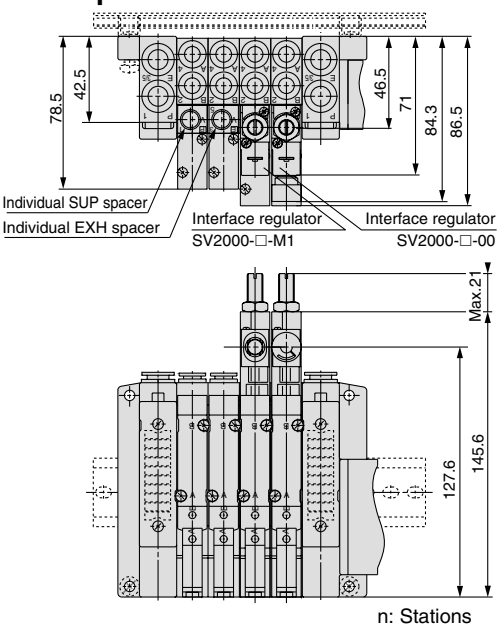








With option



L Dimension

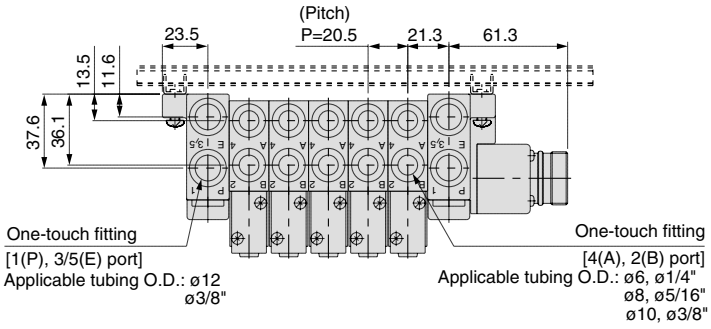
n: Stations

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

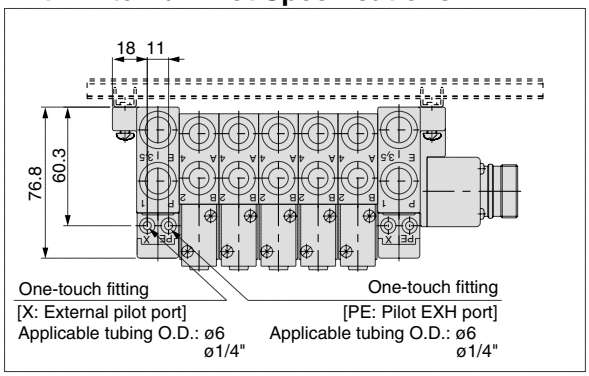
Dimensions: Series SV3000 for Circular Connector

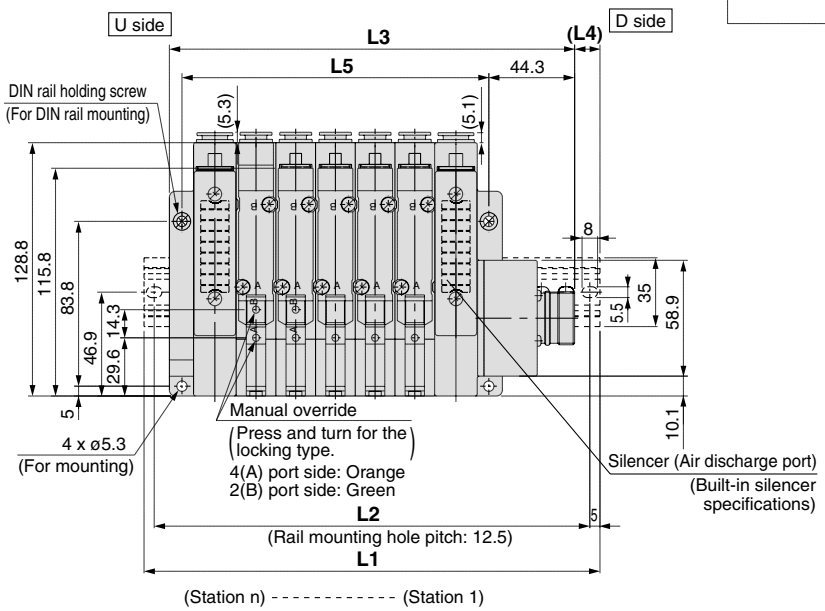
● Tie-rod base manifold: SS5V3-W10CD-Stations U/D/B (S, R, RS)- C6, N7 / C8, N9 / C10, N11 (-D)

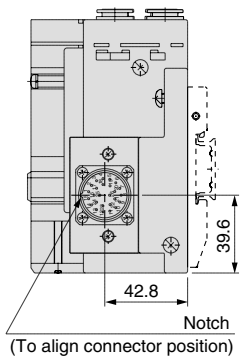
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

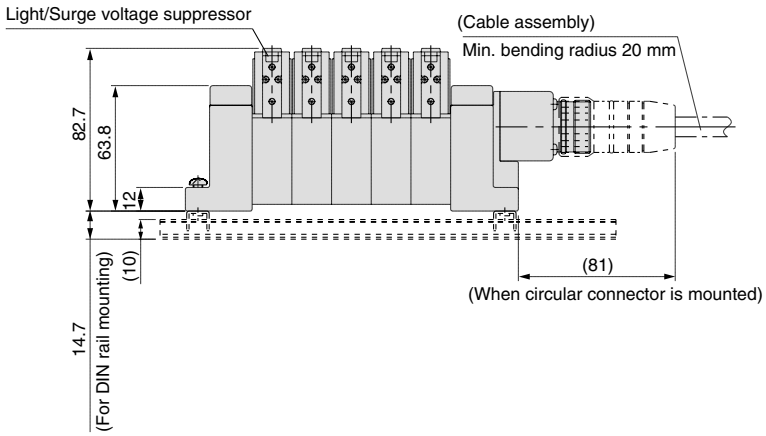


With External Pilot Specifications

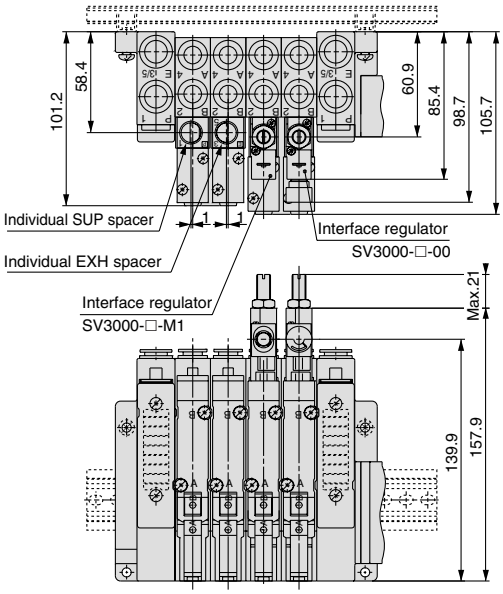








With option



L Dimension

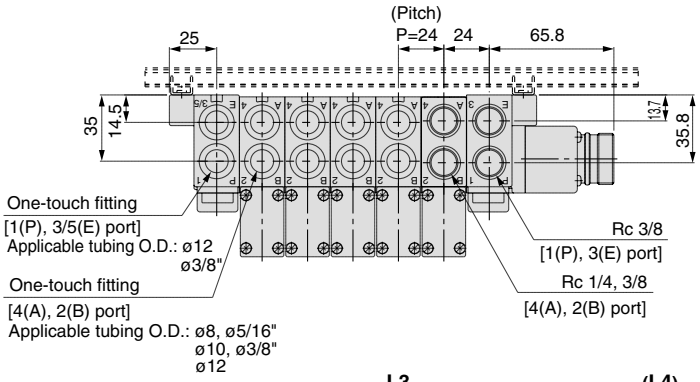
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	173	198	223	235.5	260.5	285.5	298	323	335.5	360.5	385.5	398	423	448	460.5	485.5	510.5	523	548
L2	162.5	187.5	212.5	225	250	275	287.5	312.5	325	350	375	387.5	412.5	437.5	450	475	500	512.5	537.5
L3	147.8	168.3	188.8	209.3	229.8	250.3	270.8	291.3	311.8	332.3	352.8	373.3	393.8	414.3	434.8	455.3	475.8	496.3	516.8
L4	12.5	15	17	13	15.5	17.5	13.5	16	12	14	16.5	12.5	14.5	17	13	15	17.5	13.5	15.5
L5	97	117.5	138	158.5	179	199.5	220	240.5	261	281.5	302	322.5	343	363.5	384	404.5	425	445.5	466

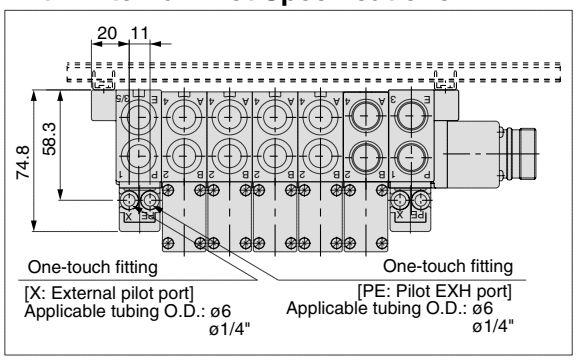
Dimensions: Series SV4000 for Circular Connector

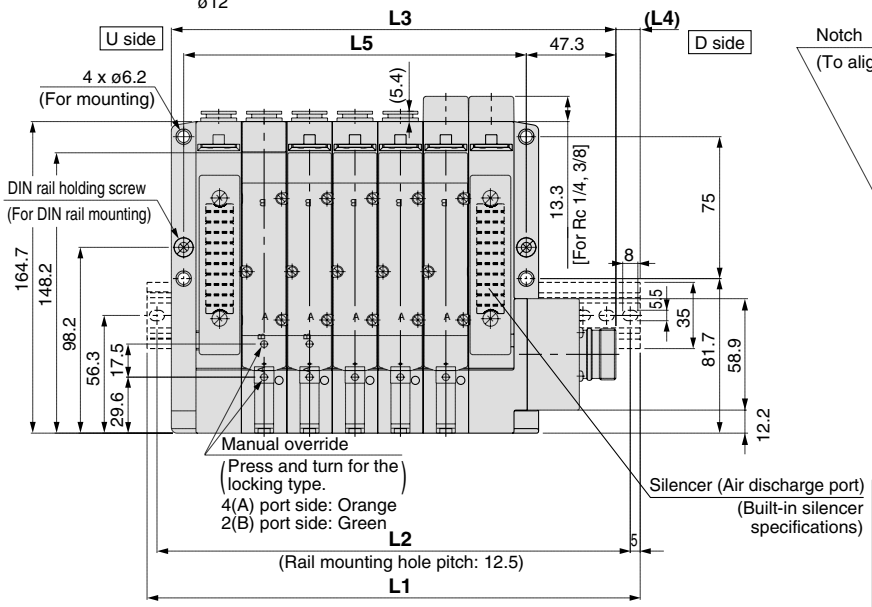
● Tie-rod base manifold: SS5V4-W10CD- Stations U/D/B (S, R, RS)- O2, O3, C8, C10, C12, N9, N11 (-D)

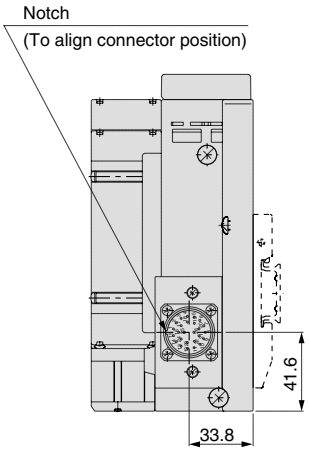
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

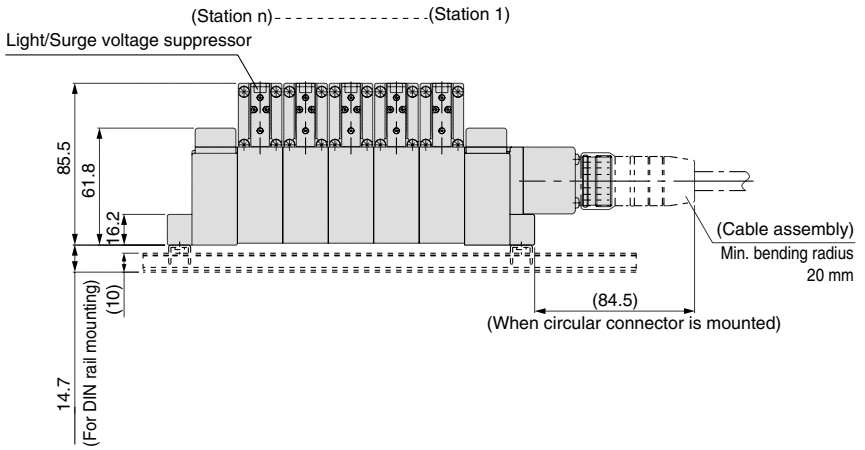


With External Pilot Specifications

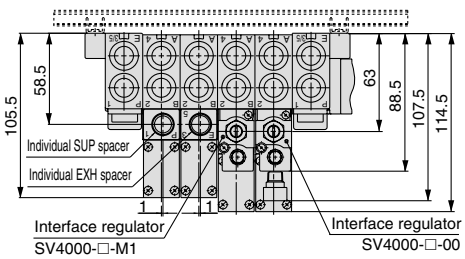


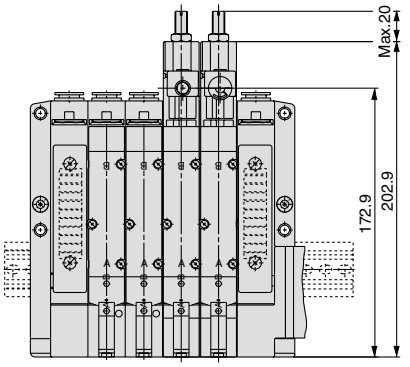






With option



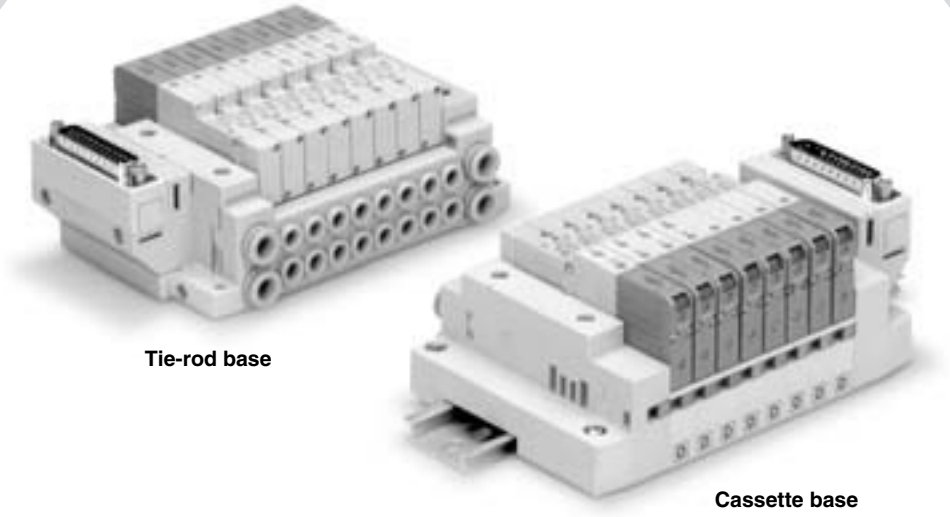


L Dimension

n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	198	210.5	235.5	260.5	285.5	310.5	335.5	360.5	385.5	410.5	435.5	460.5	485.5	498	523	548	573	598	623
L2	187.5	200	225	250	275	300	325	350	375	400	425	450	475	487.5	512.5	537.5	562.5	587.5	612.5
L3	162.8	186.8	210.8	234.8	258.8	282.8	306.8	330.8	354.8	378.8	402.8	426.8	450.8	474.8	498.8	522.8	546.8	570.8	594.8
L4	17.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17	17.5	11.5	12	12.5	13	13.5	14
L5	109	133	157	181	205	229	253	277	301	325	349	373	397	421	445	469	493	517	541

D-sub Connector



Tie-rod base

Cassette base

Applicable series	Cassette base manifold **SV1000/SV2000**
	Tie-rod base manifold **SV1000/SV2000/SV3000/SV4000**
	• Number of connectors: 25 pins • MIL-C-24308 Conforming to JIS-X-5101

D-sub Connector
Series SV

How to Order Manifold

● **Tie-rod base**

SS5V 1 – 10FD 1 – 05 U □ – □ – □

● **Cassette base**

SS5V 1 – 16FD 1 – 05 U □ – □ – □

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Connector entry direction

1	Upward
2	Lateral

Valve stations

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

Mounting

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

Note) 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.

Valve stations

Series SV1000

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

Series SV2000

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

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	
03	Rc 3/8		
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	NPT 3/8	
03N	NPT 3/8		
02T	NPTF 1/4	NPTF 3/8	
03T	NPTF 3/8		
M	A, B ports mixed		

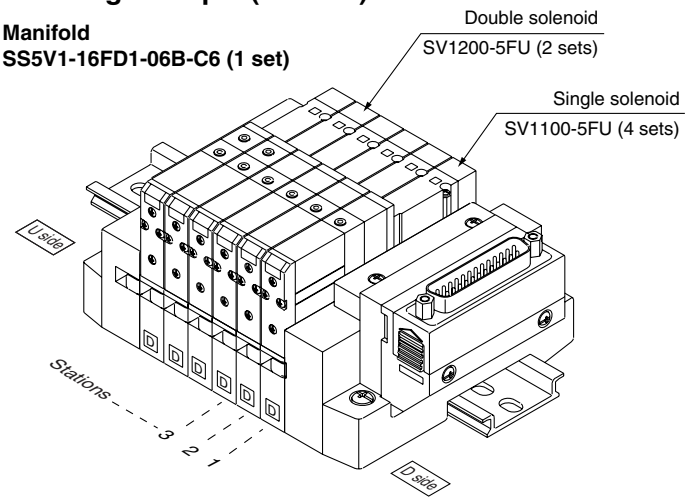
∗ In the case of mixed specifications (M), indicate separately on the manifold specification sheet.

∗ 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 Manifold Assembly

Ordering example (SV1000)

Manifold
SS5V1-16FD1-06B-C6 (1 set)



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.)

How to Order Solenoid Valves

SV 1 1 00 □ □ – 5 F □ □ – □ Note) – □

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

∗ 4 position dual 3 port valves are applicable to 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.

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 valve.

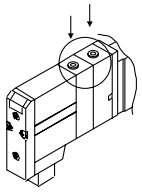
Note) Available with manifold block for station additions. Refer to pages 429 and 433.

Made to Order

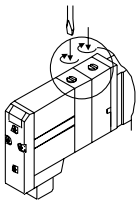
Nil	—
X90	Main valve fluoro rubber (Refer to page 448.)

Manual override

Nil: Non-locking push type



D: Push-turn locking slotted type



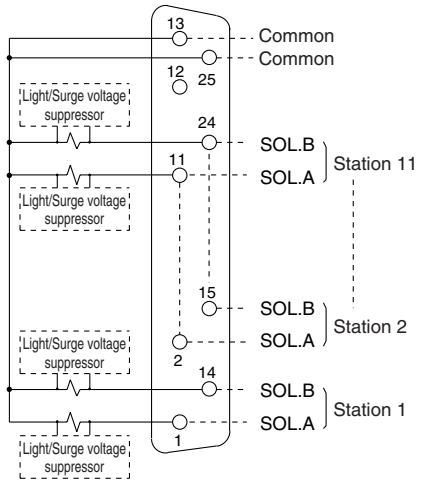
Light/Surge voltage suppressor

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

Refer to Specific Product Precautions 2 on page 450.

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.

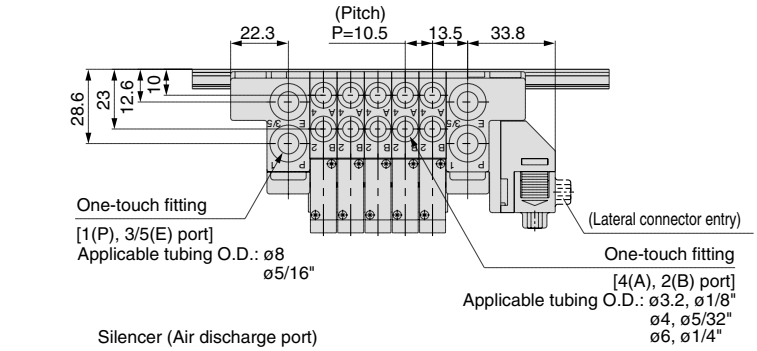
Usable No. of Solenoids

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

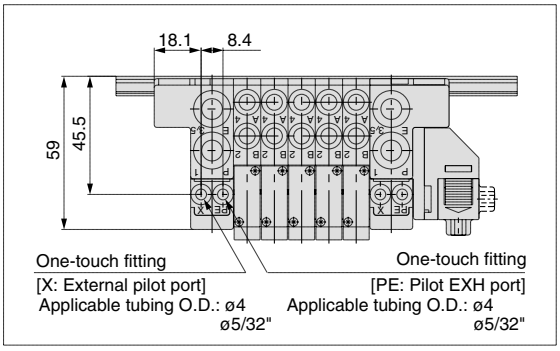
Dimensions: Series SV1000 for D-sub Connector

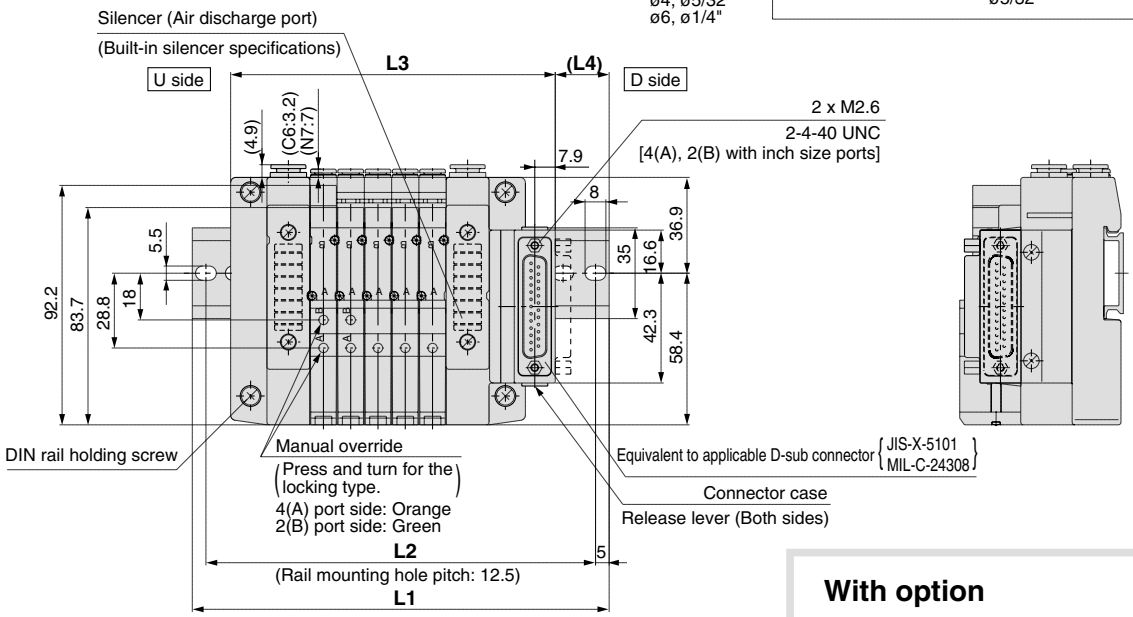
● Cassette base manifold: SS5V1-16FD$^{1}_{2}$- Stations $^{U}_{D}$ (S, R, RS)- $^{C3, N1}_{C4, N3}$ $^{}_{C6, N7}$

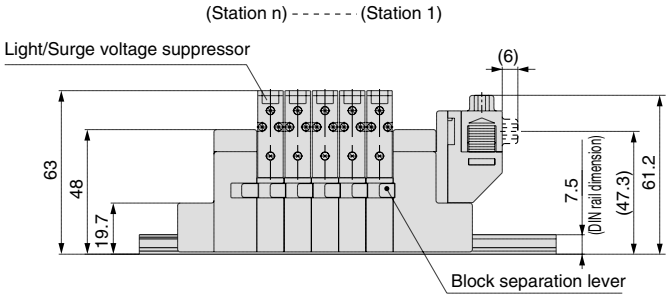
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



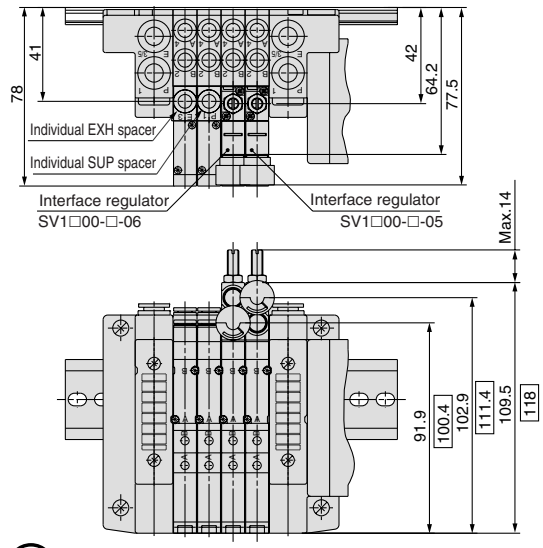
With External Pilot Specifications







With option



Dimensions are the ones for SV1300-□□-□.

L Dimension

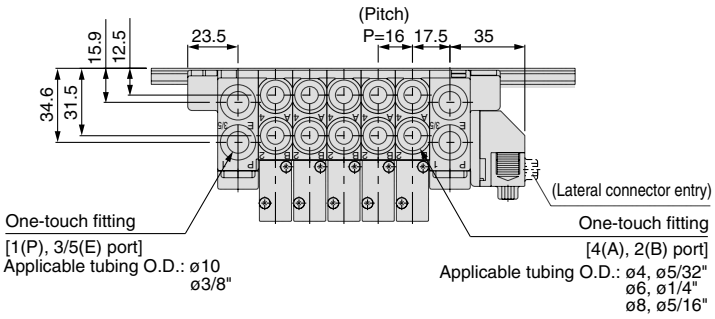
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L1	123	135.5	148	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298
L2	112.5	125	137.5	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5
L3	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5	230	240.5	251	261.5
L4	18	19	20	21	22	23	24	18.5	19.5	20.5	21.5	22.5	23.5	18.5	19.5	20.5	21.5

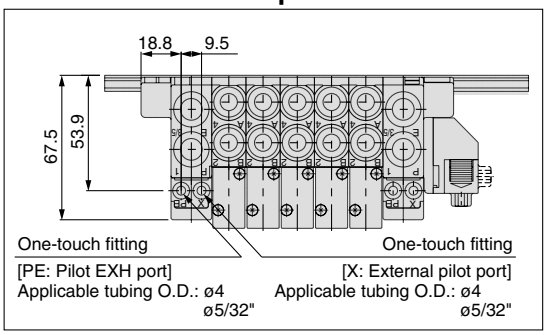
Dimensions: Series SV2000 for D-sub Connector

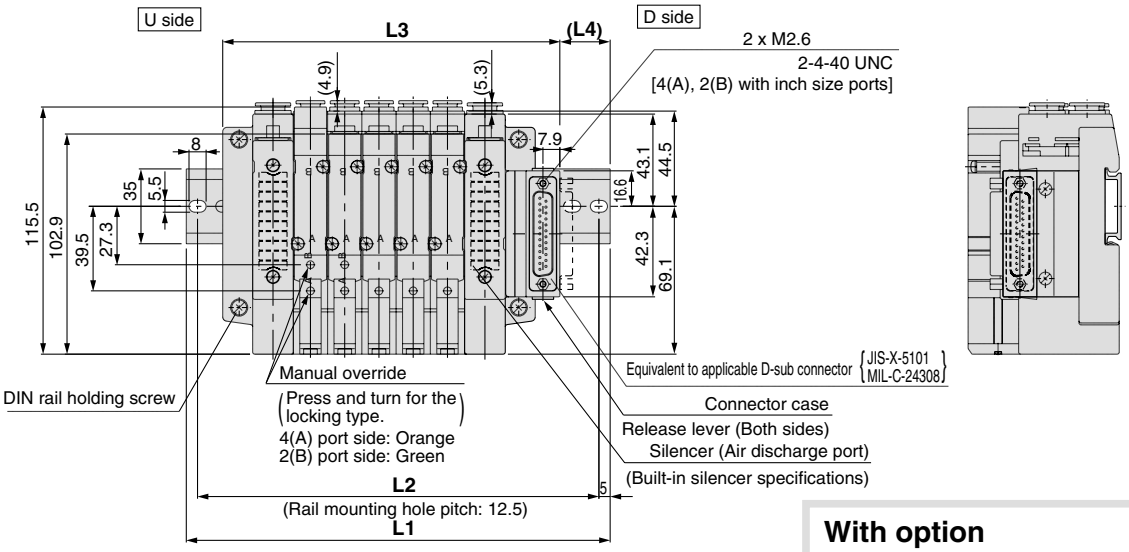
● Cassette base manifold: SS5V2-16FD$^{1}_{2}$- Stations $^{U}_{D}_{B}$ (S, R, RS)- $^{C4, N3}_{C6, N7}_{C8, N9}$

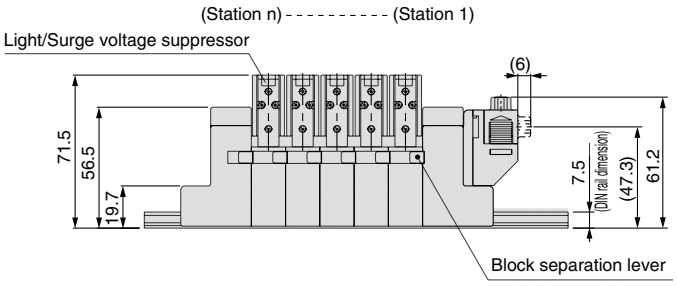
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



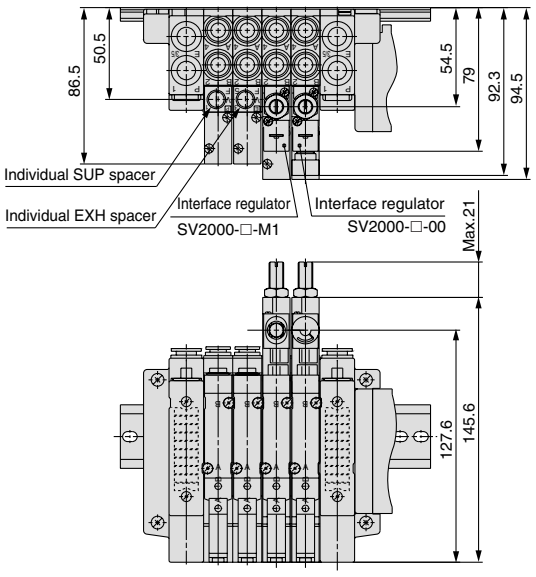
With External Pilot Specifications







With option



L Dimension

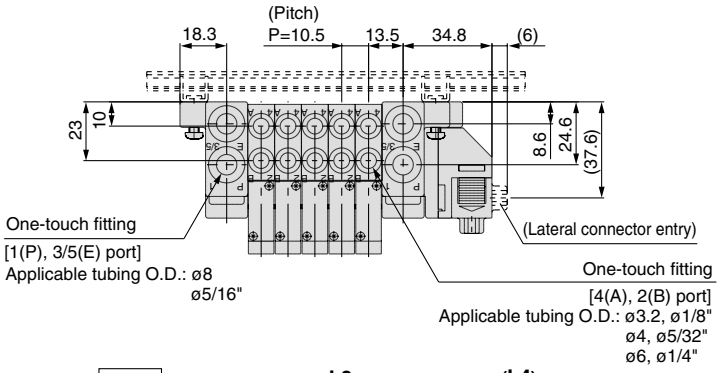
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	148	160.5	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
L2	137.5	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
L3	109.5	125.5	141.5	157.5	173.5	189.5	205.5	221.5	237.5	253.5	269.5	285.5	301.5	317.5	333.5	349.5	365.5	381.5	397.5
L4	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	22

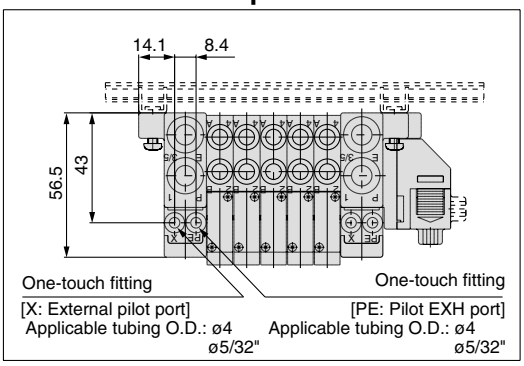
Dimensions: Series SV1000 for D-sub Connector

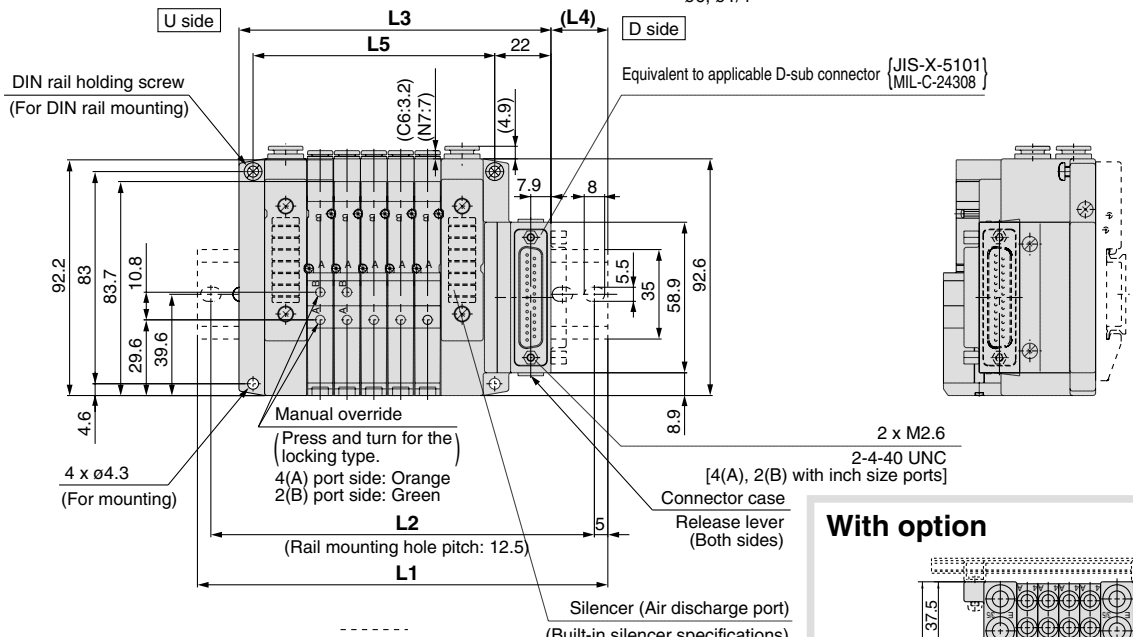
● Tie-rod base manifold: SS5V1-10FD$^{1}_{2}$ - Stations $^{U}_{D}$ (S, R, RS)- $^{C3, N1}_{C4, N3}$ $^{C6, N7}$ (-D)

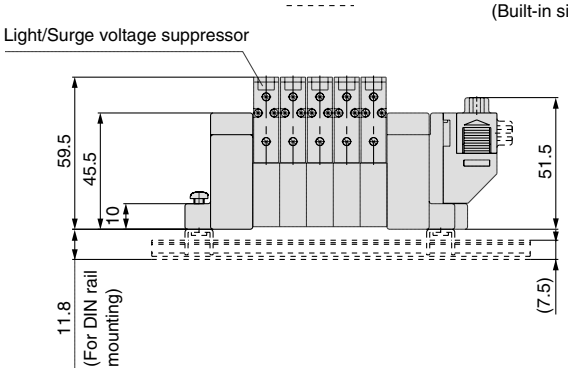
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



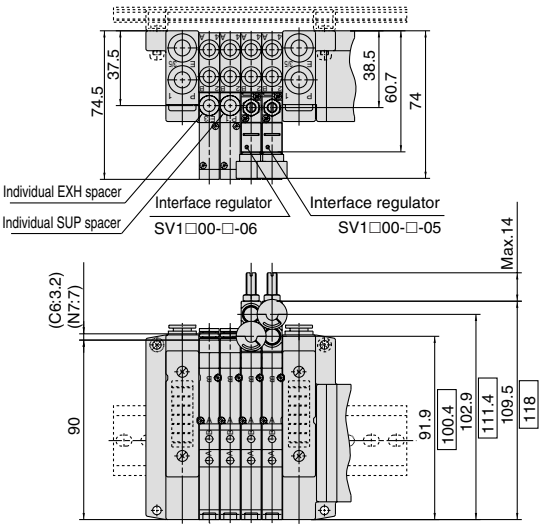
With External Pilot Specifications







With option



Dimensions are the ones for SV1300-□□-□.

L Dimension

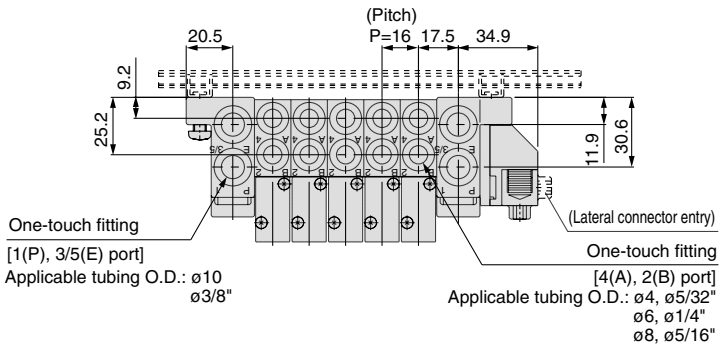
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	123	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	235.5	248	260.5	273	285.5	298	310.5	310.5
L2	112.5	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	225	237.5	250	262.5	275	287.5	300	300
L3	90.5	101	111.5	122	132.5	143	153.5	164	174.5	185	195.5	206	216.5	227	237.5	248	258.5	269	279.5
L4	19.5	20.5	21.5	22.5	23.5	18	19	20	21	22	23	18	19	20	21	22	23	24	18.5
L5	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.9	189	199.5	210	220.5	231	241.5	252

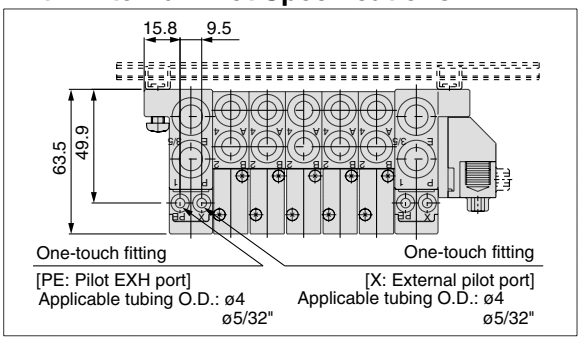
Dimensions: Series SV2000 for D-sub Connector

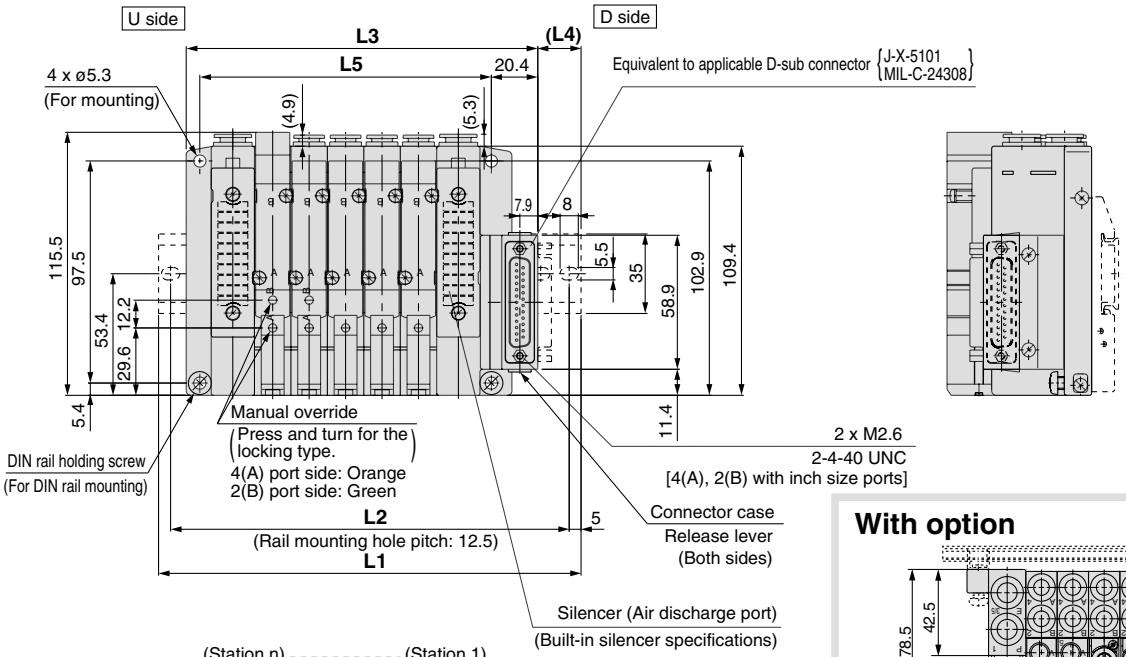
● Tie-rod base manifold: SS5V2-10FD$^{1}_{2}$ - Stations $^{U}_{D}$ (S, R, RS)- $^{C4, N3}_{C6, N7}$ $^{}_{C8, N9}$ (-D)

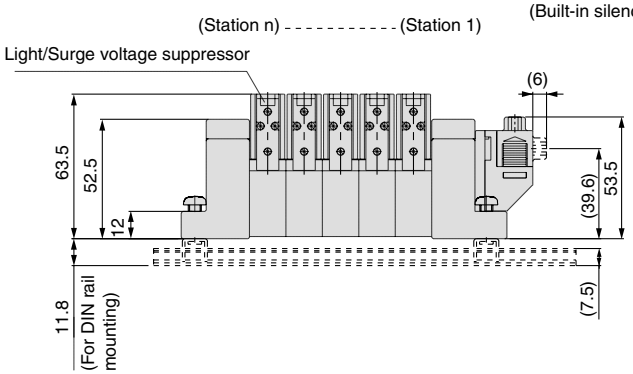
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



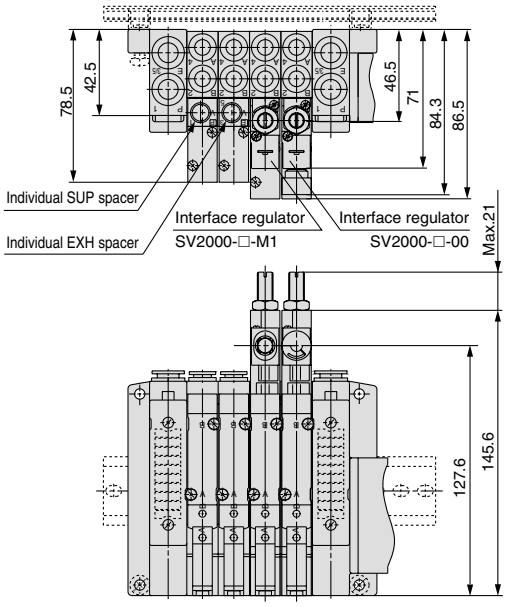
With External Pilot Specifications







With option



L Dimension

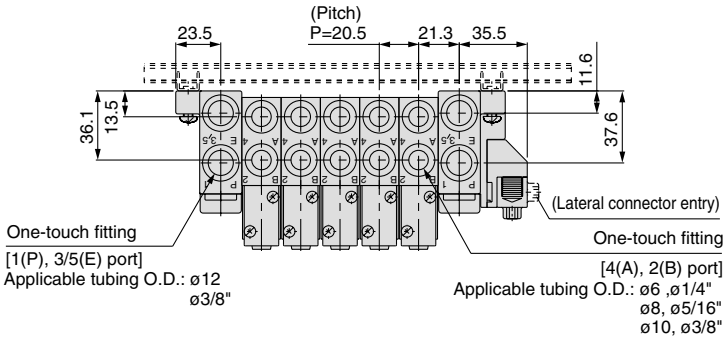
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	135.5	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
L2	125	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
L3	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
L4	17.5	22	20.5	18.5	23	21.5	19.5	18	22.5	20.5	19	23.5	21.5	20	18	22.5	21	19	23.5
L5	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368

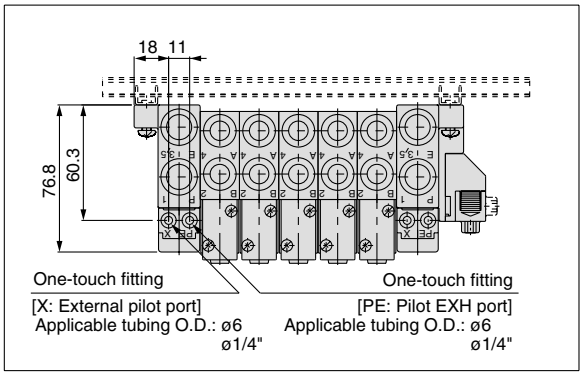
Dimensions: Series SV3000 for D-sub Connector

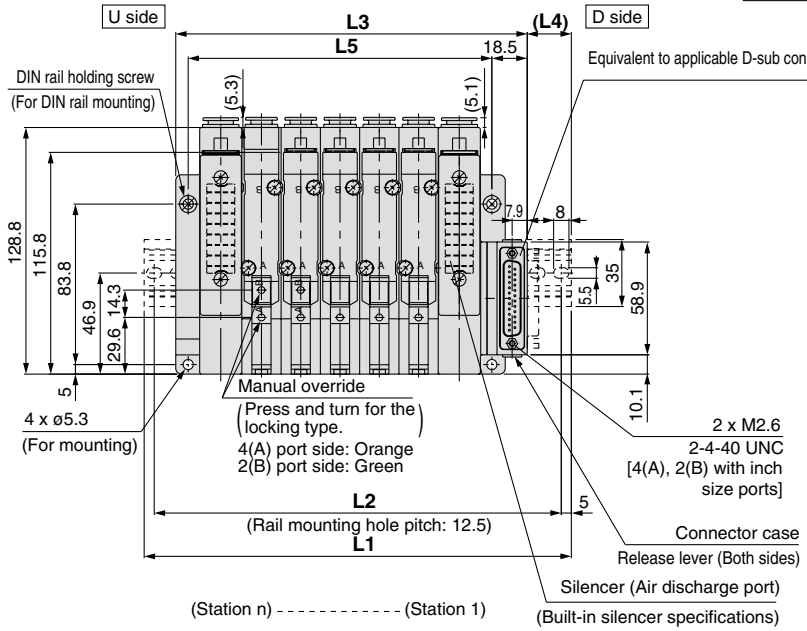
● Tie-rod base manifold: SS5V3-10FD$^{1}_{2}$ - Stations $^{U}_{D}_{B}$ (S, R, RS)- $^{C6, N7}_{C8, N9}_{C10, N11}$ (-D)

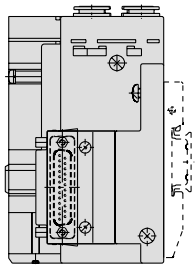
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

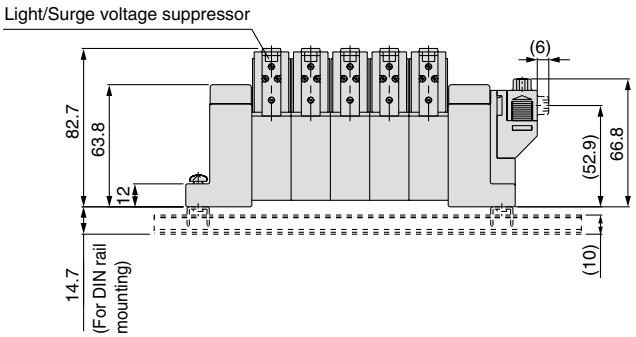


With External Pilot Specifications

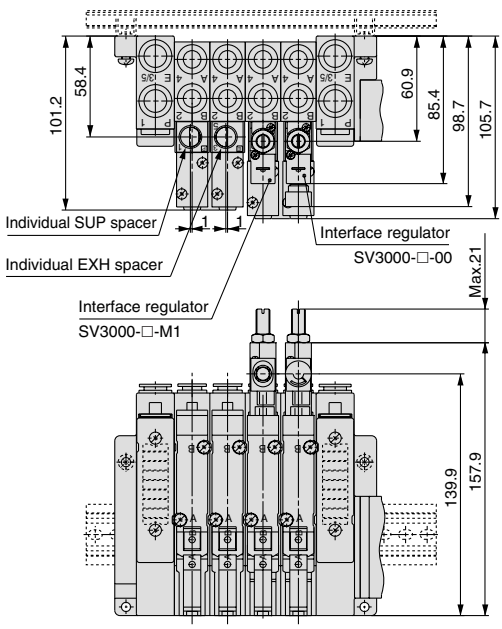








With option



L Dimension

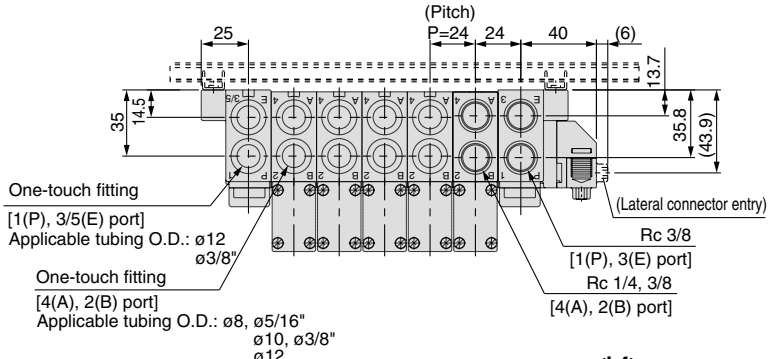
n: Stations

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	223	235.5	260.5	285.5	298	323	348	360.5	385.5	398	423	448	460.5	485.5	510.5	523
L2	150	162.5	187.5	212.5	225	250	275	287.5	312.5	337.5	350	375	387.5	412.5	437.5	450	475	500	512.5
L3	122	142.5	163	183.5	204	224.5	245	265.5	286	306.5	327	347.5	368	388.5	409	429.5	450	470.5	491
L4	22.5	18.5	20.5	23	19	21	23.5	19.5	21.5	24	20	22	18	20.5	22.5	18.5	21	23	19
L5	97	117.5	138	158.5	179	199.5	220	240.5	261	281.5	302	322.5	343	363.5	384	404.5	425	445.5	466

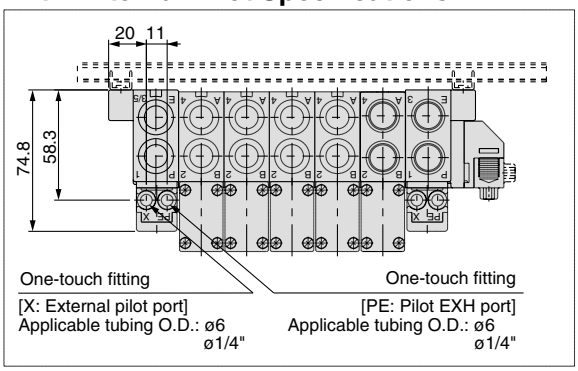
Dimensions: Series SV4000 for D-sub Connector

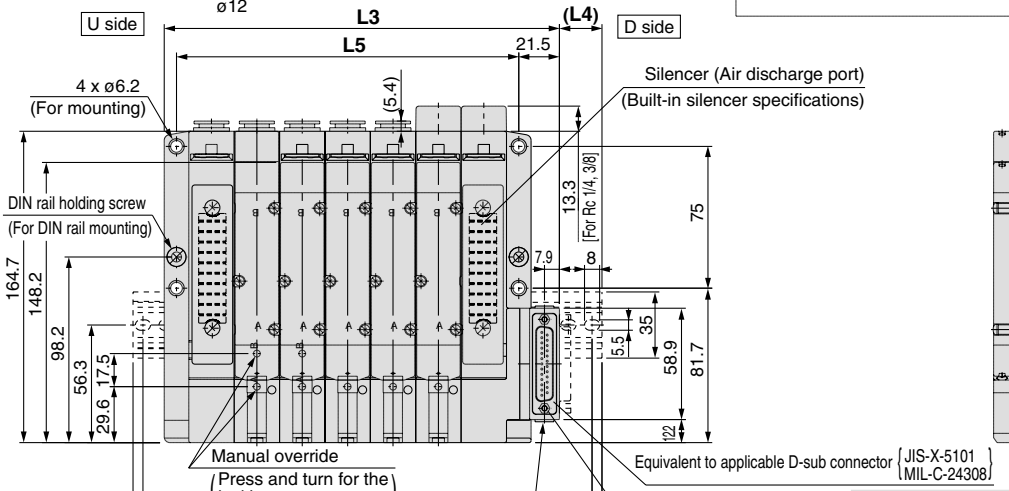
● Tie-rod base manifold: SS5V4-10FD$^{1}_{2}$ - Stations $^{U}_{D}_{B}$ (S, R, RS)- $^{02,\ C8,\ N9}_{03,\ C10,\ N11,\ C12,}$ (-D)

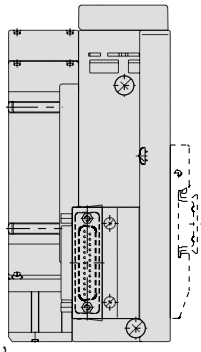
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



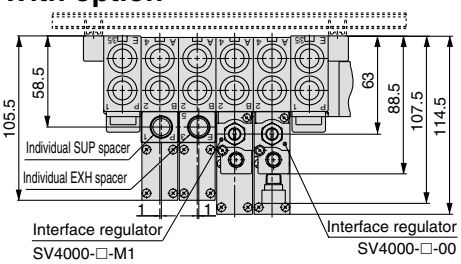
With External Pilot Specifications

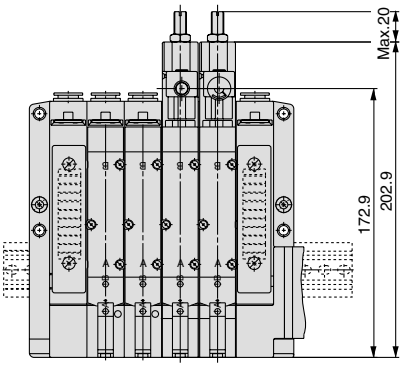


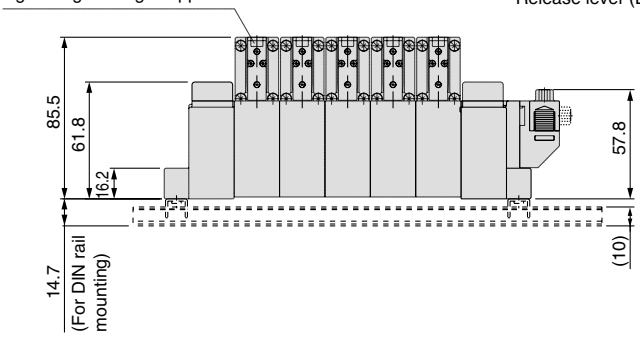




With option





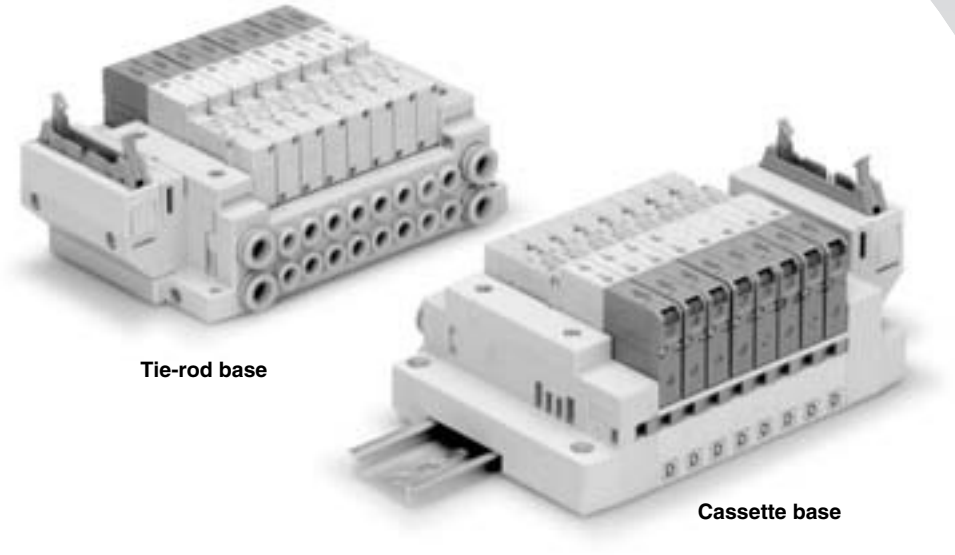


L Dimension

n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	173	198	223	248	273	298	310.5	335.5	360.5	385.5	410.5	435.5	460.5	485.5	510.5	535.5	560.5	585.5	610.5
L2	162.5	187.5	212.5	237.5	262.5	287.5	300	325	350	375	400	425	450	475	500	525	550	575	600
L3	137	161	185	209	233	257	281	305	329	353	377	401	425	449	473	497	521	545	569
L4	21	21.5	22	22.5	23	23.5	18	18.5	19	19.5	20	20.5	21	21.5	22	22.5	23	23.5	24
L5	109	133	157	181	205	229	253	277	301	325	349	373	397	421	445	469	493	517	541

Flat Ribbon Cable Connector



Tie-rod base

Cassette base

Applicable series	Cassette base manifold **SV1000/SV2000**
	Tie-rod base manifold **SV1000/SV2000/SV3000/SV4000**
	• Number of connectors: 26, 20, 10 pins • With strain relief Conforming to MIL-C-83503

Flat Ribbon Cable Connector

Series SV

How to Order Manifold

Connector type

P	Flat ribbon cable connector: 26 pins
PG	Flat ribbon cable connector: 20 pins
PH	Flat ribbon cable connector: 10 pins

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Valve stations

P: Flat ribbon cable 26 pins

02	2 stations	Double wiring (1) specifications
⋮	⋮	
12	12 stations	
02	2 stations	Specified layout (2) (Ip to 24 solenoids possible.)
⋮	⋮	
20	20 stations	

PH: Flat ribbon cable 10 pins

02	2 stations	Double wiring (1) specifications
⋮	⋮	
04	4 stations	
02	2 stations	Specified layout (2) (Up to 8 solenoids possible.)
⋮	⋮	
08	8 stations	

PG: Flat ribbon cable 20 pins

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

● **Tie-rod base**

SS5V 1 – 10 P D 1 – 05 U □ – □ – □

● **Cassette base**

SS5V 1 – 16 P D 1 – 05 U □ – □ – □

Mounting

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

Note) In case of D0, only DIN rail fittings are attached.

Series

1	SV1000
2	SV2000

Connector entry direction

1	Upward
2	Lateral

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.

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

Valve stations

Series SV1000

P: Flat ribbon cable 26 pins

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

PH: Flat ribbon cable 10 pins

02	2 stations	Double wiring (1) specifications
⋮	⋮	
04	4 stations	
02	2 stations	Specified layout (2) (Up to 8 solenoids possible.)
⋮	⋮	
08	8 stations	

PG: Flat ribbon cable 20 pins

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

Series SV2000

P: Flat ribbon cable 26 pins

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

PH: Flat ribbon cable 10 pins

02	2 stations	Double wiring (1) specifications
⋮	⋮	
04	4 stations	
02	2 stations	Specified layout (2) (Up to 8 solenoids possible.)
⋮	⋮	
08	8 stations	

PG: Flat ribbon cable 20 pins

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

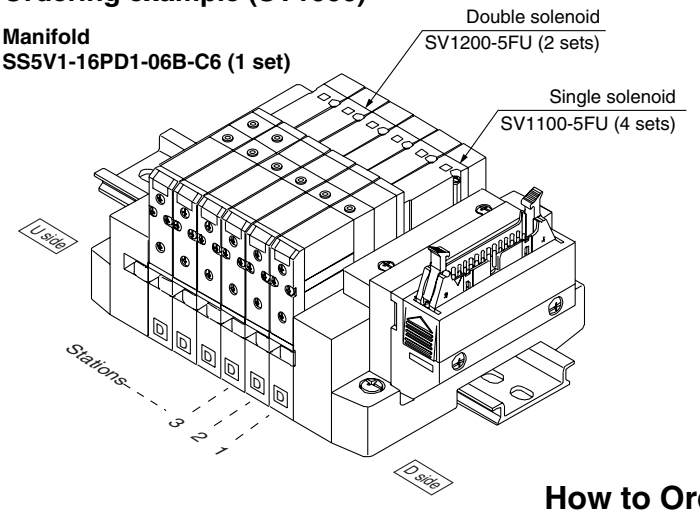
Note 1) Double wiring specifications: Single, double, 3 and 4 position solenoid valves can be used on all manifold stations. Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

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

How to Order Valve Manifold Assembly

Ordering example (SV1000)

Manifold
SS5V1-16PD1-06B-C6 (1 set)



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.)

How to Order Valve

SV 1 1 00 □ □ – 5 F □ □ – □ – □ Note)

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

∗ 4 position dual 3 port valves are applicable to 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.

Rated voltage

5	24 VDC
6	12 VDC

Back pressure check valve

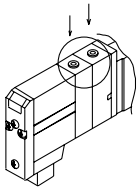
Nil	None
K	Built-in

∗ Built-in back pressure check valve type is applicable to series SV1000 only.
∗ Back pressure check valve is not available for 3 position valve.

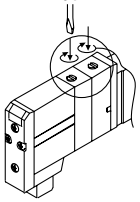
Refer to Specific Product Precautions 2 on page 450.

Manual override

Nil: Non-locking push type



D: Push-turn locking slotted type



Light/Surge voltage suppressor

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

Note) Available with manifold block for station additions. Refer to pages 429 and 433.

Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 448.)

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	
03	Rc 3/8		
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	NPT 3/8	
03N	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.

Flat Ribbon Cable PC Wiring

Series SV

How to Order Manifold

● **Tie-rod base**

SS5V 1 – 10GD 1 – 05 U □ – □ – □

● **Cassette base**

SS5V 1 – 16GD 1 – 05 U □ – □ – □

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Mounting

Nil	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0 Note)	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	When a longer DIN rail is desired than the specified stations. (Specify a longer rail than the standard length.)
⋮	⋮	
D16	For 16 stations	

Note) In the case of D0, only DIN rail fittings are attached.

Series

1	SV1000
2	SV2000

Connector entry direction

1	Upward
2	Lateral

DIN rail length specified

Nil	Standard length	
3	For 3 stations	(Specify a longer rail than the standard length.)
⋮	⋮	
16	For 16 stations	

Valve stations

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

Note1) 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.

Note2) Specified layout: Indicate wiring specifications on the manifold specification sheet. (Note that double, 3 position and 4 position valves cannot be used where single solenoid wiring has been specified.)

P, E port location

U	U side (2 to 10 stations)
D	D side (2 to 10 stations)
B	Both sides (2 to 16 stations)

SUP/EXH block assembly specifications

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

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

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	NPT 3/8	
03N	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.

How to Order Valve

**SV 1 1 00 – 5 F – **

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

∗ 4 position dual 3 port valves are applicable to 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 valve.

Rated voltage

5	24 VDC

Light/Surge voltage suppressor

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

Manual override

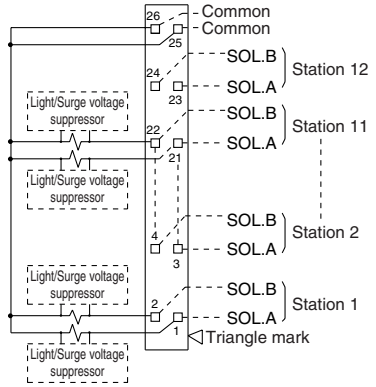
Nil	Non-locking push type
D	Push-turn locking slotted type

Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 448.)

Manifold Electrical Wiring

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

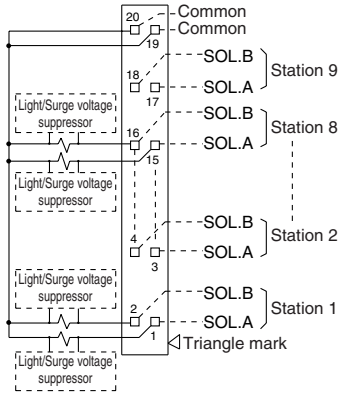


- This circuit has double wiring specifications for up to 12 stations. Since the usable number of solenoids differs depending on the manifold type, refer to the table below. In the case of single solenoids, connect to SOL. A. Furthermore, when wiring is specified on a manifold specification sheet, connections are made without skipping any connectors, and connections are made without skipping any connectors, and 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
Cassette base type 16	SV1000	18
	SV2000	24

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

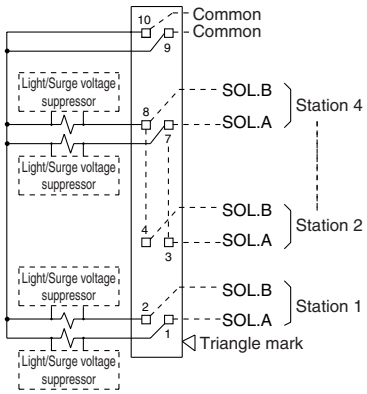


- This circuit has double wiring specifications for up to 9 stations. Since the usable number of solenoids differs depending on the manifold type, refer to the table below. In the case of single solenoids, connect to SOL. A. Furthermore, when wiring is specified on a manifold specification sheet, connections are made without skipping any connectors, and connections are made without skipping any connectors, and 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
Cassette base type 16	SV1000	
	SV2000	

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

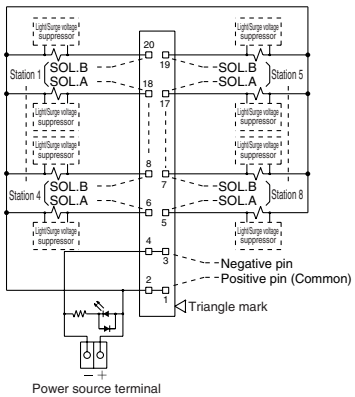


- This circuit has double wiring specifications for up to 4 stations. Since the usable number of solenoids differs depending on the manifold type, refer to the table below. In the case of single solenoids, connect to SOL. A. Furthermore, when wiring is specified on a manifold specification sheet, connections are made without skipping any connectors, 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
Cassette base type 16	SV1000	
	SV2000	

10GD/16GD Flat Ribbon Cable Type (PC Wiring)



- This circuit has double wiring specifications for up to 8 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 signals A for single and A, B for double are in order 20 →18 →16 →14, 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.

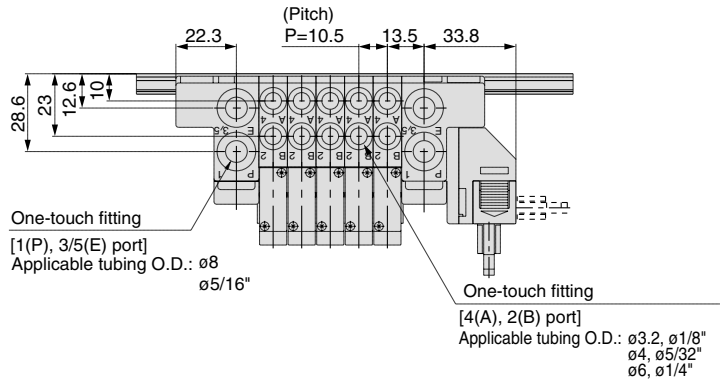
Usable No. of Solenoids

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

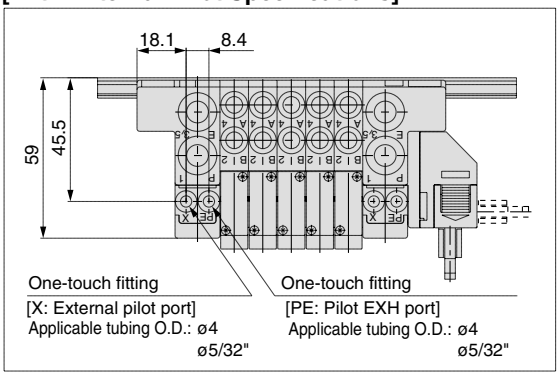
Dimensions : Series SV1000 for Flat Ribbon Cable

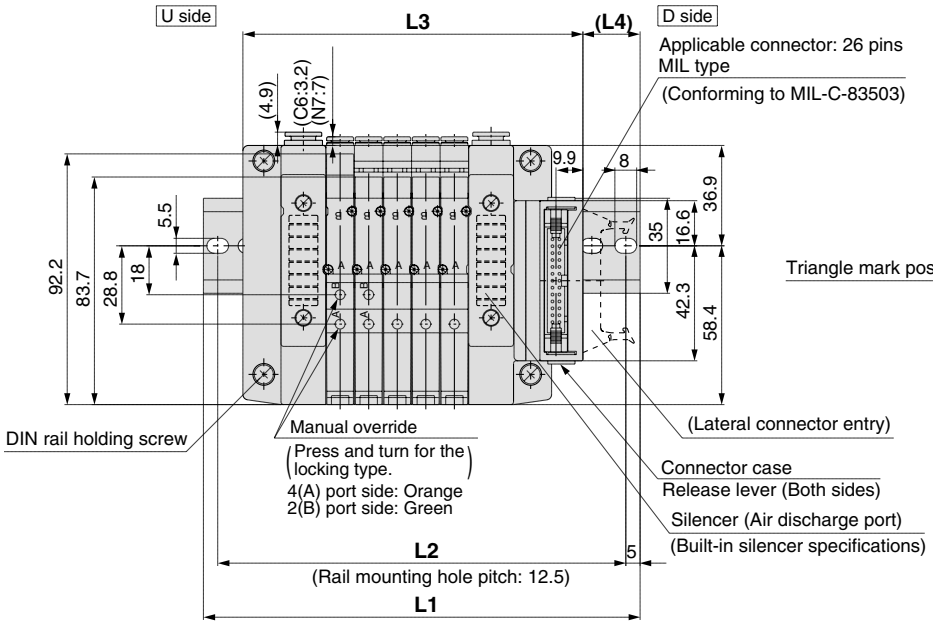
● Cassette base manifold : SS5V1-16$^{P}_{PG}$D$^{1}_{2}$-Stations$^{U}_{D}$(S, R, RS)-$^{C3, N1}_{C4, N3}$ $^{}_{C6, N7}$

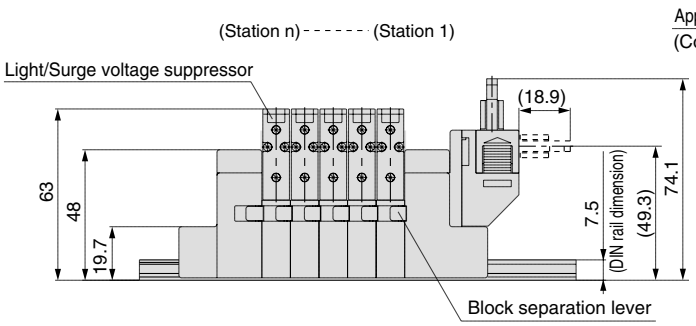
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

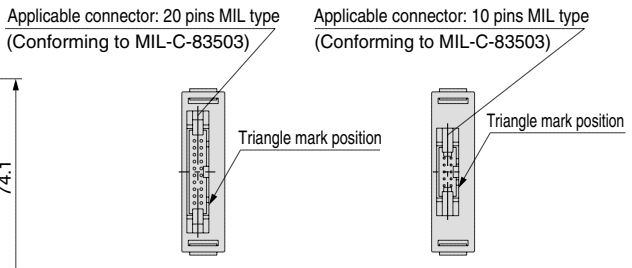


[With External Pilot Specifications]









16PG (20 pins) **16PH (10 pins)**

Refer to page 401 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

L Dimension

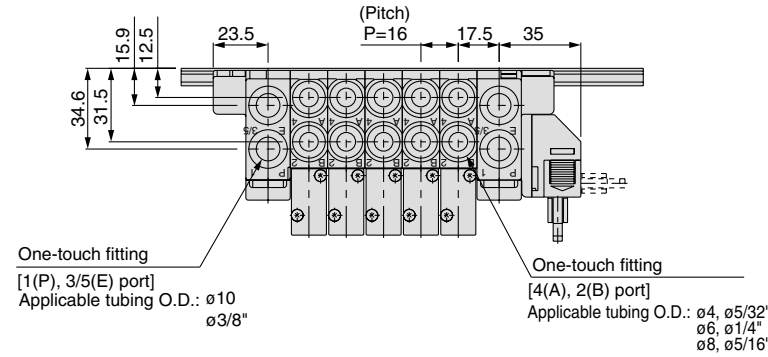
n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L1	135.5	135.5	148	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298
L2	125	125	137.5	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5
L3	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5	230	240.5	251	261.5
L4	24.5	19	20	21	22	23	24	19	20	21	22	23	24	18.5	19.5	20.5	21.5

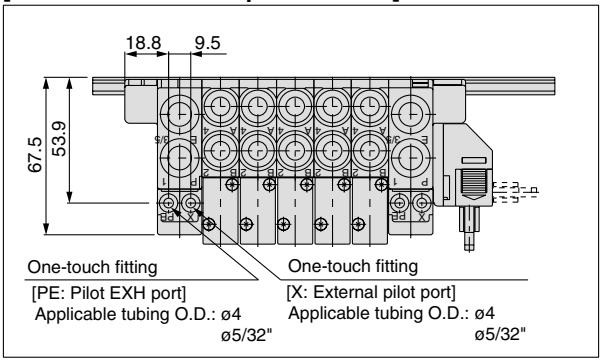
Dimensions : Series SV2000 for Flat Ribbon Cable

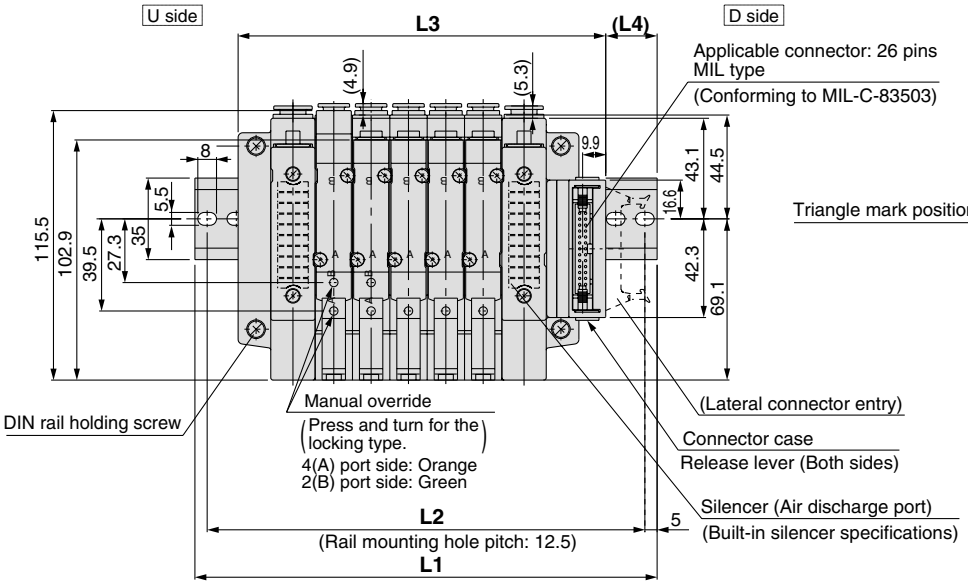
● Cassette base manifold : SS5V2-16 $^{P}_{PG}$ $^{P}_{PH}$ D^{1}_{2} - Stations $^{U}_{D}$ $^{U}_{B}$ (S, R, RS)- $^{C4, N3}_{C6, N7}$ $^{C8, N9}_{}$

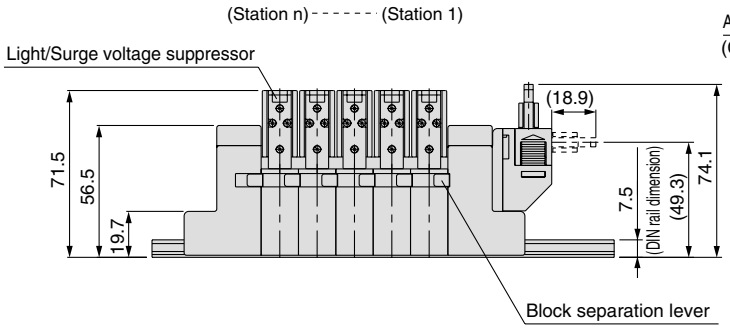
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

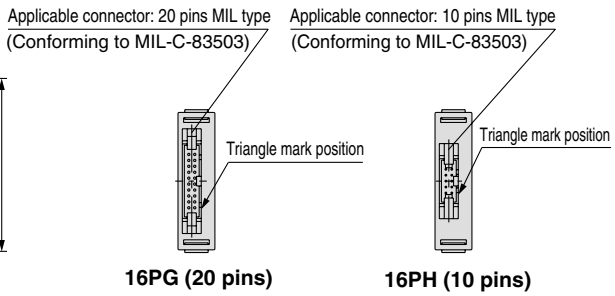


[With External Pilot Specifications]









Refer to page 402 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

L Dimension

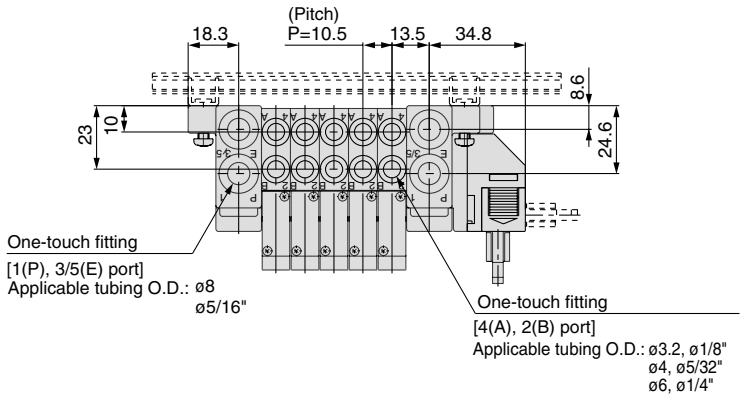
n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	148	160.5	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
L2	137.5	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
L3	109.5	125.5	141.5	157.5	173.5	189.5	205.5	221.5	237.5	253.5	269.5	285.5	301.5	317.5	333.5	349.5	365.5	381.5	397.5
L4	22.5	21	19	23.5	22	20	18.5	23	21	19.5	24	22	20.5	18.5	23	21.5	19.5	24	22.5

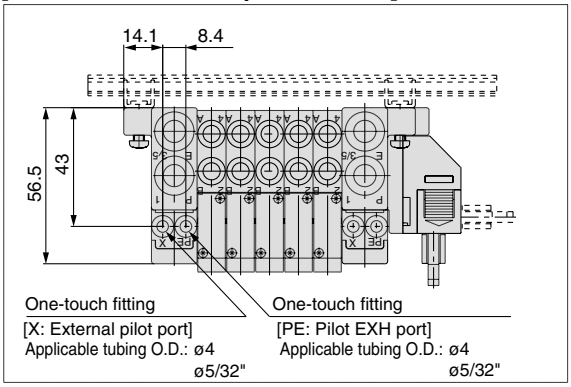
Dimensions : Series SV1000 for Flat Ribbon Cable

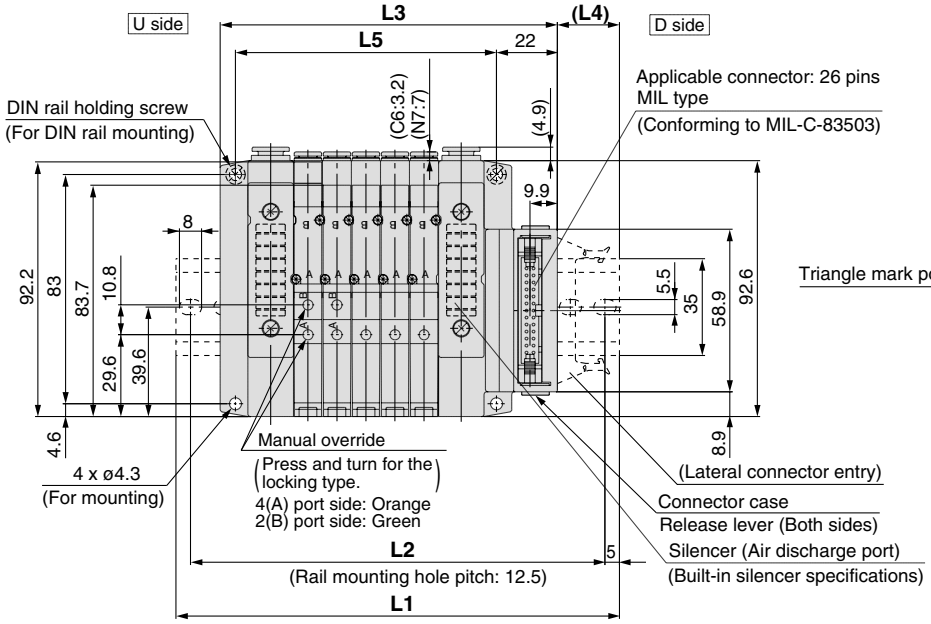
● Tie-rod base manifold : SS5V1-10 $^{P}_{PG}$ ^{PH} D^{1}_{2} - Stations $^{U}_{D}$ ^{B} (S, R, RS)- $^{C3, N1}_{C4, N3}$ $^{C6, N7}$ (-D)

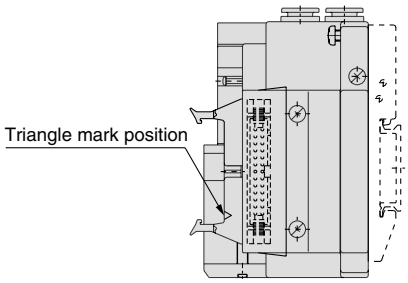
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

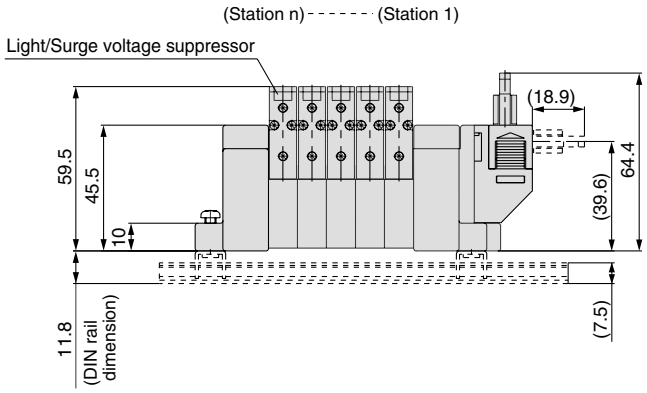


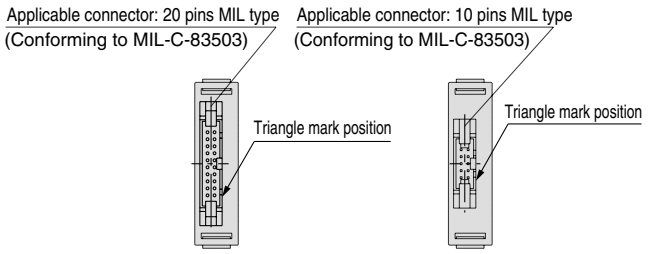
[With External Pilot Specifications]











Refer to page 403 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

L Dimension

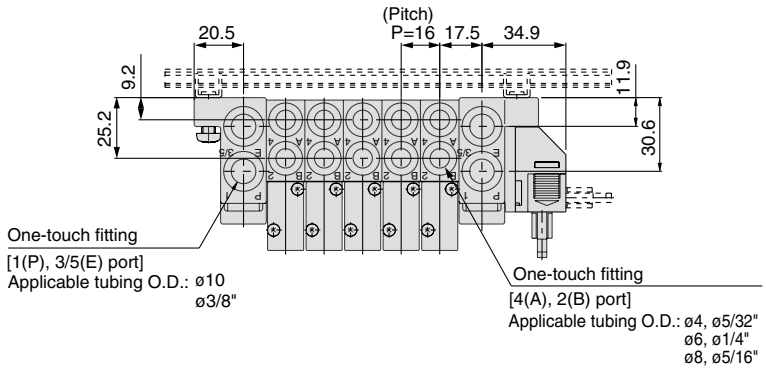
n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	123	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5	310.5
L2	112.5	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	237.5	237.5	250	262.5	275	287.5	300	300
L3	90.5	101	111.5	122	132.5	143	153.5	164	174.5	185	195.5	206	216.5	227	237.5	248	258.5	269	279.5
L4	19.5	20.5	21.5	22.5	23.5	18.5	19.5	20.5	21.5	22.5	23.5	24.5	19	20	21	22	23	24	19
L5	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252

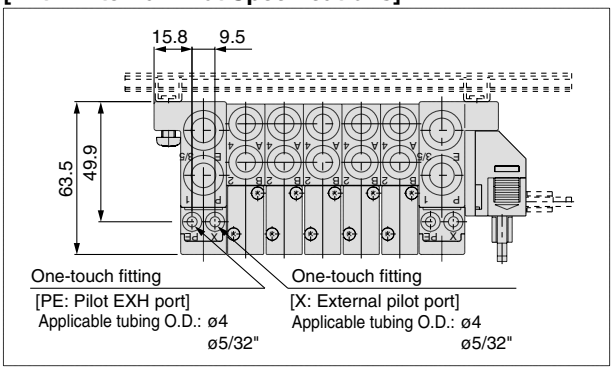
Dimensions : Series SV2000 for Flat Ribbon Cable

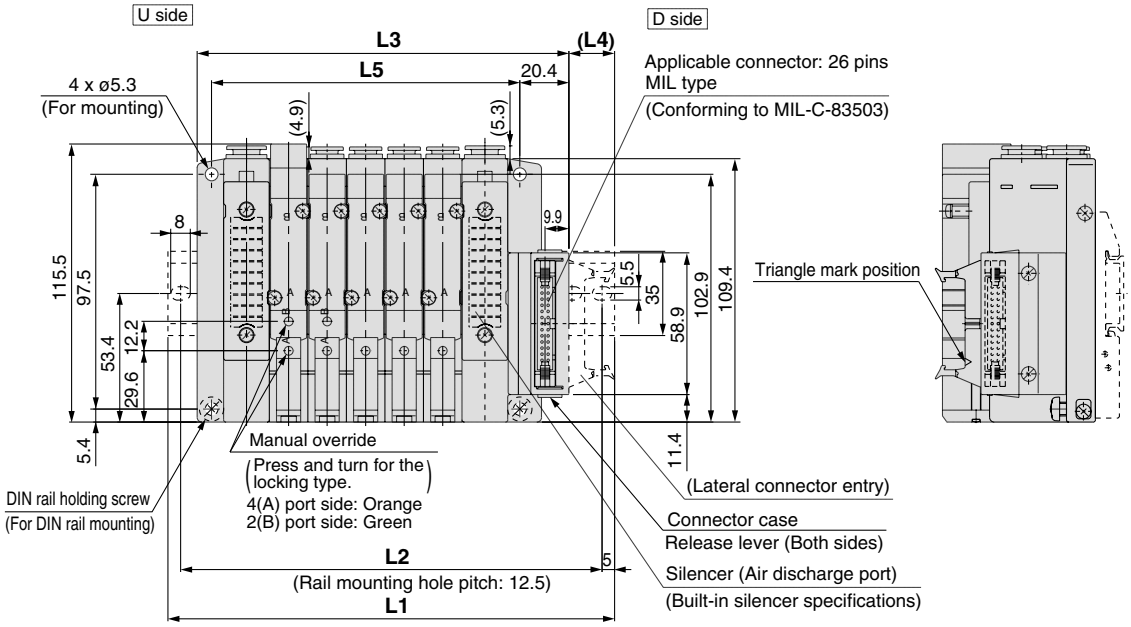
● Tie-rod base manifold : SS5V2-10 P/PG/PH D 1/2 - Stations U/D/B (S, R, RS)- C4, N3 / C6, N7 / C8, N9 (-D)

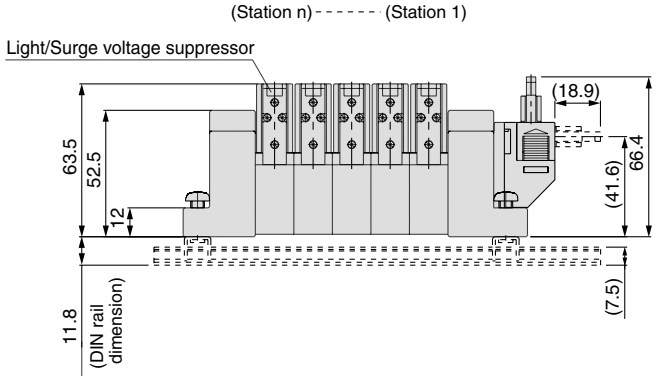
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

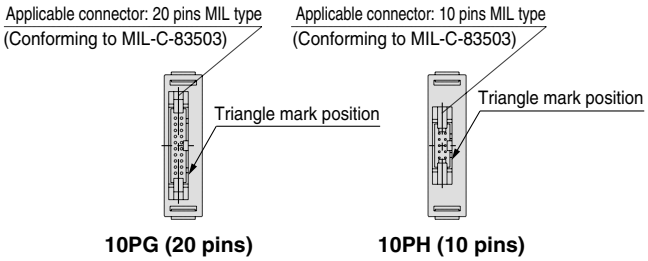


[With External Pilot Specifications]









Refer to page 404 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

L Dimension

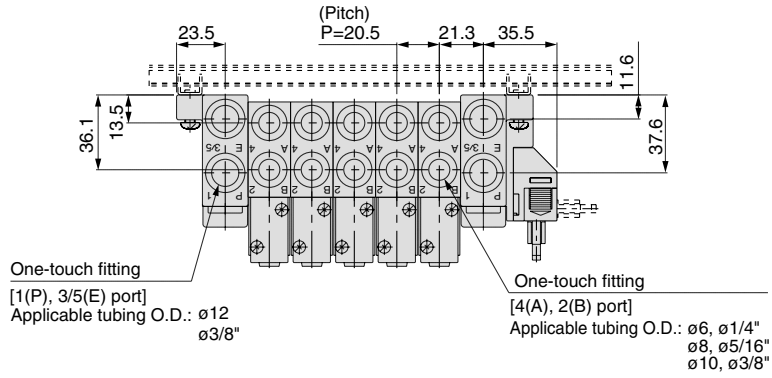
n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	148	160.5	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
L2	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
L3	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
L4	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
L5	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368

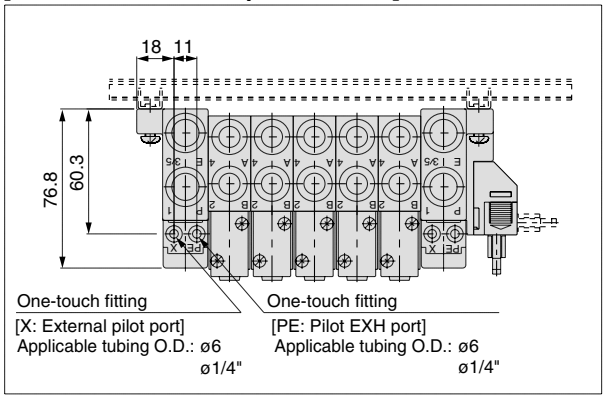
Dimensions : Series SV3000 for Flat Ribbon Cable

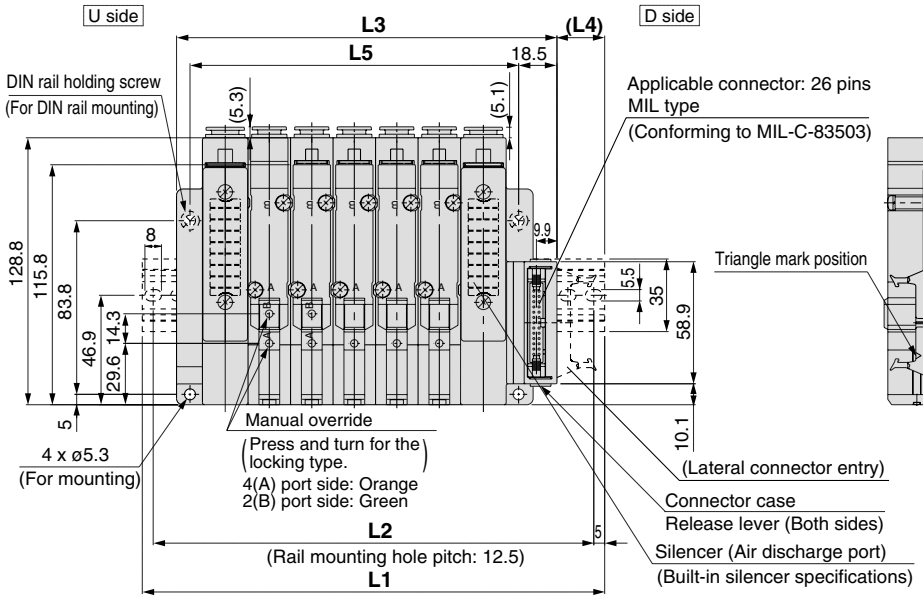
● Tie-rod base manifold : SS5V3-10 $^{P}_{PG}$ ^{PH} D^{1}_{2} - Stations $^{U}_{D}$ ^{B} (S, R, RS)- $^{C6, N7}_{C8, N9}$ $^{C10, N11}$ (-D)

- 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.

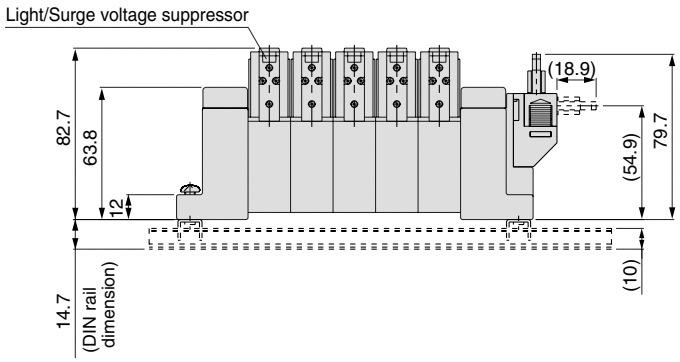


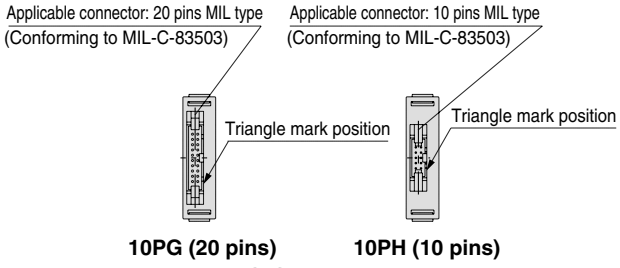
[With External Pilot Specifications]





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





Refer to page 405 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

L Dimension

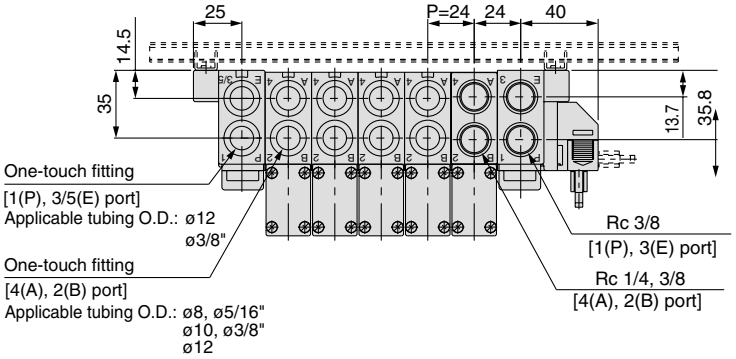
n : Stations

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	223	235.5	260.5	285.5	298	323	348	360.5	385.5	398	423	448	460.5	485.5	510.5	523
L2	150	162.5	187.5	212.5	225	250	275	287.5	312.5	337.5	350	375	387.5	412.5	437.5	450	475	500	512.5
L3	122	142.5	163	183.5	204	224.5	245	265.5	286	306.5	327	347.5	368	388.5	409	429.5	450	470.5	491
L4	22.5	18.5	21	23	19	21.5	23.5	19.5	22	24	20	22.5	18.5	20.5	23	19	21	23.5	19.5
L5	97	117.5	138	158.5	179	199.5	220	240.5	261	281.5	302	322.5	343	363.5	384	404.5	425	445.5	466

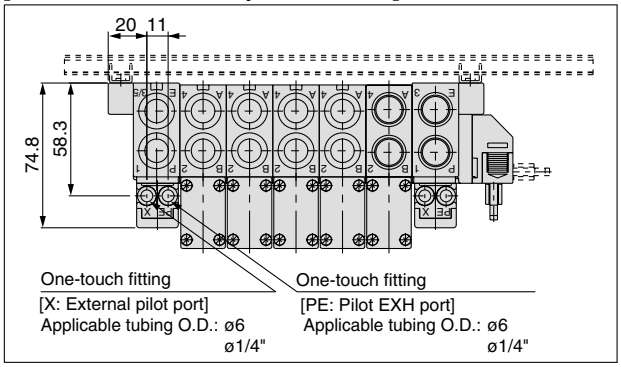
Dimensions : Series SV4000 for Flat Ribbon Cable

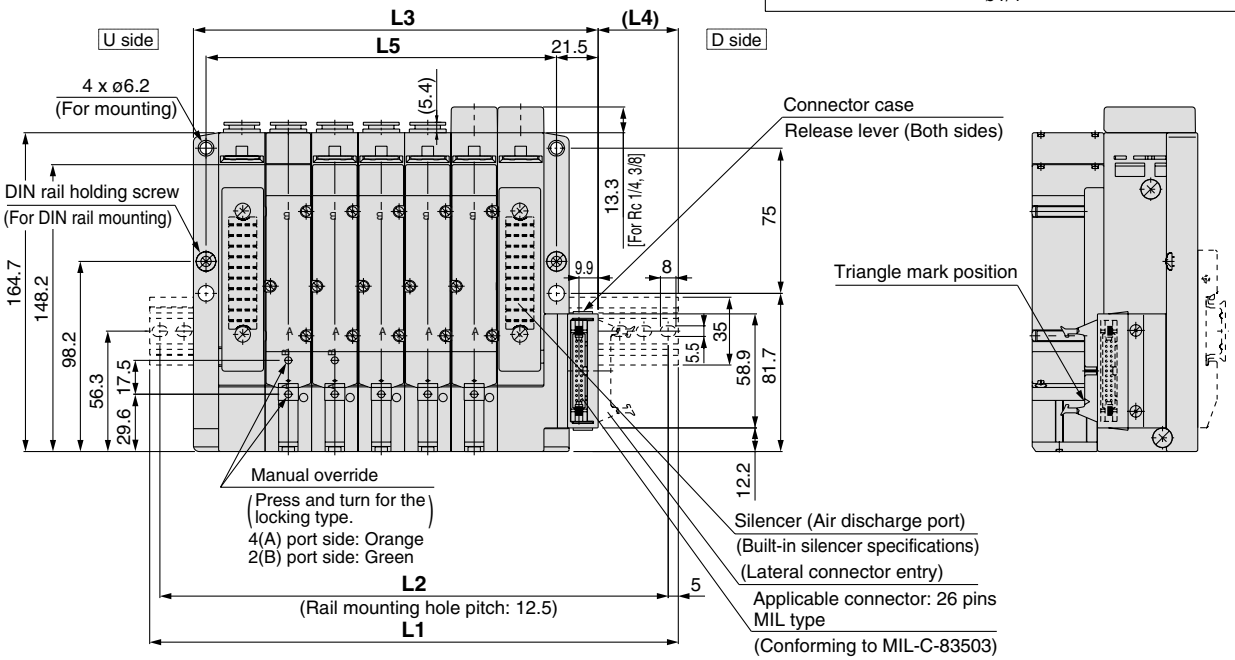
● Tie-rod base manifold : SS5V4-10 P/PG/PH D 1/2 - Stations U/D/B (S, R, RS)- 02, C8, 03, C10, C12, N9, N11 (-D)

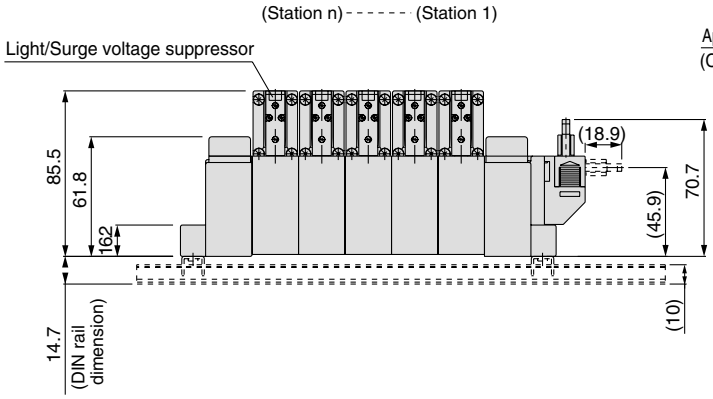
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

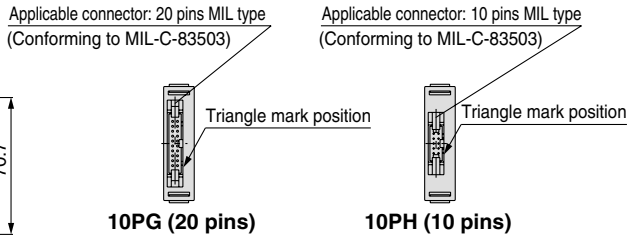


[With External Pilot Specifications]









Refer to page 406 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

L Dimension

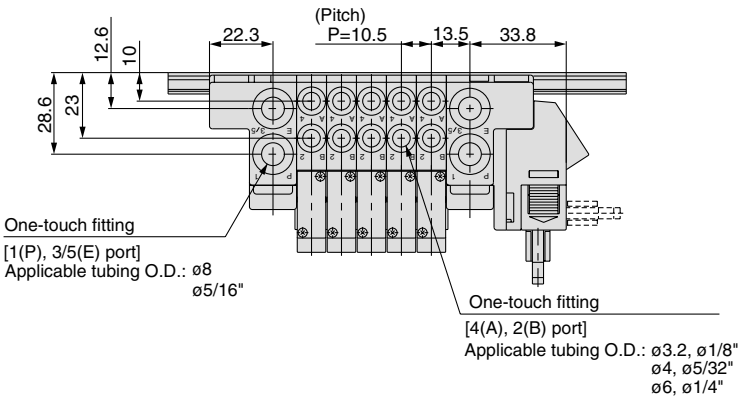
n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	185.5	210.5	235.5	260.5	285.5	310.5	335.5	348	373	398	423	448	473	498	523	548	573	598	623
L2	175	200	225	250	275	300	325	337.5	362.5	387.5	412.5	437.5	462.5	487.5	512.5	537.5	562.5	587.5	612.5
L3	137	161	185	209	233	257	281	305	329	353	377	401	425	449	473	497	521	545	569
L4	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5
L5	109	133	157	181	205	229	253	277	301	325	349	373	397	421	445	469	493	517	541

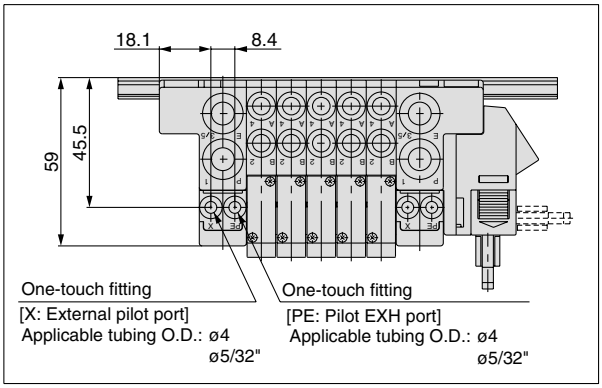
Dimensions : Series SV1000 for PC Wiring

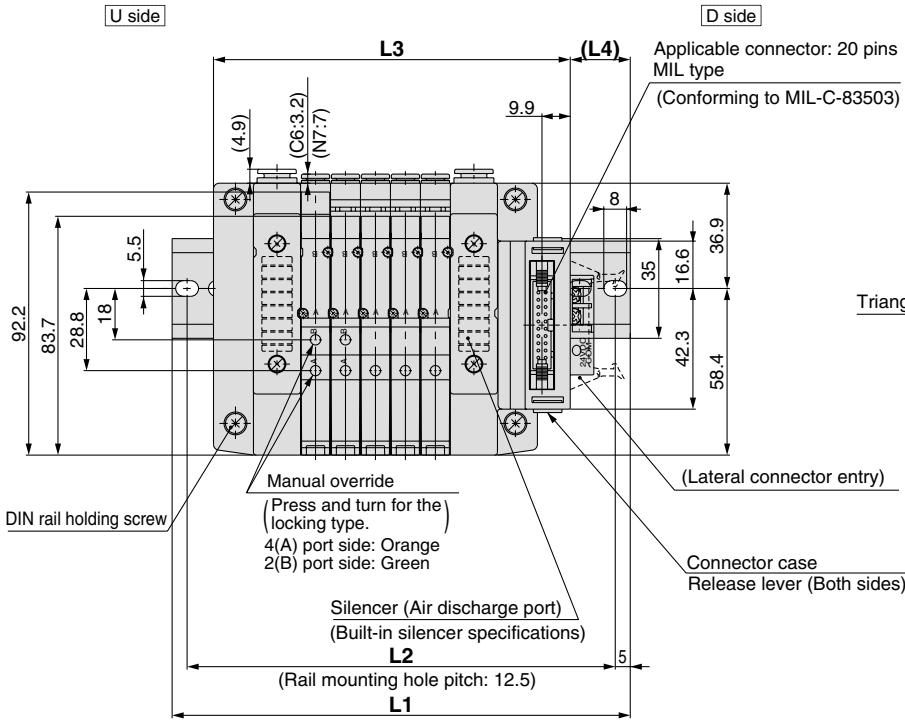
● Cassette base manifold : SS5V1-16GD$^{1}_{2}$-[Stations] $^{U}_{D}$(S, R, RS)-$^{C3, N1}_{C4, N3}$ $^{C6, N7}$

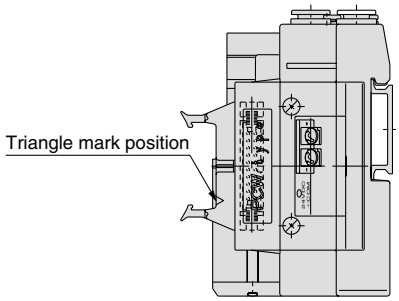
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

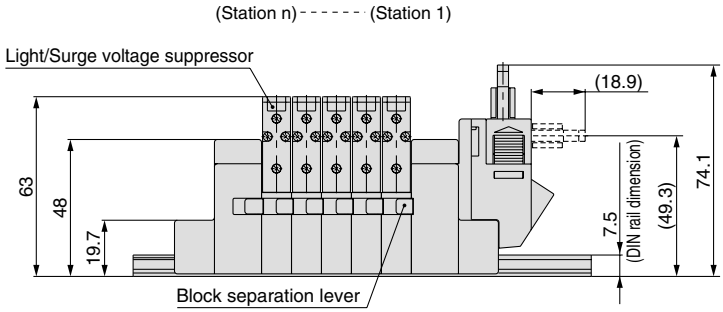


[With External Pilot Specifications]









Refer to page 401 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

L Dimension

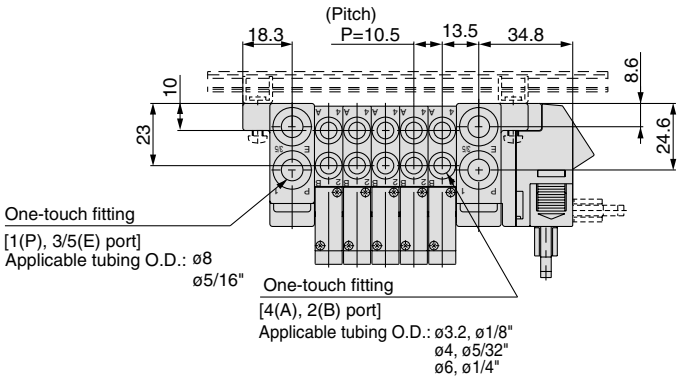
n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	135.5	135.5	148	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5	260.5	273
L2	125	125	137.5	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	250	262.5
L3	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5	230	240.5
L4	24.5	19	20	21	22	23	24	19	20	21	22	23	24	18.5	19.5

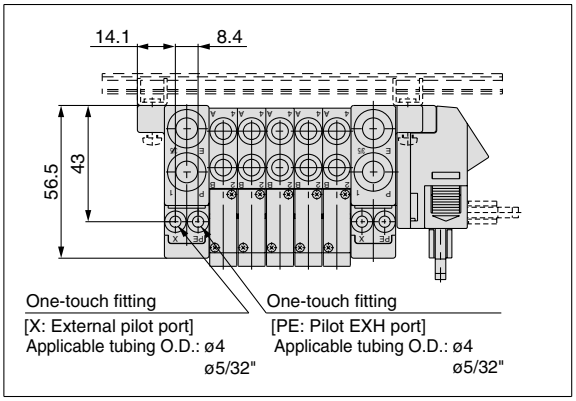
Dimensions : Series SV1000 for PC Wiring

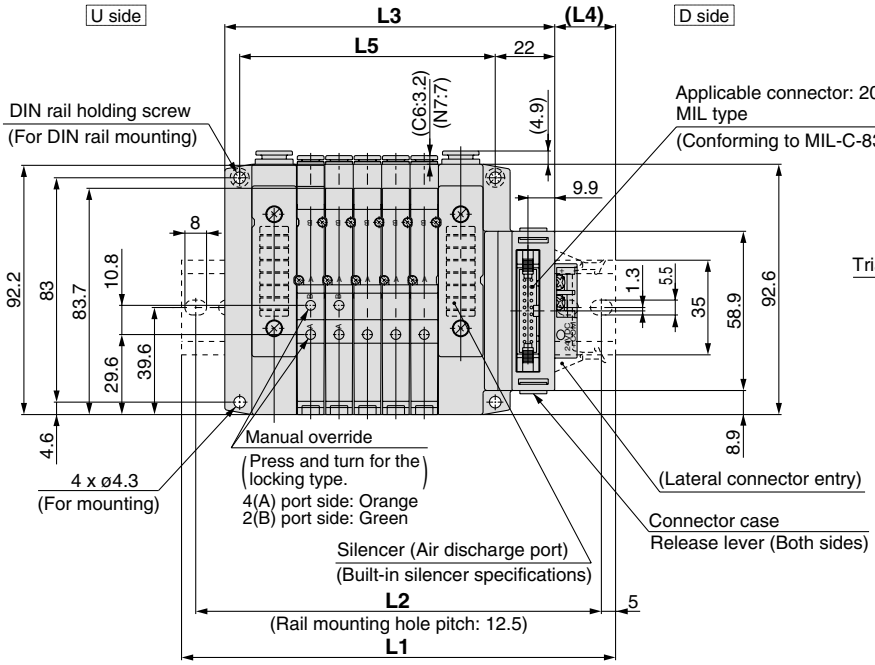
● Tie-rod base manifold : SS5V1-10GD$^{1}_{2}$- Stations $^{U}_{D}$(S, R, RS)-$^{C3, N1}_{C4, N3}$(-D)

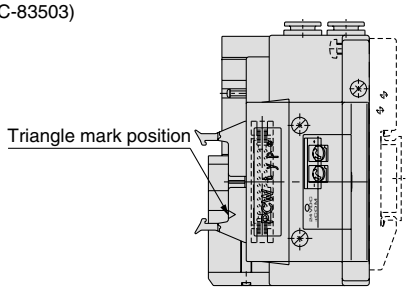
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



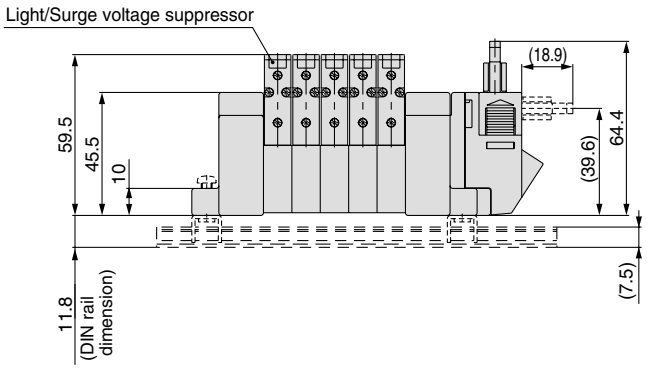
[With External Pilot Specifications]







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



Refer to page 403 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

L Dimension

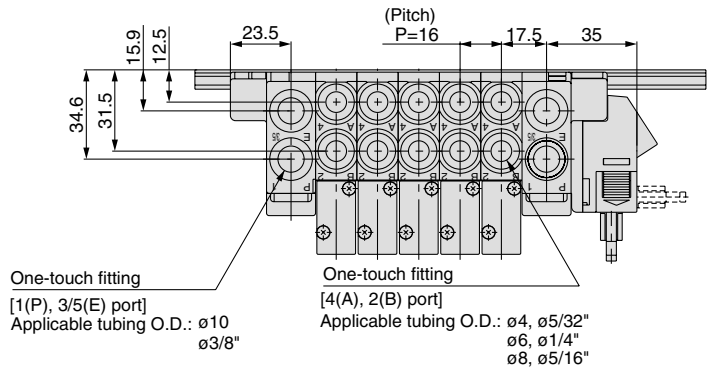
n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	123	135.5	148	160.5	173	173	185.5	198	210.5	223	235.5	248	248	260.5	273
L2	112.5	125	137.5	150	162.5	162.5	175	187.5	200	212.5	225	237.5	237.5	250	262.5
L3	90.5	101	111.5	122	132.5	143	153.5	164	174.5	185	195.5	206	216.5	227	237.5
L4	19.5	20.5	21.5	22.5	23.5	18.5	19.5	20.5	21.5	22.5	23.5	24.5	19	20	21
L5	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210

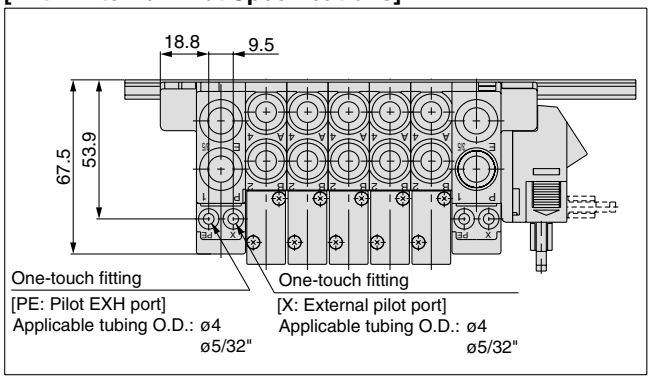
Dimensions : Series SV2000 for PC Wiring

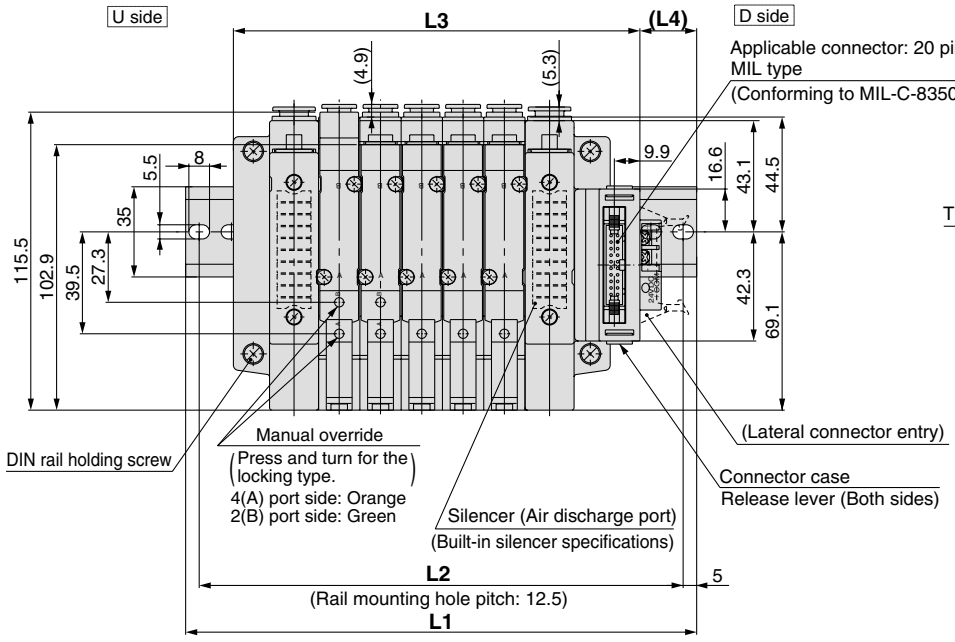
● Cassette base manifold : SS5V2-16GD$^{1}_{2}$-Stations $^{U}_{D}$(S, R, RS)-$^{C4, N3}_{C6, N7}$ $^{C8, N9}$

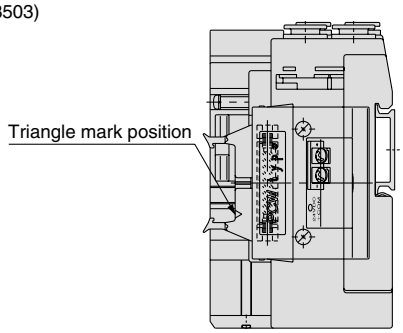
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



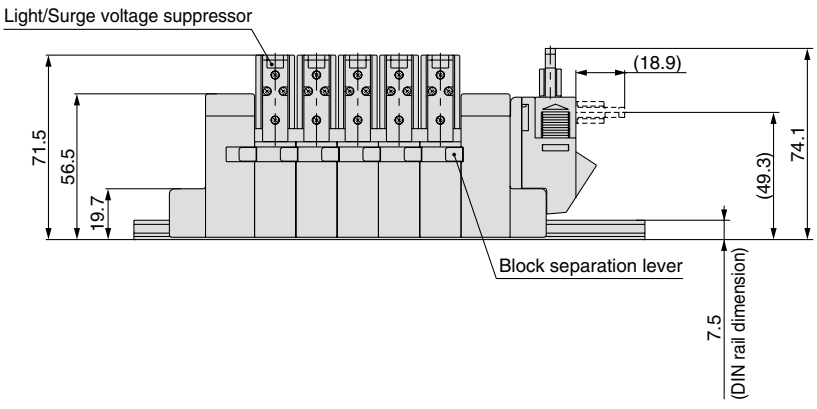
[With External Pilot Specifications]







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



Refer to page 402 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

L Dimension

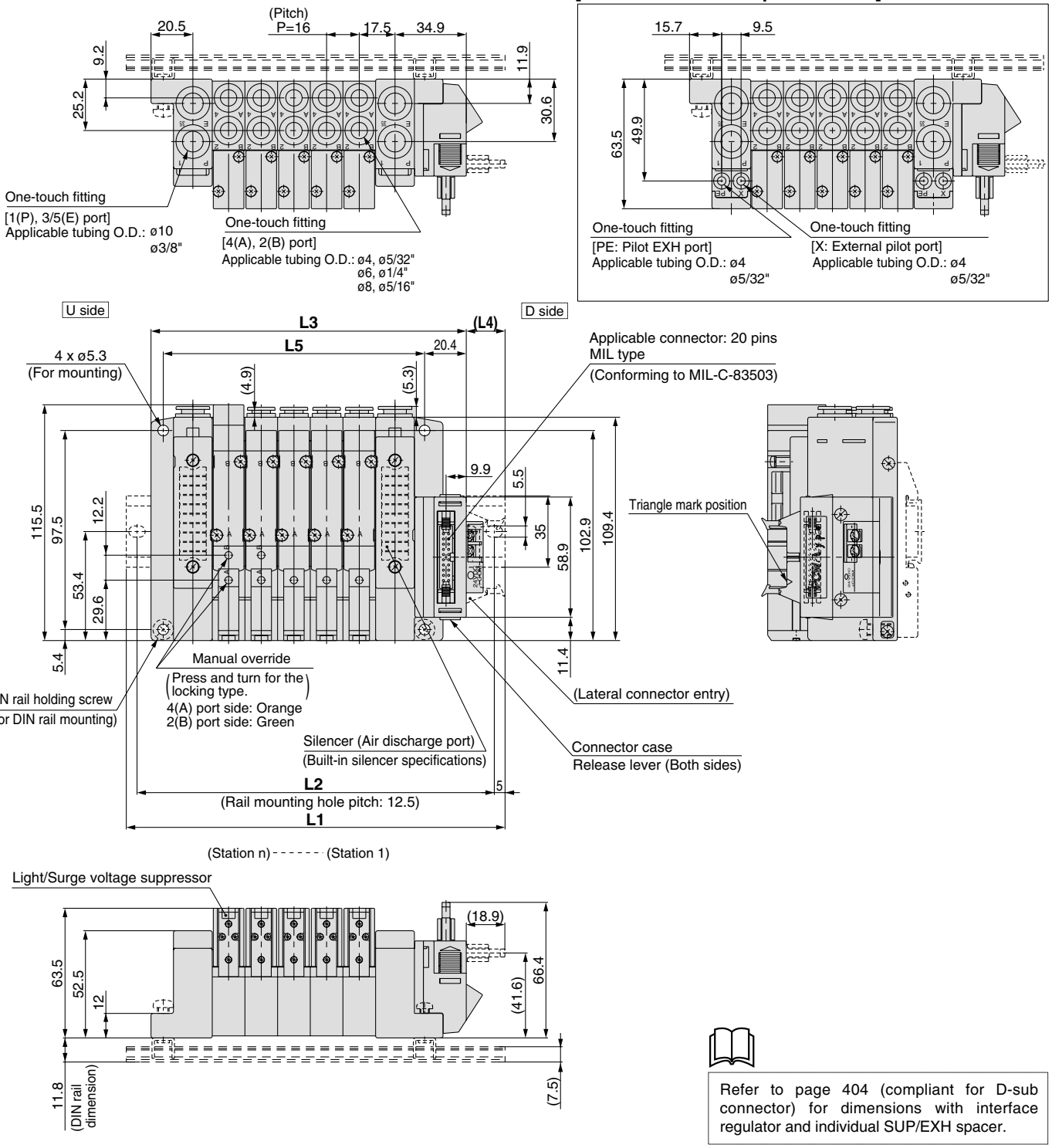
n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	148	160.5	173	198	210.5	223	235.5	260.5	273	285.5	310.5	323	335.5	348	373
L2	137.5	150	162.5	187.5	200	212.5	225	250	262.5	275	300	312.5	325	337.5	362.5
L3	109.5	125.5	141.5	157.5	173.5	189.5	205.5	221.5	237.5	253.5	269.5	285.5	301.5	317.5	333.5
L4	22.5	21	19	23.5	22	20	18.5	23	21	19.5	24	22	20.5	18.5	23

Dimensions : Series SV2000 for PC Wiring

● Tie-rod base manifold : SS5V2-10GD$^{1}_{2}$- Stations $^{U}_{D}$(S, R, RS)-$^{C4, N3}_{C6, N7}$(-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.



Refer to page 404 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

L Dimension

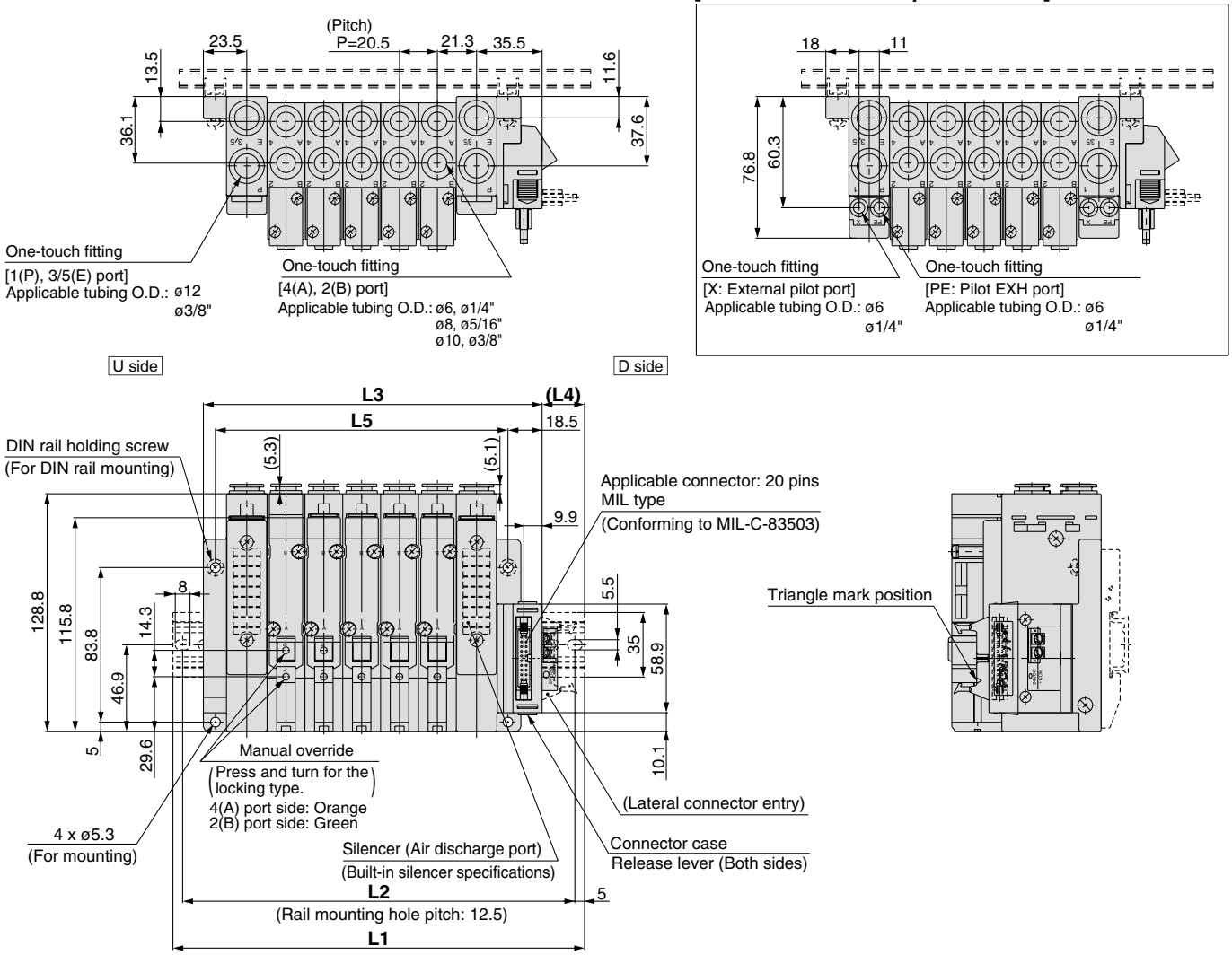
n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	148	160.5	173	185.5	210.5	223	235.5	248	273	285.5	298	323	335.5	348	360.5
L2	137.5	150	162.5	175	200	212.5	225	237.5	262.5	275	287.5	312.5	325	337.5	350
L3	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
L4	24.5	22.5	20.5	19	23.5	21.5	20	18.5	22.5	21	19.5	23.5	22	20.5	18.5
L5	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304

Dimensions : Series SV3000 for PC Wiring

● Tie-rod base manifold : SS5V3-10GD$^{1}_{2}$- Stations $^{U}_{D}$(S, R, RS)-$^{C6, N7}_{C8, N9}$ $^{C10, N11}$(-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.



Refer to page 405 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

L Dimension

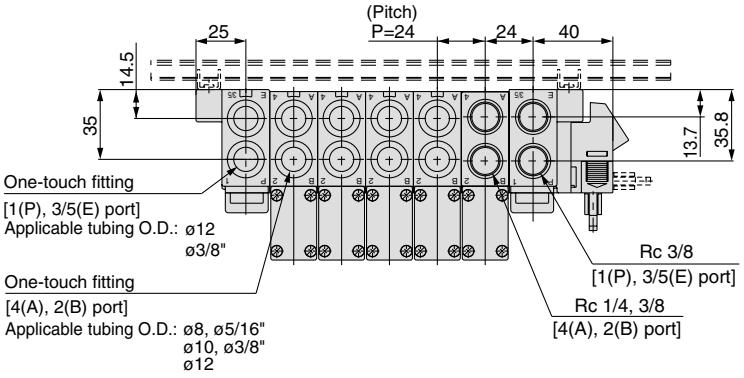
n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	160.5	173	198	223	235.5	260.5	285.5	298	323	348	360.5	385.5	398	423	448
L2	150	162.5	187.5	212.5	225	250	275	287.5	312.5	337.5	350	375	387.5	412.5	437.5
L3	122	142.5	163	183.5	204	224.5	245	265.5	286	306.5	327	347.5	368	388.5	409
L4	22.5	18.5	21	23	19	21.5	23.5	19.5	22	24	20	22.5	18.5	20.5	23
L5	97	117.5	138	158.5	179	199.5	220	240.5	261	281.5	302	322.5	343	363.5	384

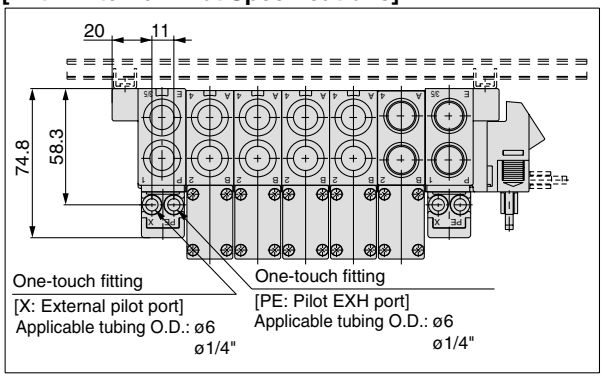
Dimensions : Series SV4000 for PC Wiring

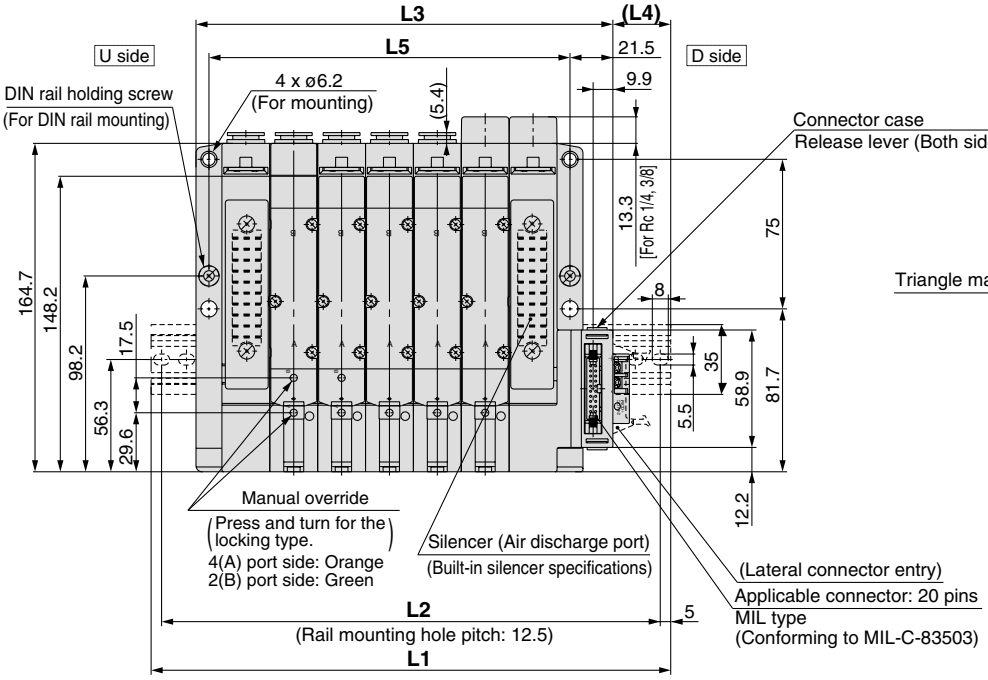
● Tie-rod base manifold : SS5V4-10GD$^{1}_{2}$- Stations $^{U}_{D}$(S, R, RS)-$^{02, C8,}_{03, C10, N9,}$ $^{}_{C12, N11}$(-D)

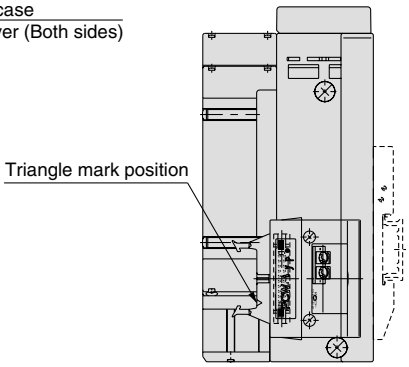
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



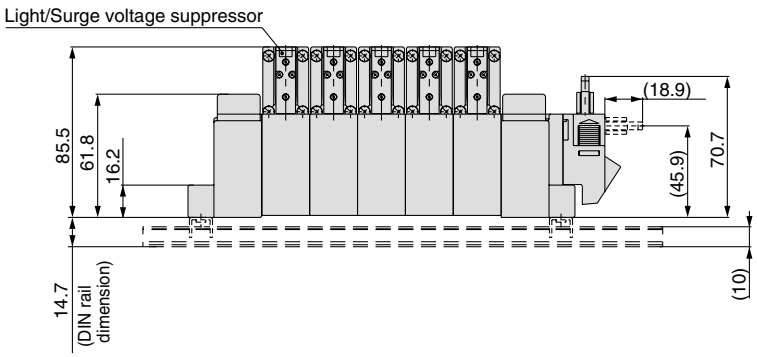
[With External Pilot Specifications]







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



Refer to page 406 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

L Dimension

n : Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	185.5	210.5	235.5	260.5	285.5	310.5	335.5	348	373	398	423	448	473	498	523
L2	175	200	225	250	275	300	325	337.5	362.5	387.5	412.5	437.5	462.5	487.5	512.5
L3	137	161	185	209	233	257	281	305	329	353	377	401	425	449	473
L4	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5	31.5
L5	109	133	157	181	205	229	253	277	301	325	349	373	397	421	445

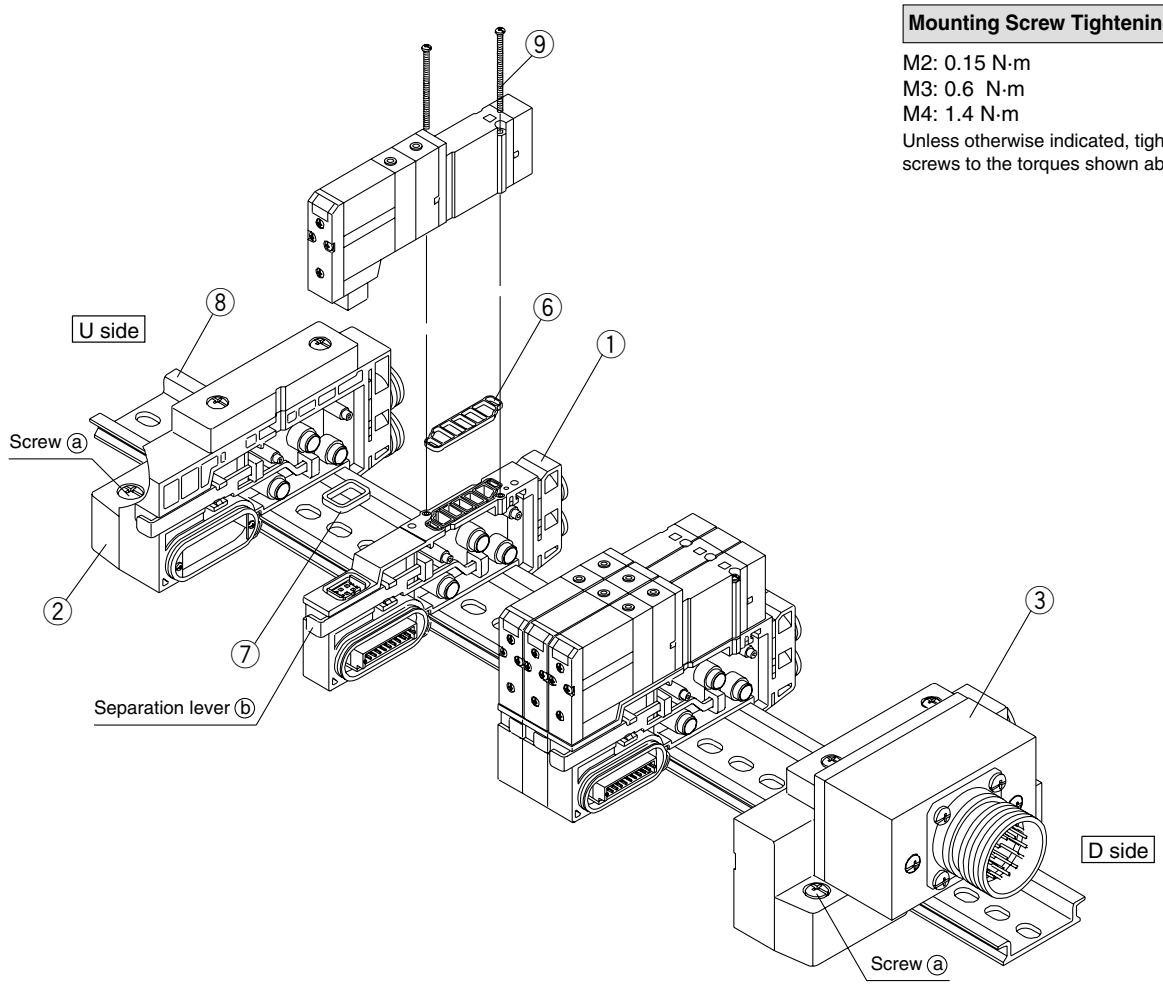
Type 16: Cassette Base Manifold Exploded View

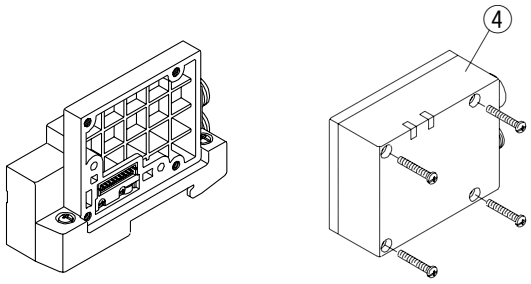
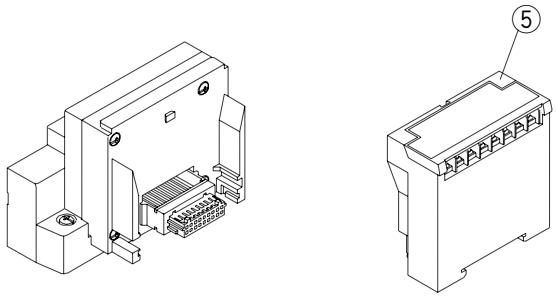
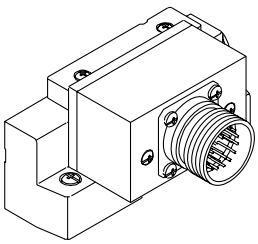
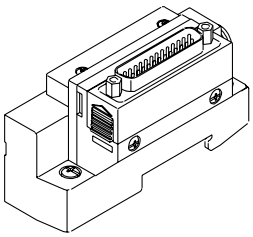
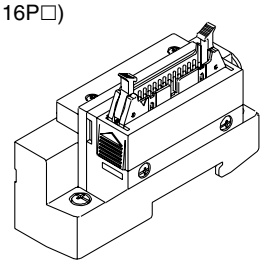
⚠ Caution

Mounting Screw Tightening Torques

M2: 0.15 N·m
M3: 0.6 N·m
M4: 1.4 N·m

Unless otherwise indicated, tighten mounting screws to the torques shown above.



③ SUP/EXH block assembly	
EX500 (Type 16SA2W) 	EX120 (Type 16S3□) 
Circular connector (Type 16C) 	D-sub connector (Type 16F□) 
For Flat ribbon cable connector (Type 16P□) 	

① Manifold Block Assembly Part No.

Series	Wiring specifications	Manifold block assembly part no.	Note
SV1000	Single	SV1000-50-3A-□□	C3: With One-touch fitting for ø3.2 N1: One-touch fitting for ø1/8" C4: With One-touch fitting for ø4 N3: One-touch fitting for ø5/32" C6: With One-touch fitting for ø6 N7: One-touch fitting for ø1/4" (Gaskets ⑥ and ⑦ are included.)
	Double	SV1000-50-4A-□□	
SV2000	Single	SV2000-50-3A-□□	C4: With One-touch fitting for ø4 N3: One-touch fitting for ø5/32" C6: With One-touch fitting for ø6 N7: One-touch fitting for ø1/4" C8: With One-touch fitting for ø8 N9: One-touch fitting for ø5/16" (Gaskets ⑥ and ⑦ are included.)
	Double	SV2000-50-4A-□□	

② Supply/Exhaust end block assembly
③ SUP/EXH block assembly

SV□000−52U − 2 A□−□

SV□000−51D□−□A□−□

Series

1	SV1000
2	SV2000

Connector entry direction (D-sub, flat types only)

1	Upward
2	Lateral

SUP/EXH block assembly specifications

30	For EX500 (decentralized serial)
32	For circular connector
33	D-sub connector
34	For flat ribbon cable connector (26 pins)
35	For flat ribbon cable connector (20 pins)
36	For flat ribbon cable connector (10 pins)
37	For flat ribbon cable PC wiring
38	For EX120 (dedicated output serial)

∗ Since EX500 and EX120 type SI units are not included, order them separately.

Pilot specifications

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

P, E port size

C8	One-touch fitting for ø8	**SV1000**
N9	One-touch fitting for ø5/16"	
C10	One-touch fitting for ø10	**SV2000**
N11	One-touch fitting for ø3/8"	
00	Plug	All series

∗ "00" (Plug) is not available for S, R and RS types.

No.	Description	Part no.		Note
		SV1000	**SV2000**	
④	**Series EX500 SI unit**	EX500-S0001		
⑤	**Series EX120 SI unit**	Refer to page 378.		
⑥	**Gasket**	SX3000-57-4	SX5000-57-6	
⑦	**Connector gasket**	SX3000-146-2		
⑧	**DIN rail**	VZ1000-11-1-□		Refer to DIN rail dimension tables on page 437.
⑨	**Round head combination screw**	SX3000-22-2 (M2 x 24) Tightening torque: 0.16N·m	SV2000-21-1 (M3 x 30) Tightening torque: 0.8N·m	

Type 16: Cassette Base Manifold

How to increase manifold bases (Type 16)

(1) Loosen the screws ⓐ (2 pcs. on one side) that hold the manifold base onto the DIN rail.
(When removing the manifold base from the DIN rail, loosen the holding screws at four locations.)

(2) Using a flat head screwdriver, etc., pull the lever ⓑ forward on the manifold block assembly where a station is to be added, and disconnect the manifold block assemblies.

(3) Attach the manifold block assembly to be added to the DIN rail as shown in the figure.

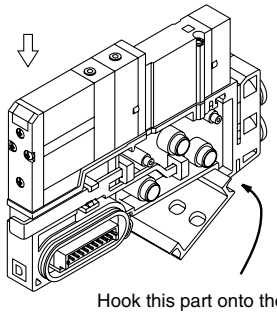


Figure. Block mounting procedure

(4) Connect the block assemblies by pressing them together, and push the lever ⓑ in firmly until it stops.
Then secure them to the DIN rail by tightening the screws ⓐ.

⚠**Caution** (Tightening torque: 1.4 N·m)

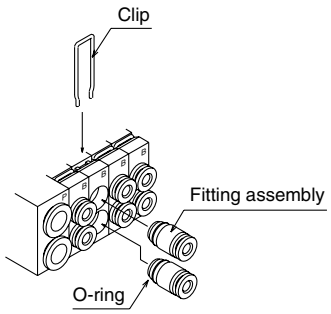
⚠Caution

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
A, B Port	One-touch fitting for ø3.2	VVQ1000-50A-C3	—
	One-touch fitting for ø4	VVQ1000-50A-C4	VVQ1000-51A-C4
	One-touch fitting for ø6	VVQ1000-50A-C6	VVQ1000-51A-C6
	One-touch fitting for ø8	—	VVQ1000-51A-C8
	One-touch fitting for ø1/8"	VVQ1000-50A-N1	—
	One-touch fitting for ø5/32"	VVQ1000-50A-N3	VVQ1000-51A-N3
	One-touch fitting for ø1/4"	VVQ1000-50A-N7	VVQ1000-51A-N7
	One-touch fitting fo ø5/16"	—	VVQ1000-51A-N9
P, E Port	One-touch fitting for ø8	VVQ1000-51A-C8	—
	One-touch fitting for ø10	—	VVQ2000-51A-C10
	One-touch fitting for ø5/16"	VVQ1000-51A-N9	—
	One-touch fitting for ø3/8"	—	VVQ2000-51A-N11



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 (KQ2P-□□) 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.

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.

■ How to order cassette base type 16 solenoid valves with manifold block

[Series SV1000/SV2000]

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

SV 1 1 00 – 5 F – –

Series

1	SV1000
2	SV2000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

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

∗ Back pressure check valve is not available for 3 position valve.

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

Note) Refer to Specific Product Precautions 2 on page 450.

Rated voltage

5	24 VDC
6	12 VDC

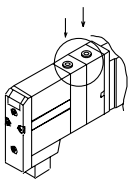
∗ Note that serial wiring manifolds (EX500, EX120) are only available with 24 VDC.

Light/Surge voltage suppressor

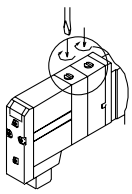
U	With light/surge voltage suppressor
R	With surge voltage suppressor

Manual override

Nil: Non-locking push type



D: Push-turn locking slotted type



Manifold block type

C	Cassette base type 16 with manifold block

Manifold wiring specifications

Nil	Double wiring
S	Single wiring

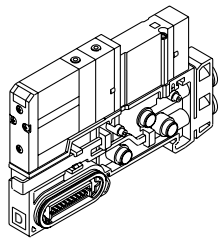
A, B port size

Refer to A, B ports size tables on pages 356, 378, 398 and 409.

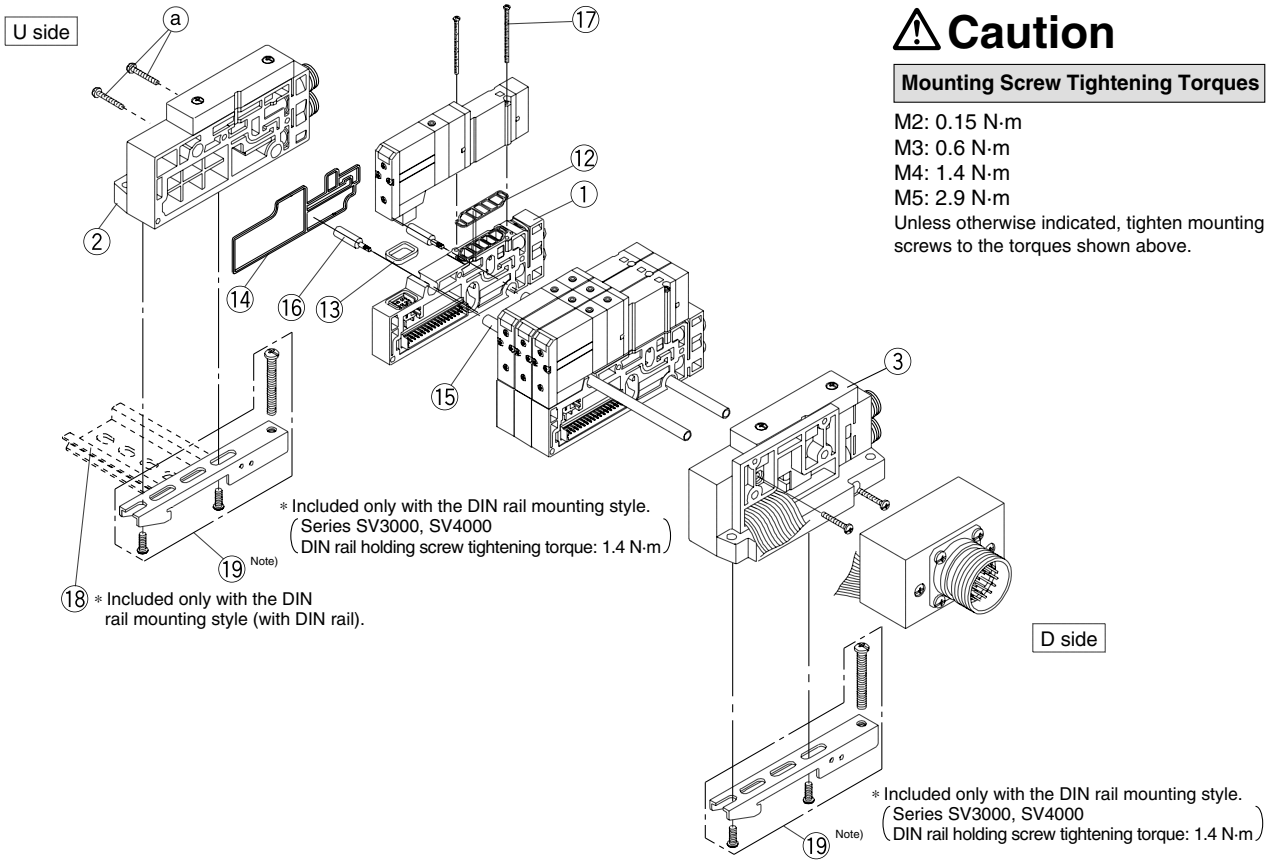
Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 488.)

Example **(SV1000)**
SV1200-5FU-C-C6



Type 10: Tie-rod Base Manifold Exploded View



⚠ Caution

Mounting Screw Tightening Torques

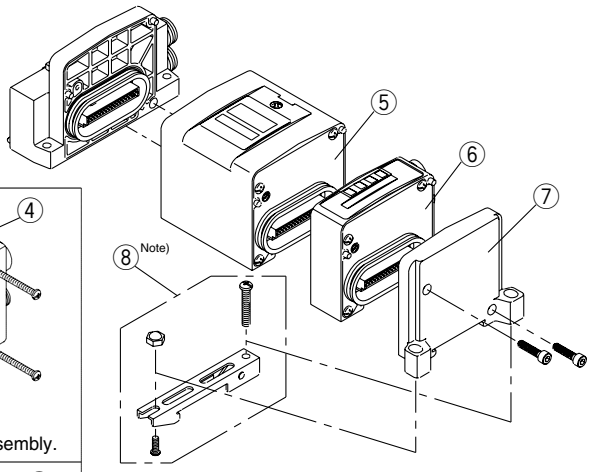
M2: 0.15 N·m
M3: 0.6 N·m
M4: 1.4 N·m
M5: 2.9 N·m
Unless otherwise indicated, tighten mounting screws to the torques shown above.

③ SUP/EXH block assembly

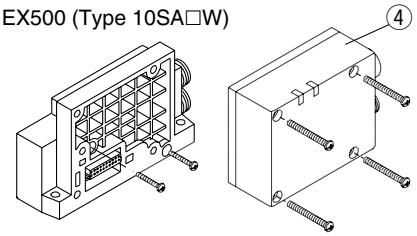
EX250 (Type 10S1□W)

∗ ⑤, ⑥, ⑦ and ⑧ are not included in the SUP/EXH block assembly.

∗ Included only with the DIN rail mounting style.
(Tightening torque of DIN rail holding screw: 0.5 N·m)

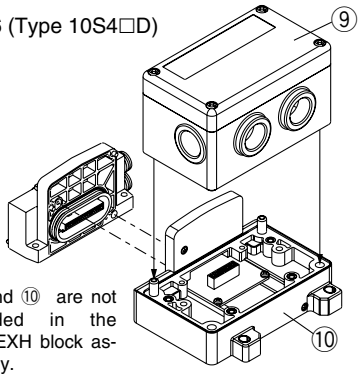


EX500 (Type 10SA□W)



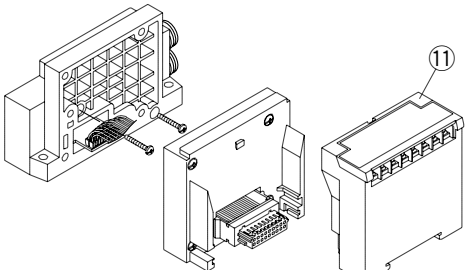
∗ ④ is not included in the SUP/EXH block assembly.

EX126 (Type 10S4□D)



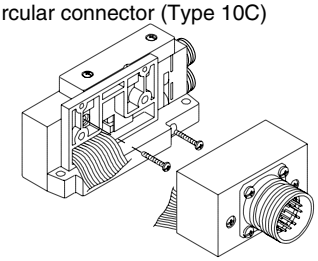
∗ ⑨ and ⑩ are not included in the SUP/EXH block assembly.

EX120 (Type 10S3□)

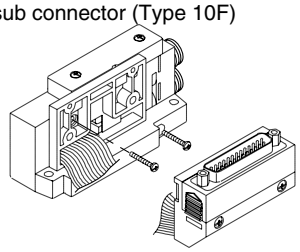


∗ ⑪ is not included in the SUP/EXH block assembly.

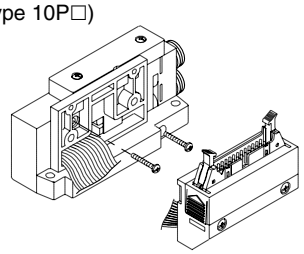
Circular connector (Type 10C)



D-sub connector (Type 10F)



For flat ribbon cable connector (Type 10P□)



Note) ⑧ and ⑲ are for SV2000. Mounting orientation onto DIN rail gets reversed.

① Manifold Block Assembly Part No.

Series	Wiring specifications	Manifold block assembly part no.	Note
SV1000	Single	SV1000-50-1A-□□	C3: With One-touch fitting for ø3.2 N1: One-touch fitting for ø1/8" C4: With One-touch fitting for ø4 N3: One-touch fitting for ø5/32" C6: With One-touch fitting for ø6 N7: One-touch fitting for ø1/4" (Tie-rod for station additions ⑭ and gaskets ⑩, ⑪, and ⑫ are included.)
	Double	SV1000-50-2A-□□	
SV2000	Single	SV2000-50-1A-□□	C4: With One-touch fitting for ø4 N3: One-touch fitting for ø5/32" C6: With One-touch fitting for ø6 N7: One-touch fitting for ø1/4" C8: With One-touch fitting for ø8 N9: One-touch fitting for ø5/16" (Tie-rod for station additions ⑭ and gaskets ⑩, ⑪, and ⑫ are included.)
	Double	SV2000-50-2A-□□	
SV3000	Single	SV3000-50-1A-□□	C6: With One-touch fitting for ø6 N7: One-touch fitting for ø1/4" C8: With One-touch fitting for ø8 N9: One-touch fitting for ø5/16" C10: With One-touch fitting for ø10 N11: One-touch fitting for ø3/8" (Tie-rod for station additions ⑭ and gaskets ⑩, ⑪, and ⑫ are included.)
	Double	SV3000-50-2A-□□	
SV4000	Single	SV4000-50-1A-□□	C8: With One-touch fitting for ø8 N9: One-touch fitting for ø5/16" C10: With One-touch fitting for ø10 N11: One-touch fitting for ø3/8" C12: With One-touch fitting for ø12 02: Rc 1/4 02N: NPT 1/4 03: Rc 3/8 03N: NPT 3/8 02F: G1/4 02T: NPTF1/4 03F: G3/8 03T: NPTF 3/8 (Tie-rod for station additions ⑭ and gaskets ⑩, ⑪, and ⑫ are included.)
	Double	SV4000-50-2A-□□	

② SUP/EXH end block assembly SV□000−52U − 1 A□−□−□

③ SUP/EXH block assembly SV□000−51D□−□A□−□−□

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Connector entry direction (D-sub, flat types only)

1	Upward
2	Lateral

Mounting

Nil	Direct mounting
DO	DIN rail mounting

SUP/EXH block assembly specifications

10	For EX500 (decentralized serial)
11	For EX250 (serial wiring with I/O unit)
	For EX126 (dedicated output serial)
12	For circular connector
13	D-sub connector
14	For flat ribbon cable connector (26 pins)
15	For flat ribbon cable connector (20 pins)
16	For flat ribbon cable connector (10 pins)
17	For flat ribbon cable PC wiring
18	For EX120 (dedicated output serial)

∗ Since EX500 EX250, EX126 and EX120 type SI units are not included, order them separately.

Pilot type

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

P, E port size

C8	One-touch fitting for ø8	**SV1000**
N9	One-touch fitting for ø5/16"	
C10	One-touch fitting for ø10	**SV2000**
N11	One-touch fitting for ø3/8"	
C12	One-touch fitting for ø12	**SV3000 SV4000**
N11	One-touch fitting for ø3/8"	
03	Rc 3/8	**SV4000**
03F	G 3/8	
03N	NPT 3/8	
03T	NPTF 3/8	
00	Plug	All series

∗ "00" (Plug) is not available for S, R and RS types.

No.	Description	SV1000	SV2000	SV3000	SV4000	
4	**Series EX500 SI unit**	Refer to page 356.				
5	**Series EX250 SI unit**	Refer to page 366.				
6	**Series EX250 input block**	EX250-IE1				M12, 2 inputs
		EX250-IE2				M12, 4 inputs
		EX250-IE3				M8, 4 inputs (3 pins)
7	**Series EX250 end plate assembly**	EX250-EA1				With mounting screws (M3 x 10, 2 pcs.)
8	**For EX250 clamp assembly**	SV1000-78A				
9	**Series EX126 SI unit**	Refer to page 372.				
10	**Terminal block plate**	VVQC1000-74A-2				For mounting EX126 SI unit
11	**Series EX120 SI unit**	Refer to page 378.				
12	**Gasket**	SX3000-57-4	SX5000-57-6	SX7000-57-5	SY9000-11-2	
13	**Connector gasket**	SX3000-146-2	SX3000-146-2	SX3000-146-2	SX3000-146-2	
14	**Manifold block gasket**	SX3000-181-1	SX5000-138-1	SV3000-65-1	SV4000-65-2	
15	**Tie-rod**	SV1000-55-1-□□	SV2000-55-1-□□	SV3000-55-1-□□	SV4000-55-1-□□	
16	**Tie-rod for station addition**	SV1000-55-2-1	SV2000-55-2A	SV3000-55-2A	SV4000-55-2A	□□: Manifold stations
17	**Round head combination screw (Valve mounting screw)**	SX3000-22-2 (M2 x 24) Tightening torque: 0.16 N·m	SV2000-21-1 (M3 x 30) Tightening torque: 0.8 N·m	SV3000-21-1 (M4 x 35) Tightening torque: 1.4 N·m	SV2000-21-2 (M3 x 40) Tightening torque: 0.8 N·m	
18	**DIN rail**	VZ1000-11-1-□	VZ1000-11-1-□	VZ1000-11-4-□	VZ1000-11-4-□	Refer to DIN rail dimension tables on page 437.
19	**Clamp assembly**	SV1000-69A	SV1000-69A	SV3000-69A	SV3000-69A	

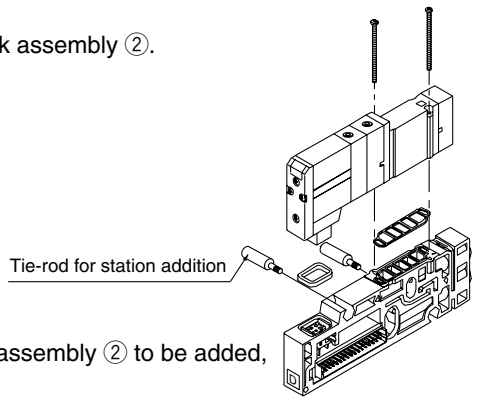
Note) Two pieces of ⑮ and ⑯ (tie-rod) are required for Series SV1000, and three pieces are required for Series SV2000, 3000 and 4000.
Two pieces of ⑰ (valve mounting screw) are required for Series SV1000, 2000 and 3000, and three pieces are required for Series SV4000.

Type 10: Tie-rod Base Manifold

How to increase manifold bases (Type 10)

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

(2) Screw in the tie-rods ⑭ 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 ⓐ.

⚠Caution Tightening torques ⓐ

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 ø3.2	VVQ1000-50A-C3	—	—	—
	One-touch fitting for ø4	VVQ1000-50A-C4	VVQ1000-51A-C4	—	—
	One-touch fitting for ø6	VVQ1000-50A-C6	VVQ1000-51A-C6	VVQ2000-51A-C6	—
	One-touch fitting for ø8	—	VVQ1000-51A-C8	VVQ2000-51A-C8	VVQ4000-50B-C8
	One-touch fitting for ø10	—	—	VVQ2000-51A-C10	VVQ4000-50B-C10
	One-touch fitting for ø12	—	—	—	VVQ4000-50B-C12
	One-touch fitting for ø1/8"	VVQ1000-50A-N1	—	—	—
	One-touch fitting for ø5/32"	VVQ1000-50A-N3	VVQ1000-51A-N3	—	—
	One-touch fitting for ø1/4"	VVQ1000-50A-N7	VVQ1000-51A-N7	VVQ2000-51A-N7	—
	One-touch fitting for ø5/16"	—	VVQ1000-51A-N9	VVQ2000-51A-N9	VVQ4000-50B-N9
	One-touch fitting for ø3/8"	—	—	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 ø8	VVQ1000-51A-C8	—	—	—
	One-touch fitting for ø10	—	VVQ2000-51A-C10	—	—
	One-touch fitting for ø12	—	—	VVQ4000-50B-C12	VVQ4000-50B-C12
	One-touch fitting for ø5/16"	VVQ1000-51A-N9	—	—	—
	One-touch fitting for ø3/8"	—	VVQ2000-51A-N11	VVQ4000-50B-N11	VVQ4000-50B-N11
	3/8 threaded type port block assembly	—	—	—	SY9000-58B-03□

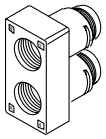
■ 1/4, 3/8 thread type port block assembly

For A, B port

SY9000 − 58A − 02 / 03 □

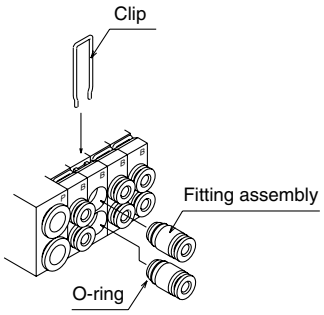
For P, E port

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.

■ 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 00 □□ − 5 F □□ − □□ − □ − □

1 SV1000
2 SV2000
3 SV3000
4 SV4000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

∗ 4 position dual 3 port valves are applicable to 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 valve.

Note) Refer to Specific Product Precautions 2 on page 450.

Rated voltage

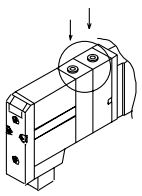
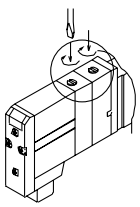
5	24 VDC
6	12 VDC

∗ Note that serial wiring (EX500, EX250 and EX12□) are only available with 24 VDC.

Light/Surge voltage suppressor

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

Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type
	

Manifold block type

T	For Tie-rod base type 10 with manifold block

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

Manifold wiring specifications

Nil	Double wiring
S	Single wiring

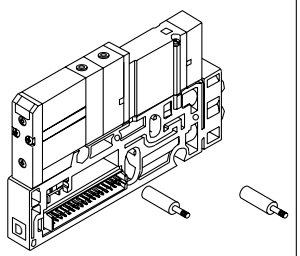
Made to Order

Nil	—
X90	Main valve fluoro rubber (Refer to page 448.)

A, B port size

Refer to A, B port size table on pages 356, 366, 372, 378, 388, 398 and 409

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



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

SV □ 000 − 60 − 5 A − 1A

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

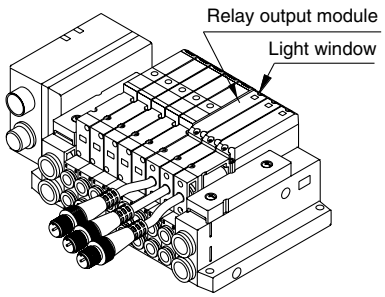
No. of output point

A	1 output
B	2 outputs

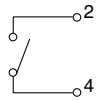
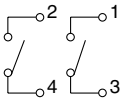
Rated voltage

5	24 VDC
6	12 VDC

∗ Note that serial wiring manifolds (EX500, EX250 and EX12□) are available with 24 VDC only.



Relay Output Module Specifications

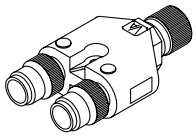
Item	Specifications			
No. of output points	1 output [connector with lead wire (M12)]		2 outputs [connector with lead wire (M12)]	
Output type	4 pins connector (M12) plug 1. — 2. Output A 3. — 4. Output A  Contact type (“a” contact)  Relay output module side pin arrangement		4 pins connector (M12) plug 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 (IEC60529)			
Current consumption	20 mA or less			
Polarity	Non-polar			
weight (g)	48			

■ Y type connector

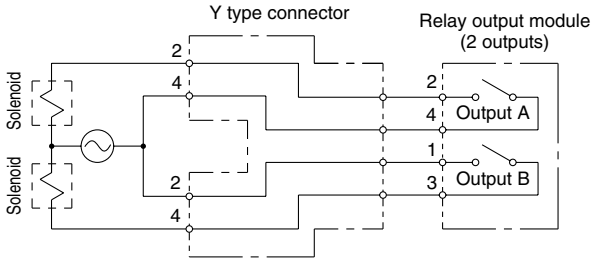
Used to branch a two output relay output module to two separate systems.

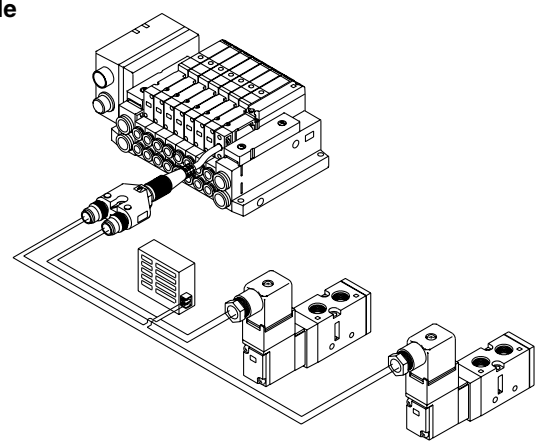
How to Order

EX500 — ACY00 — S



Relay output module and Y type connector wiring example

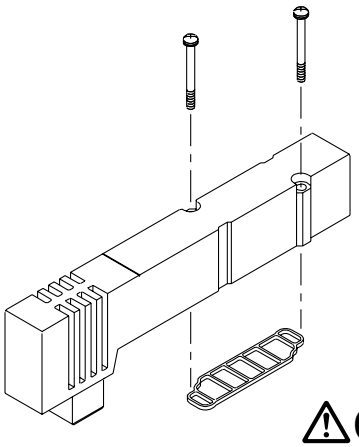




Manifold Option

■ Blanking plate assembly

Used in situations where valves will be added in the future or for maintenance.



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

⚠Caution

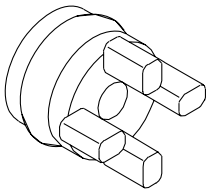
Mounting screw tightening torques

M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

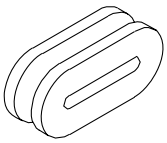
■ SUP/EXH block disk

[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

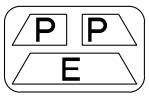
Series	Manifold Model	SUP block disk	EXH block disk
SV1000	10	SV1000-59-1A	SV1000-59-2A
	16	SX3000-77-1A	SX3000-77-1A
SV2000	10	SV2000-59-1A	SV2000-59-2A
	16	SV2000-59-3A	SV2000-59-3A
SV3000	10	SV3000-59-1A	SV3000-59-1A
SV4000	10	SY9000-57-1A	SY9000-57-1A

■ Label for block disk

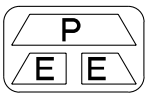
These labels are attached to manifolds in which SUP and EXH block disks have been installed, in order to identify the installed locations. (Three sheets each included.)

SV1000 − 74 − 1A

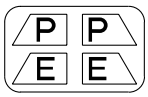
Label for SUP block disk



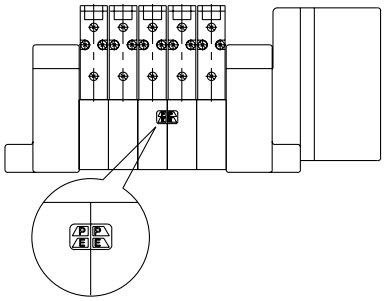
Label for EXH block disk



Label for SUP/EXH block disk

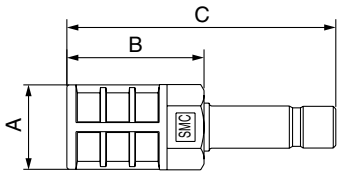


∗ When a block disk is concurrently ordered by specifying on the manifold specification sheet, etc., a label will be stuck on the position where block disk is mounted.



■ Silencer with One-touch fitting

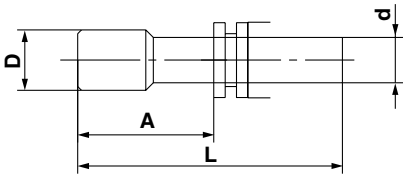
This silencer can be quickly mounted on the manifold's E (exhaust) port.



Series	Model	Effective area	A	B	C
SV1000 (For ø8)	AN203-KM8	14 mm^2	ø16	26	51
SV2000 (For ø10)	AN200-KM10	26 m^2	ø22	53.8	80.8
	AN300-KM10	30 mm^2	ø25	70	97
SV3000 **SV4000** (For ø12)	AN300-KM12	41 mm^2	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	**KQ2P-04**	16	32	ø6
ø6	**KQ2P-06**	18	35	ø8
ø8	**KQ2P-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

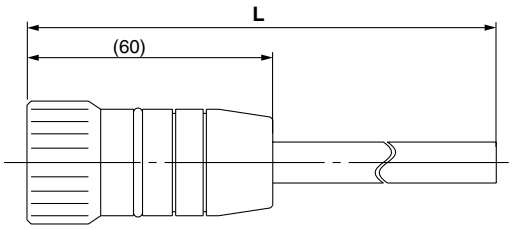
Manifold Option

■ Circular connector/Cable assembly (26 pins)

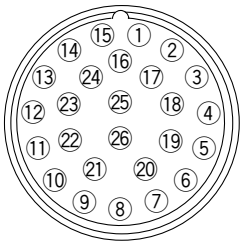
AXT100 – MC26 – □

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.

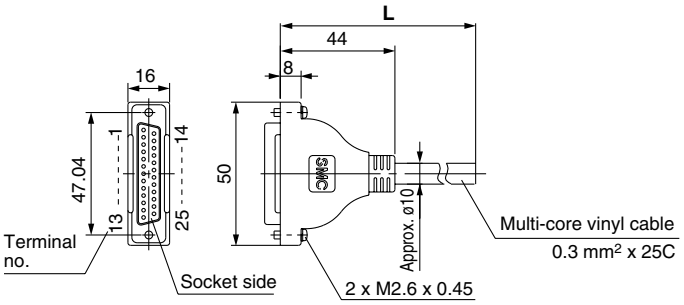
■ D-sub connector/Cable assembly (25 pins)

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 Ω/km, 20°C	65 or less
Withstand voltage VAC, 1 min.	1000
Insulation resistance, MΩkm, 20°C	5 or less

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

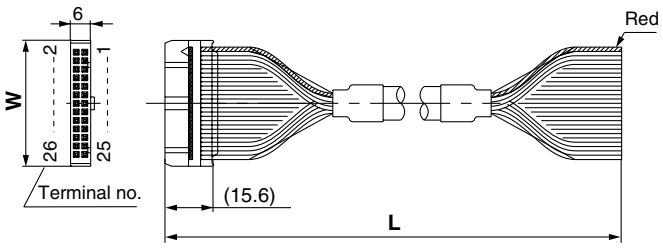
Manifold Option

■ Flat ribbon cable/Cable assembly

AXT100 − FC□ − □

Cable length (**L**)	10 pins	20 pins	26 pins
1.5 m	AXT100-FC10-1	AXT100-FC20-1	AXT100-FC26-1
3 m	AXT100-FC10-2	AXT100-FC20-2	AXT100-FC26-2
5 m	AXT100-FC10-3	AXT100-FC20-3	AXT100-FC26-3
Connector width (**W**)	17.2	30	37.5

∗ For other commercial connectors, use a type with strain relief conforming to MIL-C-83503.



Connector manufacturers' example
· Hirose Electric Co., Ltd.
· Sumitomo 3M Limited
· Fujitsu Limited
· Japan Aviation Electronics Industry, Ltd.
· J.S.T. Mfg. Co., Ltd.

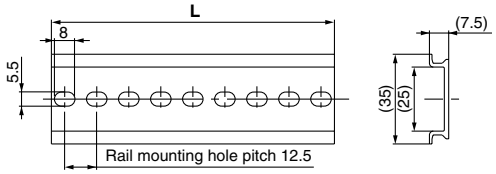
■ Connector cable for M12 waterproof connector (Female side)

Connector manufacturers' example
Correns Corp.
OMRON Corp.
Yamatake-Honeywell Corp.
Hirose Electric Co., Ltd.
DDK Ltd.

■ SV1000/2000 and Series EX500 input unit DIN rail dimensions and mass

VZ1000 − 11 − 1 − □

∗ As for □, enter the number from the DIN rail dimensions table.



No.	0	1	2	3	4	5	6	7	8	9
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5
Mass (g)	17.6	19.9	22.1	24.4	26.6	28.9	31.1	33.4	35.6	37.9

No.	10	11	12	13	14	15	16	17	18	19
L dimension	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5
Mass (g)	40.1	42.4	44.6	46.9	49.1	51.4	53.6	55.9	58.1	60.4

No.	20	21	22	23	24	25	26	27	28	29
L dimension	348	360.5	373	385.5	398	410.5	423	435.5	448	460.5
Mass (g)	62.5	64.9	67.1	69.4	71.6	73.9	76.1	78.4	80.6	82.9

No.	30	31	32	33	34	35	36	37	38	39
L dimension	473	485.5	498	510.5	523	535.5	548	560.5	573	585.5
Mass (g)	85.1	87.4	89.6	91.9	94.1	96.4	98.6	100.9	103.1	105.4

No.	40	41	42	43	44	45	46	47	48	49
L dimension	598	610.5	623	635.5	648	660.5	673	685.5	698	710.5
Mass (g)	107.6	109.9	112.1	114.4	116.6	118.9	121.1	123.4	125.6	127.9

No.	50	51	52	53	54	55	56	57	58	59
L dimension	723	735.5	748	760.5	773	785.5	798	810.5	823	835.5
Mass (g)	130.1	132.4	134.6	136.9	139.1	141.4	143.6	145.9	148.1	150.4

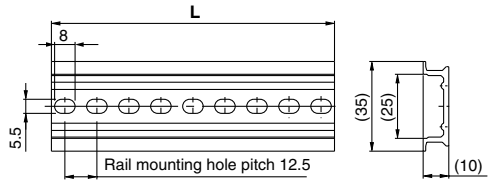
No.	60	61	62	63	64	65	66	67	68	69
L dimension	848	860.5	873	885.5	898	910.5	923	935.5	948	960.5
Mass (g)	152.6	154.9	157.1	159.4	161.6	163.9	166.1	168.4	170.6	172.9

No.	70	71
L dimension	973	985.5
Mass (g)	175.1	177.4

■ SV3000 and 4000 DIN rail dimensions and mass

VZ1000 − 11 − 4 − □

∗ As for □, enter the number from the DIN rail dimensions table.



No.	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5	223	233.5	248	260.5	273	285.5	298	310.5	323	335.5	348
Mass (g)	24.8	28	31.1	34.3	37.4	40.6	43.8	46.9	50.1	53.3	56.4	59.6	62.7	65.9	69.1	72.2	75.4	78.6	81.7	84.9	88

No.	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
L dimension	360.5	373	385.5	398	410.5	423	435.5	448	460.5	473	485.5	498	510.5	523	535.5	548	560.5	573	585.5	598	610.5
Mass (g)	91.2	94.4	97.5	100.7	103.9	107	110.2	113.3	116.5	119.7	122.8	126	129.2	132.3	135.5	138.6	141.8	145	148.1	151.3	154.5

No.	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62
L dimension	623	635.5	648	660.5	673	685.5	698	710.5	723	735.5	748	760.5	773	785.5	798	810.5	823	835.5	848	860.5	873
Mass (g)	157.6	160.8	163.9	167.1	170.3	173.4	176.6	179.8	182.9	186.1	189.2	192.4	195.6	198.7	201.9	205.1	208.2	211.4	214.5	217.7	220.9

No.	63	64	65	66	67	68	69	70	71
L dimension	885.5	898	910.5	923	935.5	948	960.5	973	985.5
Mass (g)	224	227.2	230.4	233.5	236.7	239.8	243	246.2	249.3

Manifold Option

■ Interface regulator

How to order interface regulator

Series SV1000

SV1 0 00 – 05 – P

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)

Series SV2000/SV3000/SV4000

SV 2 000 – 00 – P

Series

2	SV2000
3	SV3000
4	SV4000

Option

00	With pressure gauge
M1	Without pressure gauge

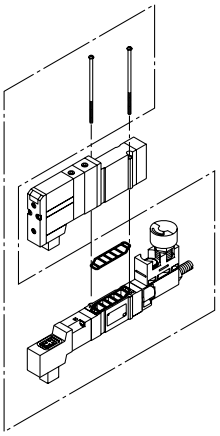
Regulating port

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

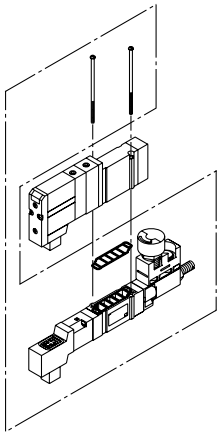
Note) In the case of Series SV1000 with a pressure gauge when mounting on the manifold, use caution that the part numbers are different between the odd no. stations and the even no. stations to avoid pressure gauges from interfering from each others.

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.

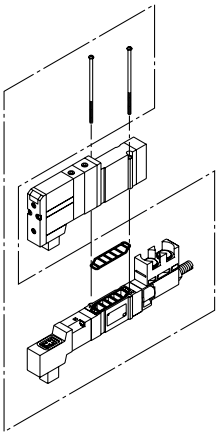
SV1000-05-□
(For mounting odd number stations)



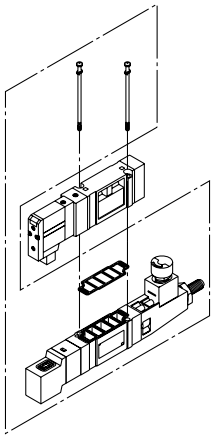
SV1000-06-□
(For mounting even number stations)



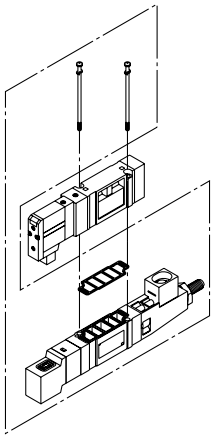
SV1000-M1-□



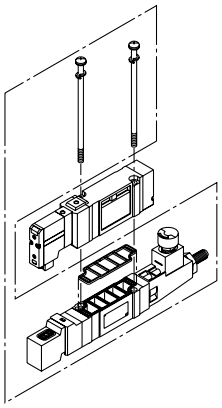
SV2000-00-□



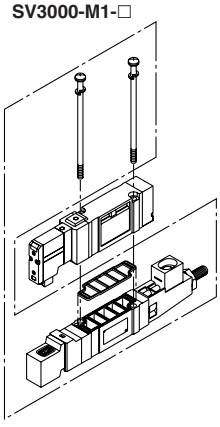
SV2000-M1-□



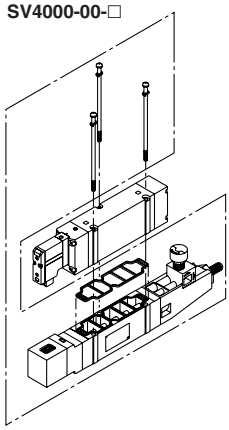
SV3000-00-□



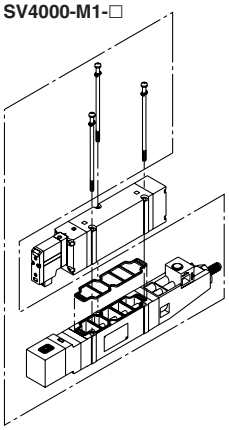
SV3000-M1-□



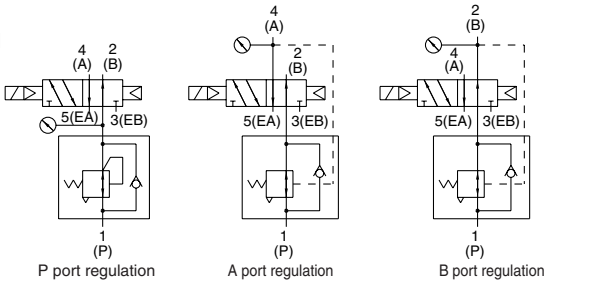
SV4000-00-□



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

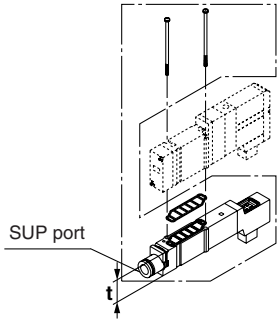
⚠ Caution

Mounting Screw Tightening Torques

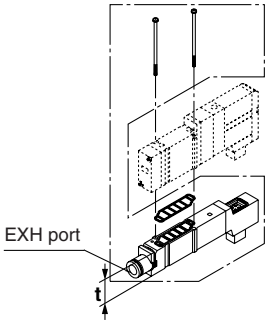
M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

Manifold Option

■ Individual SUP spacer assembly



■ Individual EXH spacer assembly



How to order individual SUP/EXH spacer assembly

Series SV1000

SV1000 − [38] − 1A − [C6]

∗ t: 15

Port size

C3	One-touch fitting for ø3.2
C4	One-touch fitting for ø4
C6	One-touch fitting for ø6
N1	One-touch fitting for ø1/8"
N3	One-touch fitting for ø5/32"
N7	One-touch fitting for ø1/4"

Spacer type

38	Individual SUP spacer
39	Individual EXH spacer
88	Individual SUP + Individual EXH spacers (Double-stack)

∗ In the series SV3000, only type 10 is compatible with the double-stack spacers.
The series SV4000 is not compatible with the double-stack spacers. Individual SUP and EXH spacers can be mounted either on the top or the bottom.

Series SV2000/SV3000/SV4000

SV [2] 000 − [38] − 1 [ ] A

Series

Symbol	Series	t
2	SV2000	15
3	SV3000	18.5
4	SV4000	20

Thread type Note)

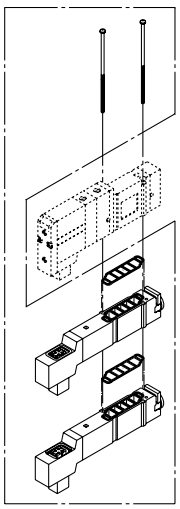
Nil	Rc
F	G
N	NPT
T	NPTF

Note) SV2000/3000/4000 port size

Series	Port size
SV2000	1/8
SV3000	1/4
SV4000	

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

■ Individual SUP/EXH spacer assembly (Double-stack)



Single Valve/Sub-plate Type IP67 Compliant

Series SV1000/2000/3000/4000

How to Order

SV [1] [1] 00 [ ] – [5] [W1] [U] [D] – [ ] [ ] – [ ]

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

1	2 position single
2	2 position double
3	3 position closed center
4	3 position exhaust center
5	3 position pressure center
A	4 position dual 3 port valve: N.C./N.C.
B	4 position dual 3 port valve: N.O./N.O.
C	4 position dual 3 port valve: N.C./N.O.

Pilot type

Nil	Internal pilot
R	External pilot

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

Rated voltage

5	24 VDC
6	12 VDC

M12 waterproof connector

Symbol	Cable length (mm)
W1	300
W2	500
W3	1000
W4	2000
W7	5000

Light/Surge voltage suppressor

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

Manual override

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

Port size

Symbol	Port size	Applicable series
Nil	Without sub-plate	
01	1/8	SV1000
02	1/4	SV2000 SV3000
03	3/8	SV3000 SV4000
04	1/2	SV4000

Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

Made to order

Nil	—
X90	Main valve fluoro rubber (Refer to page 448.)

SV3000 and 4000 are not available with 4 position dual 3 port valve.

Series SV Solenoid Valve Specifications

Fluid		Air
Internal pilot operating pressure range (MPa)	**2 position single** **4 position dual 3 port valve**	0.15 to 0.7
	2 position double	0.1 to 0.7
	3 position	0.2 to 0.7
External pilot operating pressure range (MPa)	**Operating pressure range**	–100 kPa to 0.7
	2 position single, double **3 position**	0.25 to 0.7
Ambient and fluid temperature (°C)		–10 to 50 (No freezing. Refer to page 5.)
Max. operating frequency (Hz)	**2 position single, double** **4 position dual 3 port valve**	5
	3 position	3
Manual override		Non-locking push type
		Push-turn locking slotted type
Pilot exhaust method	**Internal pilot**	Common exhaust type for main and pilot valve
	External pilot	Pilot valve individual exhaust
Lubrication		Not required
Mounting orientation		Unrestricted
Impact/Vibration resistance (ms^2)		150/30 (8.3 to 2000 Hz)
Enclosure		IP67 (Based on IEC60529)
Electrical entry		M12 waterproof connector
Coil rated voltage		24 VDC, 12 VDC
Allowable voltage fluctuation		±10% of rated voltage
Power consumption (W)		0.6 (With indicator light: 0.65)
Surge voltage suppressor		Zener diode
Indicator light		LED

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

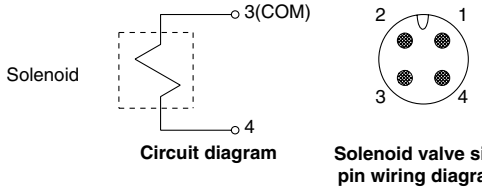
Response Time

Type of actuation	Response time (ms) (at the pressure of 0.5 MPa)			
	SV1000	**SV2000**	**SV3000**	**SV4000**
2 position single	11 or less	25 or less	28 or less	40 or less
2 position double	10 or less	17 or less	26 or less	40 or less
3 position	18 or less	29 or less	32 or less	82 or less
4 position dual 3 port valve	15 or less	33 or less	—	—

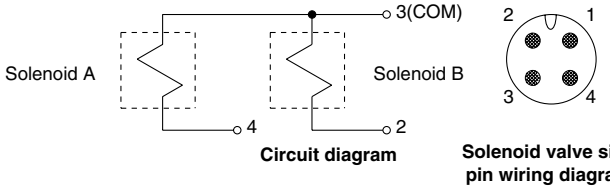
Note) Based on dynamic performance test, JIS B 8375-1981. (Coil temperature: 20°C, at rated voltage)

M12 Waterproof Connector Wiring Specifications

Single solenoid	Double solenoid
4 pins connector (M12) plug	4 pins connector (M12) plug



Circuit diagram **Solenoid valve side pin wiring diagram**



Circuit diagram **Solenoid valve side pin wiring diagram**

Note) Solenoid valves have no polarity.

Flow Characteristics/Mass

Series SV1000

Valve model	Type of actuation		Port size	Flow characteristics (1)						Mass (g) (2)
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			M12 waterproof connector (Cable length 300 mm)
				C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
SV1□00-□-01	2 position	Single	Rc 1/8	1.0	0.30	0.24	1.1	0.30	0.26	123 (88)
		Double								128 (93)
	3 position	Closed center		0.77	0.28	0.18	0.85	0.30	0.19	130 (95)
		Exhaust center		0.73	0.31	0.18	1.1 [0.55]	0.26 [0.52]	0.24 [0.16]	
		Pressure center		1.2 [0.51]	0.24 [0.45]	0.29 [0.14]	0.89	0.47	0.24	
	4 position dual	N.C./N.C.		0.68	0.35	0.18	1.1	0.39	0.29	128 (93)
		N.O./N.O.		0.87	0.31	0.23	0.77	0.44	0.21	

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

Series SV2000

Valve model	Type of actuation		Port size	Flow characteristics (1)						Mass (g) (2)
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			M12 waterproof connector (Cable length 300 mm)
				C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
SV2□00-□-02	2 position	Single	Rc 1/4	2.4	0.41	0.64	2.8	0.29	0.66	159 (96)
		Double								163 (100)
	3 position	Closed center		1.8	0.47	0.50	1.8	0.40	0.47	168 (105)
		Exhaust center		1.4	0.55	0.44	3.0 [1.2]	0.33 [0.48]	0.72 [0.37]	
		Pressure center		3.3 [0.84]	0.36 [0.60]	0.85 [0.28]	1.8	0.40	0.48	
	4 position dual	N.C./N.C.		2.2	0.40	0.55	2.6	0.31	0.60	163 (100)
		N.O./N.O.		2.7	0.24	0.57	2.3	0.36	0.54	

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

Series SV3000

Valve model	Type of actuation		Port size	Flow characteristics (1)						Mass (g) (2)
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			M12 waterproof connector (Cable length 300 mm)
				C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
SV3□00-□-02	2 position	Single	Rc 1/4	4.1	0.41	1.1	4.1	0.29	1.0	250 (121)
		Double								253 (124)
	3 position	Closed center		3.0	0.43	0.80	2.6	0.41	0.72	26 (132)
		Exhaust center		2.6	0.42	0.71	4.7 [1.7]	0.35 [0.48]	1.1 [0.49]	
		Pressure center		5.3 [2.3]	0.39 [0.49]	1.3 [0.65]	2.2	0.49	0.63	
SV3□00-□-03	2 position	Single	Rc 3/8	4.9	0.29	1.2	4.5	0.27	1.1	235
		Double								238
	3 position	Closed center		3.0	0.40	0.80	2.6	0.45	0.73	246
		Exhaust center		2.6	0.42	0.71	4.8 [1.7]	0.35 [0.48]	1.1 [0.34]	
		Pressure center		5.3 [2.3]	0.31 [0.51]	1.3 [0.64]	2.3	0.45	0.66	

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

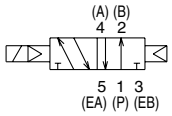
Series SV4000

Valve model	Type of actuation		Port size	Flow characteristics (1)						Mass (g) (2)
				1 → 4/2 (P → A/B)			4/2 → 5/3 (A/B → EA/EB)			M12 waterproof connector (Cable length 300 mm)
				C [dm³/(s·bar)]	b	Cv	C [dm³/(s·bar)]	b	Cv	
SV4□00-□-03	2 position	Single	Rc 3/8	7.9	0.34	2.0	9.6	0.43	2.5	505 (208)
		Double								509 (212)
	3 position	Closed center		7.5	0.33	1.8	7.3	0.30	1.7	530 (233)
		Exhaust center		7.2	0.34	1.7	13 [4.0]	0.23 [0.41]	2.8 [0.95]	
		Pressure center		12 [3.3]	0.26 [0.41]	2.8 [0.84]	6.7	0.40	1.9	
SV4□00-□-04	2 position	Single	Rc 1/2	8.0	0.48	2.2	10	0.29	2.5	484
		Double								488
	3 position	Closed center		7.6	0.32	1.8	7.3	0.32	1.8	509
		Exhaust center		7.3	0.42	2.0	13 [4.7]	0.32 [0.54]	3.6 [1.5]	
		Pressure center		12 [3.3]	0.33 [0.51]	3.3 [0.94]	7.4	0.33	1.9	

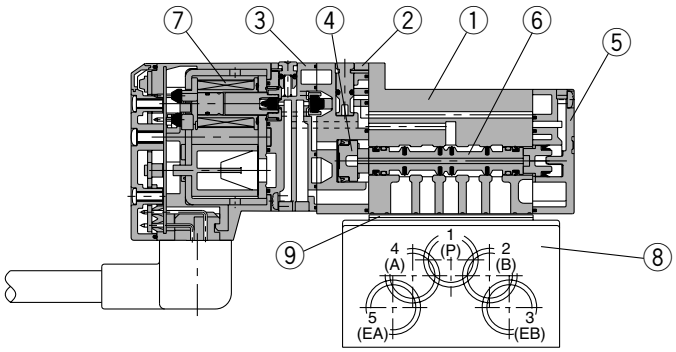
Note 1) [ ]: Denotes the normal position. Note 2) ( ): Denotes without sub-plate.

Construction: SV1000/2000/3000/4000 Single Valve/Sub-plate Type

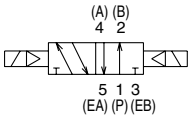
2 position single



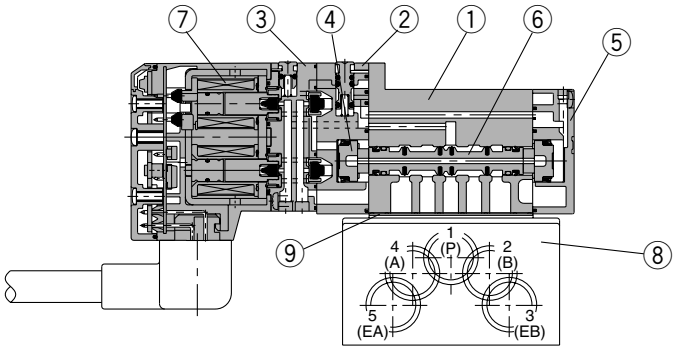
2 position single



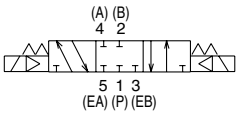
2 position double



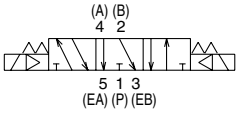
2 position double



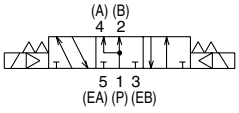
3 position closed center



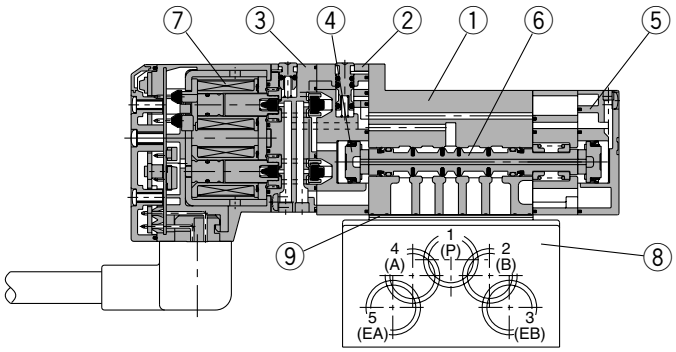
3 position exhaust center



3 position pressure center



3 position closed center/exhaust center/pressure center



Component Parts

No.	Description	Material	Note
①	**Body**	Aluminum die-casted (SV1000 is zinc die-casted)	White
②	**Adapter plate**	Resin	White
③	**Pilot body**	Resin	White
④	**Piston**	Resin	—
⑤	**End plate**	Resin	White
⑥	**Spool valve assembly**	Aluminum/HNBR	—
⑦	**Molded coil**	—	Gray

⚠Caution

Mounting screw tightening torques

M2: 0.16 N·m
M3: 0.8 N·m
M4: 1.4 N·m

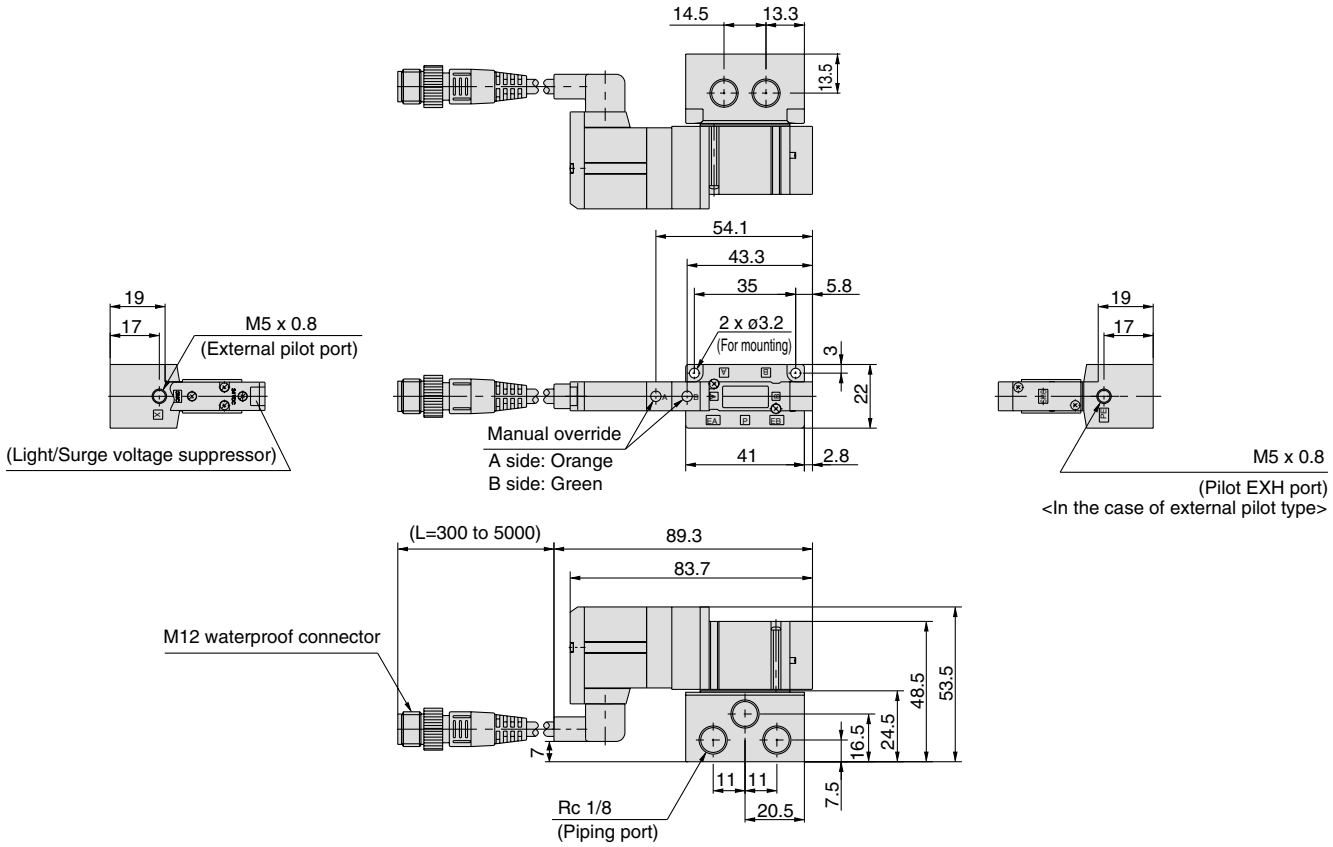
Replacement Parts

No.	Description	Part no.				Note
		SV1□00	**SV2□00**	**SV3□00**	**SV4□00**	
⑧	**Sub-plate**	SY3000-27-1□-Q	SY5000-27-1□-Q	1/4: SY7000-27-1□-Q 3/8: SY7000-27-2□-Q	3/8: SY9000-27-1□ 1/2: SY9000-27-2□	Aluminum die-casted Refer to thread types on page 440 for □.
⑨	**Gasket**	SY3000-11-25	SY5000-11-18	SY7000-11-14	SY9000-11-2	
—	**Round head combination screw**	SX3000-22-2 (M2 x 24)	SV2000-21-1 (M3 x 30)	SV3000-21-1 (M4 x 35)	SV2000-21-2 (M3 x 40)	For valve mounting (Matt nickel plated)

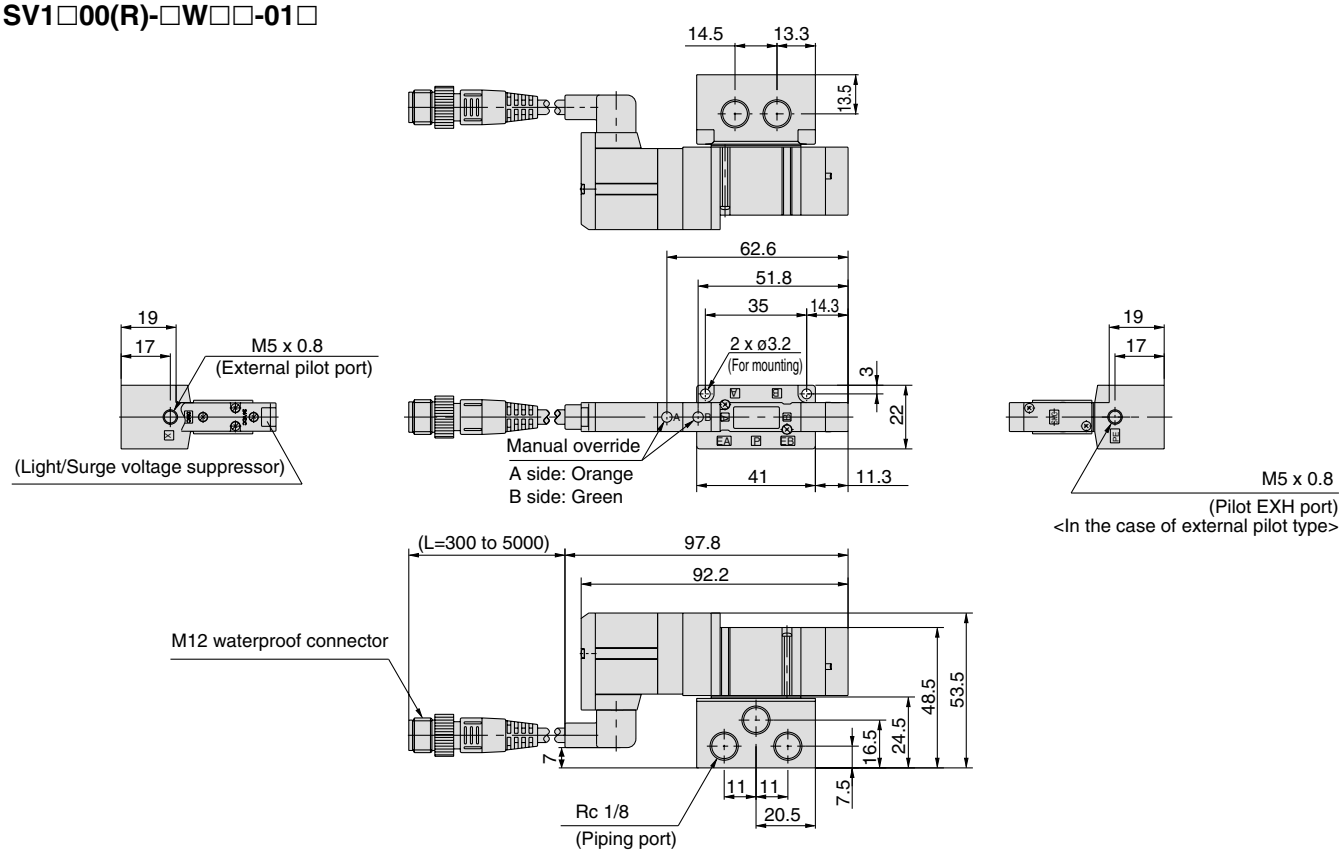
Note) Round head combination screw requires 2 pcs. per one valve for Series SV1000, SV2000, SV3000. For Series SV4000, it requires 3 pcs.

Dimensions: Series SV1000

2 position single/double, 4 position dual 3 port [M12 waterproof connector type]
SV1□00(R)-□W□□-01□

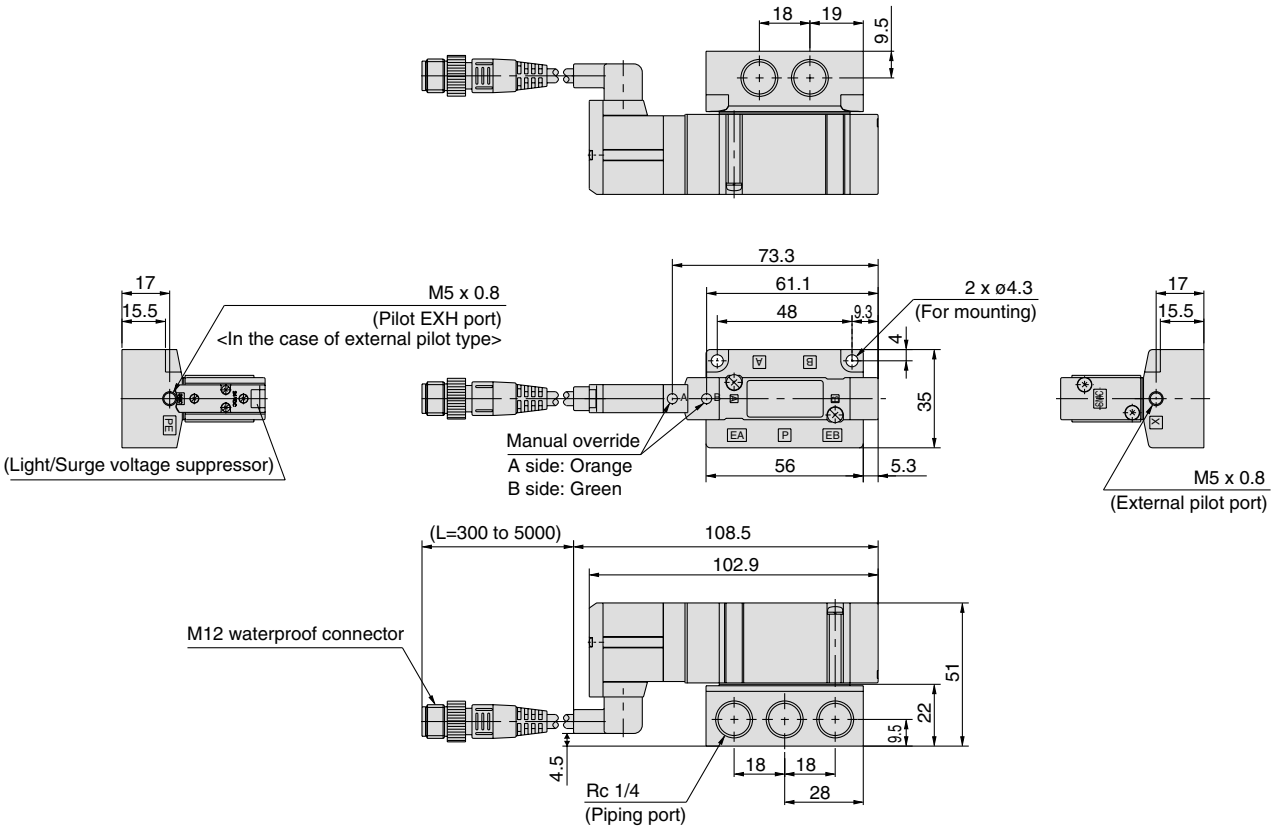


3 position closed center/exhaust center/pressure center [M12 waterproof connector type]
SV1□00(R)-□W□□-01□

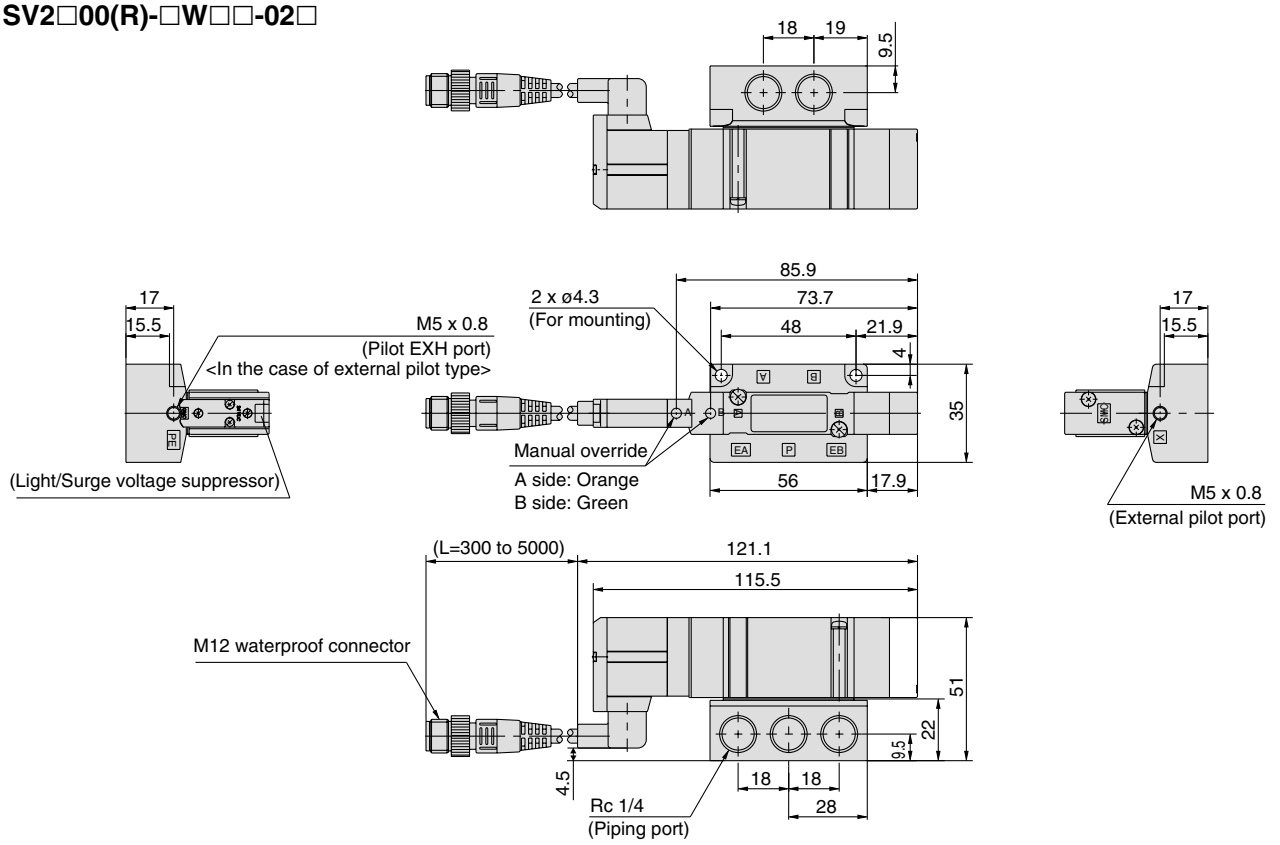


Dimensions: Series SV2000

2 position single/double, 4 position dual 3 port [M12 waterproof connector type]
SV2□00(R)-□W□□-02□

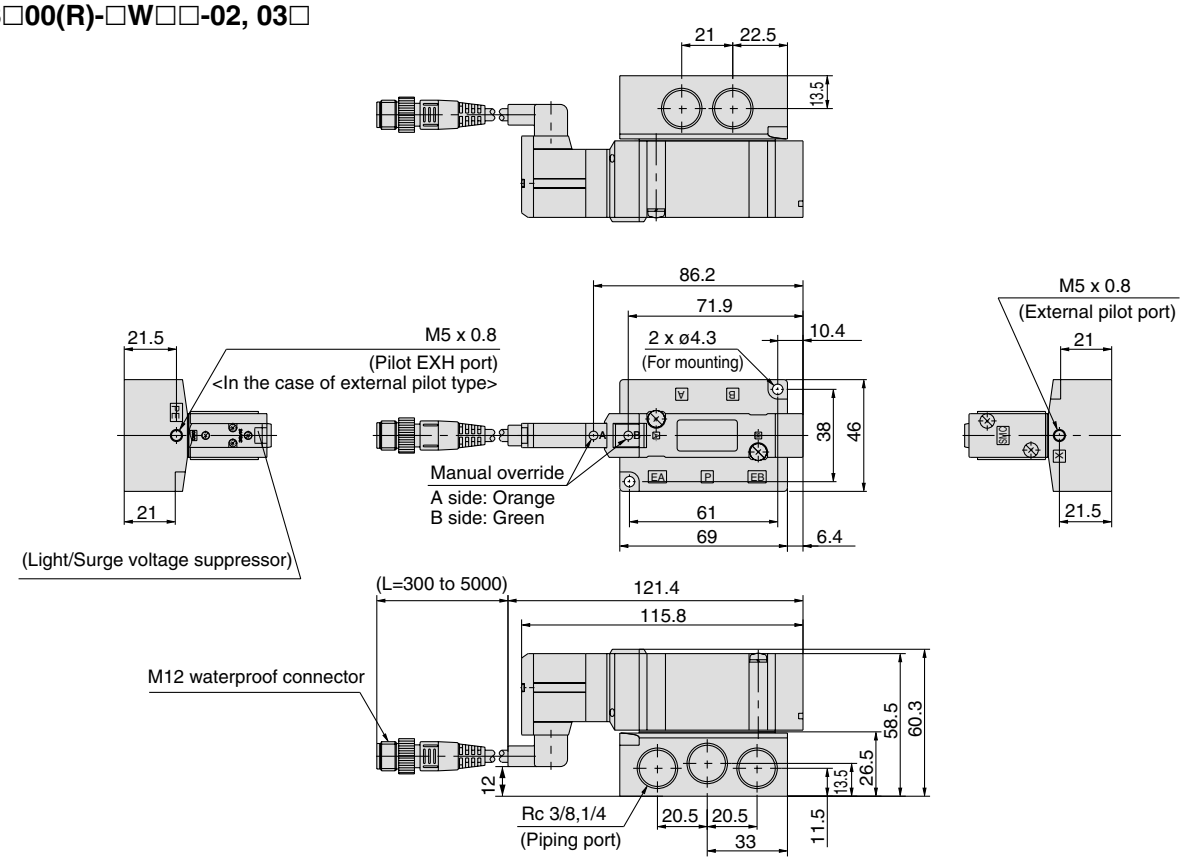


3 position closed center/exhaust center/pressure center [M12 waterproof connector type]
SV2□00(R)-□W□□-02□

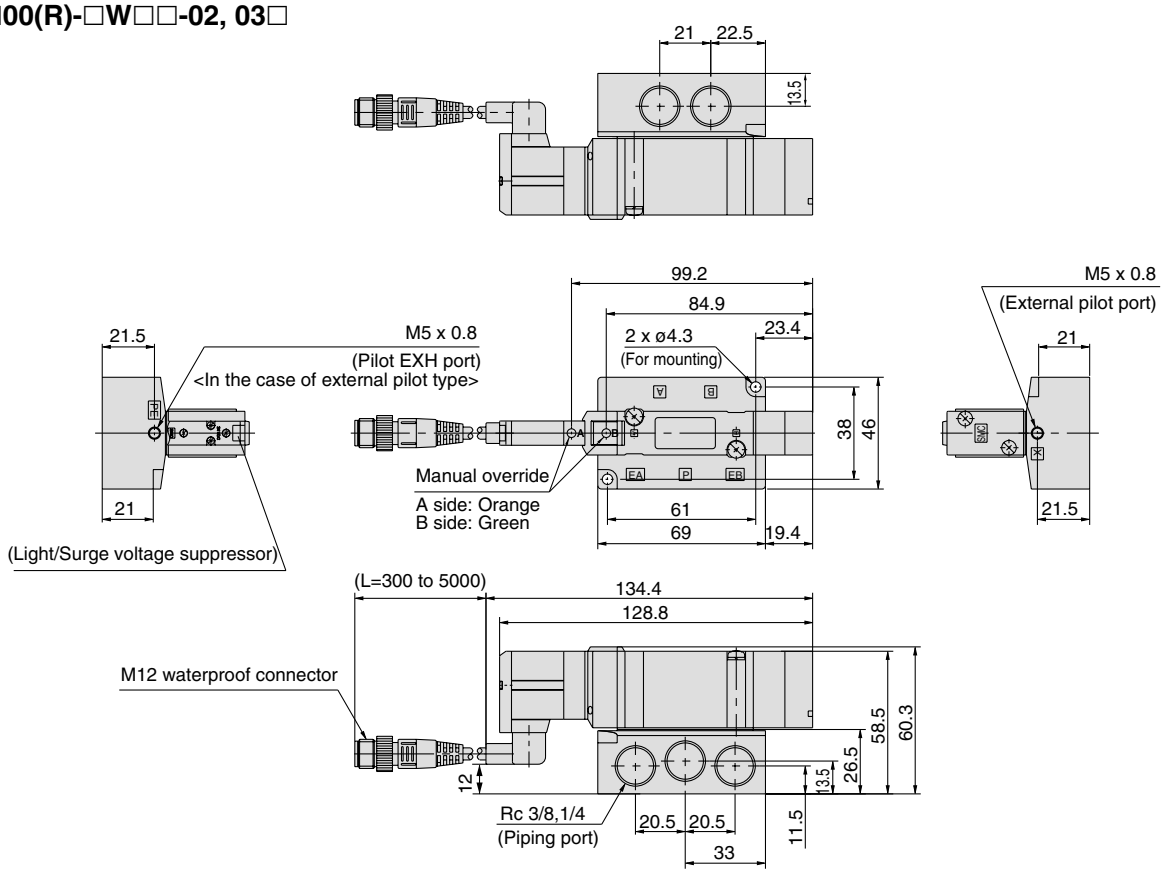


Dimensions: Series SV3000

2 position single/double [M12 waterproof connector type]
SV3□00(R)-□W□□-02, 03□

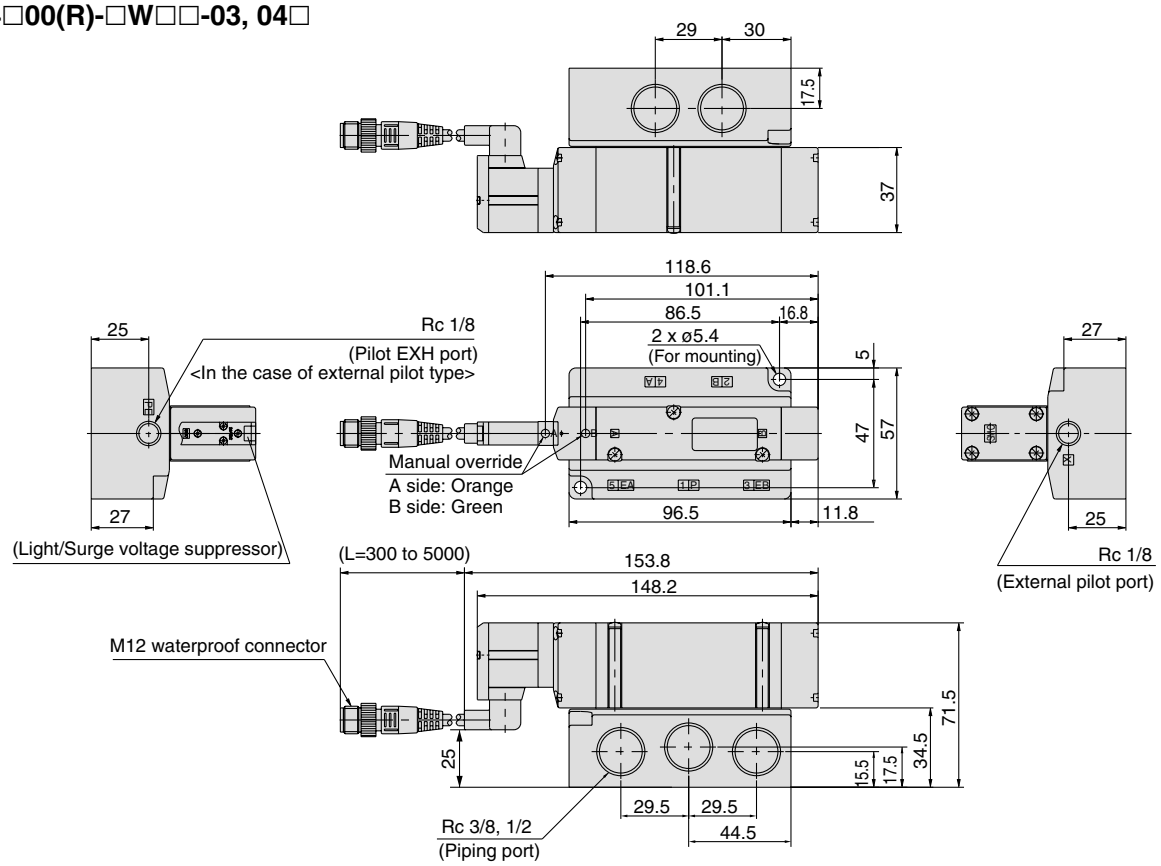


3 position closed center/exhaust center/pressure center [M12 waterproof connector type]
SV3□00(R)-□W□□-02, 03□

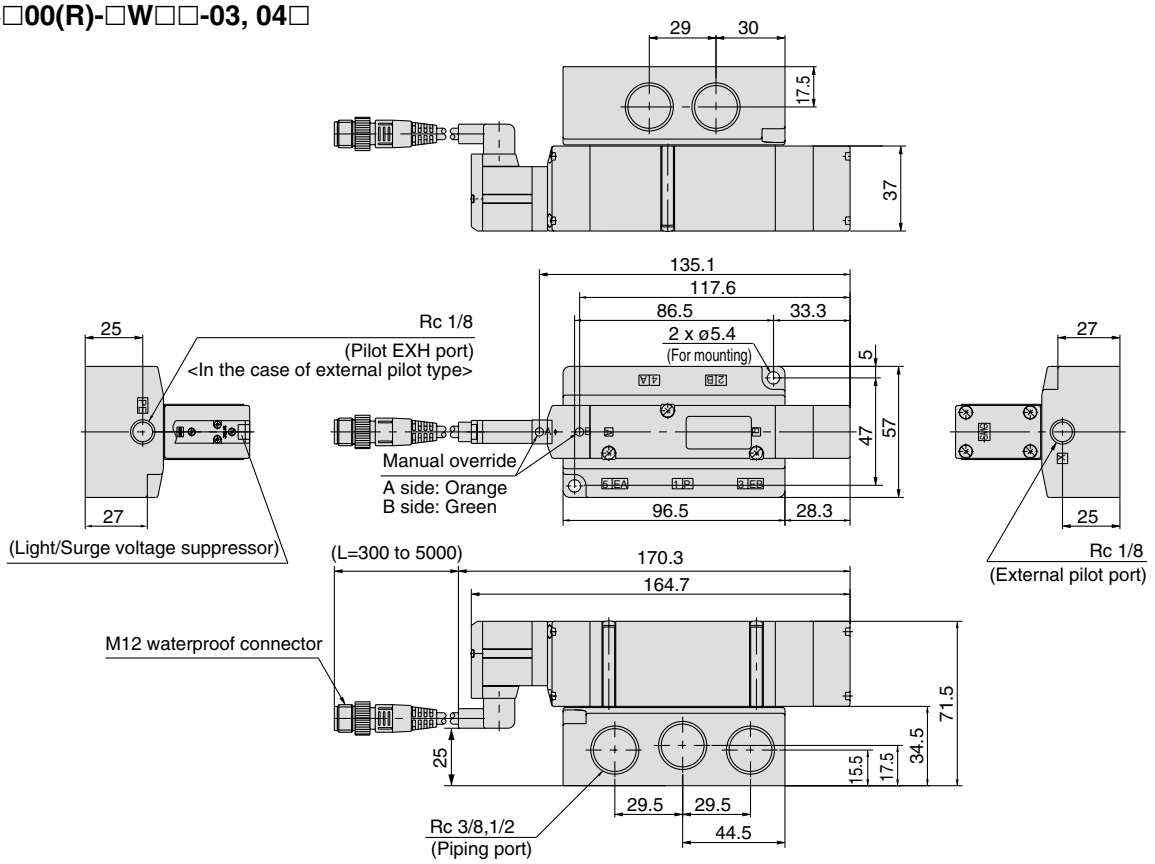


Dimensions: Series SV4000

2 position single/double [M12 waterproof connector type]
SV4□00(R)-□W□□-03, 04□



3 position closed center/exhaust center/pressure center [M12 waterproof connector type]
SV4□00(R)-□W□□-03, 04□



Series ***SV***

Made to Order Specifications

For detailed specifications, delivery and pricing, please contact SMC.

1 Main Valve Fluoro Rubber Specifications

Symbol

-X90

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

1. When using a lubricant other than the recommended turbine oil, and there is a possibility of malfunction due to swelling of the spool valve seals.
2. When ozone enters or is generated in the air supply.

Model no. SV 1 2 3 4 □ 00 – □□□□ – □ – X90

● **Entry is the same as standard products.**

Note) Because in series -X90 fluoro rubber is used for only main valve, the rubber parts of the application/usage in conditions requiring heat resistance should be avoided.

Series SV
Specific Product Precautions 1

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Environment

⚠Warning

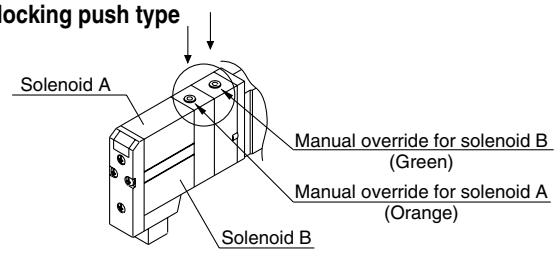
1. Do not use valves in atmospheres of corrosive gases, chemicals, salt water, water, steam, or where there is direct contact with any of these.
2. Products compliant with IP65 and IP67 enclosures (Based on IEC60529) are protected against dust and water, however, these products cannot be used in water.
3. Products compliant with IP65 and IP67 enclosures satisfy the specifications by mounting each product properly. Be sure to read the Specific Product Precautions for each product.
4. When using built-in silencer type manifold with an IP67 enclosure, keep the exhaust port of the silencer from coming in direct contact with water or other liquids. Liquid filtration through the exhaust port of the silencer can cause damage to the valve.

Manual Override Operation

⚠Warning

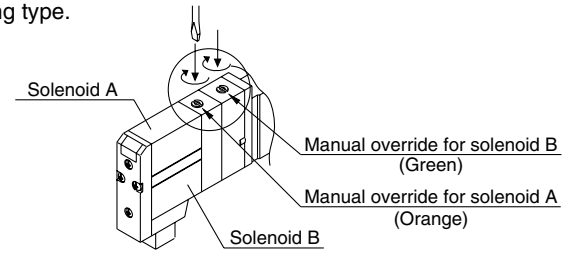
Handle carefully, as connected equipment can be actuated through manual override operation.

■ **Non-locking push type**



■ **Push-turn locking slotted type**

After pushing down, turn in the direction of the arrow.
If it is not turned, it can be operated the same way as the non-locking type.



⚠Caution

When locking the manual override with the push-turn locking slotted type, be sure to push it down before turning.
Turning without first pushing it down can cause damage to the manual override and other trouble such as air leakage, etc.

Exhaust Restriction

⚠Caution

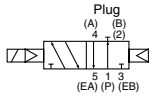
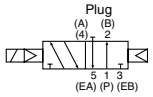
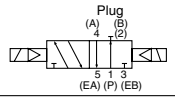
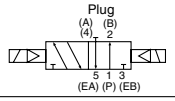
Since Series SV is a type in which the pilot valve exhaust joins the main valve exhaust inside the valve, use caution, so that the piping from the exhaust port is not restricted.

Series SV Used as a 3 Port Valve

⚠Caution

In the case of using a 5 port valve (as a 3 port valve)

Series SV can be used as normally closed (N.C.) or normally open (N.O.) 3 port valves by closing one of the cylinder ports (A or B) with a plug. However, they should be used with the exhaust ports kept open. They are convenient at times when a double solenoid type 3 port valve is required.

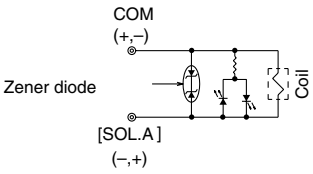
Plug position		B port	A port
Actuation		N.C.	N.O.
Number of solenoids	Single		
	Double		

Light/Surge Voltage Suppressor

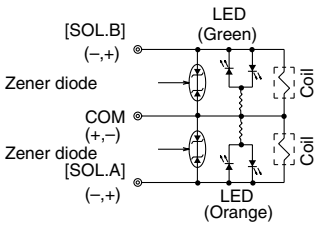
⚠Caution

Solenoid valves have no polarity.
Light/Surge voltage suppressor

Single solenoid

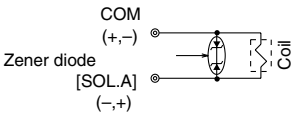


Double solenoid, 3 position type

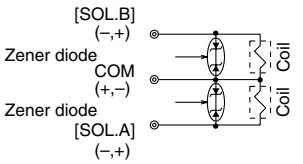


Surge voltage suppressor

Single solenoid



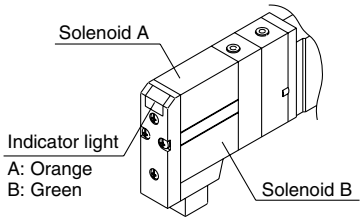
Double solenoid, 3 position type



Light Indication

⚠Caution

When equipped with indicator light and surge voltage suppressor, the light window turns orange when solenoid A is energized, and it turns green when solenoid B is energized.



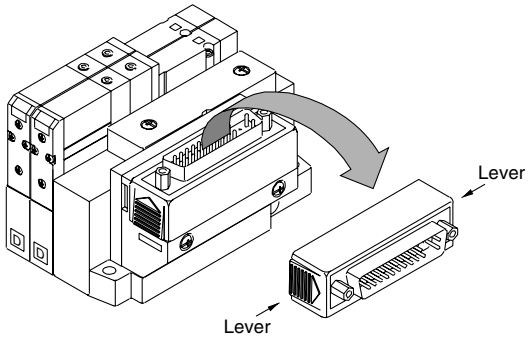
Series SV
Specific Product Precautions 2

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Connector Entry Directions

⚠Caution

Connector entry directions for D-sub connectors and flat ribbon cables can be changed. To change the connector's entry direction, press the levers on both sides of the connector, take it off, and change the direction as shown in the drawing. Since lead wire assemblies are attached to the connector, excessive pulling or twisting can cause broken wires or other trouble. Also, take precautions so that lead wires are not caught and pinched when installing the connector.

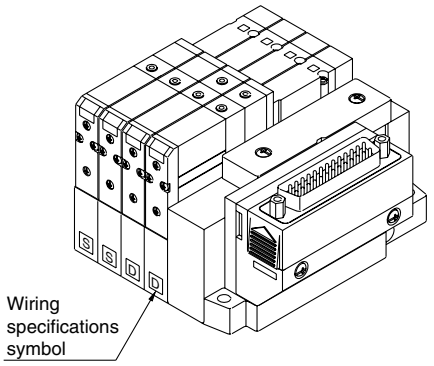


How to Order Manifold

⚠Caution

The letter "S" or "D" is indicated on manifold blocks for series SV as shown below. This indication refers to the type of substrate assembly (single wiring or double wiring) inside the manifold blocks.

When the manifold specification sheet does not include a wiring specification, all stations will be double wiring specification (D). In this case, single and double solenoid valves can be mounted in any position, but when a single valve is used, there will be an unused control signal. To avoid this, indicate positions of manifold blocks for single wiring specification (S) and double wiring specification (D) on a manifold specification sheet. (Note that double, 3 or 4 position valves cannot be used for manifolds blocks with single wiring specification (S).)



Substrate Assemblies inside Manifolds

⚠Caution

Substrate assemblies inside of manifolds cannot be taken apart. Attempting to do so may damage parts.

One-touch Fittings

⚠Caution

1. Tube attachment/detachment for One-touch fittings

1) Attaching of tube

(1) Take a tube having no flaws on its periphery and cut it off at a right angle. When cutting the tube, use tube cutters TK-1, 2 or 3. Do not use pinchers, nippers or scissors, etc. If cutting is done with tools other than tube cutters, there is the danger that the tube may be cut diagonally or become flattened, etc., making a secure installation impossible, and causing problems such as the tube pulling out after installation or air leakage. Also allow some extra length in the tube.

(2) Grasp the tube and push it in slowly, inserting it securely all the way into the fitting.

(3) After inserting the tube, pull on it lightly to confirm that it will not come out. If it is not installed securely all the way into the fitting, this can cause problems such as air leakage or the tube pulling out.

2) Detaching of tube

(1) Push in the release button sufficiently, and push the collar evenly at the same time.

(2) Pull out the tube while holding down the release button so that it does not come out. If the release button is not pressed down sufficiently, there will be increased bite on the tube and it will become more difficult to pull it out.

(3) When the removed tube is to be used again, cut off the portion which has been chewed before reusing it. If the chewed portion of the tube is used as is, this can cause trouble such as air leakage or difficulty in removing the tube.

Other Tubing Brands

⚠Caution

1. When using tube other than SMC brand, confirm that the following specifications are satisfied with respect to the outside diameter tolerance of the tube.

1) Nylon tubing within ±0.1 mm
2) Soft nylon tubing within ±0.1 mm
3) Polyurethane tubing within +0.15 mm
within –0.2 mm

Do not use tubing which does not meet these outside diameter tolerances. It may not be possible to connect them, or they may cause other trouble, such as air leakage or the tube pulling out after connection.

Back Pressure Check Valve Built-in Type

⚠Caution

Valves with built-in back pressure check valve is to protect the back pressure inside a valve. For this reason, use caution the valves with external pilot specification cannot be pressurized from exhaust port [3/5(E)]. As compared with the types which do not integrate the back pressure check valve, C value of the flow characteristics goes down. For details, please contact SMC.

Specific Product Precautions 3

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Interface Regulator

⚠Caution

Specifications

Interface regulator		SV1□00-□-□	SV2000-□-□	SV3000-□-□	SV4000-□-□
Applicable model		SV1000	SV2000	SV3000	SV4000
Regulating port		P, A, B			
Set pressure range		0.1 to 0.7 MPa			
Maximum operating pressure		0.7 MPa			
Fluid		Air			
Ambient and fluid temp.		Maximum at 50°C			
Mass	**With pressure gauge**	38.4 g (43.4 g)	86.5 g	103.8 g	178.2 g
	Without pressure gauge	32 g (37 g)	80.3 g	97.6 g	171.8 g

Note 1) Apply pressure from P port in the base for interface regulator.
Note 2) P port pressure regulation is only available for closed center and pressure center.
Note 3) Gasket and mounting screws are included in the weight.
Note 4) ( ): Denotes the values of SV1300.

How to Calculate the Flow Rate

For obtaining the flow rate, refer to front matters 44 to 47

Series SV
Specific Product Precautions 4

Be sure to read before handling.
Refer to front matters 58 and 59 for Safety Instructions and pages 3 to 7 for 3/4/5 Port Solenoid Valve Precautions.

Serial Wiring EX500/EX250/EX120 Precautions

⚠ Warning

1. **These products are intended for use in general factory automation equipment.**
   Avoid using these products in machinery/equipment which affects human safety, and in cases where malfunction or failure can result in extensive damage.
2. **Do not use in an explosive atmosphere, environment with inflammable gases, or corrosive atmosphere.**
   This can cause injury or fire, etc.
3. **Work such as transporting, installing, piping, wiring, operation, control and maintenance should be performed by personnel with specialized knowledge.**
   There is a danger of electrocution, injury or fire, etc.
4. **Install an external emergency stop circuit that can promptly stop operation and shut off the power supply.**
5. **Do not remodel these products, as there is a danger of injury and damage.**
6. **Do not wipe the product with chemicals, etc.**

⚠ Caution

1. **Read the instruction manual carefully, strictly observe the precautions and operate within the range of the specifications.**
2. **Do not drop these products or submit them to strong impacts. This can cause damage, failure or malfunction, etc.**
3. **In locations with poor electrical conditions, take steps to ensure a steady flow of the rated power supply. Use of a voltage outside of the specifications can cause malfunction, damage to the unit, electrocution or fire, etc.**
4. **Do not touch connector terminals or internal substrates when current is being supplied. There is a danger of malfunction, damage to the unit or electrocution if connector terminals or internal substrates are touched when current is being supplied.**
   Be sure that the power supply is OFF when adding or removing manifold valves or input blocks, etc., or when connecting or disconnecting connectors.
5. **Operate at an ambient temperature that is within the specifications. Even when the ambient temperature range is within the specifications, do not use in locations where there are rapid temperature changes.**
6. **Keep wire scraps and other extraneous material from getting inside these products. This can cause fire, failure or malfunction, etc.**
7. **Give consideration to the operating environment depending on the type of enclosure being used.**
   To achieve IP65 or IP67 protection, provide appropriate wiring between all units using electrical wiring cables, communication connectors and cables with M12 connectors. Also, provide waterproof caps when there are unused ports, and perform proper mounting of input units, input bolcks, SI units and manifold valves, etc. Provide a cover or other protection for applications in which there is constant exposure to water.
8. **Obey the proper tightening torque.**
   There is a possibility of damaging threads if tightening exceeds the tightening torque range.

⚠ Caution

9. **Provide adequate protection when operating in locations such as the following:**
   • Where noise is generated by static electricity, etc.
   • Where there is a strong electric field
   • Where there is a danger of exposure to radiation
   • When in close proximity to power supply lines
10. **When these products are installed in equipment, provide adequate protection against noise by using noise filters, etc.**
11. **Since these products are components that are used after installation in other equipment, the customer should confirm conformity to EMC directives for the finished product.**
12. **Do not remove the name plate.**
13. **Perform periodic inspections and confirm normal operation. It may otherwise be impossible to guarantee safety due to unexpected malfunction or erroneous operation.**

Power Supply Safety Instructions

⚠ Caution

1. **Operation is possible with a single power supply or a separate power supply. However, be sure to provide two wiring systems (one for solenoid valves, and one for input and control units).**
2. **Use the following UL approved products for DC power supply combinations.**
   1) Controlled voltage current circuit conforming to UL508
   Circuit uses the secondary coil of an isolated transformer as the power supply, satisfying the following conditions.
   • Max. voltage (with no load): 30 Vrms (42.4 V peak) or less
   • Max. current: (1) 8 A or less (including shorts), and
   (2) When controlled by a circuit protector (fuse, etc.) with the following rating

No-load voltage (V peak)	Max. current rating
0 to 20 [V]	5.0
Over 20 [V] to 30 [V]	$\frac{100}{\text{Peak voltage value}}$

   2) A circuit (class 2 circuit) with maximum 30 Vrms (42.4 V peak) or less, and a power supply consisting of a class 2 power supply unit confirming to UL1310, or a class 2 transformer confirming to UL1585

Safety Instructions for Cable

⚠ Caution

1. **Be careful of mis-wiring. This can cause malfunction, damage and fire in the unit.**
2. **To prevent noise and surge in signal lines, keep all wiring separate from power lines and high voltage lines. Otherwise, this can cause malfunction.**
3. **Check wiring insulation, as defective insulation can cause damage to the unit due to excessive voltage or current.**
4. **Do not bend or pull cables repeatedly, and do not place heavy objects on them or allow them to be pinched. This can cause broken lines.**

Fieldbus System
(For Input/Output)

New

RoHS

Applicable Fieldbus protocols

CC-Link V2 | DeviceNet | PROFIBUS | EtherNet/IP | EtherCAT

New unit type added
SI Unit (EtherC AT)

Reduction in wiring time with SPEEDCON (Phoenix Contact). Just insert and make 1/2 rotation!

IP67
Note) Some products are IP40.

Self diagnosis function

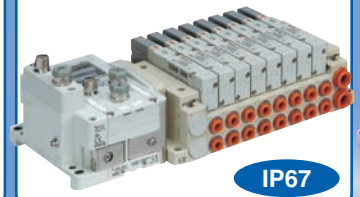
It is possible to asce rtain the maintenance period and identify the parts that require maintenance, by an input/output open circuit detecting function and an input/output signal ON/OFF counter function. Also, the monitoring of input and output signals and the setting of parameters can be performed with a Handheld Terminal.

Max. 9 units Note) Can be connected in any order.

The unit to connect input device such as an auto switch, pressure switch and flow switch, and the unit to connect output device such as a solenoid valve, relay and indicator light can be connected in any order.

Note) Except SI Unit

Manifold Solenoid Valves

Series SY3000/5000	Series SV1000/2000/3000	Series S0700	Series VQC1000/2000/4000
			
IP67	IP67	IP40	IP67

Note) The SY3000/5000, S0700, and VQC1000/2000/4000 are not UL-compatible.

Series EX600

SMC

CAT.NA02-24C

Fieldbus System

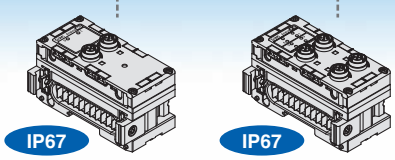
Analog Unit

M12 connector (5 pins)

Input Unit — 2CH

Output Unit — 2CH

Input/Output Unit — 2CH/2CH



Input device


Pressure sensor

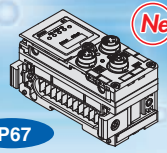

Flow sensor

Output device


Electro-pneumatic regulator, etc.

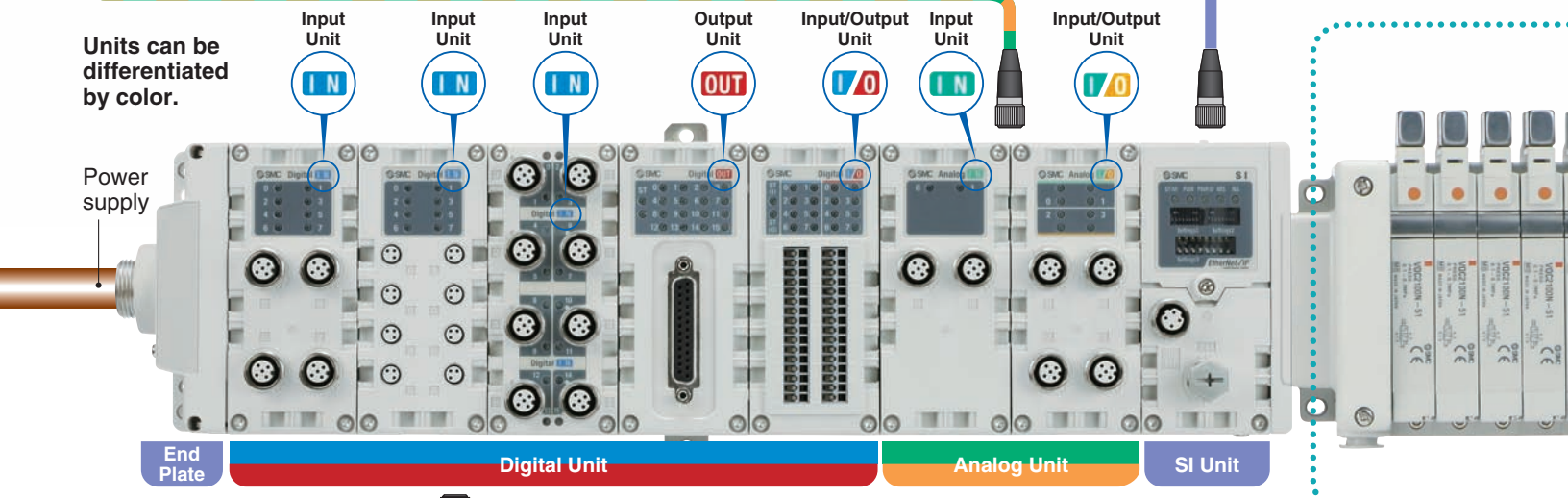
SI Unit

EtherCAT added to compatible communication networks



Handheld Terminal
Parameter setting and I/O monitor tool

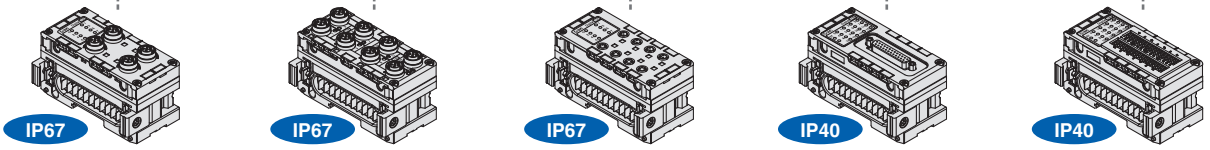
Units can be differentiated by color.



For detailed specifications of connectable device, refer to the catalog of each device and select the right device for your application. If anything is unclear, contact us.

Digital Unit

	M12 connector (5 pins)		M8 connector (3 pins)	D-sub connector	Spring type terminal block
Input Unit	8 inputs	16 inputs	8 inputs	16 inputs	16 inputs
Output Unit	8 outputs			16 outputs	16 outputs
Input/Output Unit				8 inputs/8 outputs	8 inputs/8 outputs



Input device

Pressure switch
Flow switch
Auto switch

Others
Proximate sensor
Photoelectric switch
Limit switch

Output device

Solenoid valve
Others
Indicator light
Relay
Buzzer

SMC

Parameters

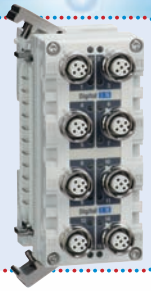
A **parameter** is a set value to change the function and operation of the product through a PLC or Handheld Terminal. The desired operation for the customer's application is realized by the set values. There are some parameters that can only be set using the Handheld Terminal of this series.

SI Unit

Unit to connect various Fieldbus with the EX600 system

Digital Unit

Unit to input or output digital (switch) signals



Analog Unit

Unit to input or output analog (voltage/current) signals

End Plate

Unit to supply power to the EX600 system

Handheld Terminal

Parameter setting and I/O monitor tool

Accessories

Options including a power supply cable, etc. for the EX600 series

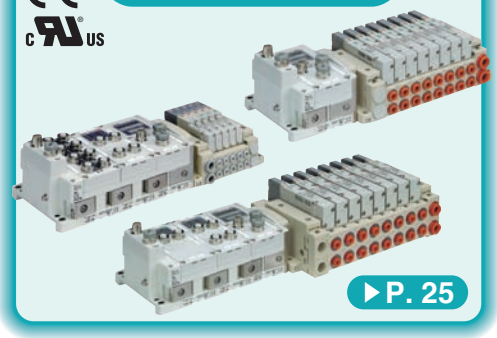
▶P. 13

Manifold solenoid valves

Series SY (IP67)

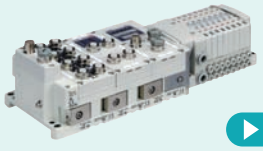
▶P. 17

Series SV (IP67)



▶P. 25

Series S0700 (IP40)



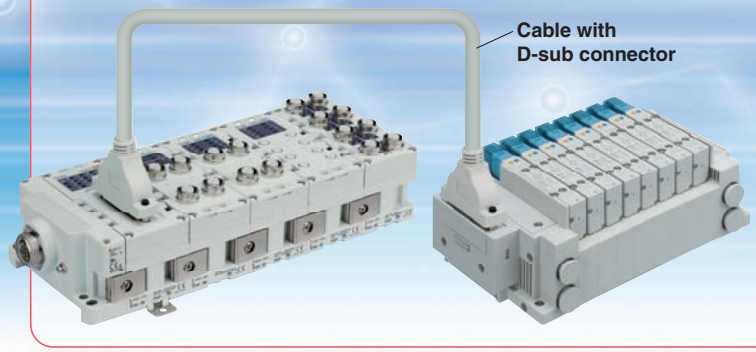
▶P. 33

Series VQC (IP67)

▶P. 37

Connection using D-sub connector

IP40



These units are capable of connection using a D-sub connector. There are three types of units, for digital input, output, and input/output. The Digital Output Unit can be connected with an SMC manifold solenoid valve F kit (D-sub connector).

Manifold solenoid valve can be connected using cable with D-sub connector.

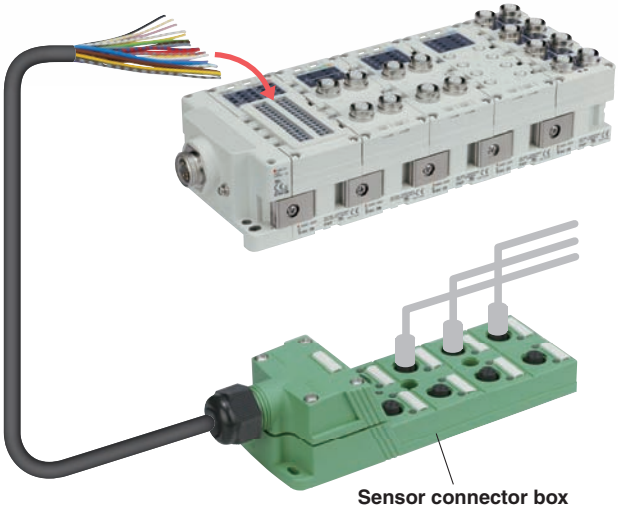
- Series **SY**
- Series **S0700**
- Series **SJ**
- Series **SQ**
- Series **SV**
- Series **VQC**
- Series **VQ**

∗ Please limit the number of valve connections to 16 stations for single and 8 stations for double. Refer to the catalog for each product for pin assignment details.

Connection using spring type terminal block

IP40

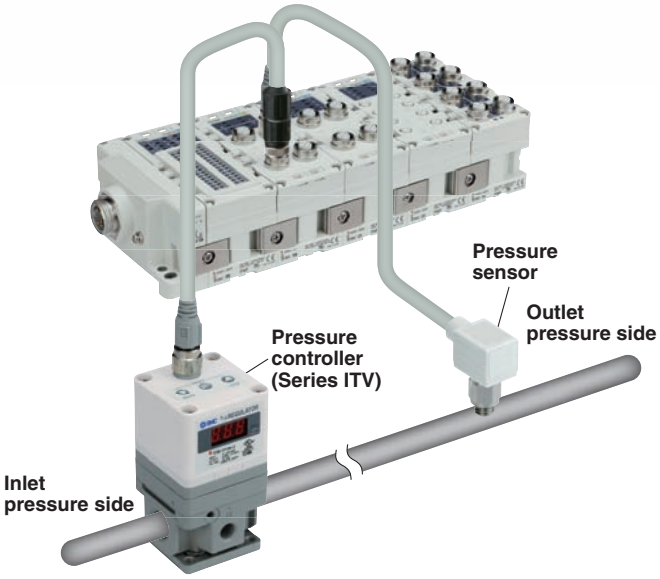
These terminal block units are compatible with individual wiring configurations. There are three types of units, for digital input, output, and input/output. Wiring connection to a sensor connector box, etc., can be carried out easily using only a flat head screwdriver.



Analog Input/Output Unit

IP67

These units input or output analog (voltage/current) signals. A single unit performs both input and output, allowing feedback control where analog signals are received from a pressure sensor and sent to a pressure controller. Installation space is minimized as well.



Self Diagnosis Function

In combination with the Handheld Terminal, the following two functions are available.

Short/Open circuit detecting function

It is possible to detect short or open circuit of input device such as an electronic 2-wire switch and 3-wire switch and output device such as a solenoid valve. The location of the error can be identified by the indicator light and the network.

Green ON Normal

Red ON Short circuit

Red flashing Open circuit

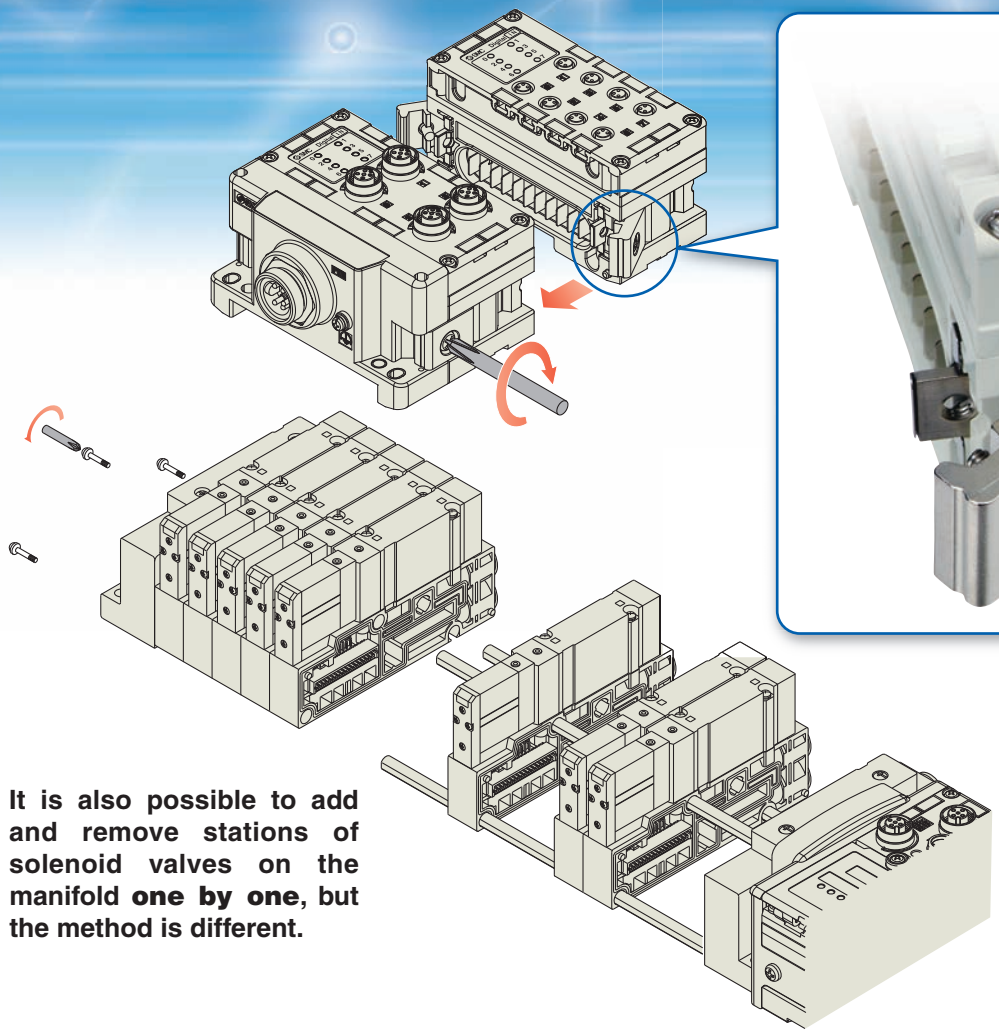
Counter function

It is possible to ascertain the maintenance period and identify the parts that require maintenance by an input and output signal ON/OFF counter function. When the counter function is enabled and a certain number of contact operations is reached, the display of counter will flash in red.

Note) The counter function is not provided with the Analog Unit.

Individual units can be connected and removed one by one.

A unique clamping method is adopted to prevent screws from falling out.
It is easy to separate the unit just by loosening bracket screws.



It is also possible to add and remove stations of solenoid valves on the manifold one by one, but the method is different.

Handheld Terminal

Forced input and output function

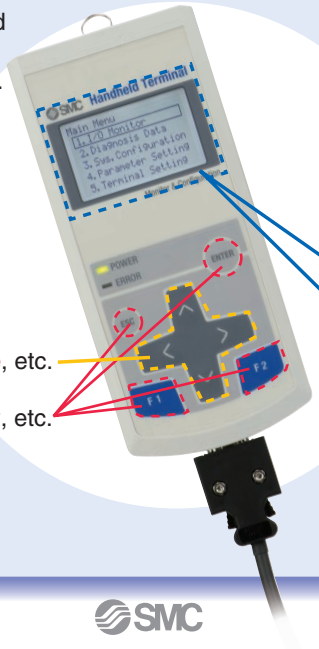
The input and output signals are controlled forcedly without a PLC. The startup time after facility introduction can be shortened.

Password setting function

Simple operation

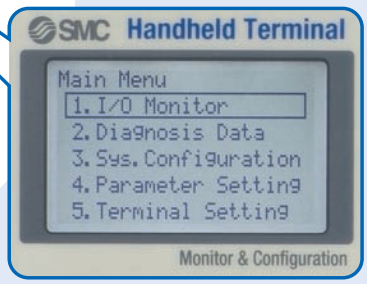
Cursor button: **Mode and setting change**, etc.

Function key: **Value and command entry**, etc.



Can be used for the adjustment of internal parameters and the monitoring of input and output signal status.

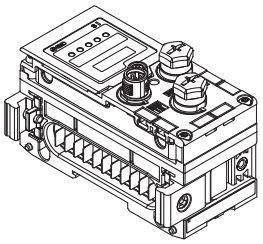
Parameters: **Analog data format**
Analog measurement range
Input filter selection
Counter function
Open circuit detection function, etc.



Fieldbus System
Series EX600

How to Order

SI Unit



EX600-S□□□

Protocol

Symbol	Description
PR	PROFIBUS DP
DN	DeviceNet™
MJ	CC-Link
EN	EtherNet/IP™ Note 1)
EC	EtherCAT Note 1)

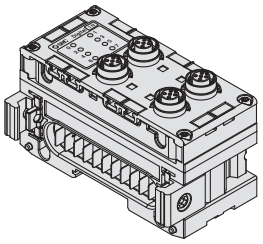
Version

Symbol	Description
Nil	When MJ or EN or EC is selected
A	When PR or DN is selected

Output type

Symbol	Description
1	PNP (Negative common)
2	NPN (Positive common)

Digital Input Unit



EX600-DX□□

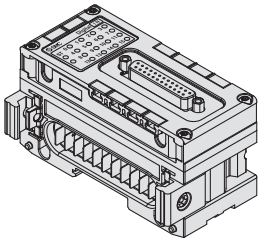
Input type

Symbol	Description
P	PNP
N	NPN

Number of inputs, open circuit detection, and connector

Symbol	Number of inputs	Open circuit detection	Connector
B	8 inputs	No	M12 connector (5 pins) 4 pcs.
C	8 inputs	No	M8 connector (3 pins) 8 pcs.
C1	8 inputs	Yes	M8 connector (3 pins) 8 pcs.
D	16 inputs	No	M12 connector (5 pins) 8 pcs.
E	16 inputs	No	D-sub connector (25 pins) Note1) 2)
F	16 inputs	No	Spring type terminal block (32 pins) Note1) 2)

Digital Output Unit



EX600-DY□□

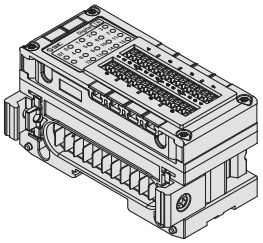
Output type

Symbol	Description
P	PNP
N	NPN

Number of outputs and connector

Symbol	Number of outputs	Connector
B	8 outputs	M12 connector (5 pins) 4 pcs.
E	16 outputs	D-sub connector (25 pins) Note1) 2)
F	16 outputs	Spring type terminal block (32 pins) Note1) 2)

Digital Input/Output Unit



EX600-DM□□

Input/Output type

Symbol	Description
P	PNP
N	NPN

Number of inputs/outputs and connector

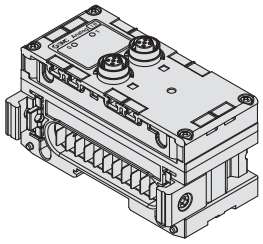
Symbol	Number of inputs	Number of outputs	Connector
E	8 inputs	8 outputs	D-sub connector (25 pins) Note1) 2)
F	8 inputs	8 outputs	Spring type terminal block (32 pins) Note1) 2)

Note 1) Cannot be communicated with the EX600-HT1-□. Refer to page 15 for a table of mountable units.
Note 2) Cannot be connected with the EX600-SPR1, EX600-SPR2, EX600-SDN1, or EX600-SDN2. Refer to page 15 for a table of mountable units.

How rder

Analog Input Unit

EX600-AX□

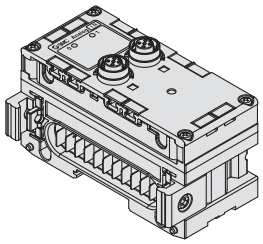


Analog input ● **Number of input channels and connector**

Symbol	Number of input channels	Connector
A	2 channels	M12 connector (5 pins) 2 pcs.

Analog Output Unit

EX600-AY□

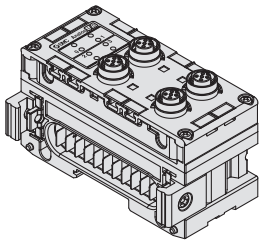


Analog output ● **Number of output channels and connector**

Symbol	Number of output channels	Connector
A	2 channels	M12 connector (5 pins) 2 pcs. Note1) 2)

Analog Input/Output Unit

EX600-AM□

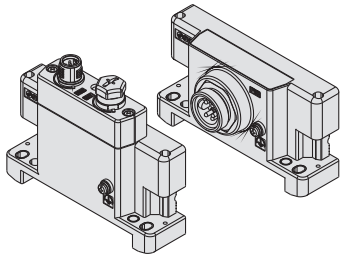


Analog input/output ● **Number of input/output channels and connector**

Symbol	Number of input channels	Number of output channels	Connector
B	2 channels	2 channels	M12 connector (5 pins) 4 pcs. Note1) 2)

End Plate

EX600-ED□-□



Power connector ●

Symbol	Connector
2	M12 (5 pins)
3	7/8 inch (5 pins)

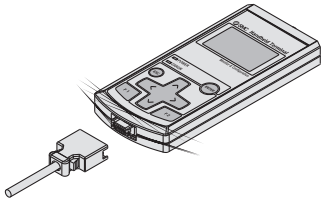
● **Mounting method**

Symbol	Description
Nil	Without DIN rail mounting bracket
2	With DIN rail mounting bracket
3	With DIN rail mounting bracket (Specialized for Series SY)

Handheld Terminal

EX600-HT1A-□

Handheld Terminals are not yet UL-compatible.



Version ● **Cable length**

Symbol	Description
Nil	No cable
1	1 m
3	3 m

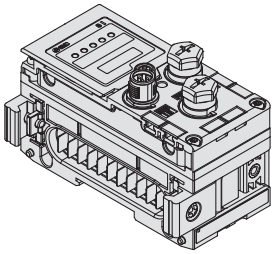
Note 1) Cannot be communicated with the EX600-HT1-□. Refer to page 15 for a table of mountable units.
Note 2) Cannot be connected with the EX600-SPR1, EX600-SPR2, EX600-SDN1, or EX600-SDN2. Refer to page 15 for a table of mountable units.

SI Unit Specifications

All Units Common Specifications

Environmental resistance	**Operating temperature range**	14 to 122°F
	Storage temperature range	–4 to 140°F
	Operating humidity range	35 to 85% RH (No dew condensation)
	Withstand voltage Note)	500 VAC for 1 minute between external terminals and FE
	Insulation resistance Note)	500 VDC, 10 MΩ or more between external terminals and FE

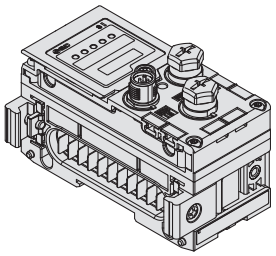
Note) Except Handheld Terminals



EX600-SPR□A

SI Unit (EX600-SPR□A)

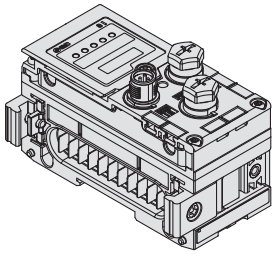
Model		EX600-SPR1A	EX600-SPR2A
Communication	**Protocol**	PROFIBUS DP (DP-V0)	
	Device type	PROFIBUS DP Slave	
	Communication speed	9.6/19.2/45.45/93.75/187.5/500 kbps 1.5/3/6/12 Mbps	
	Configuration file	GSD file	
	I/O occupation area (Inputs/Outputs)	Max. (512 inputs/512 outputs)	
Terminating resistor		Internally implemented	
Internal current consumption (Power supply for Control/Input)		80 mA or less	
Output	**Output type**	PNP (Negative common)	NPN (Positive common)
	Number of outputs	32 outputs (8/16/24/32 outputs selectable)	
	Load	Solenoid valve with surge voltage suppressor 24 VDC, 1.5 W or less (SMC)	
	Power supply	24 VDC, 2 A	
	Fail safe	HOLD/CLEAR/Forced power ON	
	Protection	Short-circuit protection	
Enclosure		IP67 (Manifold assembly)	
Standards		CE marking, UL (CSA), RoHS recognition	
Weight		0.6 lbs (300 g)	



EX600-SDN□A

SI Unit (EX600-SDN□A)

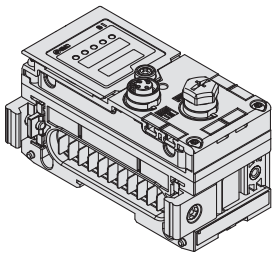
Model		EX600-SDN1A	EX600-SDN2A
Communication	**Protocol**	DeviceNet™: Volume 1 (Edition 2.1), Volume 3 (Edition 1.1)	
	Device type	Group 2 Only Server	
	Communication speed	125/250/500 kbps	
	Configuration file	EDS file	
	I/O occupation area (Inputs/Outputs)	Max. (512 inputs/512 outputs)	
	Applicable messages	Duplicate MAC ID Check Message Group 2 Only Unconnected Explicit Message Explicit Message (Group 2) Poll I/O Message (Predefined M/S Connection set)	
DeviceNet™ power supply		11 to 25 VDC	
Internal current consumption (Power supply for Control/Input)		55 mA or less	
Output	**Output type**	PNP (Negative common)	NPN (Positive common)
	Number of outputs	32 outputs (8/16/24/32 outputs selectable)	
	Load	Solenoid valve with surge voltage suppressor 24 VDC, 1.5 W or less (SMC)	
	Power supply	24 VDC, 2 A	
	Fail safe	HOLD/CLEAR/Forced power ON	
	Protection	Short-circuit protection	
Enclosure		IP67 (Manifold assembly)	
Standards		CE marking, UL (CSA), RoHS recognition	
Weight		0.6 lbs (300 g)	



EX600-SMJ□

SI Unit (EX600-SMJ□)

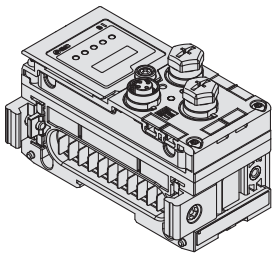
Model		EX600-SMJ1	EX600-SMJ2
Communication	Protocol	CC-Link (Ver. 1.10, Ver. 2.00)	
	Station type	Remote Device Station	
	Communication speed	156/625 kbps 2.5/5/10 Mbps	
	I/O occupation area (Inputs/Outputs)	Max. (512 inputs/512 outputs) 1/2/3/4 stations occupied	
Internal current consumption (Power supply for Control/Input)		75 mA or less	
Output	Output type	PNP (Negative common)	NPN (Positive common)
	Number of outputs	32 outputs (8/16/24/32 outputs selectable)	
	Load	Solenoid valve with surge voltage suppressor 24 VDC, 1.5 W or less (SMC)	
	Power supply	24 VDC, 2 A	
	Fail safe	HOLD/CLEAR/Forced power ON	
	Protection	Short-circuit protection	
Enclosure		IP67 (Manifold assembly)	
Standards		CE marking, UL (CSA), RoHS recognition	
Weight		0.6 lbs (300 g)	



EX600-SEN□

SI Unit (EX600-SEN□)

Model		EX600-SEN1	EX600-SEN2
Communication	Protocol	EtherNet/IP™ (Conformance version: Composite 6)	
	Media	100 BASE-TX	
	Communication speed	10/100 Mbps (Automatic/Manual)	
	Communication method	Full duplex/Half duplex (Automatic/Manual)	
	Configuration file	EDS file	
	I/O occupation area (Inputs/Outputs)	Max. (512 inputs/512 outputs)	
	IP address setting range	SI Unit switch settings: 192.168.0 or 1.1 to 254 Through DHCP server: Optional address	
	Device information	Vendor ID: 7 (SMC Corporation) Product type: 12 (Communication Adapter) Product code: 126	
Internal current consumption (Power supply for Control/Input)		120 mA or less	
Output	Output type	PNP (Negative common)	NPN (Positive common)
	Number of outputs	32 outputs (8/16/24/32 outputs selectable)	
	Load	Solenoid valve with surge voltage suppressor 24 VDC, 1.5 W or less (SMC)	
	Power supply	24 VDC, 2 A	
	Fail safe	HOLD/CLEAR/Forced power ON	
	Protection	Short-circuit protection	
Enclosure		IP67 (Manifold assembly)	
Standards		CE marking, UL (CSA), RoHS recognition	
Weight		0.6 lbs (300 g)	

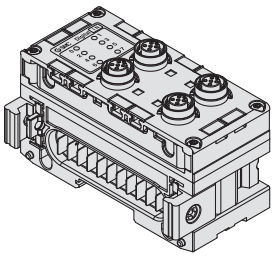


EX600-SEC□

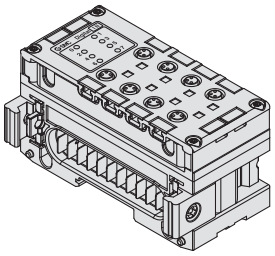
SI Unit (EX600-SEC□)

Model		EX600-SEC1	EX600-SEC2
Communication	Protocol	EtherCAT (Conformance Test Record V.1.2)	
	Communication speed	100 Mbps	
	Configuration file	XML file	
	I/O occupation area (Inputs/Outputs)	Max. (512 inputs/512 outputs)	
Internal current consumption (Power supply for Control/Input)		100 mA or less	
Output	Output type	PNP (Negative common)	NPN (Positive common)
	Number of outputs	32 outputs (8/16/24/32 outputs selectable)	
	Load	Solenoid valve with surge voltage suppressor 24 VDC, 1.5 W or less (SMC)	
	Power supply	24 VDC, 2 A	
	Fail safe	HOLD/CLEAR/Forced power ON	
	Protection	Short-circuit protection	
Enclosure		IP67 (Manifold assembly)	
Standards		CE marking, UL (CSA), RoHS recognition	
Weight		0.6 lbs (300 g)	

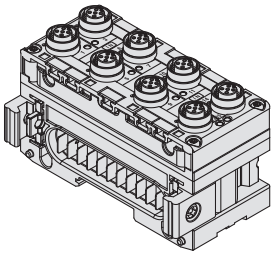
Digital Unit Specifications



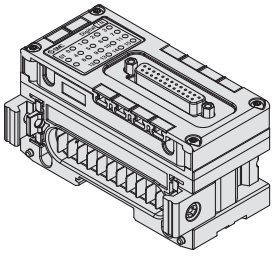
EX600-DX□B



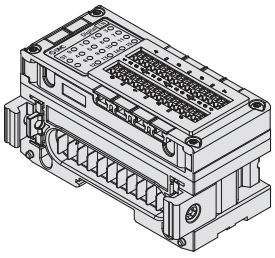
EX600-DX□C□



EX600-DX□D



EX600-DX□E



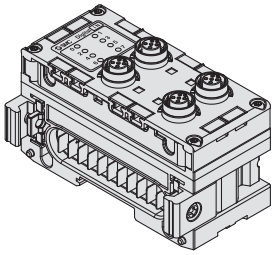
EX600-DX□F

Digital Input Unit

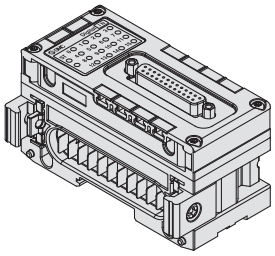
Model			EX600-DXPB	EX600-DXNB	EX600-DXPC□	EX600-DXNC□	EX600-DXPD	EX600-DXND
Input	Input type		PNP	NPN	PNP	NPN	PNP	NPN
	Input connector		M12 (5-pin) socket Note 1)		M8 (3-pin) socket		M12 (5-pin) socket Note 1)	
	Number of inputs		8 inputs (2 inputs/connector)		8 inputs (1 input/connector)		16 inputs (2 inputs/connector)	
	Supplied voltage		24 VDC					
	Max. supplied current		0.5 A/connector 2 A/unit		0.25 A/connector 2 A/unit		0.5 A/connector 2 A/unit	
	Protection		Short-circuit protection					
	Input current (at 24 VDC)		9 mA or less					
	ON voltage		17 V or more (At NPN input, between the pin for input terminal and supplied voltage of +24 V) (At PNP input, between the pin for input terminal and supplied voltage of 0 V)					
	OFF voltage		5 V or less (At NPN input, between the pin for input terminal and supplied voltage of +24 V) (At PNP input, between the pin for input terminal and supplied voltage of 0 V)					
	Open circuit detection current	2 wires	—		0.5 mA/input Note 2)		—	
		3 wires	—		0.5 mA/connector Note 2)		—	
Current consumption			50 mA or less		55 mA or less		70 mA or less	
Enclosure			IP67 (Manifold assembly)					
Standards			CE marking, UL (CSA), RoHS recognition					
Weight			0.6 lbs (300 g)		0.6 lbs (275 g)		0.75 lbs (340 g)	

Note 1) M12 (4-pin) connector can be connected.
Note 2) Function only applies to the EX600-DX□C1.

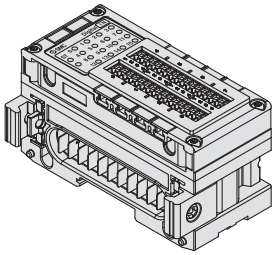
Model		EX600-DXPE	EX600-DXNE	EX600-DXPF	EX600-DXNF
Input	Input type	PNP	NPN	PNP	NPN
	Input connector	D-sub socket (25 pins) Lock screw: No.4-40 UNC		Spring type terminal block (32 pins)	
	Number of inputs	16 inputs		16 inputs (2 inputs x 8 blocks)	
	Supplied voltage	24 VDC			
	Max. supplied current	2 A/unit		0.5 A/block 2 A/unit	
	Protection	Short-circuit protection			
	Input current (at 24 VDC)	5 mA or less			
	ON voltage	17 V or more (At NPN input, between the pin for input terminal and supplied voltage of +24 V) (At PNP input, between the pin for input terminal and supplied voltage of 0 V)			
	OFF voltage	5 V or less (At NPN input, between the pin for input terminal and supplied voltage of +24 V) (At PNP input, between the pin for input terminal and supplied voltage of 0 V)			
Applicable wire		—		0.08 to 1.5 mm² (AWG16 to 28)	
Current consumption		50 mA or less		55 mA or less	
Enclosure		IP40 (Manifold assembly)			
Standards		CE marking, UL (CSA), RoHS recognition			
Weight		0.6 lbs (300 g)			



EX600-DY□B



EX600-DY□E
EX600-DM□E



EX600-DY□F
EX600-DM□F

Digital Output Unit

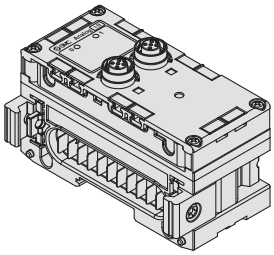
Model		EX600-DYPB	EX600-DYNB	EX600-DYPE	EX600-DYNE	EX600-DYPF	EX600-DYNF
Output	Output type	PNP	NPN	PNP	NPN	PNP	NPN
	Output connector	M12 (5-pin) socket Note)		D-sub socket (25 pins) Lock screw: No.4-40 UNC		Spring type terminal block (32 pins)	
	Number of outputs	8 outputs (2 outputs/connector)		16 outputs		16 outputs (2 outputs x 8 blocks)	
	Supplied voltage	24 VDC					
	Max. load current	0.5 A/output 2 A/unit					
	Protection	Short-circuit protection					
Applicable wire		—		—		0.08 to 1.5 mm² (AWG16 to 28)	
Current consumption		50 mA or less					
Enclosure		IP67 (Manifold assembly)		IP40 (Manifold assembly)			
Standards		CE marking, UL (CSA), RoHS recognition					
Weight		0.6 lbs (300 g)					

Note) M12 (4-pin) connector can be connected.

Digital Input/Output Unit

Model		EX600-DMPE	EX600-DMNE	EX600-DMPF	EX600-DMNF
Input/Output type		PNP	NPN	PNP	NPN
Connector		D-sub socket (25 pins) Lock screw: No.4-40 UNC		Spring type terminal block (32 pins)	
Input	Number of inputs	8 inputs		8 inputs (2 inputs x 4 blocks)	
	Supplied voltage	24 VDC			
	Max. supplied current	2 A/unit		0.5 A/block 2 A/unit	
	Protection	Short-circuit protection			
	Input current (at 24 VDC)	5 mA or less			
	ON voltage	17 V or more (At NPN input, between the pin for input terminal and supplied voltage of +24 V) (At PNP input, between the pin for input terminal and supplied voltage of 0 V)			
	OFF voltage	5 V or less (At NPN input, between the pin for input terminal and supplied voltage of +24 V) (At PNP input, between the pin for input terminal and supplied voltage of 0 V)			
Output	Number of outputs	8 outputs		8 outputs (2 outputs x 4 blocks)	
	Supplied voltage	24 VDC			
	Max. load current	0.5 A/output 2 A/unit			
	Protection	Short-circuit protection			
Applicable wire		—		0.08 to 1.5 mm² (AWG16 to 28)	
Current consumption		50 mA or less		60 mA or less	
Enclosure		IP40 (Manifold assembly)			
Standards		CE marking, UL (CSA), RoHS recognition			
Weight		0.6 lbs (300 g)			

Analog Unit Specifications

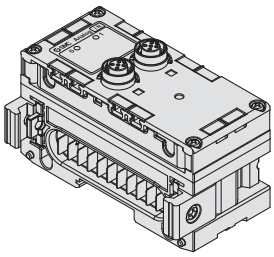


EX600-AXA

Analog Input Unit

Model			EX600-AXA	
Input	Input type		Voltage input	Current input
	Input connector		M12 (5-pin) socket Note 1)	
	Input channel		2 channels (1 channel/connector)	
	Supplied voltage		24 VDC	
	Max. supplied current		0.5 A/connector	
	Protection		Short-circuit protection	
	Input signal range	12 bit resolution	0 to 10 V, 1 to 5 V, 0 to 5 V	0 to 20 mA, 4 to 20 mA
		16 bit resolution	–10 to 10 V, –5 to 5 V	–20 to 20 mA
	Max. rated input signal		±15 V	±22 mA Note 2)
	Input impedance		100 kΩ	50 Ω
	Linearity (77°F)		±0.05% F.S.	
	Repeatability (77°F)		±0.15% F.S.	
	Absolute accuracy (77°F)		±0.5% F.S.	±0.6% F.S.
Current consumption			70 mA or less	
Enclosure			IP67 (Manifold assembly)	
Standards			CE marking, UL (CSA), RoHS recognition	
Weight			0.6 lbs (290 g)	

Note 1) M12 (4-pin) connector can be connected.
Note 2) When input signal exceeds 22 mA, the protection function activates and the input signal is interrupted.

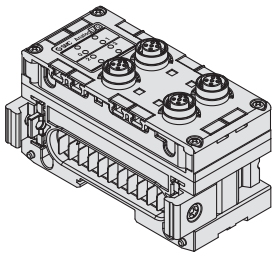


EX600-AYA

Analog Output Unit

Model			EX600-AYA	
Output	Output type		Voltage output	Current output
	Output connector		M12 (5-pin) socket Note)	
	Output channel		2 channels (1 channel/connector)	
	Supplied voltage		24 VDC	
	Max. load current		0.5 A/connector	
	Protection		Short-circuit protection	
	Output signal range	12 bit resolution	0 to 10 V, 1 to 5 V, 0 to 5 V	0 to 20 mA, 4 to 20 mA
	Load impedance		1 kΩ or more	600 Ω or less
	Linearity (77°F)		±0.05% F.S.	
	Repeatability (77°F)		±0.15% F.S.	
	Absolute accuracy (77°F)		±0.5% F.S.	±0.6% F.S.
Current consumption			70 mA or less	
Enclosure			IP67 (Manifold assembly)	
Standards			CE marking, UL (CSA), RoHS recognition	
Weight			0.6 lbs (290 g)	

Note) M12 (4-pin) connector can be connected.

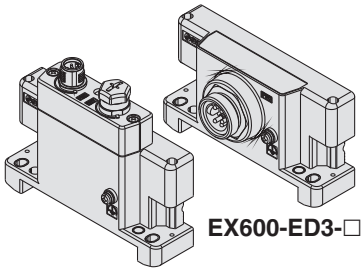


EX600-AMB

Analog Input/Output Unit

Model			EX600-AMB	
Input	Input type		Voltage input	Current input
	Input connector		M12 (5-pin) socket Note 1)	
	Input channel		2 channels (1 channel/connector)	
	Supplied voltage		24 VDC	
	Max. supplied current		0.5 A/connector	
	Protection		Short-circuit protection	
	Input signal range	12 bit resolution	0 to 10 V, 1 to 5 V, 0 to 5 V	0 to 20 mA, 4 to 20 mA
	Max. rated input signal		15 V	22 mA Note 2)
	Input impedance		100 kΩ	250 Ω
	Linearity (77°F)		±0.05% F.S.	
	Repeatability (77°F)		±0.15% F.S.	
	Absolute accuracy (77°F)		±0.5% F.S.	±0.6% F.S.
Output	Output type		Voltage output	Current output
	Output connector		M12 (5-pin) socket Note 1)	
	Output channel		2 channels (1 channel/connector)	
	Supplied voltage		24 VDC	
	Max. load current		0.5 A/connector	
	Protection		Short-circuit protection	
	Output signal range	12 bit resolution	0 to 10 V, 1 to 5 V, 0 to 5 V	0 to 20 mA, 4 to 20 mA
	Load impedance		1 kΩ or more	600 Ω or less
	Linearity (77°F)		±0.05% F.S.	
	Repeatability (77°F)		±0.15% F.S.	
	Absolute accuracy (77°F)		±0.5% F.S.	±0.6% F.S.
Current consumption			100 mA or less	
Enclosure			IP67 (Manifold assembly)	
Standards			CE marking, UL (CSA), RoHS recognition	
Weight			0.6 lbs (300 g)	

Note 1) M12 (4-pin) connector can be connected.
Note 2) When input signal exceeds 22 mA, the protection function activates and the input signal is interrupted.

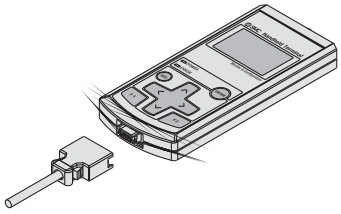


EX600-ED3-□

EX600-ED2-□

End Plate

Model		EX600-ED2-□	EX600-ED3-□
Power specification	Power connector	M12 (5-pin) plug	7/8 inch (5-pin) plug
	Power supply (for Control/Input)	24 VDC ±10%, Class 2, 2 A	24 VDC ±10%, 8 A
	Power supply (for Output)	24 VDC +10/–5%, Class 2, 2 A	24 VDC +10/–5%, 8 A
Enclosure		IP67 (Manifold assembly)	
Standards		CE marking, UL (CSA), RoHS recognition	
Weight		0.4 lbs (170 g)	0.4 lbs (175 g)



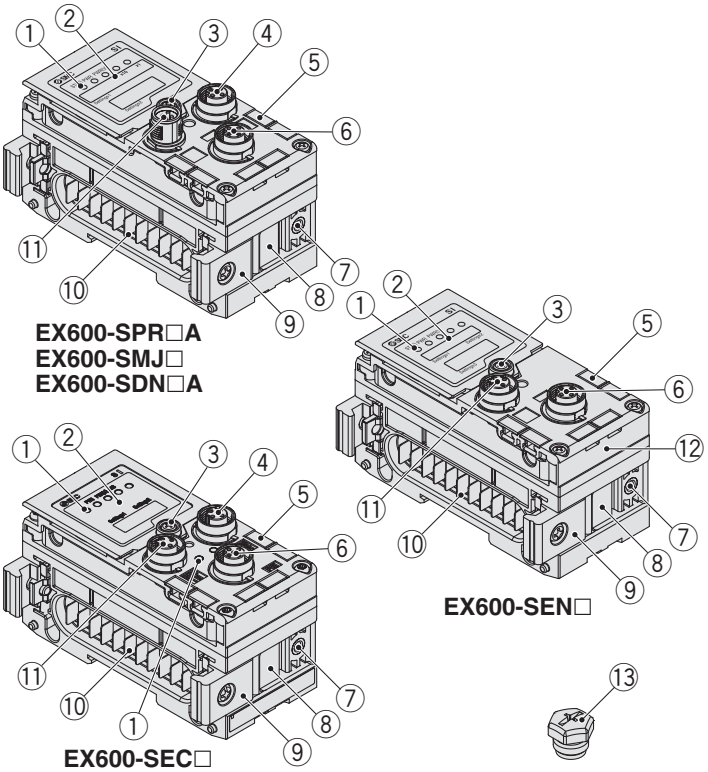
EX600-HT1A-□

Handheld Terminal

Model	EX600-HT1A-□
Power supply	Power supplied from SI Unit connector (24 VDC)
Current consumption	50 mA or less
Display	LCD with backlight
Connection cable	Handheld Terminal cable (1 m ··· EX600-AC010-1, 3 m ··· EX600-AC030-1)
Enclosure	IP20
Standards	CE marking, RoHS recognition
Weight	0.35 lbs (160 g)

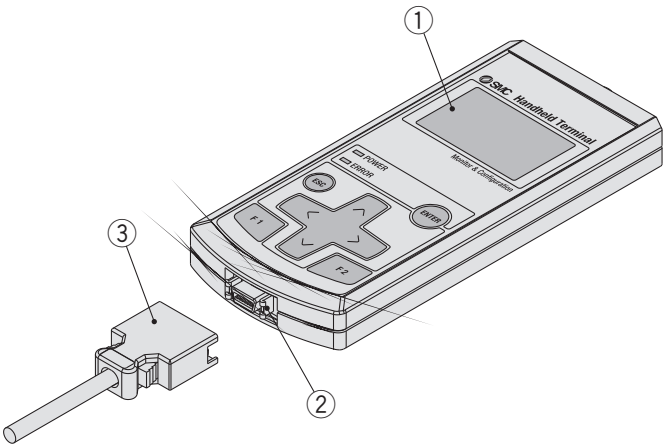
Parts Description

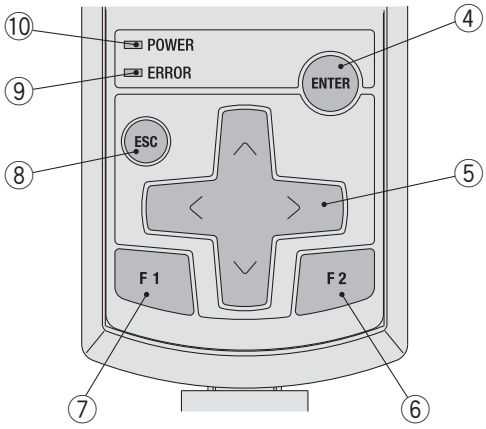
SI Unit



No.	Description	Use
1	**Status indication LED**	Displays unit status.
2	**Indication cover**	Open for setting the switch.
3	**Indication cover set screw**	Loosen for opening the indication cover.
4	**Connector (BUS OUT)**	Connects to the fieldbus output cable.
5	**Marker groove**	Can be used to mount a marker.
6	**Connector (PCI)**	Connects to the Handheld Terminal cable.
7	**Valve Plate mounting holes**	Fixes Valve Plate in place.
8	**Valve Plate mounting groove**	Inserts Valve Plate.
9	**Joint bracket**	Links units to one another.
10	**Connector for unit (Plug)**	Transmits signals to the neighboring unit and supplies power.
11	**Connector (BUS IN)**	Connects to the cable for fieldbus input.
12	**MAC address name plate**	Displays a unique 12-digit MAC address for each SI Unit.
13	**Seal cap**	Mounted on the connectors (BUS OUT and PCI) at the time of shipment.

Handheld Terminal

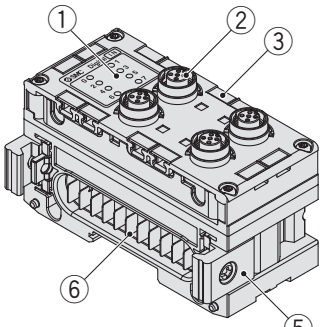




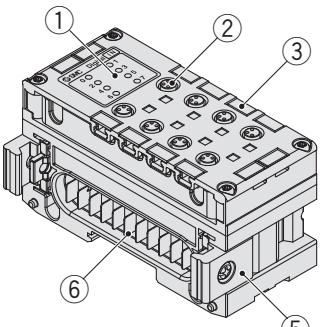
Operation buttons

No.	Description	Use
1	**LCD**	Displays operation and unit information.
2	**Connector**	Connects to the Handheld Terminal cable.
3	**Handheld Terminal cable**	Connects the SI Unit to the Handheld Terminal.
4	**Enter button (ENTER)**	From the selection screen, goes to the screen for the item selected. On the settings screen, registers the settings that have been made so far.
5	**Cursor button (▲ ▼ ◀ ▶)**	Moves the cursor on the LCD up, down, left or right. Moves the cursor on the selection screen up, down, left or right to make selections. On the settings screen, increases or decreases the value of settings or turns settings on and off.
6	**F2 button (F2)**	Functions in accordance with on-screen display or instructions.
7	**F1 button (F1)**	Functions in accordance with on-screen display or instructions.
8	**Escape button (ESC)**	On the selection screen, goes back to the previous screen. On the settings screen, cancels the settings that have been made so far and goes back to the previous screen.
9	**ERROR LED**	Lights up red when the EX600 diagnosis errors occur.
10	**POWER LED**	Connects to the EX600 SI Unit, and lights up green when control/input power supply is on.

Digital Unit

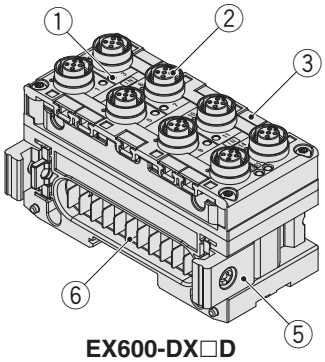


EX600-DX□B
EX600-DY□B

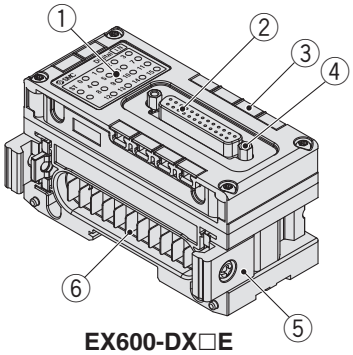


EX600-DX□C□

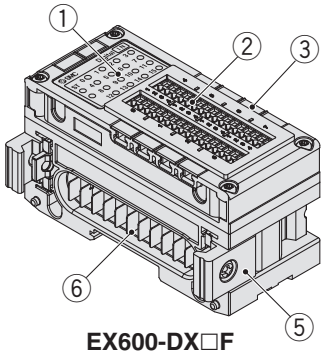
No.	Description	Use
1	**Status indication LED**	Displays unit status.
2	**Connector**	Connects with input or output devices.
3	**Marker groove**	Can be used to mount a marker.
4	**Lock screw**	Fixes the D-sub connector in place. (No.4-40 UNC)
5	**Joint bracket**	Links units to one another.
6	**Connector for unit (Plug)**	Transmits signals to the neighboring unit and supplies power.



EX600-DX□D

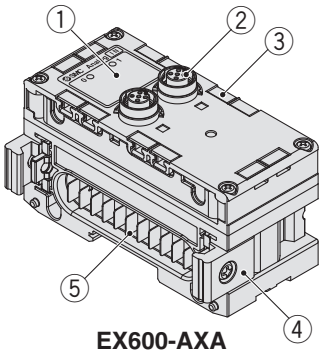


EX600-DX□E
EX600-DY□E
EX600-DM□E

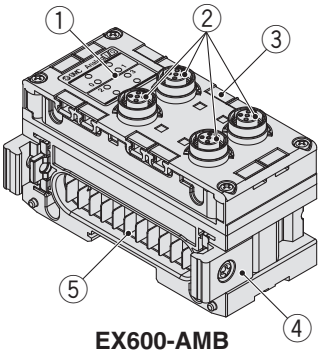


EX600-DX□F
EX600-DY□F
EX600-DM□F

Analog Unit



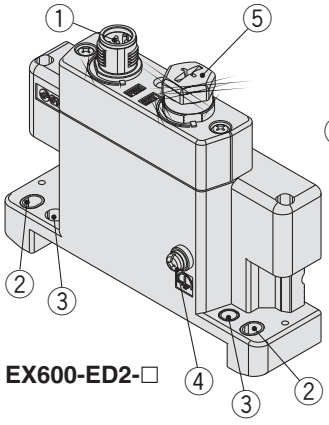
EX600-AXA
EX600-AYA



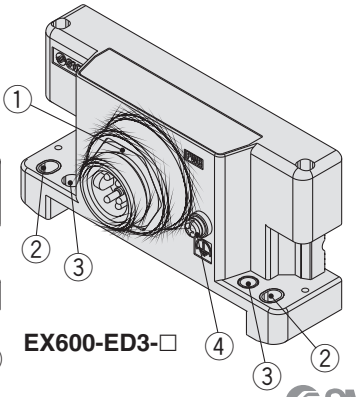
EX600-AMB

No.	Description	Use
1	**Status indication LED**	Displays unit status.
2	**Connector**	Connects with input or output devices.
3	**Marker groove**	Can be used to mount a marker.
4	**Joint bracket**	Links units to one another.
5	**Connector for unit (Plug)**	Transmits signals to the neighboring unit and supplies power.

End Plate



EX600-ED2-□



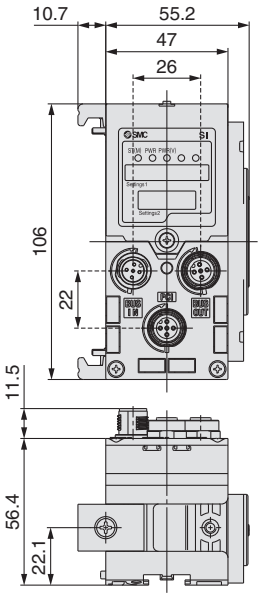
EX600-ED3-□

No.	Description	Use
1	**Power connector**	Supplies power to the unit and/or input/output devices.
2	**Fixing hole for direct mounting**	Connects directly to equipment.
3	**Fixing hole for DIN rail**	Converts to manifold or for DIN rail mounting.
4	**FE terminal**	Connects for grounding to FE (Functional Earth).
5	**Connector (Unused)**	This connector has not yet been used. Do not remove the seal cap.

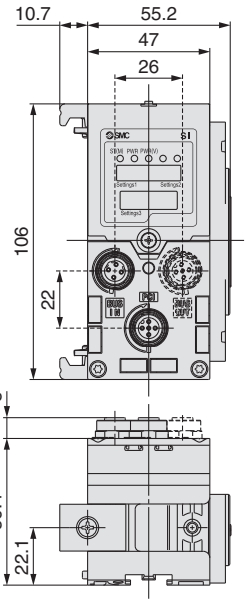
Dimensions

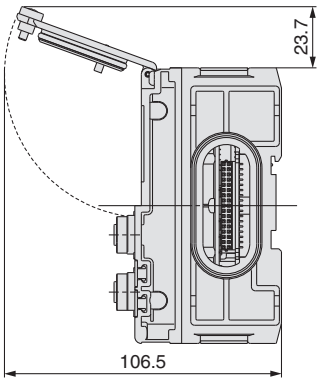
SI Unit

EX600-SPR□A
EX600-SDN□A
EX600-SMJ□



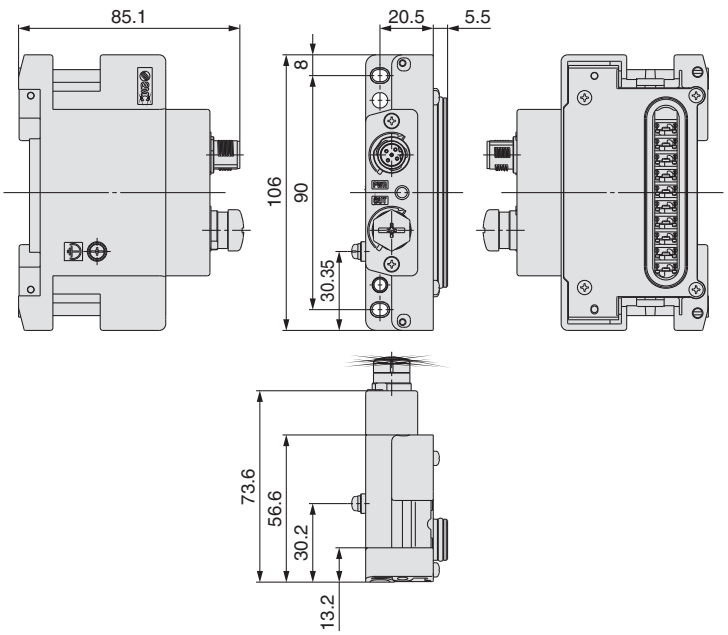
EX600-SEN□
EX600-SEC□



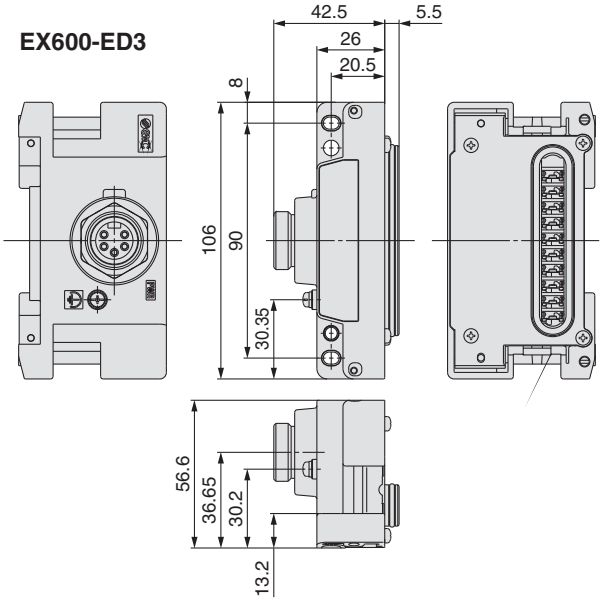


End Plate

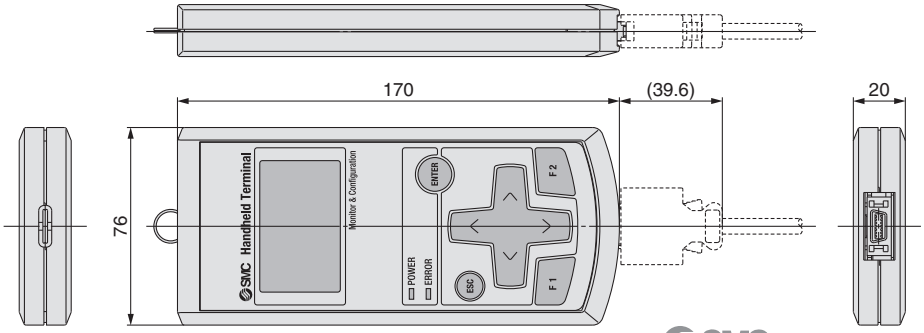
EX600-ED2



EX600-ED3



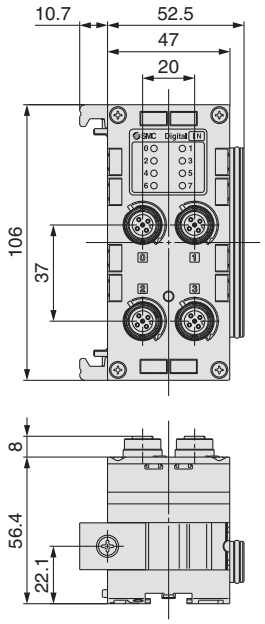
Handheld Terminal



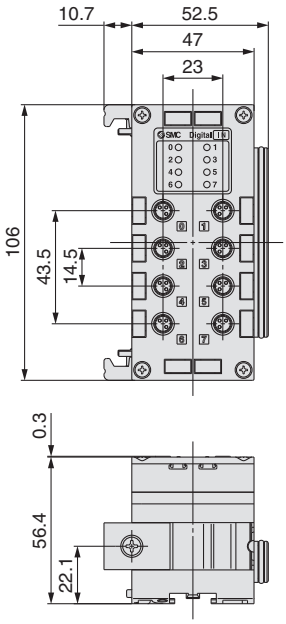
(mm)

Digital Unit

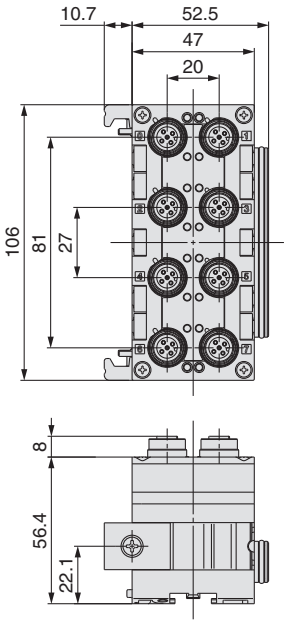
EX600-DX□B
EX600-DY□B



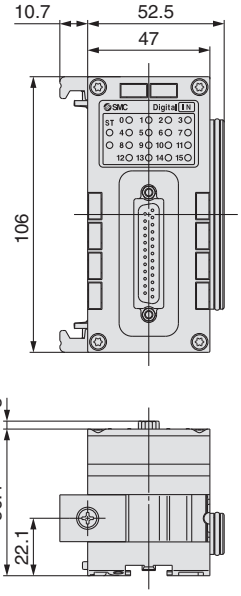
EX600-DX□C□



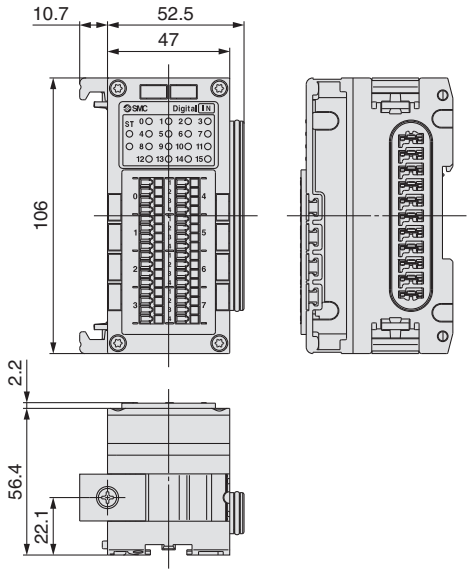
EX600-DX□D



EX600-DX□E
EX600-DY□E
EX600-DM□E

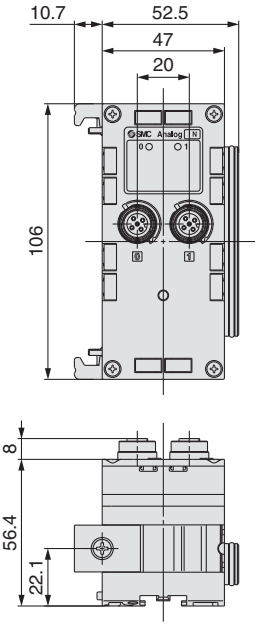


EX600-DX□F
EX600-DY□F
EX600-DM□F

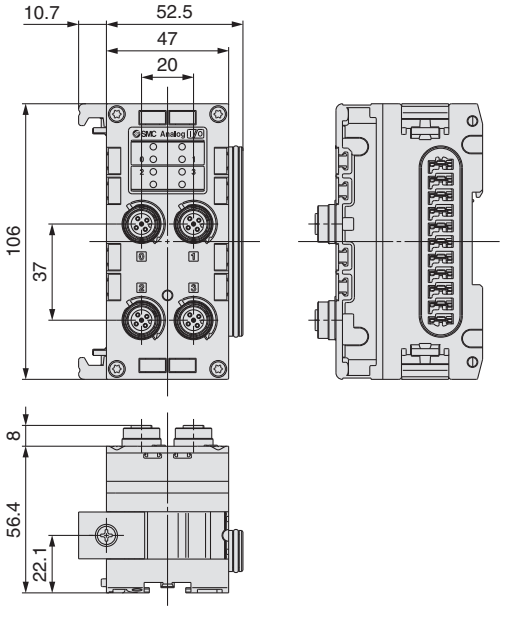


Analog Unit

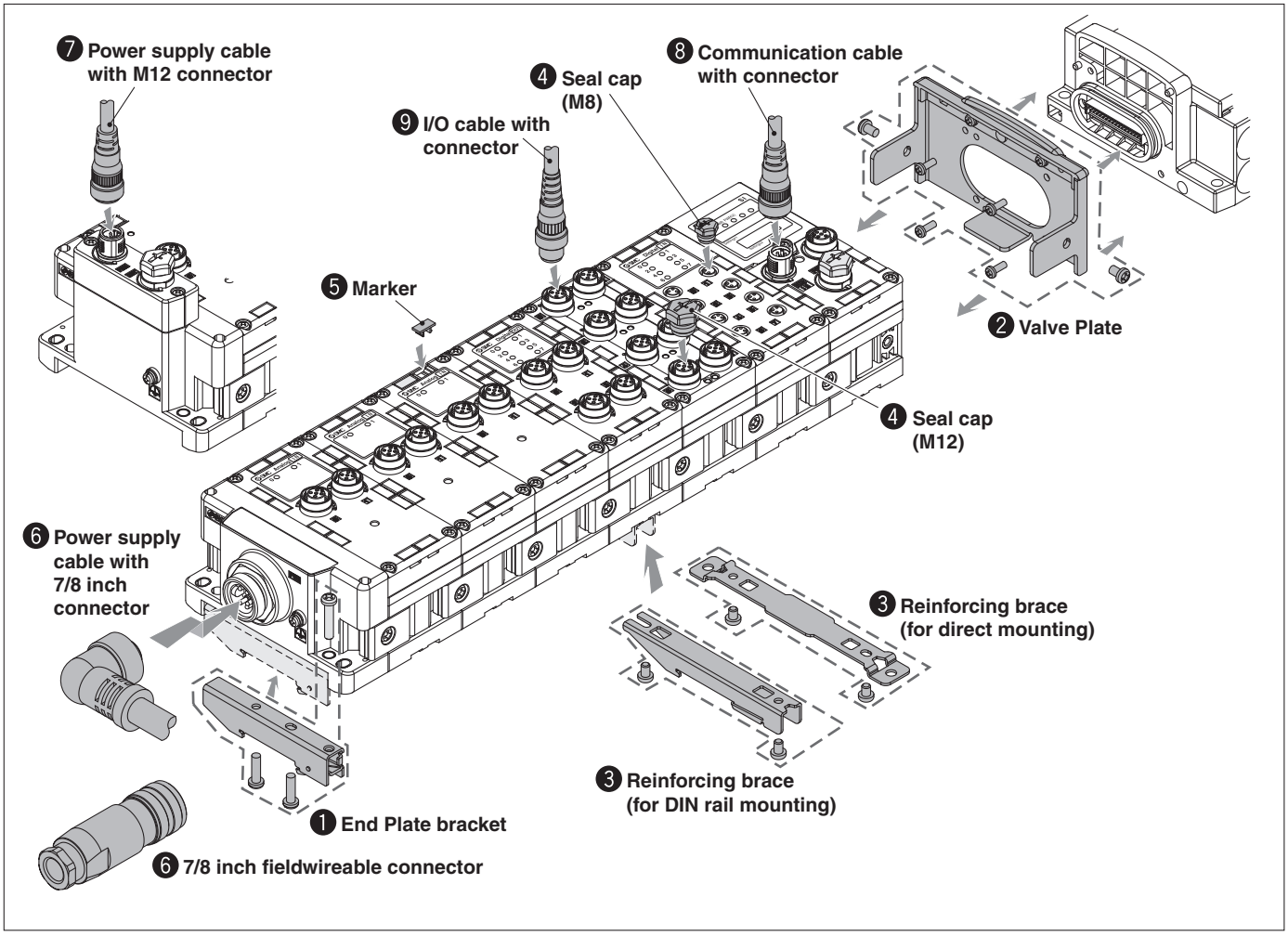
EX600-AXA
EX600-AYA



EX600-AMB



Accessories



❶ End Plate bracket

This bracket is used for the End Plate of DIN rail mounting.

EX600-ZMA2

Enclosed parts

Round head screw (M4 x 20)	1 pc.
P-tight screw (4 x 14)	2 pcs.

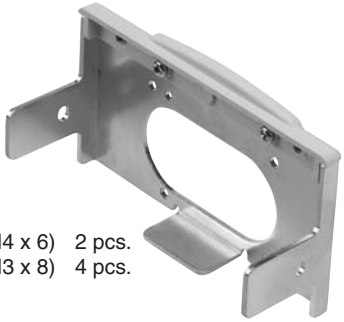
EX600-ZMA3
(Specialized for Series SY)

Enclosed parts

Round head screw with washer (M4 x 20)	1 pc.
P-tight screw (4 x 14)	2 pcs.

❷ Valve Plate

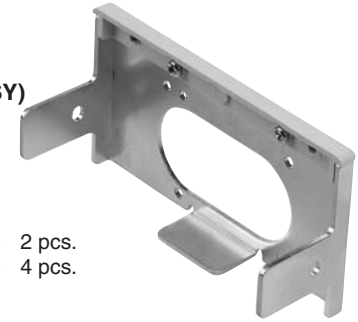
EX600-ZMV1



Enclosed parts

Round head screw (M4 x 6)	2 pcs.
Round head screw (M3 x 8)	4 pcs.

EX600-ZMV2
(Specialized for Series SY)



Enclosed parts

Round head screw (M4 x 6)	2 pcs.
Round head screw (M3 x 8)	4 pcs.

❸ Reinforcing brace

This bracket is used on the bottom of the unit at the intermediate position for connecting 6 units or more.

For direct mounting
EX600-ZMB1

Enclosed parts
Round head screw (M4 x 5) 2 pcs.

For DIN rail mounting
EX600-ZMB2

Enclosed parts
Round head screw (M4 x 6) 2 pcs.

❹ Seal cap (10 pcs.)

The seal cap needs to be placed the unused I/O connector.
The specified protection cannot be maintained.

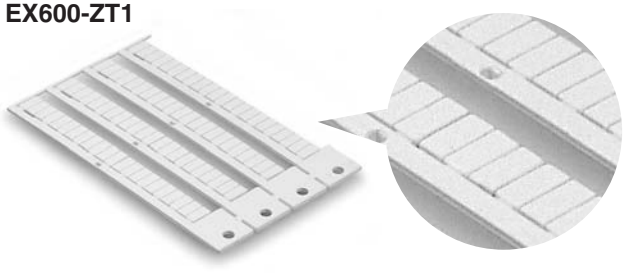
EX9-AWES
For M8

EX9-AWTS
For M12

❺ Marker (1 sheet, 88 pcs.)

The signal name of I/O device and each unit address can be entered and mounted on each unit.

EX600-ZT1



❻ 7/8 inch connector and its related parts

• Power supply cable with 7/8 inch connector

PCA-1558810	Straight 2 m
PCA-1558823	Straight 6 m
PCA-1558836	Right angle 2 m
PCA-1558849	Right angle 6 m

• Fieldwireable 7/8 inch connector [compatible to AWG22-16]

PCA-1578078	Plug
PCA-1578081	Socket

SPEEDCON and Its Related Parts

❼ Power supply cable with M12 connector (5-pin B-coded)

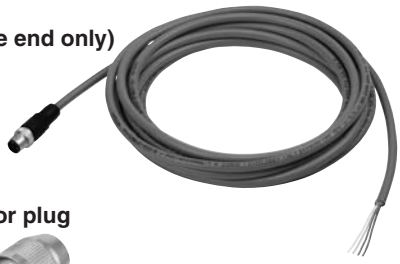
PCA-1564927	Straight 2 m
PCA-1564930	Straight 6 m
PCA-1564943	Right angle 2 m
PCA-1564969	Right angle 6 m

Note) For M12 connector, description of B-coded for a reverse type is used as a connector shape.

❽ Communication cable with connector/ Communication connector

For EtherNet/IP™ and EtherCAT

• Communication cable (with connector on one end only)
Straight 5 m
PCA-1446566



• Fieldwireable connector plug
PCA-1446553

The communication cable with connector and the communication connector that can be used on this series other than EtherNet/IP ™ and EtherCAT are found in the M8/M12 connector catalog.

❾ I/O cable with connector/ I/O connector

The I/O cable with connector and I/O connector that can be used on this series are found in the M8/M12 connector catalog (ES100-73).

Table of Mountable Units

The units that can be connected differ depending on the product number.
Before mounting, please be sure to confirm the types of units that can be connected.

Table of compatible units mountable with each SI Unit

			Product number: SI Unit			
			EX600-SPR□ (PROFIBUS DP) EX600-SDN□ (DeviceNet™)	EX600-SPR□A (PROFIBUS DP) EX600-SDN□A (DeviceNet™)	EX600-SMJ□ (CC-Link)	EX600-SEN□ (EtherNet/IP™) EX600-SEC□ (EtherCAT)
			Version Nil	Version A	Version Nil	Version Nil
Product number	Digital Input Unit	EX600-DX□B	○	○	○	○
		EX600-DX□C□	○	○	○	○
		EX600-DX□D	○	○	○	○
		EX600-DX□E	×	○	○	○
		EX600-DX□F	×	○	○	○
	Digital Output Unit	EX600-DY□B	○	○	○	○
		EX600-DY□E	×	○	○	○
		EX600-DY□F	×	○	○	○
	Digital Input/Output Unit	EX600-DM□E	×	○	○	○
		EX600-DM□F	×	○	○	○
	Analog Input Unit	EX600-AXA	○	○	○	○
	Analog Output Unit	EX600-AYA	×	○	○	○
	Analog Input/Output Unit	EX600-AMB	×	○	○	○
	Handheld Terminal	EX600-HT1-□	○	○	○	×
		EX600-HT1A-□	○	○	○	○

Table of compatible units capable of communication with Handheld Terminals

			Product number: Handheld Terminal	
			EX600-HT1-□	EX600-HT1A-□
			Version Nil	Version A
Product number	SI Unit	EX600-SPR□ (PROFIBUS DP)	○	○
		EX600-SPR□A (PROFIBUS DP)	○	○
		EX600-SDN□ (DeviceNet™)	○	○
		EX600-SDN□A (DeviceNet™)	○	○
		EX600-SMJ□ (CC-Link)	○	○
		EX600-SEN□ (EtherNet/IP™)	×	○
		EX600-SEC□ (EtherCAT)	×	○
	Digital Input Unit	EX600-DX□B	○	○
		EX600-DX□C□	○	○
		EX600-DX□D	○	○
		EX600-DX□E	×	○
		EX600-DX□F	×	○
	Digital Output Unit	EX600-DY□B	○	○
		EX600-DY□E	×	○
		EX600-DY□F	×	○
	Digital Input/Output Unit	EX600-DM□E	×	○
		EX600-DM□F	×	○
	Analog Input Unit	EX600-AXA	○	○
	Analog Output Unit	EX600-AYA	×	○
	Analog Input/Output Unit	EX600-AMB	×	○

For Series EX600

Series SV1000/2000/3000

When I/O Unit EX600-D□□E or EX600-D□□F are selected, enclosure is IP40.
Refer to page 50 for details.

How rder Manifold

● Tie-rod Base

SS5V 1 – □ 10S6 Q □ □ □ D – 05 U □ – C6 – □

Series

1	SV1000
2	SV2000
3	SV3000

Enclosure

Nil	IP40
W	IP67

SI Unit

0	Without SI Unit
Q	For DeviceNet™
N	For PROFIBUS DP
V	For CC-Link
ZE	For EtherNet/IP™
D	For EtherCAT

- When "Without SI Unit" is specified, I/O Unit cannot be mounted.
- When "Without SI Unit" is specified, Valve Plate to connect the valve manifold and SI Unit is not mounted. Refer to page 51 for mounting method.

End Plate type

Nil	No End Plate
2	Power supply with M12 connector (Max. supplied current 2 A)
3	Power supply with 7/8 inch connector (Max. supplied current 8 A)

Note) Without SI Unit, the symbol is nil.

SI Unit common

Nil	Positive common
N	Negative common

Note) Without SI Unit, the symbol is nil.

I/O Unit stations

Nil	None
1	1 station
⋮	⋮
9	9 stations

Note 1) Without SI Unit, the symbol is nil.
Note 2) SI Unit is not included in I/O Unit stations.
Note 3) When I/O Unit is selected, it is shipped separately and assembled by customer. Refer to the attached operation manual for mounting method.

Valve stations

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

Note 1) Double wiring: single, double, 3-position and 4-position valves can be used on all manifold stations.
Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet. (Note that double, 3-position and 4-position valves cannot be used where single wiring has been specified.)

Mounting

Nil	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0 Note 1)	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	When a longer DIN rail is desired than the specified stations. (Specify a longer rail than the standard length.)
⋮	⋮	
D20	For 20 stations	

Note 1) In the case of D0, only DIN rail mounting bracket is attached.
Note 2) DIN rail is not attached (but shipped together) on the manifold in the case of with DIN rail. Refer to the SV series catalog for mounting method.
Note 3) When selecting the DIN rail mounting (with DIN rail) of the SV3000 series, and 9 I/O Unit stations will result in a total of 18 valve stations. With 19 and 20 stations, the DIN rail mounting (with DIN rail) cannot be indicated, so please exercise caution. (Refer to "DIN Rail Overall Length" on page 31 and 32.)
Note 4) Please consult SMC when changing from direct mounting to DIN rail mounting.
Note 5) When it is necessary to mount a DIN rail without an SI Unit, select D0 and order the DIN rail with required length separately by referring to L1 in the dimensions.

SUP/EXH block assembly

Nil	Internal pilot
S Note)	Internal pilot, Built-in silencer
R	External pilot
RS Note)	External pilot, Built-in silencer

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

P, E port entry

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

A, B port size (Metric)

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

A, B port size (Inch)

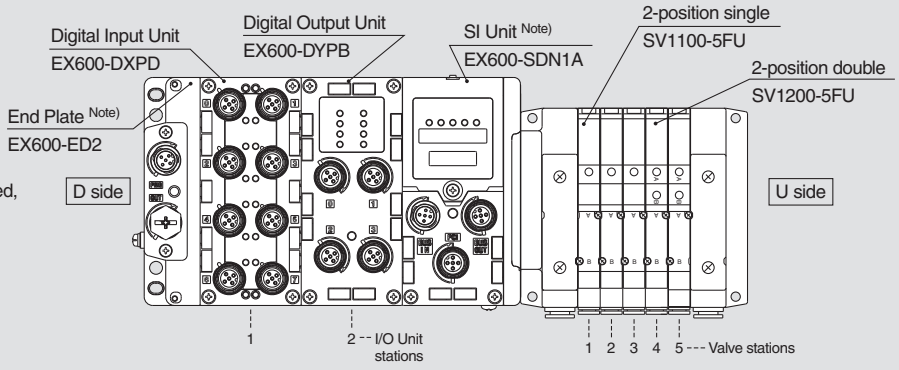
Symbol	A, B port	P, E port	Applicable series
N1	ø1/8" One-touch fitting	ø5/16" One-touch fitting	SV1000
N3	ø5/32" One-touch fitting		
N7	ø1/4" One-touch fitting		
N3	ø5/32" One-touch fitting	ø3/8" One-touch fitting	SV2000
N7	ø1/4" One-touch fitting		
N9	ø5/16" One-touch fitting		
N7	ø1/4" One-touch fitting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

∗ In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
∗ The X and PE port size of External pilot type (R), and X port size of External pilot, Built-in silencer type (RS) are ø4 (mm) or ø5/32" (inch) for the SV1000/2000 series, and ø6 (mm) or ø1/4" (inch) for the SV3000 series.

How to Order Manifold Assembly

Example (SS5V1)

Manifold
Power supply with
M12 connector



For the I/O Unit part number mounted, refer to the following pages.

- Digital Input Unit ·····P.1
- Digital Output Unit ·····P.1
- Digital Input/Output Unit ·····P.1
- Analog Input Unit ·····P.2
- Analog Output Unit ·····P.2
- Analog Input/Output Unit ·····P.2

Serial transmission kit
SS5V1-W10S6Q2N2D-05B-C6 ····1 set **Manifold base part number**
∗ SV1100-5FU ·····3 sets **Valve part number (Stations 1 to 3)**
∗ SV1200-5FU ·····2 sets **Valve part number (Stations 4 to 5)**
∗ EX600-DXPD ·····1 set **I/O Unit part number (Station 1)**
∗ EX600-DYPB ·····1 set **I/O Unit part number (Station 2)**

Enter in order starting from the first station on the D side. If the arrangement becomes complicated, specify on a manifold specification sheet.

Enter in order starting from the first station on the D side. If the arrangement becomes complicated, specify on a manifold specification sheet.

Note) Do not enter the SI Unit part number and the End Plate part number together.

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

How to Order Valves

SV 1 1 00 □ □ – 5 F U □ – □

Series

1	SV1000
2	SV2000
3	SV3000

Made to Order

Nil	—
X90	Fluororubber specification

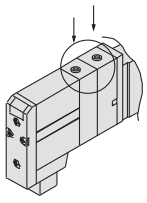
Type of actuation

1	2-position single
2	2-position double
3	3-position closed center
4	3-position exhaust center
5	3-position pressure center
A	4-position dual 3-port valve (N.C./N.C.)
B	4-position dual 3-port valve (N.O./N.O.)
C	4-position dual 3-port valve (N.C./N.O.)

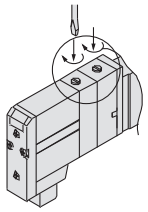
∗ 4-position dual 3-port valves are applicable to the SV1000/2000 series only.

Manual override

Nil: Non-locking push type



D: Push-turn locking slotted type



Pilot type

Nil	Internal pilot
R	External pilot

∗ External pilot specification is not available for 4-position dual 3-port valves.

Light/surge voltage suppressor

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

Rated voltage

5	24 VDC

Back pressure check valve

Nil	None
K	Built-in

∗ The built-in back pressure check valve type is applicable to the SV1000 series only.

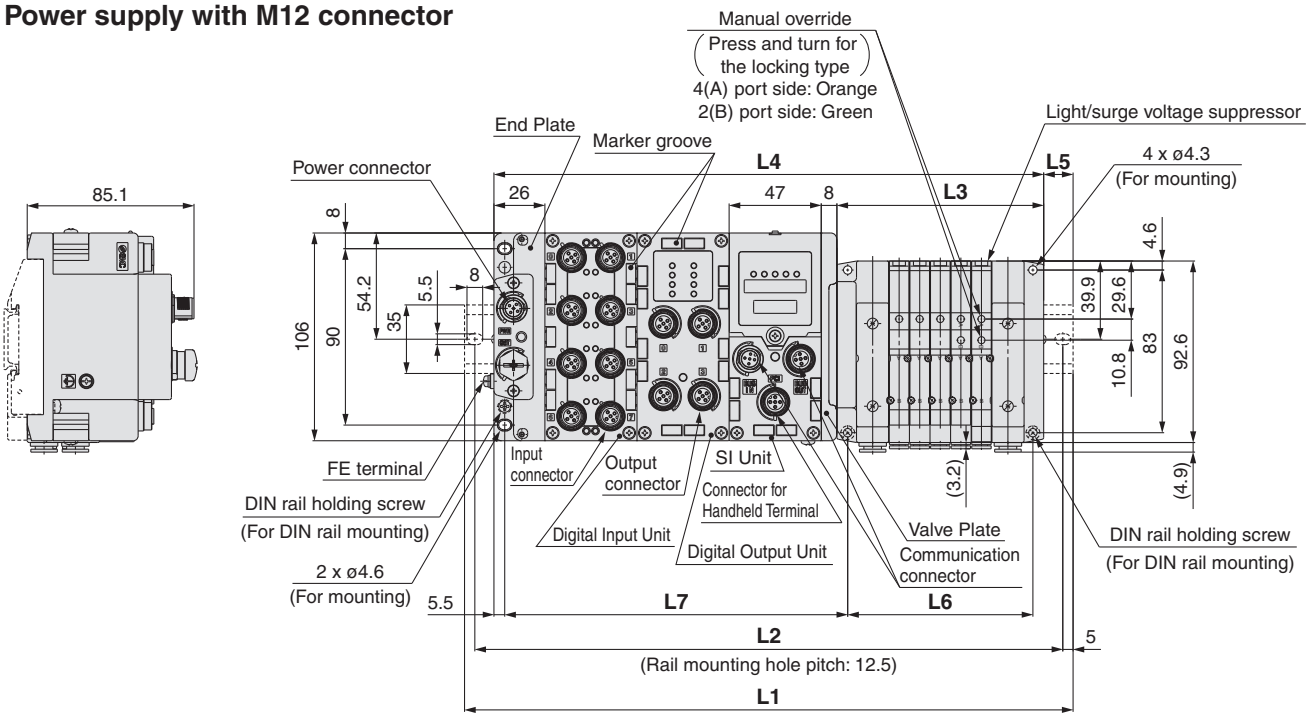
∗ The product with back pressure check valve is not available for 3-position valves.

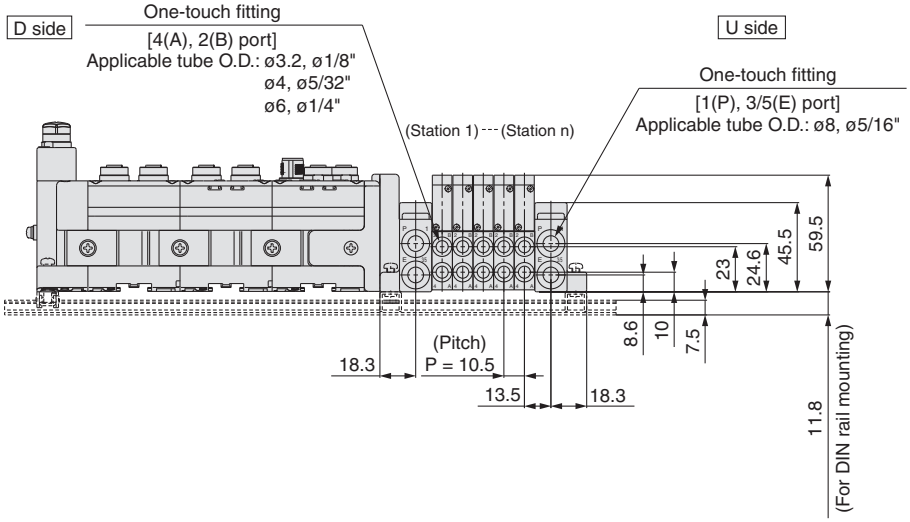
Refer to the catalog of each series for details on manifold solenoid valve specifications, Common Precautions and Specific Product Precautions.

Dimensions: Series SV1000

(mm)

Power supply with M12 connector





L2 = L1 – 10.5
L3 = 10.5 x n1 + 53
L4 = L3 + 81 + 47 x n2
L5 = (L1 – L4)/2
L6 = 10.5 x n1 + 42
L7 = 47 x n2 + 81

L1: DIN Rail Overall Length

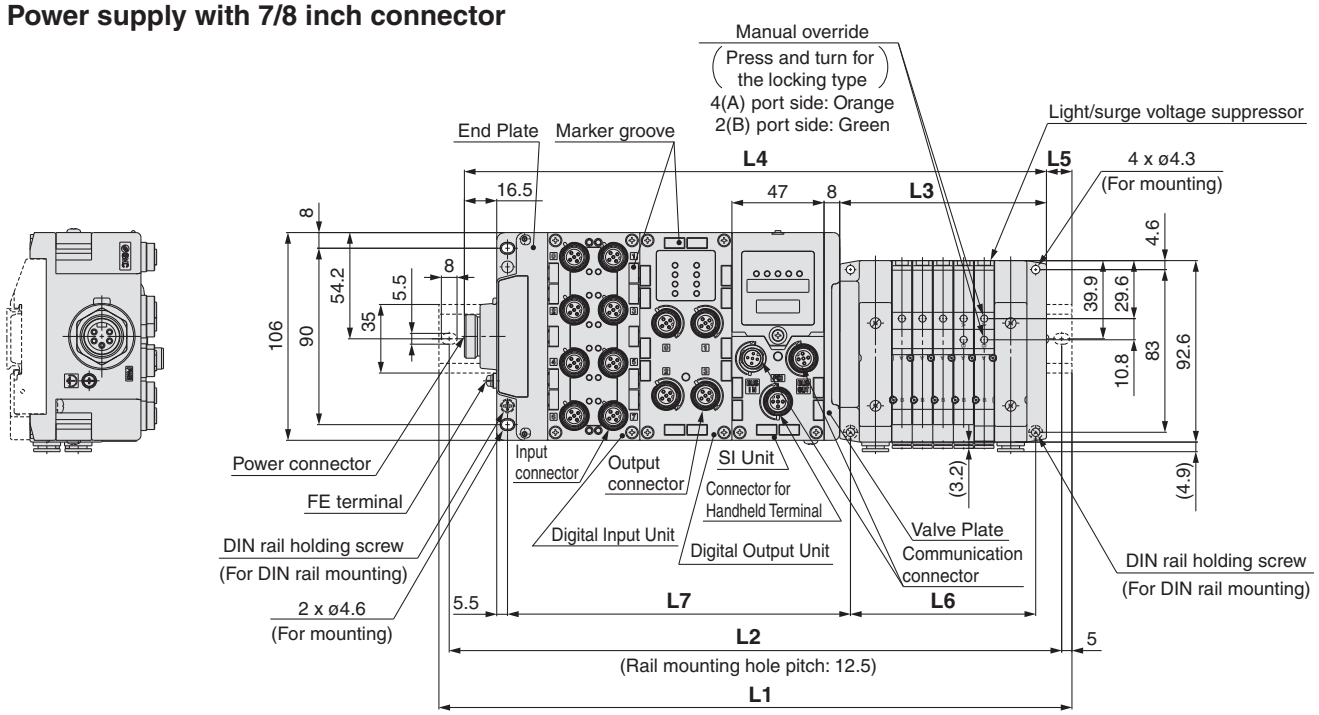
(mm)

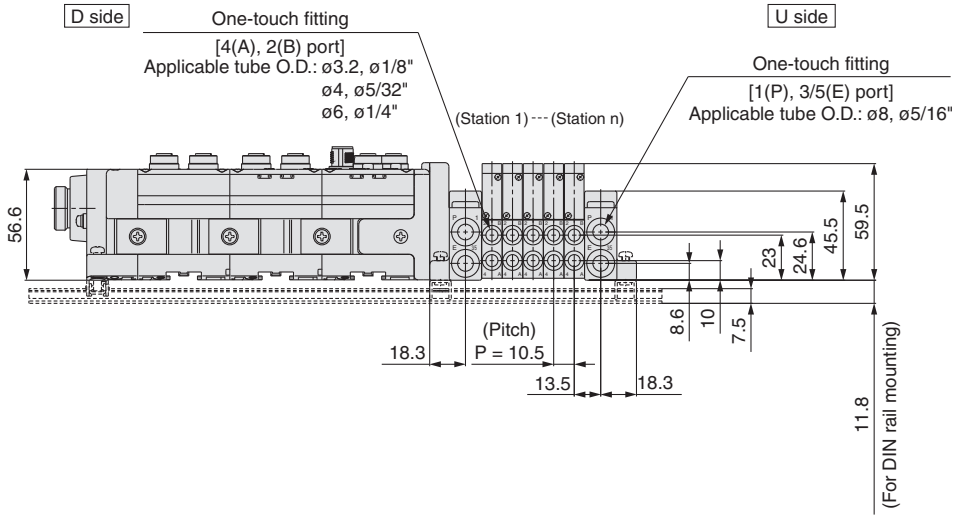
I/O Unit stations (n2) \ Valve stations (n1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0	185.5	198	210.5	210.5	223	235.5	248	260.5	273	273	285.5	298	310.5	323	335.5	348	348	360.5	373
1	235.5	248	248	260.5	273	285.5	298	310.5	310.5	323	335.5	348	360.5	373	373	385.5	398	410.5	423
2	273	285.5	298	310.5	323	335.5	335.5	348	360.5	373	385.5	398	410.5	410.5	423	435.5	448	460.5	473
3	323	335.5	348	360.5	373	373	385.5	398	410.5	423	435.5	435.5	448	460.5	473	485.5	498	498	510.5
4	373	385.5	398	398	410.5	423	435.5	448	460.5	473	473	485.5	498	510.5	523	535.5	535.5	548	560.5
5	423	435.5	435.5	448	460.5	473	485.5	498	498	510.5	523	535.5	548	560.5	560.5	573	585.5	598	610.5
6	460.5	473	485.5	498	510.5	523	535.5	535.5	548	560.5	573	585.5	598	598	610.5	623	635.5	648	660.5
7	510.5	523	535.5	548	560.5	560.5	573	585.5	598	610.5	623	623	635.5	648	660.5	673	685.5	698	698
8	560.5	573	585.5	598	598	610.5	623	635.5	648	660.5	660.5	673	685.5	698	710.5	723	723	735.5	748
9	610.5	623	623	635.5	648	660.5	673	685.5	685.5	698	710.5	723	735.5	748	760.5	760.5	773	785.5	798

Dimensions: Series SV1000

(mm)

Power supply with 7/8 inch connector





L2 = L1 – 10.5
L3 = 10.5 x n1 + 53
L4 = L3 + 97.5 + 47 x n2
L5 = (L1 – L4)/2
L6 = 10.5 x n1 + 42
L7 = 47 x n2 + 81

L1: DIN Rail Overall Length

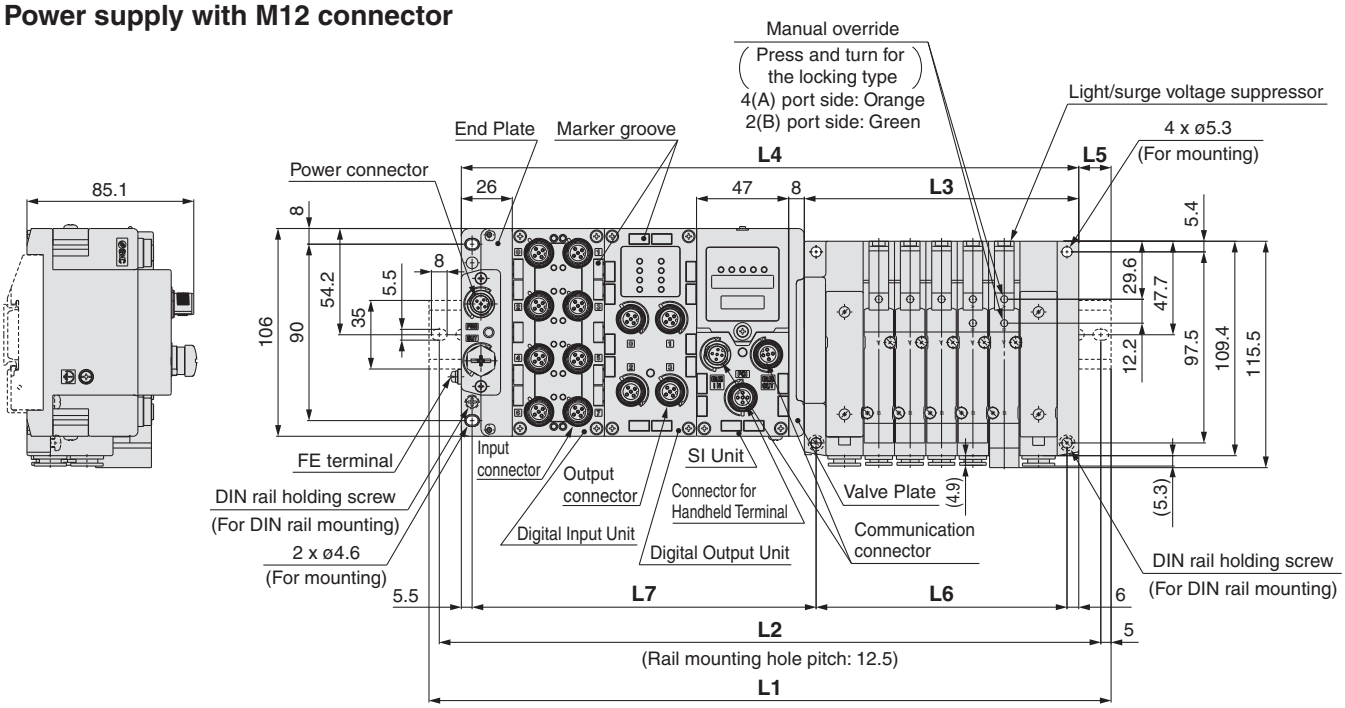
(mm)

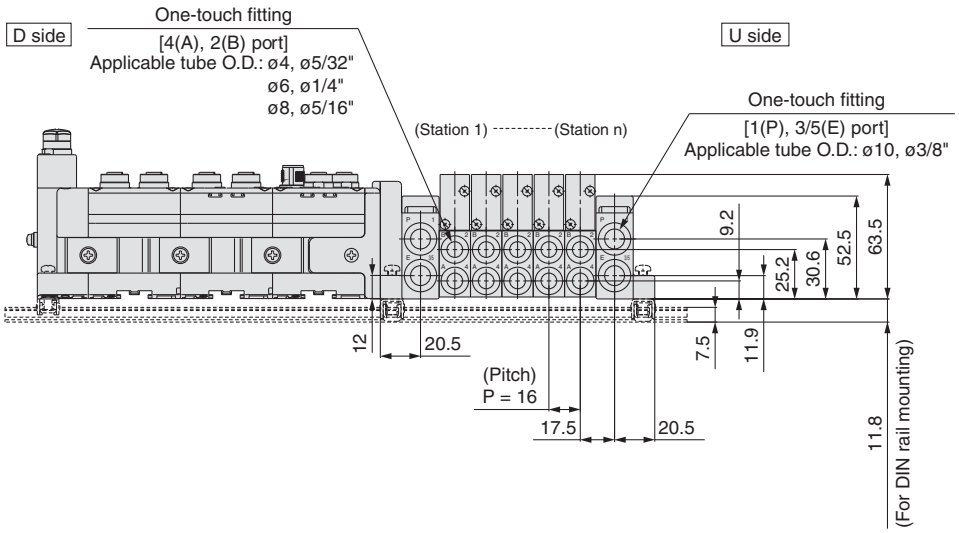
I/O Unit stations (n2) \ Valve stations (n1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0	198	210.5	223	235.5	248	248	260.5	273	285.5	298	310.5	310.5	323	335.5	348	360.5	373	385.5	385.5
1	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5	373	385.5	398	410.5	410.5	423	435.5
2	298	310.5	310.5	323	335.5	348	360.5	373	373	385.5	398	410.5	423	435.5	448	448	460.5	473	485.5
3	348	348	360.5	373	385.5	398	410.5	410.5	423	435.5	448	460.5	473	473	485.5	498	510.5	523	535.5
4	385.5	398	410.5	423	435.5	435.5	448	460.5	473	485.5	498	510.5	510.5	523	535.5	548	560.5	573	573
5	435.5	448	460.5	473	473	485.5	498	510.5	523	535.5	535.5	548	560.5	573	585.5	598	598	610.5	623
6	485.5	498	498	510.5	523	535.5	548	560.5	573	573	585.5	598	610.5	623	635.5	635.5	648	660.5	673
7	535.5	535.5	548	560.5	573	585.5	598	598	610.5	623	635.5	648	660.5	660.5	673	685.5	698	710.5	723
8	573	585.5	598	610.5	623	635.5	635.5	648	660.5	673	685.5	698	698	710.5	723	735.5	748	760.5	760.5
9	623	635.5	648	660.5	660.5	673	685.5	698	710.5	723	723	735.5	748	760.5	773	785.5	798	798	810.5

Dimensions: Series SV2000

(mm)

Power supply with M12 connector





L2 = L1 – 10.5
L3 = 16 x n1 + 60
L4 = L3 + 81 + 47 x n2
L5 = (L1 – L4)/2
L6 = 16 x n1 + 48
L7 = 47 x n2 + 81.5

L1: DIN Rail Overall Length

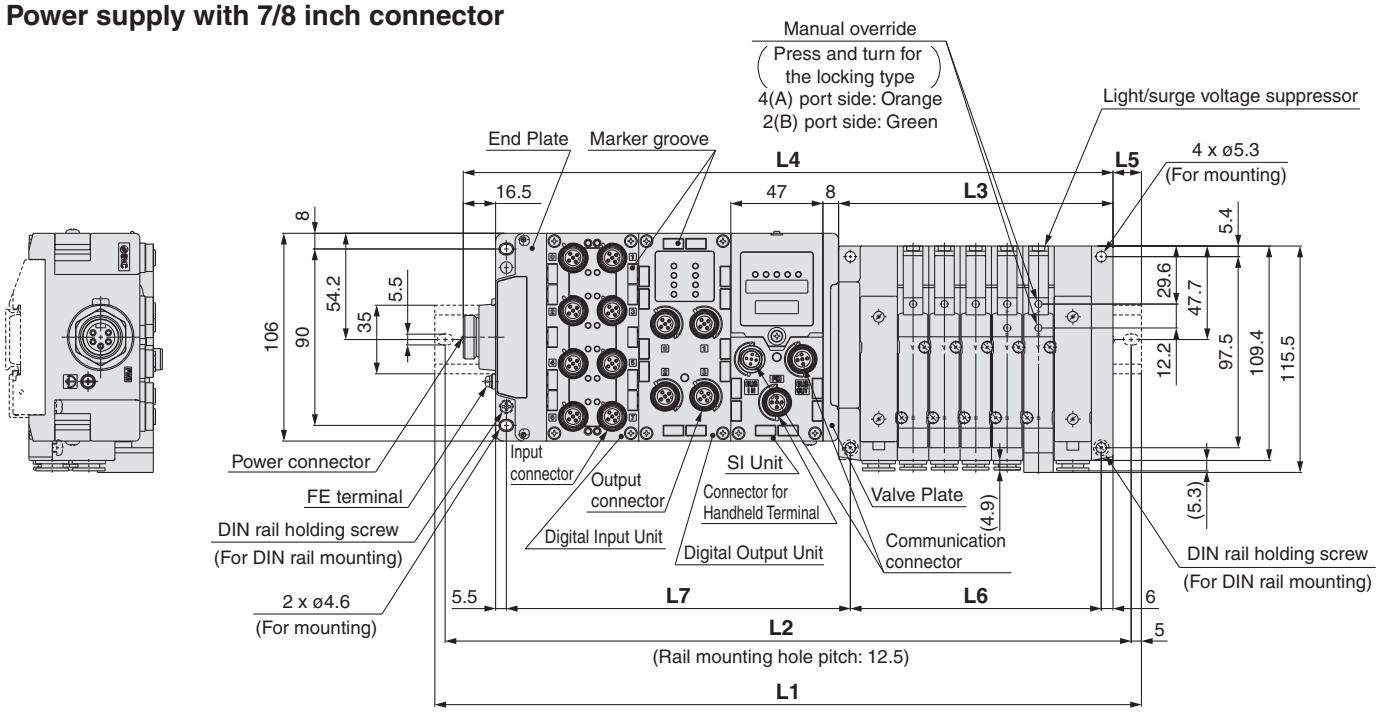
(mm)

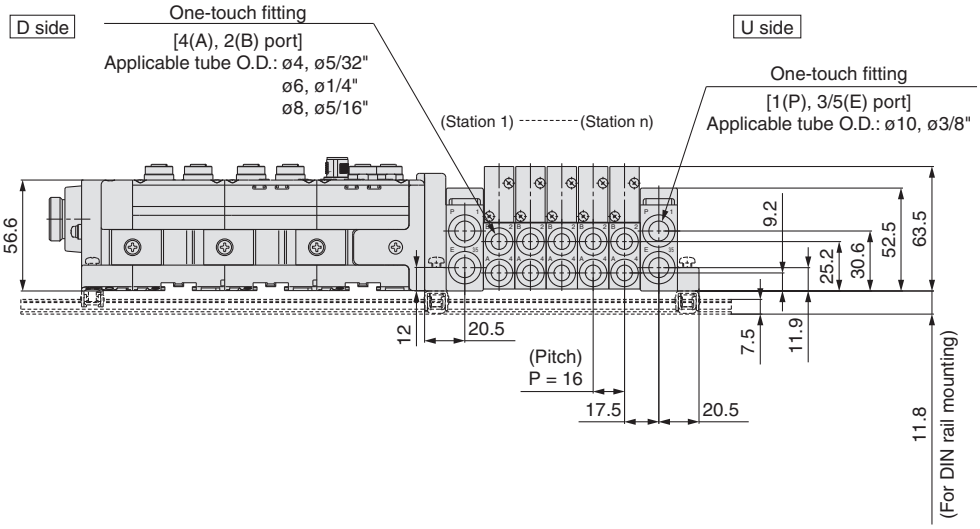
I/O Unit stations (n2) \ Valve stations (n1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0	198	223	235.5	248	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5
1	248	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	435.5	460.5	473	485.5	510.5	523	535.5
2	298	310.5	323	348	360.5	373	398	410.5	423	435.5	460.5	473	485.5	510.5	523	535.5	548	573	585.5
3	348	360.5	373	385.5	410.5	423	435.5	460.5	473	485.5	498	523	535.5	548	573	585.5	598	610.5	635.5
4	385.5	410.5	423	435.5	460.5	473	485.5	498	523	535.5	548	560.5	585.5	598	610.5	635.5	648	660.5	673
5	435.5	448	473	485.5	498	523	535.5	548	560.5	585.5	598	610.5	635.5	648	660.5	673	698	710.5	723
6	485.5	498	510.5	535.5	548	560.5	585.5	598	610.5	623	648	660.5	673	698	710.5	723	735.5	760.5	773
7	535.5	548	560.5	585.5	598	610.5	623	648	660.5	673	685.5	710.5	723	735.5	760.5	773	785.5	798	823
8	573	598	610.5	623	648	660.5	673	685.5	710.5	723	735.5	760.5	773	785.5	798	823	835.5	848	860.5
9	623	635.5	660.5	673	685.5	710.5	723	735.5	748	773	785.5	798	823	835.5	848	860.5	885.5	898	910.5

Dimensions: Series SV2000

(mm)

Power supply with 7/8 inch connector





L2 = L1 – 10.5
L3 = 16 x n1 + 60
L4 = L3 + 97.5 + 47 x n2
L5 = (L1 – L4)/2
L6 = 16 x n1 + 48
L7 = 47 x n2 + 81.5

L1: DIN Rail Overall Length

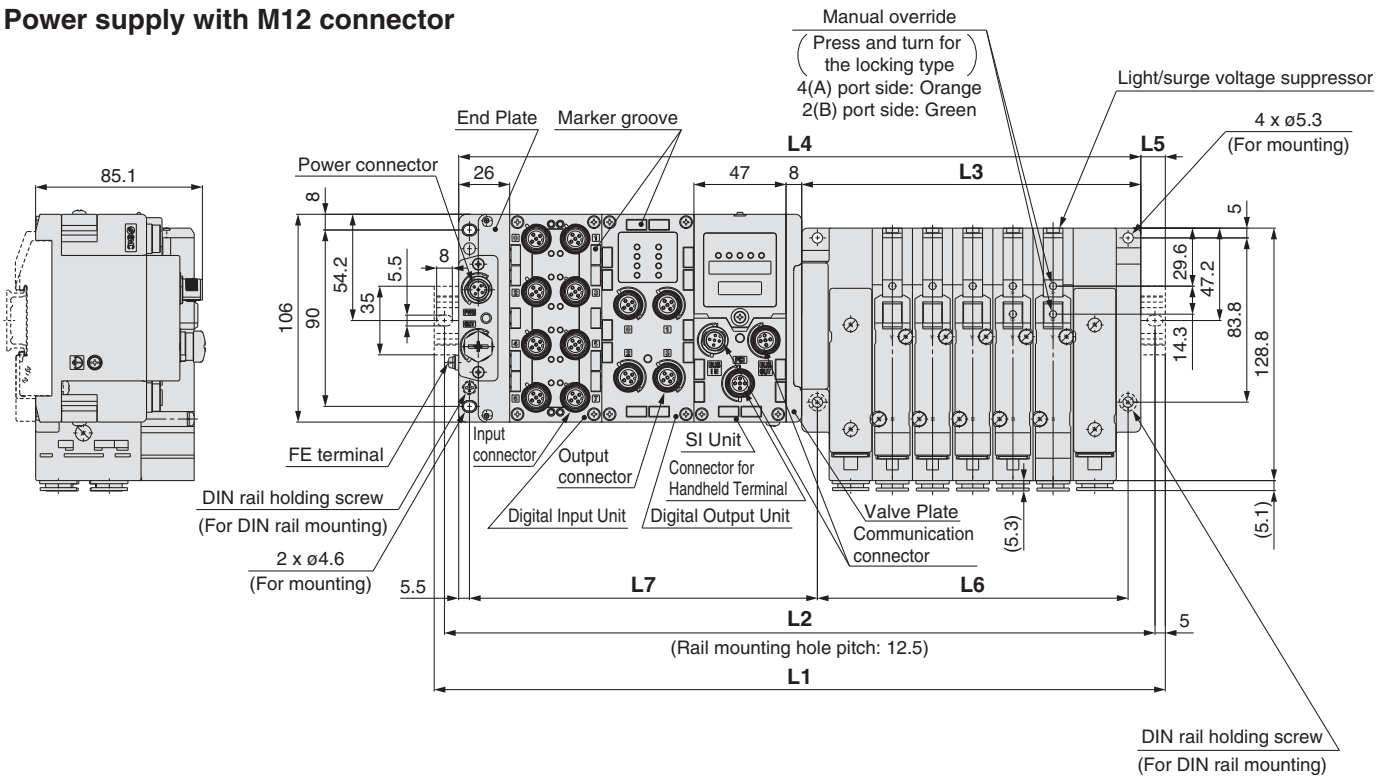
(mm)

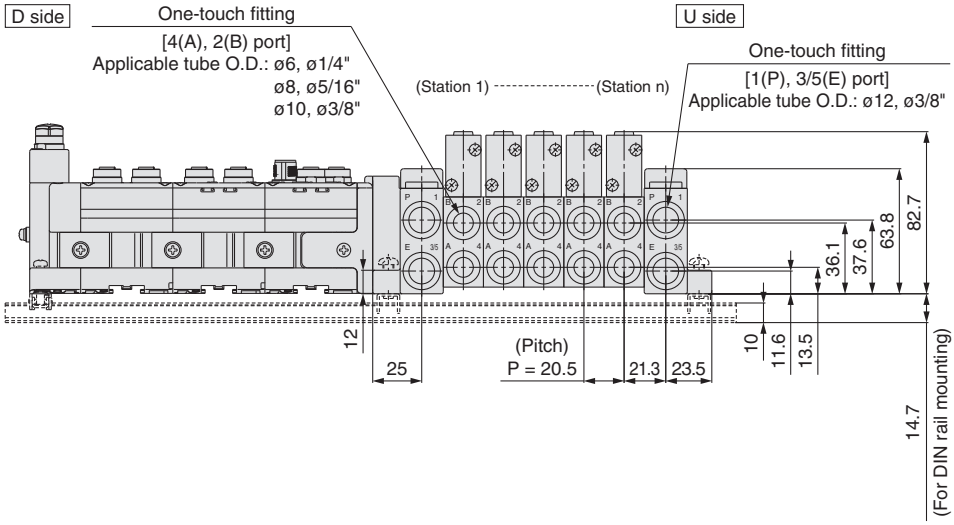
I/O Unit stations (n2) \ Valve stations (n1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0	223	235.5	248	273	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5
1	260.5	285.5	298	310.5	335.5	348	360.5	373	398	410.5	423	448	460.5	473	485.5	510.5	523	535.5	548
2	310.5	323	348	360.5	373	398	410.5	423	435.5	460.5	473	485.5	510.5	523	535.5	548	573	585.5	598
3	360.5	373	398	410.5	423	435.5	460.5	473	485.5	498	523	535.5	548	573	585.5	598	610.5	635.5	648
4	410.5	423	435.5	460.5	473	485.5	498	523	535.5	548	573	585.5	598	610.5	635.5	648	660.5	673	698
5	448	473	485.5	498	523	535.5	548	560.5	585.5	598	610.5	635.5	648	660.5	673	698	710.5	723	748
6	498	523	535.5	548	560.5	585.5	598	610.5	623	648	660.5	673	698	710.5	723	735.5	760.5	773	785.5
7	548	560.5	585.5	598	610.5	623	648	660.5	673	698	710.5	723	735.5	760.5	773	785.5	798	823	835.5
8	598	610.5	623	648	660.5	673	685.5	710.5	723	735.5	760.5	773	785.5	798	823	835.5	848	873	885.5
9	648	660.5	673	685.5	710.5	723	735.5	748	773	785.5	798	823	835.5	848	860.5	885.5	898	910.5	935.5

Dimensions: Series SV3000

(mm)

Power supply with M12 connector





L2 = L1 – 10.5
L3 = 20.5 x n1 + 70.5
L4 = L3 + 81 + 47 x n2
L5 = (L1 – L4)/2
L6 = 20.5 x n1 + 56
L7 = 47 x n2 + 83.5

L1: DIN Rail Overall Length

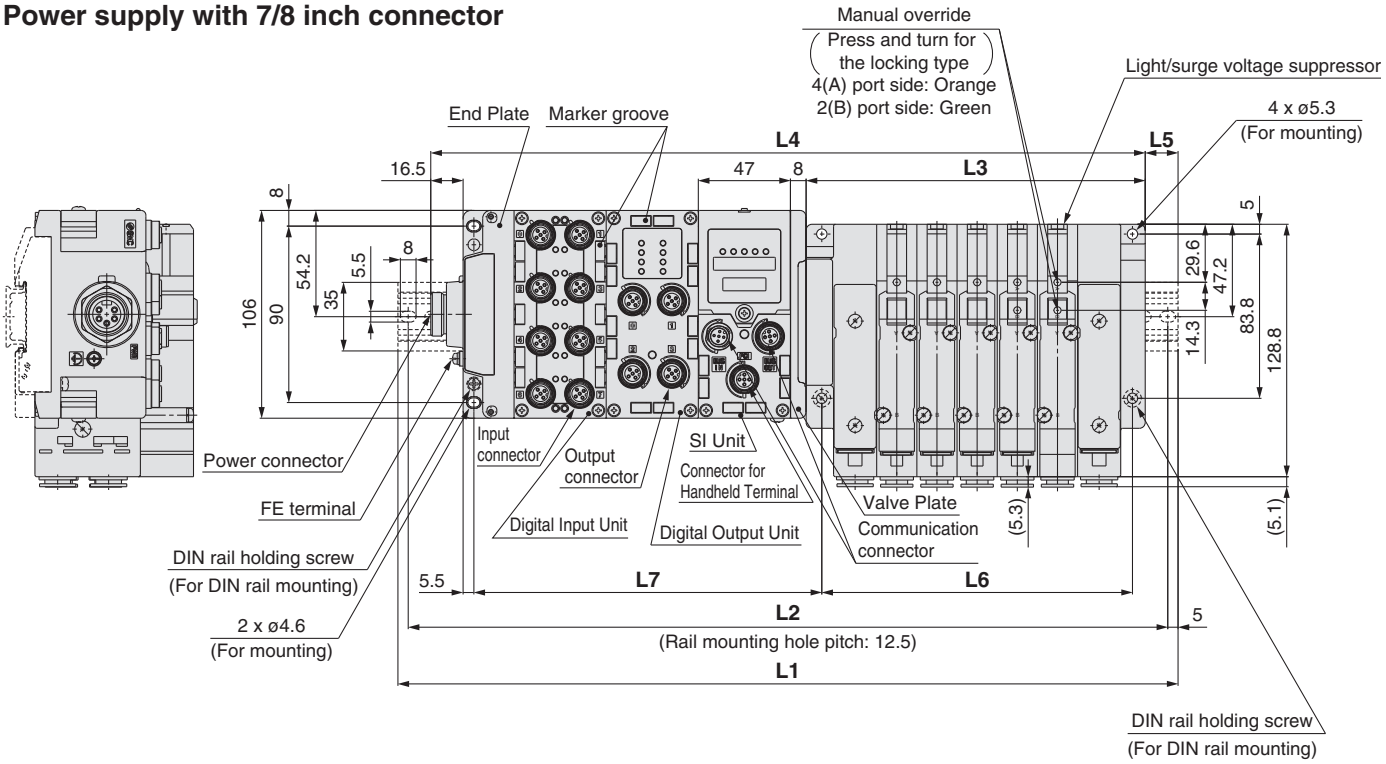
(mm)

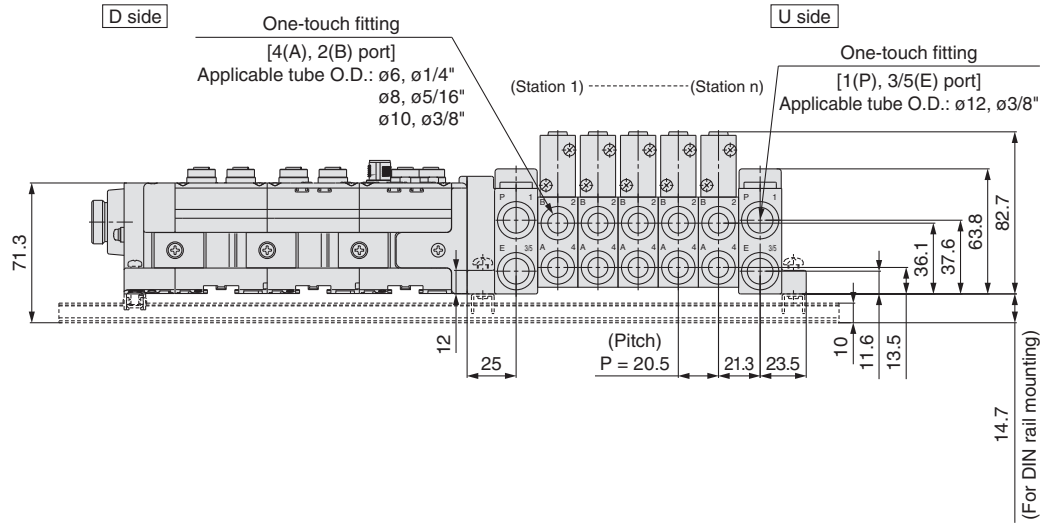
I/O Unit stations (n2) \ Valve stations (n1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0	223	248	260.5	285.5	298	323	348	360.5	385.5	410.5	423	448	473	485.5	510.5	535.5	548	573	585.5
1	273	285.5	310.5	335.5	348	373	398	410.5	435.5	448	473	498	510.5	535.5	560.5	573	598	623	635.5
2	310.5	335.5	360.5	373	398	423	435.5	460.5	485.5	498	523	535.5	560.5	585.5	598	623	648	660.5	685.5
3	360.5	385.5	398	423	448	460.5	485.5	510.5	523	548	573	585.5	610.5	635.5	648	673	685.5	710.5	735.5
4	410.5	435.5	448	473	498	510.5	535.5	548	573	598	610.5	635.5	660.5	673	698	723	735.5	760.5	773
5	460.5	473	498	523	535.5	560.5	585.5	598	623	635.5	660.5	685.5	698	723	748	760.5	785.5	810.5	823
6	498	523	548	560.5	585.5	610.5	623	648	673	685.5	710.5	735.5	748	773	785.5	810.5	835.5	848	873
7	548	573	598	610.5	635.5	648	673	698	710.5	735.5	760.5	773	798	823	835.5	860.5	873	898	923
8	598	623	635.5	660.5	685.5	698	723	735.5	760.5	785.5	798	823	848	860.5	885.5	910.5	923	948	973
9	648	660.5	685.5	710.5	723	748	773	785.5	810.5	835.5	848	873	885.5	910.5	935.5	948	973	—	—

Dimensions: Series SV3000

(mm)

Power supply with 7/8 inch connector





L2 = L1 – 10.5
L3 = 20.5 x n1 + 70.5
L4 = L3 + 97.5 + 47 x n2
L5 = (L1 – L4)/2
L6 = 20.5 x n1 + 56
L7 = 47 x n2 + 83.5

L1: DIN Rail Overall Length

(mm)

I/O Unit stations (n2) \ Valve stations (n1)	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
0	235.5	260.5	285.5	298	323	335.5	360.5	385.5	398	423	448	460.5	485.5	510.5	523	548	560.5	585.5	610.5
1	285.5	310.5	323	348	373	385.5	410.5	423	448	473	485.5	510.5	535.5	548	573	598	610.5	635.5	660.5
2	335.5	348	373	398	410.5	435.5	460.5	473	498	523	535.5	560.5	573	598	623	635.5	660.5	685.5	698
3	385.5	398	423	435.5	460.5	485.5	498	523	548	560.5	585.5	610.5	623	648	660.5	685.5	710.5	723	748
4	423	448	473	485.5	510.5	523	548	573	585.5	610.5	635.5	648	673	698	710.5	735.5	760.5	773	798
5	473	498	510.5	535.5	560.5	573	598	623	635.5	660.5	673	698	723	735.5	760.5	785.5	798	823	848
6	523	535.5	560.5	585.5	598	623	648	660.5	685.5	710.5	723	748	760.5	785.5	810.5	823	848	873	885.5
7	573	585.5	610.5	623	648	673	685.5	710.5	735.5	748	773	798	810.5	835.5	860.5	873	898	910.5	935.5
8	610.5	635.5	660.5	673	698	723	735.5	760.5	773	798	823	835.5	860.5	885.5	898	923	948	960.5	985.5
9	660.5	685.5	698	723	748	760.5	785.5	810.5	823	848	860.5	885.5	910.5	923	948	973	985.5	—	—

Series EX600
Specific Product Precautions 1

Be sure to read this before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" for 3/4/5 Port Solenoid Valve Precautions. The Operation Manual can be downloaded from the SMC website, http://www.smcworld.com

Design/Selection

⚠ Warning

1. Use this product within the specification range.

Using beyond the specified specifications range can cause fire, malfunction, or damage to the system.
Check the specifications before operation.

2. When using for an interlock circuit:

- **Provide a multiple interlock system which is operated by another system (such as mechanical protection function).**
- **Perform an inspection to confirm that it is working properly.**

This may cause possible injury due to malfunction.

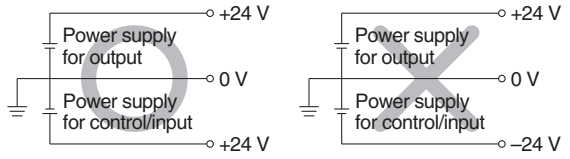
⚠ Caution

1. When applicable to UL, use a Class 2 power supply unit conforming to UL1310 for direct current power supply.

2. Use this product within the specified voltage range.

Using beyond the specified voltage range is likely to cause the units and connecting devices to be damaged or to malfunction.

3. The power supply for the unit should be 0 V as the standard for both power supply for output as well as power supply for control/input.



4. Do not install a unit in a place where it can be used as a foothold.

Applying any excessive load such as stepping on the unit by mistake or placing a foot on it, will cause it to break.

5. Keep the surrounding space free for maintenance.

When designing a system, take into consideration the amount of free space needed for performing maintenance.

6. Do not remove the name plate.

Improper maintenance or incorrect use of operation manual can cause failure and malfunction. Also, there is a ri sk of losing conformity with safety standards.

7. Beware of inrush current when the power supply is turned on.

Some connected loads can apply an initial charge current which will trigger the over current protection function, causing the unit to malfunction.

Mounting

⚠ Caution

1. When handling and assembling units:

- **Do not touch the sharp metal parts of the connector or plug.**
- **Do not apply excessive force to the unit when disassembling.**

The connecting portions of the unit are firmly joined with seals.

- **When joining units, take care not to get fingers caught between units.**

Injury can result.

Mounting

⚠ Caution

2. Do not drop, bump, or apply excessive impact.

Otherwise, the unit can become damaged, malfunction, or fail to function.

3. Observe the tightening torque range.

Tightening outside of the allowable torque range will likely damage the screw.
IP67 cannot be guaranteed if the screws are not tightened to the specified torque.

4. When lifting a large size manifold solenoid valve unit, take care to avoid causing stress to the valve connection joint.

The connection parts of the unit may be damaged.
Because the unit may be heavy, carrying and installation should be performed by more than one operator to avoid strain or injury.

5. When placing a manifold, mount it on a flat surface.

Torsion in the whole manifold can lead to trouble such as air leakage or defective insulation.

Wiring

⚠ Caution

1. Check the grounding to maintain the safety of the reduced wiring system and for anti-noise performance.

Provide a specific grounding as close to the unit as possible to minimize the distance to grounding.

2. Avoid repeatedly bending or stretching the cable and applying a heavy object or force to it.

Wiring applying repeated bending and tensile stress to the cable can break the circuit.

3. Avoid miswiring.

If miswired, there is a danger of malfunction or damage to the reduced wiring system.

4. Do not wire while energizing the product.

There is a danger of malfunction or damage to the reduced wiring system or input/output device.

5. Avoid wiring the power line and high pressure line in parallel.

Noise or surge produced by signal line resulting from the power line or high pressure line could cause malfunction.
Wiring of the reduced wiring system or input/output device and the power line or high pressure line should be separated from each other.

6. Check the wiring insulation.

Defective insulation (contact with other circuits, improper insulation between terminals, etc.) may cause damage to the reduced wiring system or input/output device due to excessive voltage or current.

Series EX600
Specific Product Precautions 2

Be sure to read this before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" for 3/4/5 Port Solenoid Valve Precautions. The Operation Manual can be downloaded from the SMC website, http://www.smcworld.com

Wiring

⚠Caution

7. When a reduced wiring system is installed in machinery/equipment, provide adequate protection against noise by using noise filters, etc.

Noise in signal lines may cause malfunction.

8. When connecting wires of input/output device or Handheld Terminal, prevent water, solvent or oil from entering inside from the connecter section.

This can cause damage, equipment failure or malfunction.

9. Avoid wiring patterns in which excessive stress is applied to the connector.

This may cause malfunction or damage to the unit due to contact failure.

Operating Environment

⚠Warning

1. Do not use in an atmosphere containing an inflammable gas or explosive gas.

Use in such an atmosphere is likely to cause a fire or explosion. This system is not explosion-proof.

⚠Caution

1. Select the proper type of enclosure according to the environment of operation.

IP65/67 is achieved when the following conditions are met.

1) Provide appropriate wiring between all units using electrical wiring cables, communication connectors and cables with M12 connectors.

2) Suitable mounting of each unit and manifold valve.

3) Be sure to mount a seal cap on any unused connectors.

If using in an environment that is exposed to water splashes, please take measures such as using a cover.
When the enclosure is IP40, do not use in an operating environment or atmosphere where it may come in contact with corrosive gas, chemical agents, seawater, water, or water vapor. When connected to the EX600-D□□E or EX600-D□□F, manifold enclosure is IP40.
Also, the Handheld Terminal conforms to IP20, so prevent foreign matter from entering inside, and water, solvent or oil from coming in direct contact with it.

2. Provide adequate protection when operating in locations such as the following.

Failure to do so may cause damage or malfunction.
The effect of countermeasures should be checked in individual equipment and machine.

1) Where noise is generated by static electricity, etc.

2) Where there is a strong electric field

3) Where there is a danger of exposure to radiation

4) When in close proximity to power supply lines

Operating Environment

⚠Caution

3. Do not use in an environment where oil and chemicals are used.

Operating in environments with coolants, cleaning solvents, various oils or chemicals may cause adverse effects (damage, malfunction) to the unit even in a short period of time.

4. Do not use in an environment where the product could be exposed to corrosive gas or liquid.

This may damage the unit and cause it to malfunction.

5. Do not use in locations with sources of surge generation.

Installation of the unit in an area around the equipment (electromagnetic lifters, high frequency induction furnaces, welding machine, motors, etc.), which generates the large surge voltage could cause to deteriorate an internal circuitry element of the unit or result in damage. Implement countermeasures against the surge from the generating source, and avoid touching the lines with each other.

6. Use the product type that has an integrated surge absorption element when directly driving a load which generates surge voltage by relay, solenoid valves or lamp.

When a surge generating load is directly driven, the unit may be damaged.

7. The product is CE marked, but not immune to lightning strikes. Take measures against lightning strikes in your system.

8. Keep dust, wire scraps and other extraneous material from getting inside the product.

This may cause malfunction or damage.

9. Mount the unit in such locations, where no vibration or shock is affected.

This may cause malfunction or damage.

10. Do not use in places where there are cyclic temperature changes.

In case that the cyclic temperature is beyond normal temperature changes, the internal unit is likely to be adversely effected.

11. Do not use in direct sunlight.

Do not use in direct sunlight. It may cause malfunction or damage.

12. Use this product within the specified ambient temperature range.

This may cause malfunction.

13. Do not use in places where there is radiated heat around it.

Such a place is likely to cause malfunction.

Series EX600
Specific Product Precautions 3

Be sure to read this before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" for 3/4/5 Port Solenoid Valve Precautions. The Operation Manual can be downloaded from the SMC website, http://www.smcworld.com

Adjustment/Operation

⚠Warning

1. Do not perform operation or setting with wet hands.
There is a risk of electrical shock.

<Handheld Terminal>

2. Do not apply pressure to the LCD.
There is a possibility of the crack of LCD and injuring.

3. The forced input/output function is used to change the signal status forcibly. When operating this function, be sure to check the safety of the surroundings and installation.
Otherwise, injury or equipment damage could result.

4. Incorrect setting of parameters can cause malfunction. Be sure to check the settings before use.
This may cause injury or equipment damage.

⚠Caution

1. Use a watchmakers' screwdriver with thin blade for the setting of each switch of the SI Unit.
When setting the switch, do not touch other unrelated parts.
This may cause parts damage or malfunction due to a short circuit.

2. Provide adequate setting for the operating conditions.
Failure to do so could result in malfunction.
Refer to the operation manual for setting of the switches.

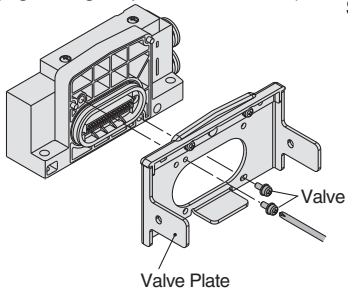
3. For details on programming and address setting, refer to the manual from the PLC manufacturer.
The content of programming related to protocol is designed by the manufacturer of the PLC used.

<Handheld Terminal>

4. Do not press the setting buttons with a sharp pointed object.
This may cause damage or malfunction.

5. Do not apply excessive load and impact to the setting buttons.
This may cause damage, equipment failure or malfunction.

When the order does not include the SI Unit, the Valve Plate to connect the manifold and SI Unit is not mounted. Use attached valve fixing screws and mount the Valve Plate.
(Tightening torque: 0.6 to 0.7 N·m)



Screw tightened parts
Series SV: 2 places
Series S0700: 2 places
Series VQC1000: 2 places
Series VQC2000: 3 places
Series VQC4000: 4 places
Series SY: 2 places

Maintenance

⚠Warning

1. Do not disassemble, modify (including circuit board replacement) or repair this product.
Such actions are likely to cause injuries or breakage.

2. When an inspection is performed,
- **Turn off the power supply.**
- **Stop the air supply, exhaust the residual pressure in piping and verify that the air is released before performing maintenance work.**
Unexpected malfunction of system components and injury can result.

⚠Caution

1. When handling and replacing the unit:
- **Do not touch the sharp metal parts of the connector or plug.**
- **Do not apply excessive force to the unit when disassembling.**
The connecting portions of the unit are firmly joined with seals.
- **When joining units, take care not to get fingers caught between units.**
Injury can result.

2. Perform periodic inspection.
Unexpected malfunction in the system composition devices is likely to occur due to malfunction of machinery or equipment.

3. After maintenance, make sure to perform an appropriate functionality inspection.
In cases of abnormality such as faulty operation, stop operation. Unexpected malfunction in the system composition devices is likely to occur.

4. Do not use benzene and thinner for cleaning units.
Damage to the surface or erasure of the display can result. Wipe off any stains with a soft cloth.
If the stain is persistent, wipe off with a cloth soaked in a dilute solution of neutral detergent and wrung out tightly, and then finish with a dry cloth.

Other

⚠Caution

1. Refer to the catalog of each series for Common Precautions and Specific Product Precautions on manifold solenoid valves.

⚠ Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of **"Caution," "Warning"** or **"Danger."** They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)*1), and other safety regulations.

⚠ Caution: **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

⚠ Warning: **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

⚠ Danger : **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines.
(Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots - Safety.
etc.

⚠ Warning

1. **The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.**
   Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.
2. **Only personnel with appropriate training should operate machinery and equipment.**
   The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.
3. **Do not service or attempt to remove product and machinery/equipment until safety is confirmed.**
   1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
   2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
   3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.
4. **Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.**
   1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
   2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
   3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
   4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

⚠ Caution

1. **The product is provided for use in manufacturing industries.**
   The product herein described is basically provided for peaceful use in manufacturing industries.
   If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
   If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".
Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered.*2)
   Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
   This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

*2) **Vacuum pads are excluded from this 1 year warranty.**
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.
Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Revision history

Edition B	∗ EtherNet/IP™ communication protocol added.	
	∗ Analog Output Unit and Input/Output Unit added.	
	∗ D-sub connector and spring type terminal block added.	
	∗ Applicable solenoid valve SY3000/5000 series added.	
	∗ Number of pages decreased from 64 to 60.	OW
Edition C	∗ EtherCAT communication protocol added.	PX

⚠ Safety	Be sure to read "Handling Precautions for SMC Products" (M-E03-3) before using.

Fieldbus System

(Output device for driving 5 port solenoid valves)

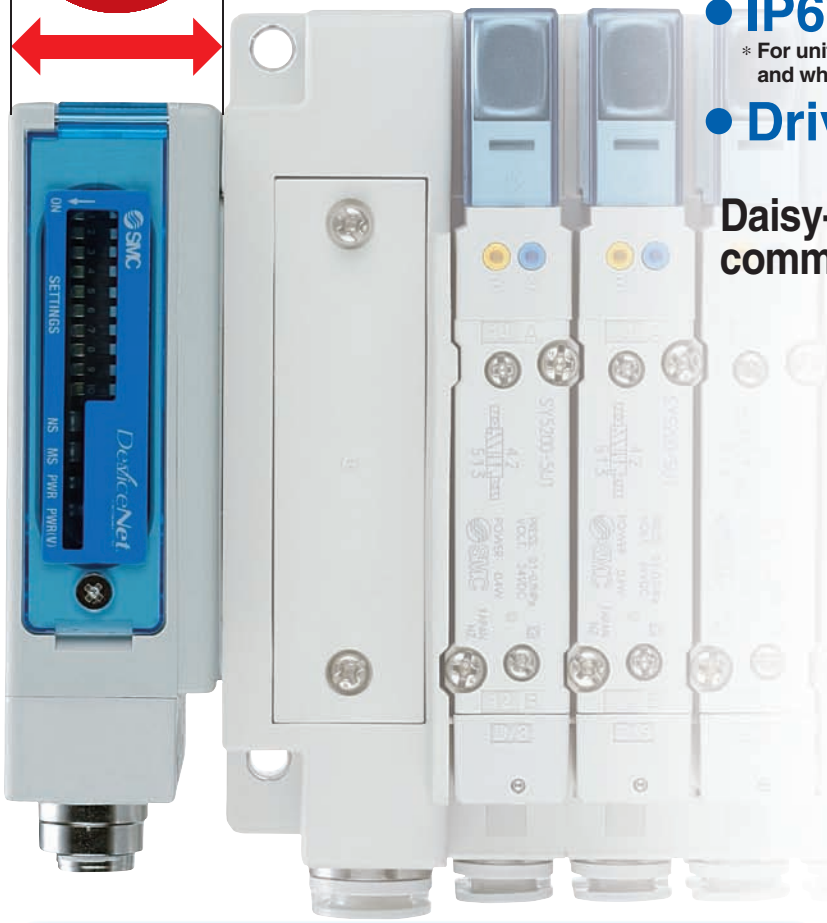
New

CE cULus RoHS

Compact
28 mm
(Actual size)

Space-saving Installation

EtherNet/IP™ added !

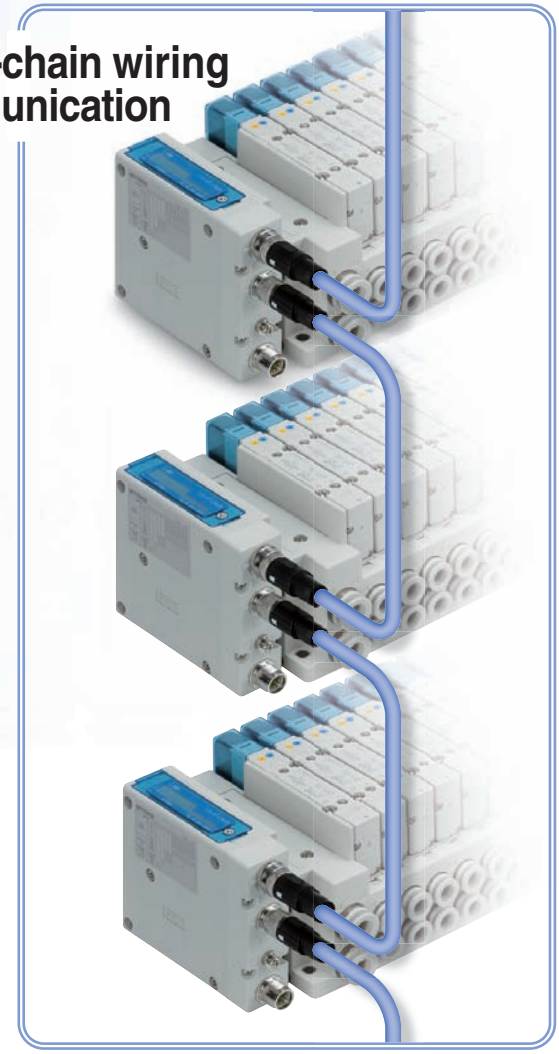


- **IP67***

  * For units with D-sub connector, and when connected to S0700 manifolds, it is IP40.

- **Drives up to 32 solenoids**

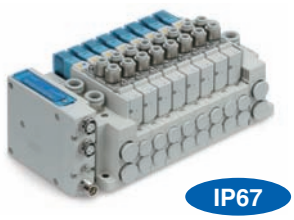
Daisy-chain wiring communication



Applicable Fieldbus protocols

PROFIBUS® DeviceNet™ CC-Link

PROFINET® New EtherNet/IP™ EtherCAT®

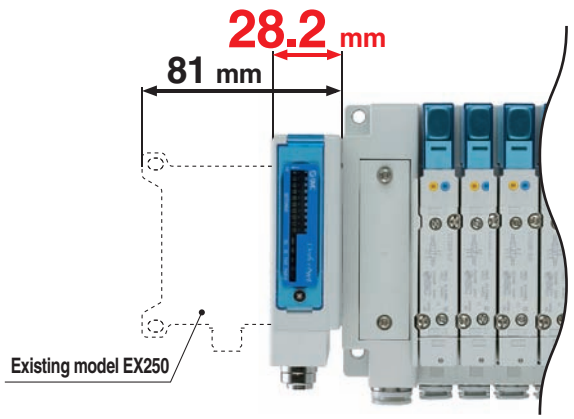
Top ported valve	Bottom ported valve	Side ported valve Mixed valve sizes manifold	7 mm width valve
			
IP67	IP67	IP67	IP40

Series EX260

SMC

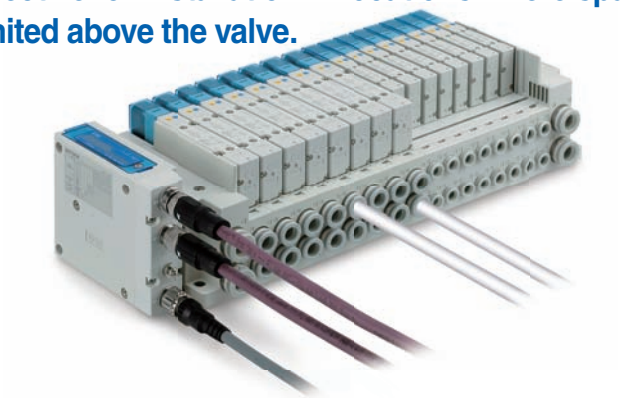
CAT.NAS02-25B

Manifold length is shortened by the small fieldbus output module (SI unit).

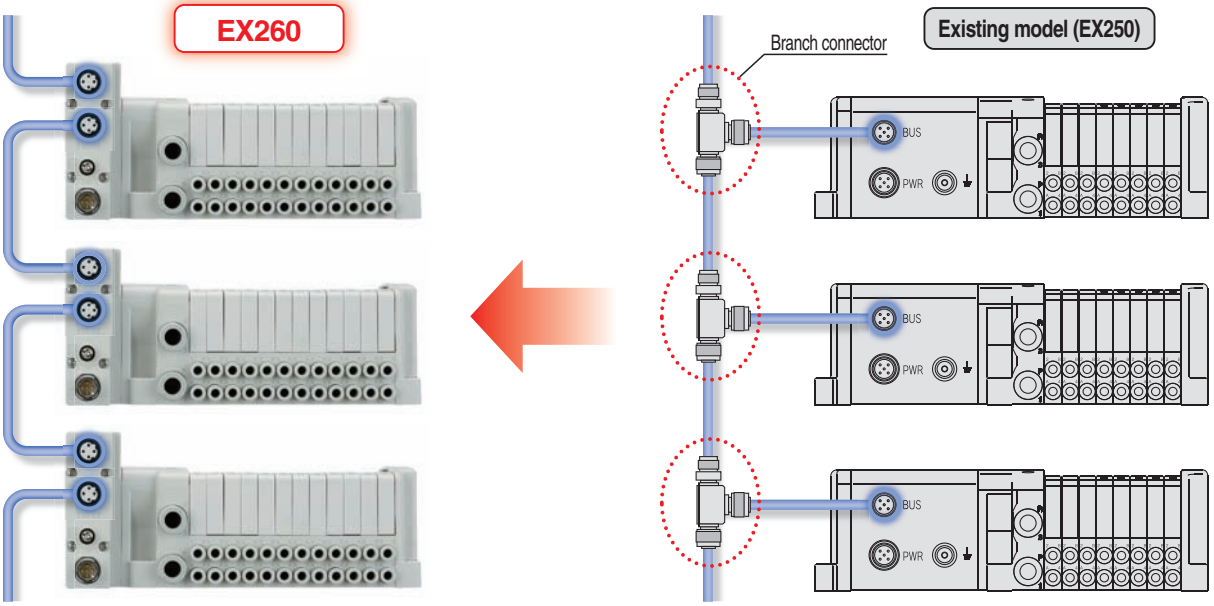


Wiring and piping from the same direction is possible. (for side ported)

Effective for installation in locations where space is limited above the valve.

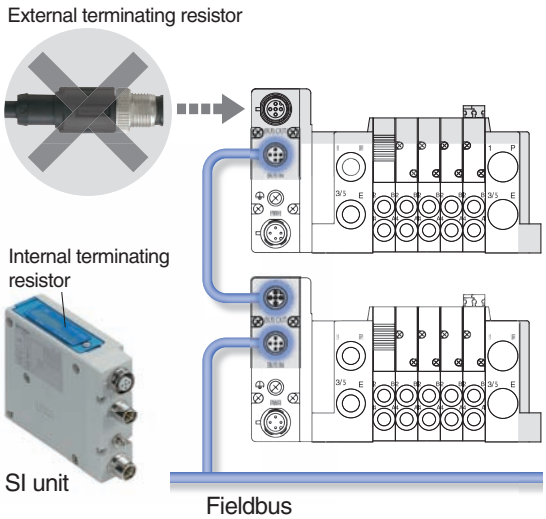


External branch connector is not necessary. Daisy-chain wiring is possible. Reduced wiring space



External terminating resistor is not necessary. (Only available for M12 PROFIBUS DP, CC-Link communication connectors)

ON/OFF switching is possible with an internal terminating resistor. External terminating resistor is not necessary.



Product Specification Variations

	PROFIBUS DP	DeviceNet	CC-Link	PROFINET	EtherNet/IP	EtherCAT
Number of outputs	16 32	16 32	16 32	16 32	16 32	16 32
Output polarity	PNP NPN	PNP NPN	PNP NPN	PNP NPN	PNP NPN	PNP NPN
Communication connector	M12 D-sub	M12	M12	M12	M12	M12

■ Communication connector examples

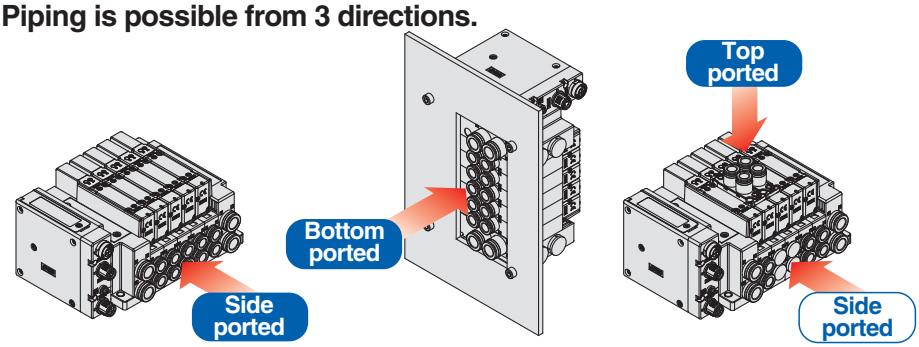
M12 communication connector
(PROFIBUS DP)

D-sub communication connector
(PROFIBUS DP)

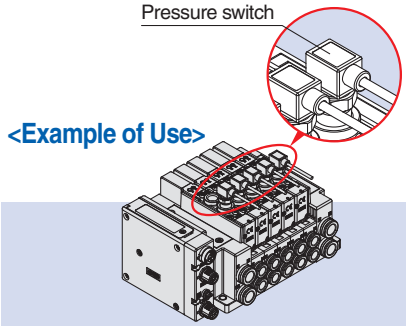
Series SY3000/5000

Valve piping direction variations

■ **Piping is possible from 3 directions.**

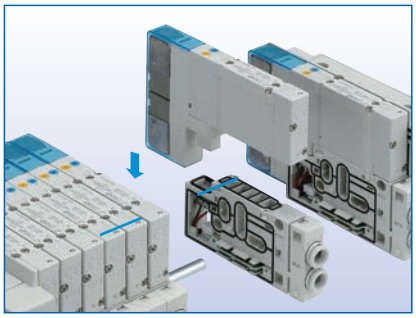


Mixed mounting of top ported and side ported is possible.



By mounting top ported valves on side ported and bottom ported type manifolds, it is possible to detect the output of the A/B port with a pressure switch.

Valves can be freely connected up to 24 stations.



■ **It is possible to connect only the number of valves required, from 1 to 24 stations, to suit the application. (Maximum number of solenoids connected: 32)**

Mixed valve sizes manifold

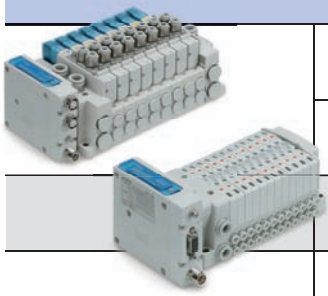
■ **Valves of different sizes, SY3000 and SY5000, can be mounted on the same manifold.**

Series S0700

7 mm width valves can be connected.

■ **It is possible to connect only the number of 7 mm width valves required, from 1 to 24 stations. (Maximum number of solenoids connected: 32)**

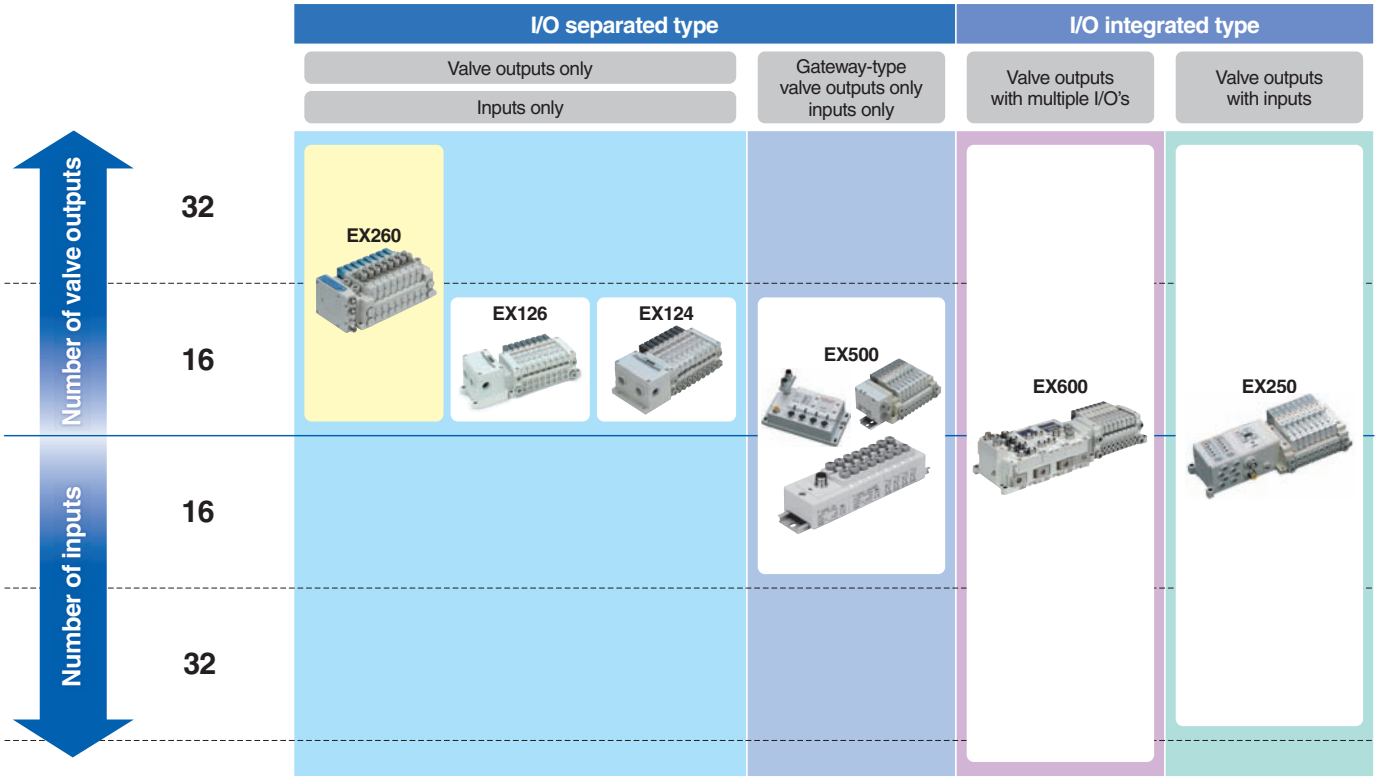
● Applicable Valve Series

Series		Flow-rate characteristics (4/2→5/3) C [dm³/(s·bar)]	Flow-rate characteristics (4/2→5/3) b	Maximum number of solenoids	Power consumption (W)	Enclosure	Standards	Page
	SY3000	1.6	0.19	32	0.35 (standard) 0.1 (with power-saving circuit)	IP67	CE	page 7
	SY5000	3.6	0.17					
	S0700	0.37	0.39	32	0.35	IP40	CE	page 38
	SV1000	1.1	0.35	32	0.6	IP67	CE cULus	page 24
	SV2000	2.4	0.18					
	SV3000	4.3	0.21					
	VQC1000	1.0	0.30	24	0.4 (standard)	IP67	CE	page 29
	VQC2000	3.2	0.30					
	VQC4000	7.3	0.38		1.0 (standard)			

Note) For units with D-sub communication connector, it is IP40.

Fieldbus System Variations

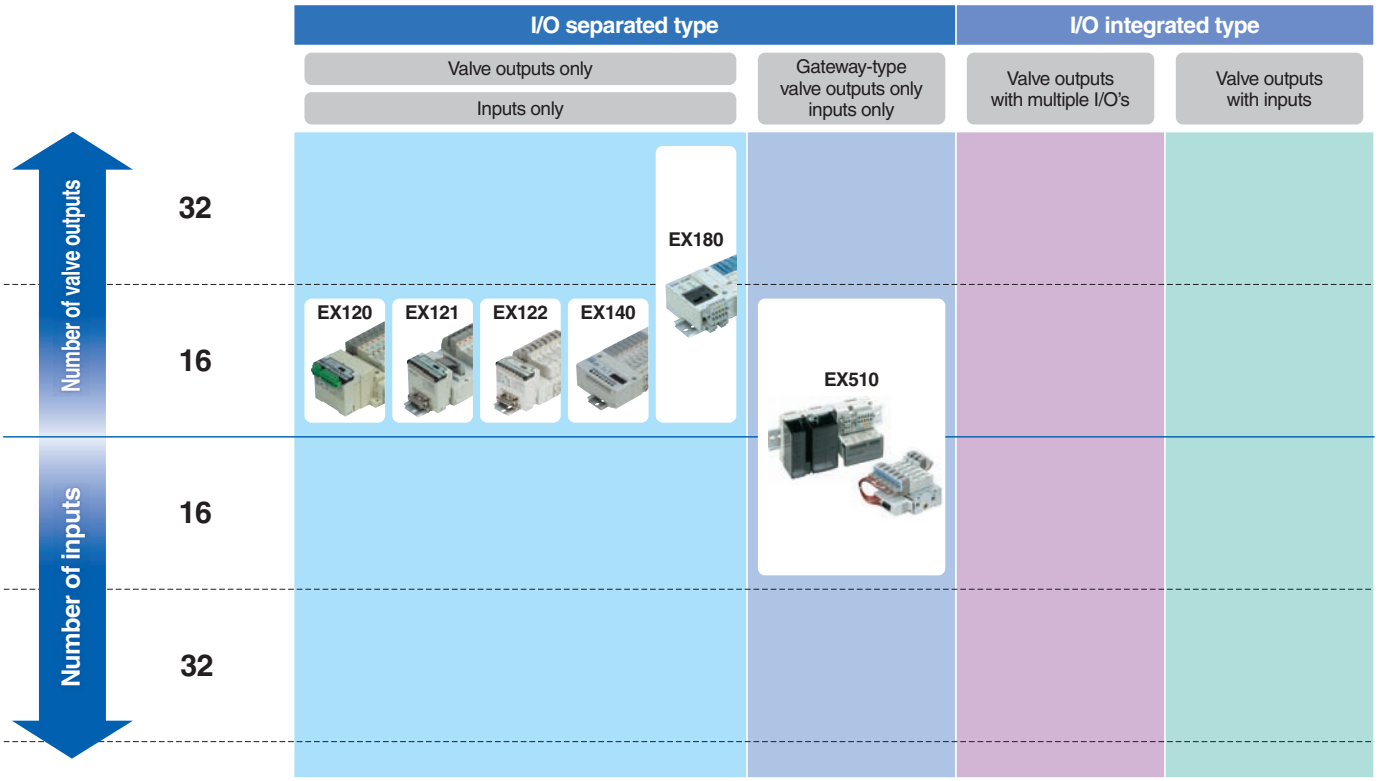
IP67/65 specification models



Number of valve outputs	16			32	16 (total 64)	32	32
Number of inputs	None				16 (total 64)	144	32
SI unit series	EX260	EX126	EX124	EX260	EX500	EX600	EX250
Open network: PROFINET	●			●			
Open network: EtherCAT	●			●		●	
Open network: EtherNet/IP™	●			●	●	●	●
Open network: PROFIBUS DP	●			●	●	●	●
Open network: DeviceNet™	●		●	●	●	●	●
Open network: CC-Link	●	●	●	●	●	●	●
Open network: AS-Interface							●
Open network: CANopen							●
Open network: CompoNet™							
Applicable valve series: SY (Plug-in connector connecting base) 3000	●	●		●	●	●	●
Applicable valve series: SY (Plug-in connector connecting base) 5000	●	●		●	●	●	●
Applicable valve series: S0700 (Stacking base) 0700	●			●	●	●	●
Applicable valve series: SV 1000	●	●		●	●	●	●
Applicable valve series: SV 2000	●	●		●	●	●	●
Applicable valve series: SV 3000	●	●		●	●	●	●
Applicable valve series: SV 4000					●		
Applicable valve series: VQC 1000	●	●		●	●	●	●
Applicable valve series: VQC 2000	●	●		●	●	●	●
Applicable valve series: VQC 4000	●	●		●	●	●	●
Applicable valve series: VQ 1000							
Applicable valve series: VQ 2000			●				
Applicable valve series: VQ 4000			●				
Applicable valve series: VQ 5000			●				

Fieldbus System Variations

IP20 specification models



Number of valve outputs		16				32	16 (total 64)
Number of inputs		None					16 (total 64)
SI unit series		EX120	EX121	EX122	EX140	EX180	EX510
Open network	PROFINET						
	EtherCAT						
	EtherNet/IP™						
	PROFIBUS DP						●
	DeviceNet™	●	●	●	●	●	●
	CC-Link	●	●	●	●	●	●
	AS-Interface						
	CANopen						
	CompoNet™	●	●	●			
Applicable valve series	SY (Plug-in connector connecting base) 3000	●					
	SY (Plug-in connector connecting base) 5000	●					
	SJ 2000					●	●
	SJ 3000					●	●
	SY (Plug-in metal base) 3000						●
	SY (Plug-in metal base) 5000						●
	S0700 (Bar stock) 0700					●	●
	SY (Bar stock) 3000						●
	SY (Bar stock) 5000						●
	SY (Bar stock) 7000						●
	SY (Stacking base) 3000		●	●			●
	SY (Stacking base) 5000		●	●			●
	SY (Stacking base) 7000						●
	SV 1000	●					
	SV 2000	●					
	SV 3000	●					
	SV 4000	●					
	VQ 1000	●					●
	VQ 2000	●					●
	VQ 4000						
	VQ 5000						
	SQ 1000				●		●
	SQ 2000				●		●
	SZ 3000				●		●
	VQZ 1000						●
	VQZ 2000						●
	VQZ 3000						●
	SYJ 3000						●
	SYJ 5000						●
	SYJ 7000						●

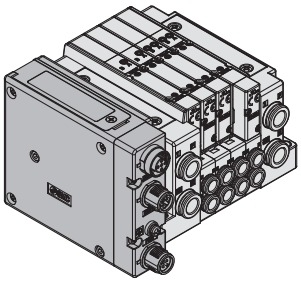
SI Unit Integrated-type/For Output

Series EX260

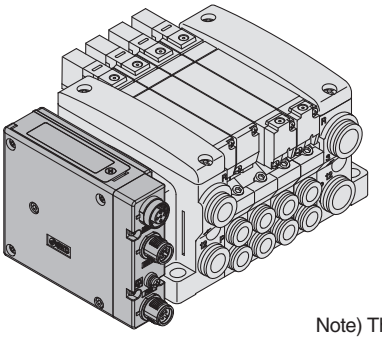
Note)

Compact design	Compact design for space saving
Number of outputs	Each 32/16 digital output type available in the series
Output polarity	Each negative common (PNP) / positive common (NPN) type available in the series
Enclosure	IP67 (For units with D-sub connector, and when connected with S0700 manifolds, it is IP40.)
Internal terminating resistor	ON/OFF switching is possible with an internal terminating resistor for communication. (Only for units compatible with M12 PROFIBUS DP, CC-Link communication connectors)

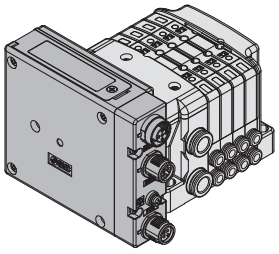
SY3000/5000



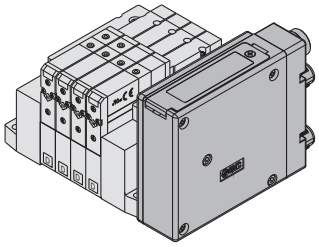
VQC1000/2000/4000



S0700



SV1000/2000/3000



Note) The SY3000/5000, VQC1000/2000/4000, and S0700 are not yet UL-compatible.

How to Order SI Units

EX260 – S PR1

● Communication protocol

Symbol	Protocol	Number of outputs	SI unit output polarity	Communication connector	Manifold symbol
DN1	DeviceNet™	32	Source/PNP (Negative common)	M12	QAN
DN2			Sink/NPN (Positive common)		QA
DN3		16	Source/PNP (Negative common)		QBN
DN4			Sink/NPN (Positive common)		QB
PR1	PROFIBUS DP	32	Source/PNP (Negative common)	M12	NAN
PR2			Sink/NPN (Positive common)		NA
PR3		16	Source/PNP (Negative common)		NBN
PR4			Sink/NPN (Positive common)		NB
PR5		32	Source/PNP (Negative common)	D-sub Note)	NCN
PR6			Sink/NPN (Positive common)		NC
PR7		16	Source/PNP (Negative common)		NDN
PR8			Sink/NPN (Positive common)		ND
MJ1	CC-Link	32	Source/PNP (Negative common)	M12	VAN
MJ2			Sink/NPN (Positive common)		VA
MJ3		16	Source/PNP (Negative common)		VBN
MJ4			Sink/NPN (Positive common)		VB
EC1	EtherCAT	32	Source/PNP (Negative common)	M12	DAN
EC2			Sink/NPN (Positive common)		DA
EC3		16	Source/PNP (Negative common)		DBN
EC4			Sink/NPN (Positive common)		DB
PN1	PROFINET	32	Source/PNP (Negative common)	M12	FAN
PN2			Sink/NPN (Positive common)		FA
PN3		16	Source/PNP (Negative common)		FBN
PN4			Sink/NPN (Positive common)		FB
EN1	EtherNet/IP™	32	Source/PNP (Negative common)	M12	EAN
EN2			Sink/NPN (Positive common)		EA
EN3		16	Source/PNP (Negative common)		EBN
EN4			Sink/NPN (Positive common)		EB

Note) Enclosure is IP40 when the communication connector is D-sub.

SI Unit Specifications

Model		EX260-SPR1/3	EX260-SPR2/4	EX260-SPR5/7	EX260-SPR6/8	EX260-SDN1/3	EX260-SDN2/4	EX260-SMJ1/3	EX260-SMJ2/4
Applicable system	Protocol	PROFIBUS DP				DeviceNet™		CC-Link	
	Version Note 1)	DP-V0				Volume 1(Edition 3.5) Volume 3(Edition 1.5)		Ver.1.10	
	Configuration file Note 3)	GSD file				EDS file		—	
I/O occupation area (Inputs/Outputs)		SPR1: 0/32 SPR3: 0/16	SPR2: 0/32 SPR4: 0/16	SPR5: 0/32 SPR7: 0/16	SPR6: 0/32 SPR8: 0/16	SDN1: 0/32 SDN3: 0/16	SDN2: 0/32 SDN4: 0/16	SMJ1: 32/32 SMJ3: 32/32 (1 station, remote I/O stations)	SMJ2: 32/32 SMJ4: 32/32 (1 station, remote I/O stations)
Communication speed		9.6 k/19.2 k/45.45 k/93.75 k/ 187.5 k/500 k/1.5 M/3 M/6 M/12 Mbps				125 k/250 k/500 kbps		156 k/625 k/ 2.5 M/5 M/10 Mbps	
Power supply for control	Power supply voltage	21.6 to 26.4 VDC				—		21.6 to 26.4 VDC	
	Internal current consumption	100 mA or less				—		100 mA or less	
Power supply for output	Power supply voltage	—		22.8 to 26.4 VDC					
Power supply for communication	Power supply voltage	—				11 to 25 VDC		—	
	Internal current consumption					100 mA or less		—	
Communication connector specification		M12		D-sub		M12			
Terminating resistor switch		Built-in		None				Built-in	
Output	Output type	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)	Sink/NPN (Positive common)
	Number of outputs	SPR1: 32 points SPR3: 16 points	SPR2: 32 points SPR4: 16 points	SPR5: 32 points SPR7: 16 points	SPR6: 32 points SPR8: 16 points	SDN1: 32 points SDN3: 16 points	SDN2: 32 points SDN4: 16 points	SMJ1: 32 points SMJ3: 16 points	SMJ2: 32 points SMJ4: 16 points
	Load	Solenoid valve with protective circuit for surge voltage of 24 VDC/1.5 W or less (SMC)							
	Supplied voltage	24 VDC							
	Supplied current	SPR1: Max. 2.0 A SPR3: Max. 1.0 A	SPR2: Max. 2.0 A SPR4: Max. 1.0 A	SPR5: Max. 2.0 A SPR7: Max. 1.0 A	SPR6: Max. 2.0 A SPR8: Max. 1.0 A	SDN1: Max. 2.0 A SDN3: Max. 1.0 A	SDN2: Max. 2.0 A SDN4: Max. 1.0 A	SMJ1: Max. 2.0 A SMJ3: Max. 1.0 A	SMJ2: Max. 2.0 A SMJ4: Max. 1.0 A
Environmental resistance	Enclosure	IP67		IP40		IP67			
	Operating temperature range	14 to 122°F (–10 to 50°C)							
	Operating humidity range	35 to 85%RH (No condensation)							
	Withstand voltage	500 VAC for 1 minute between terminals and housing							
	Insulation resistance	10 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing							
Standards		CE marking, UL (CSA) compatible							
Weight		0.44 lbs (200 g)							
Accessories	Mounting screw	2 pcs.							
	Seal cap (for M12 connector socket)	EX9-AWTS (1 pc.)		—		EX9-AWTS (1 pc.)			

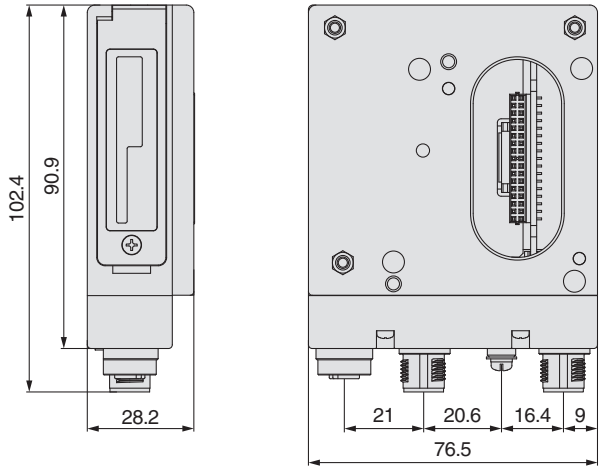
Model		EX260-SEC1/3	EX260-SEC2/4	EX260-SPN1/3	EX260-SPN2/4	EX260-SEN1/3	EX260-SEN2/4
Applicable system	Protocol	EtherCAT Note 2)		PROFINET Note 2)		EtherNet/IP™ Note 2)	
	Version Note 1)	Conformance Test Record V.1.1		PROFINET Specification Version 2.2		Volume 1(Edition 3.8) Volume 2(Edition 1.9)	
	Configuration file Note 3)	XML file		GSD file		EDS file	
I/O occupation area (Inputs/Outputs)		SEC1: 0/32 SEC3: 0/16	SEC2: 0/32 SEC4: 0/16	SPN1: 0/32 SPN3: 0/16	SPN2: 0/32 SPN4: 0/16	SEN1: 16/32 SEN3: 16/16	SEN2: 16/32 SEN4: 16/16
Communication speed		100 Mbps Note 2)				10 M/100 Mbps Note 2)	
Power supply for control	Power supply voltage	21.6 to 26.4 VDC					
	Internal current consumption	100 mA or less					
Power supply for output	Power supply voltage	22.8 to 26.4 VDC					
Power supply for communication	Power supply voltage	—					
	Internal current consumption	—					
Communication connector specification		M12					
Terminating resistor switch		None					
Output	Output type	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)	Sink/NPN (Positive common)	Source/PNP (Negative common)	Sink/NPN (Positive common)
	Number of outputs	SEC1: 32 points SEC3: 16 points	SEC2: 32 points SEC4: 16 points	SPN1: 32 points SPN3: 16 points	SPN2: 32 points SPN4: 16 points	SEN1: 32 points SEN3: 16 points	SEN2: 32 points SEN4: 16 points
	Load	Solenoid valve with protective circuit for surge voltage of 24 VDC/1.5 W or less (SMC)		Solenoid valve with protective circuit for surge voltage of 24 VDC/1.0 W or less (SMC)		Solenoid valve with protective circuit for surge voltage of 24 VDC/1.5 W or less (SMC)	
	Supplied voltage	24 VDC					
	Supplied voltage	SEC1: Max. 2.0 A SEC3: Max. 1.0 A	SEC2: Max. 2.0 A SEC4: Max. 1.0 A	SPN1: Max. 2.0 A SPN3: Max. 1.0 A	SPN2: Max. 2.0 A SPN4: Max. 1.0 A	SEN1: Max. 2.0 A SEN3: Max. 1.0 A	SEN2: Max. 2.0 A SEN4: Max. 1.0 A
Environmental resistance	Enclosure	IP67					
	Operating temperature range	14 to 12°F (–10 to 50°C)					
	Operating humidity range	35 to 85%RH (No condensation)					
	Withstand voltage	500 VAC for 1 minute between terminals and housing					
	Insulation resistance	10 MΩ or more (500 VDC measured via megohmmeter) between terminals and housing					
Standards		CE marking, UL (CSA) compatible					
Weight		0.44 lbs (200 g)					
Accessories	Mounting screw	2 pcs.					
	Seal cap (for M12 connector socket)	EX9-AWTS (1 pc.)					

Note 1) Please note that the version is subject to change.
Note 2) Use a CAT5 or higher transmission cable for EtherCAT, PROFINET, EtherNet/IP™.
Note 3) Each file can be downloaded from the SMC website, http://www.smcworld.com

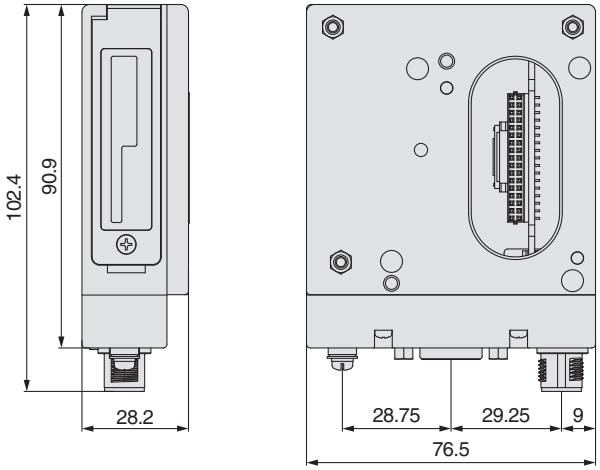
SI Unit Dimensions

(mm)

M12 communication connector type

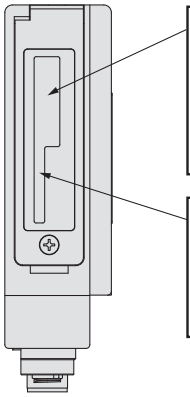


D-sub communication connector type



Functions of SI Unit Parts

<LED indication and setting switch>

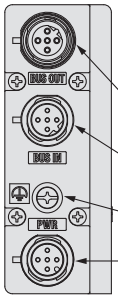


<Setting switch>
- **Address switch**
- **Communication speed switch**
- **Terminating resistor switch**
- **Others**

<LED indication>
- **Communication state**
- **Unit power supply state**
- **Valve power supply state**

Note) The setting switch varies depending on the model.
Refer to the operation manual for details.
Please download it via the SMC website, http://www.smcworld.com

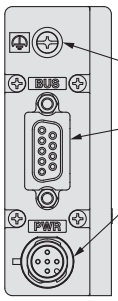
<Connector>
M12 communication connector type



Part no.	EX260-SPR1/-SPR2 -SPR3/-SPR4	EX260-SDN□	EX260-SMJ□	EX260-SEC□ EX260-SPN□ EX260-SEN□
Communication protocol	**PROFIBUS DP**	**DeviceNet™**	**CC-Link**	**EtherCAT PROFINET EtherNet/IP™**
Communication connector (M12) BUS OUT	5 pins, socket, B code	5 pins, socket, A code	5 pins, socket, A code	4 pins, socket, D code
Communication connector (M12) BUS IN	5 pins, plug, B code	5 pins, plug, A code	4 pins, plug, A code	4 pins, socket, D code
Ground terminal	M3			
Power connector (M12)	5 pins, plug, A code	4 pins, plug, A code	5 pins, plug, B code	5 pins[Note1], 4 pins[Note2], plug, A code

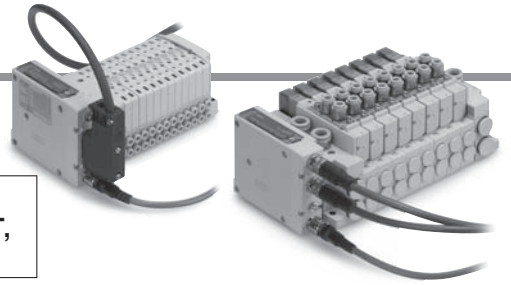
Note 1) For EtherCAT, PROFINET
Note 2) For EtherNet/IP™

D-sub communication connector type



Part no.	EX260-SPR5/-SPR6/-SPR7/-SPR8
Communication protocol	**PROFIBUS DP**
Ground terminal	M3
Communication connector (D-sub) BUS IN/OUT	9 pins, socket
Power connector (M12)	5 pins, plug, A code

Accessories



① Communication cable with connector

For SI units compatible with PROFIBUS DP, DeviceNet™, CC-Link

For SI units compatible with EtherCAT, PROFINET, EtherNet/IP™

Refer to the catalog (CAT. NAS100-73) for details.

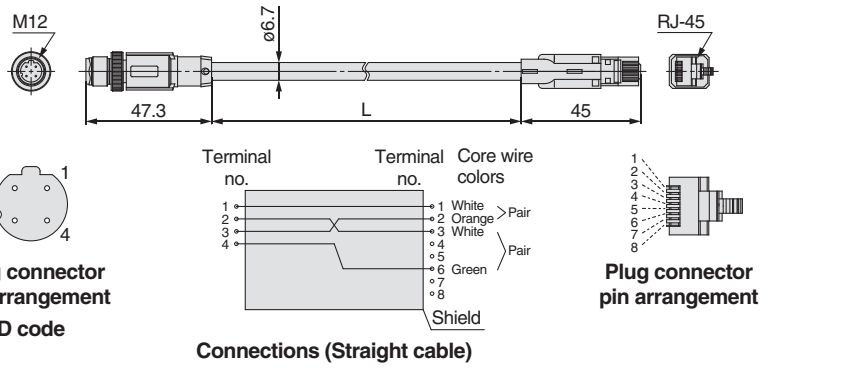
EX9 – AC 020 EN – PSRJ

Cable length (L)

010	1000 [mm]
020	2000 [mm]
030	3000 [mm]
050	5000 [mm]
100	10000 [mm]

Connector specification

PSRJ	M12 plug (straight) ⇔ RJ-45 connector

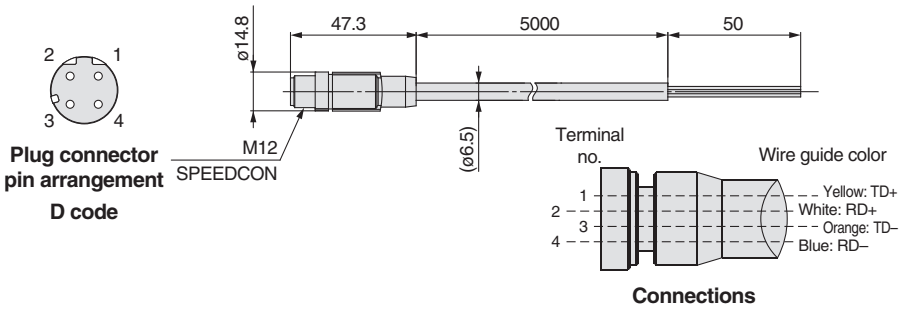


For SI units compatible with EtherCAT, PROFINET, EtherNet/IP™

PCA – 1446566

Cable length

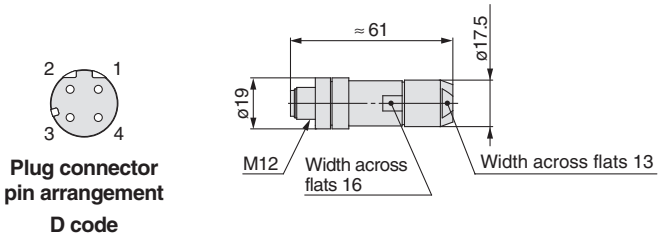
1446566	5000 [mm]



For SI units compatible with EtherCAT, PROFINET, EtherNet/IP™

Fieldwireable connector

PCA – 1446553



Accessories

② Power cable with connector (for SI units)

For SI units compatible with PROFIBUS DP, DeviceNet™, EtherCAT, PROFINET, EtherNet/IP™

EX500 − AP 050 − S

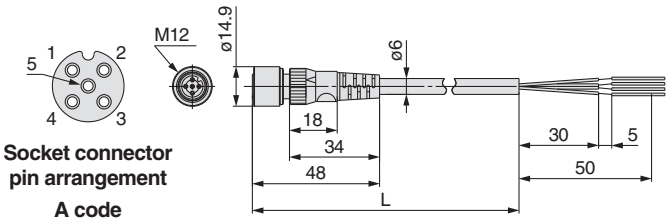
Cable length (L)

010	1000 [mm]
050	5000 [mm]

Connector specification

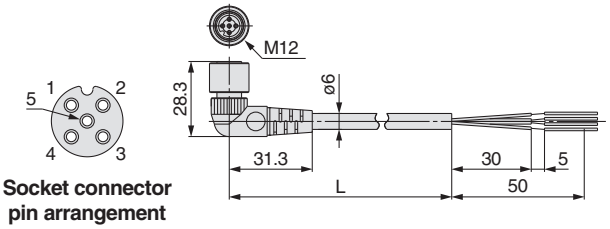
S	Straight
A	Angle

Straight connector type



Socket connector pin arrangement
A code

Angle connector type



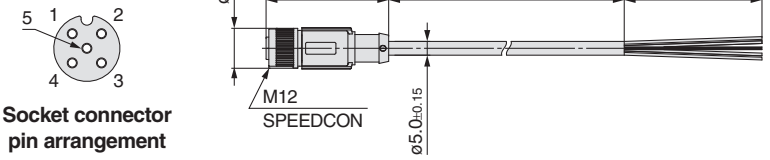
Socket connector pin arrangement
A code

SPEEDCON

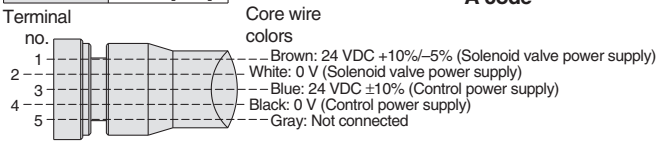
PCA− 1401804

Cable length (L)

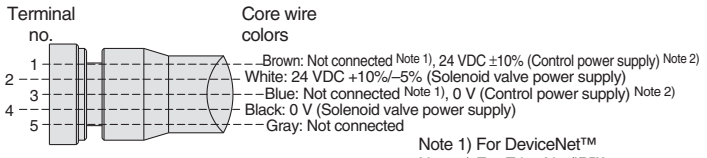
1401804	1500 [mm]
1401805	3000 [mm]
1401806	5000 [mm]



Socket connector pin arrangement
A code



Connections (PROFIBUS DP/EtherCAT)



Connections (DeviceNet™, EtherNet/IP™)

Note 1) For DeviceNet™
Note 2) For EtherNet/IP™

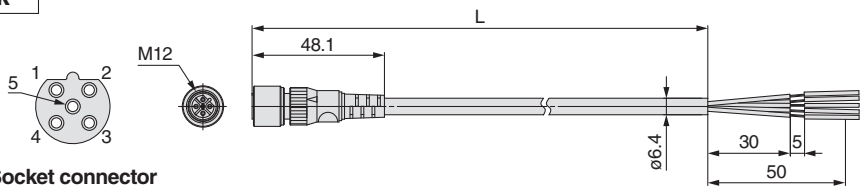
For SI units compatible with CC-Link

Straight connector type

EX9 − AC 050 − 1

Cable length (L)

010	1000 [mm]
030	3000 [mm]
050	5000 [mm]



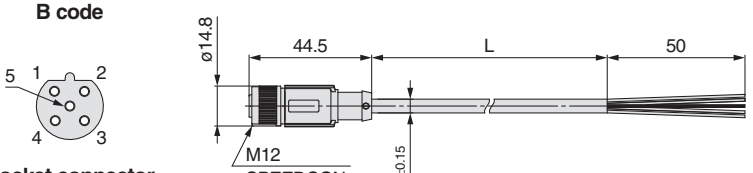
Socket connector pin arrangement
B code

SPEEDCON

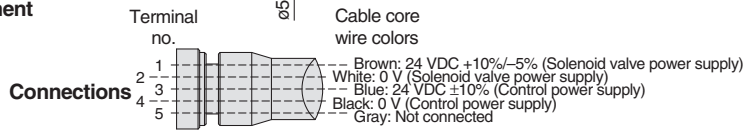
PCA− 1401807

Cable length (L)

1401807	1500 [mm]
1401808	3000 [mm]
1401809	5000 [mm]



Socket connector pin arrangement
B code



Connections

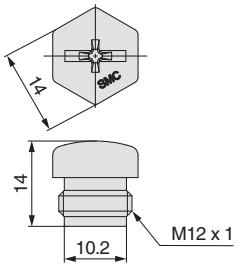
③ Seal cap: For M12 connector socket

Use this on ports that are not being used for communication connector (M12 connector socket).
Use of this seal cap maintains the integrity of the IP67 enclosure.
Note) Tighten the seal cap with the prescribed tightening torque. (For M12: 0.07 lbf·ft (0.1 N·m)

EX9 − AW TS

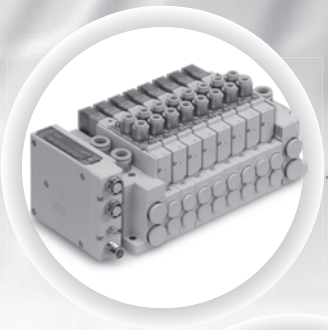
Connector type

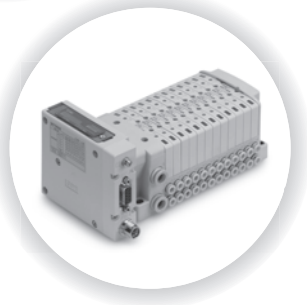
TS	For M12 connector socket (10 pcs.)



For M12 connector socket

Manifold Solenoid Valves for *Series EX260* Integrated-type (For Output) Serial Transmission System





Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base: For EX260 Integrated-type (For Output) Serial Transmission System

Series SY3000/5000

CE RoHS

How to Order Manifold

Refer to page 11 for Type 11/Bottom ported dimensions.

SS5Y **3** – **10** **S** **NA** **N** – **05** **U** **[ ]** – **C6** **[ ]**

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

❶ Series

3	SY3000
5	SY5000

❷ Type

10	Side ported
11	Bottom ported*

* The SY5000 manifold base is used for the bottom ported of the SY3000. When ordering, refer to Plug-in Mixed Type Manifold (from page 17).

❸ SI unit specifications

Symbol	Protocol	Number of outputs	Communication connector
0	Without SI unit		
QA	DeviceNet™	32	M12
QB		16	
NA	PROFIBUS DP	32	M12
NB		16	
NC		32	D-sub Note)
ND		16	
VA	CC-Link	32	M12
VB		16	
DA	EtherCAT	32	M12
DB		16	
FA	PROFINET	32	M12
FB		16	
EA	EtherNet/IP™	32	M12
EB		16	

Note) IP40 for the D-sub applicable communication connector specification.
For SI unit part number, refer to page 1.
DIN rail and SI unit output polarity "N" cannot be selected for the product without SI unit.

❹ SI unit output polarity

Nil	Positive common
N	Negative common

Note 1) Ensure a match with the common specifications of the valve to be used.
Note 2) Without SI unit, the symbol is nil.

❺ Valve stations

In the case of the 32-output SI unit

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

In the case of the 16-output SI unit

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

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet.
(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
Note 3) Includes the number of blanking plate assemblies.
Note 4) For the model without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

❻ P, E port entry

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

❼ SUP/EXH block assembly

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

* 3/5(E) port is plugged for the built-in silencer type.
* When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

❾ Mounting and Option

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

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

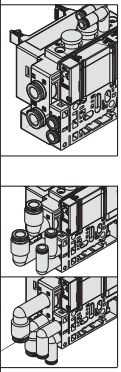
DIN Rail Option

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

* When it is necessary to mount a DIN rail without an SI unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. Refer to the SY3000/5000 series catalog (CAT. NAS11-103) for part numbers of DIN rail.

❽ A, B port size (Metric)

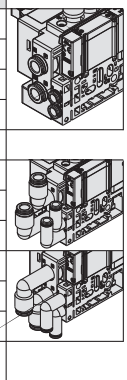
Symbol		A, B port	Type 10/ Side ported SY3000	Type 10/ Side ported SY5000	Type 11/ Bottom ported SY5000
C2	Straight	ø2 One-touch fitting	●	—	—
C3		ø3.2 One-touch fitting	●	—	—
C4		ø4 One-touch fitting	●	—	●
C6		ø6 One-touch fitting	●	●	●
C8		ø8 One-touch fitting	—	●	●
CM*		Straight port, mixed sizes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



Note) To avoid interference with the body or piping, select downward elbow port when mounting the optional spacer assembly (Refer to the SY3000/ 5000 series catalog (CAT. NAS11-103)).

A, B port size (Inch)

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

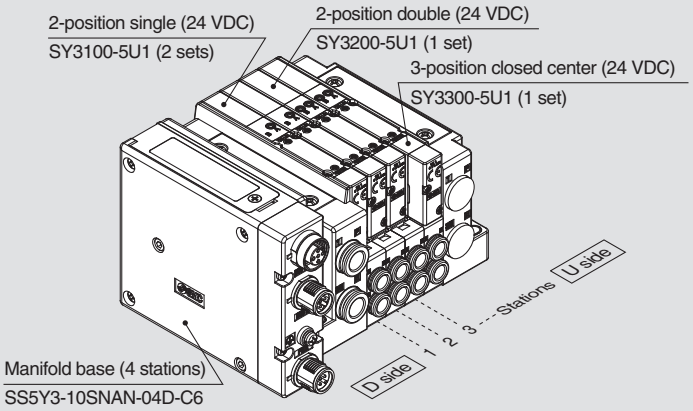


* Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".
* The direction of P, E port fittings is the same as for A, B port. If selecting "LM", indicate it on the manifold specification sheet for the P, E port fitting direction.

SMC

How to Order Manifold Assembly

Example (SS5Y3-10SNAN-□)



SS5Y3-10SNAN-04D-C6 ···1 set (Type 10 4-station manifold base part no.)
∗SY3100-5U1 ·····2 sets (2-position single part no.)
∗SY3200-5U1 ·····1 set (2-position double part no.)
∗SY3300-5U1 ·····1 set (3-position closed center part no.)
∗The asterisk denotes the symbol for assembly.
∗Prefix it to the part nos. of the valve, etc.

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

Note) When mixing top ported configurations, select from page 13. Specify on a manifold specification sheet if plugs are required on the A and B port on the manifold.

How to Order Valves (With two mounting screws)

Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for details on valve specifications.

SY 3 1 0 0 □ □ □ □ – 5 □ □ 1 – □
❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫

● **Base mounted**

❶ Series

3	SY3000
5	SY5000

❷ Type of actuation

1	2-position single
2	2-position double
3	3-position closed center
4	3-position exhaust center
5	3-position pressure center
A∗	4-position dual 3-port valve (N.C./N.C.)
B∗	4-position dual 3-port valve (N.O./N.O.)
C∗	4-position dual 3-port valve (N.C./N.O.)

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

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot type

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

∗ Only rubber seal type.
Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for details. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.
∗ The built-in valve type back pressure check valve is not available for the 3-position type.

❻ Pilot valve option

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

∗ Only metal seal type is available for the high pressure type.

❼ Coil type

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

∗ Be sure to select the power saving circuit type when a valve is continuously energized for long periods of time.
∗ Note the specified energizing time when power saving circuit is selected.

❽ Rated voltage

5	24 VDC

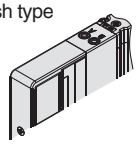
❾ Light/surge voltage suppressor and common specification

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

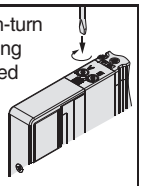
∗ Only "Z" and "NZ" types are available for the product with power saving circuit. Select a valve from R, U, S or Z when the SI unit output polarity is Nil (Positive common). Select a valve from R, U, NS or NZ when the SI unit output polarity is N (Negative common).

❿ Manual override

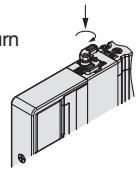
Nil: Non-locking push type



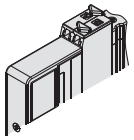
D: Push-turn locking slotted type



E: Push-turn locking manual type



F: Slide locking type



⓫ Type of mounting screw

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

∗ For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.
∗ When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for part numbers of the base gasket and mounting screw.
∗ "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

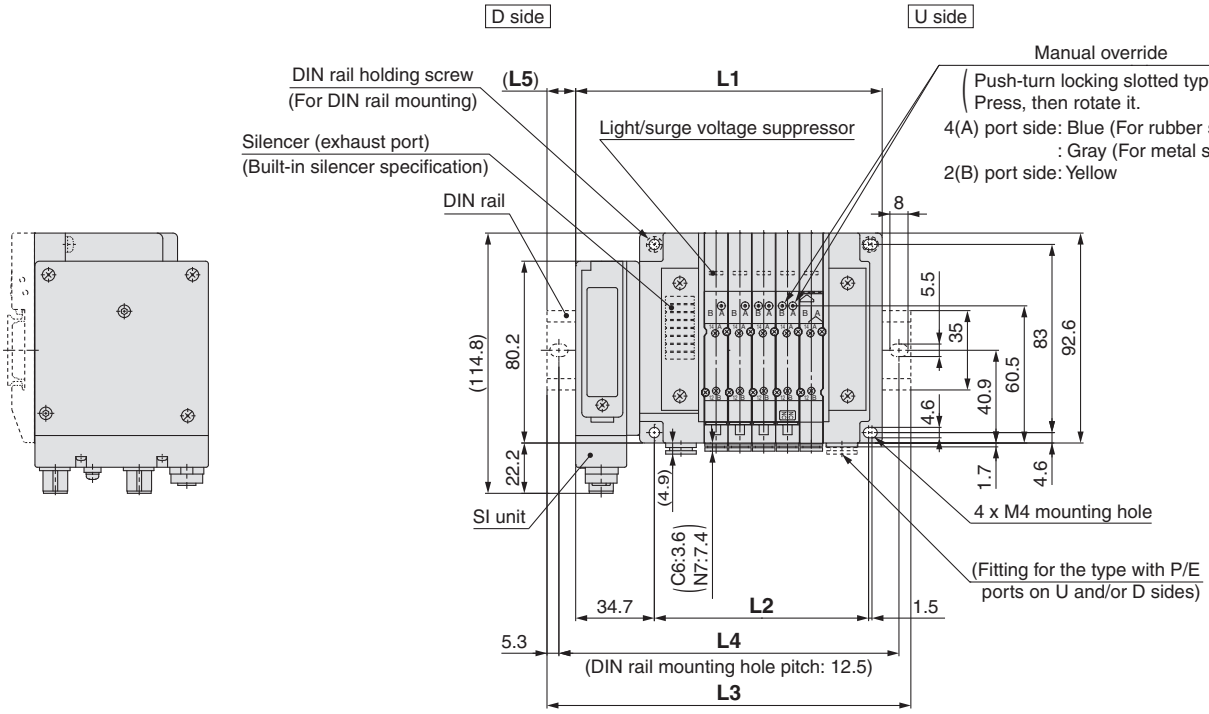
Refer to the SMC website or the SY3000/5000 series catalog (CAT.NAS11-103) for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.

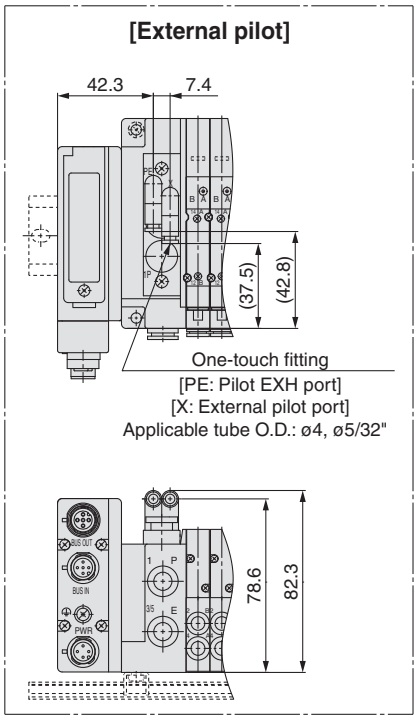
⚠ Protective class class Ⅲ(Mark: ⏚)

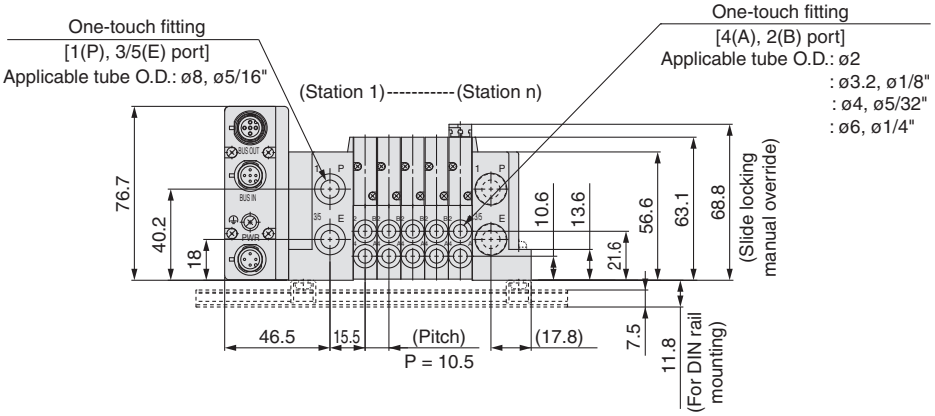
Dimensions: Type 10/For EX260/Series SY3000

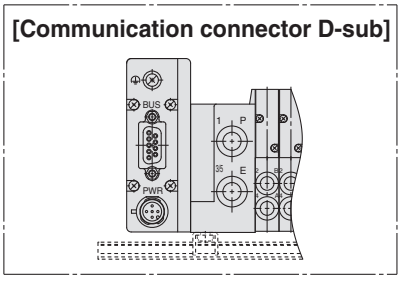
(mm)

SS5Y3-10S□□- Stations U/D/B (S, R) - C2/C3, N1/C4, N3/C6, N7 (D)









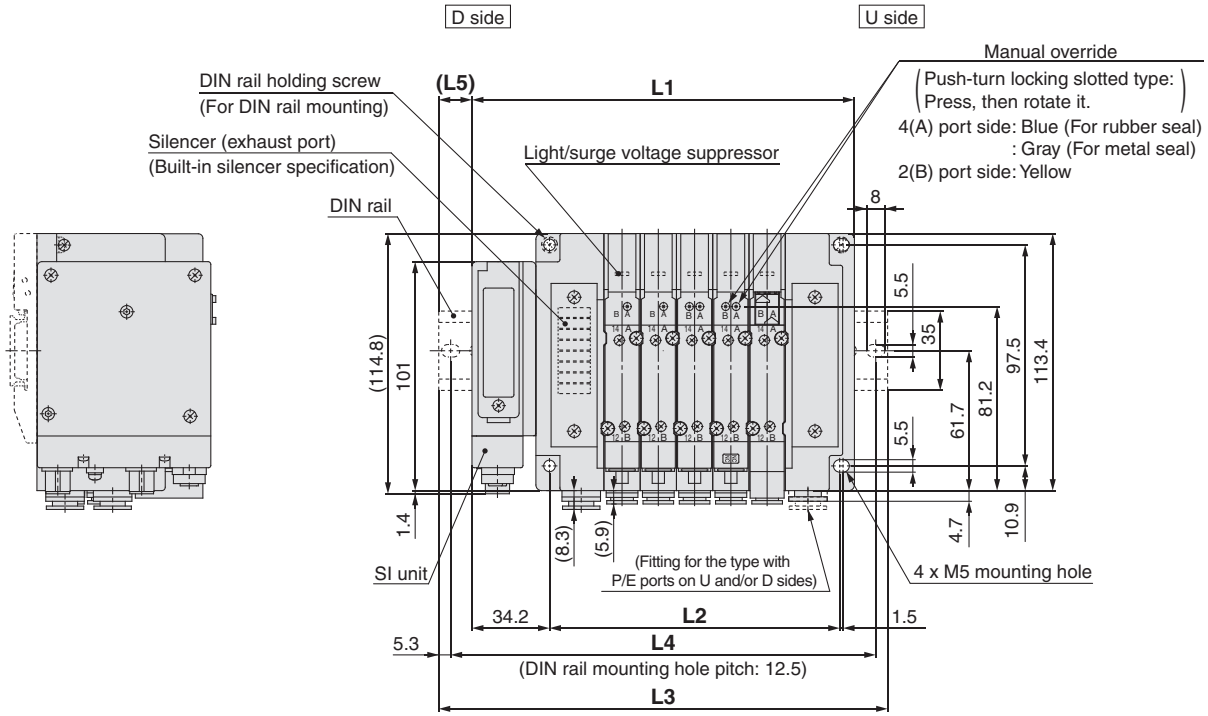
Note) These figures show the “SS5Y3-10SQA-05D-C6”.

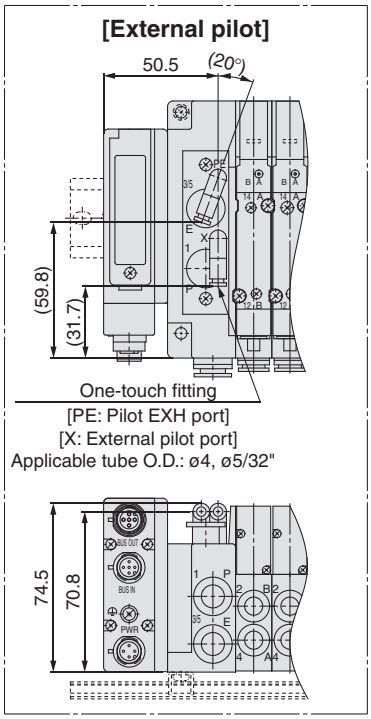
n: stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	103.7	114.2	124.7	135.2	145.7	156.2	166.7	177.2	187.7	198.2	208.7	219.2	229.7	240.2	250.7	261.2	271.7	282.2	292.7	303.2	313.7	324.2	334.7
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5	294
L3	135.5	148	148	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5
L4	125	137.5	137.5	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5	275	275	287.5	300	312.5	325	337.5	337.5	350
L5	16	17	11.5	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13	14	15	16	17	12	13

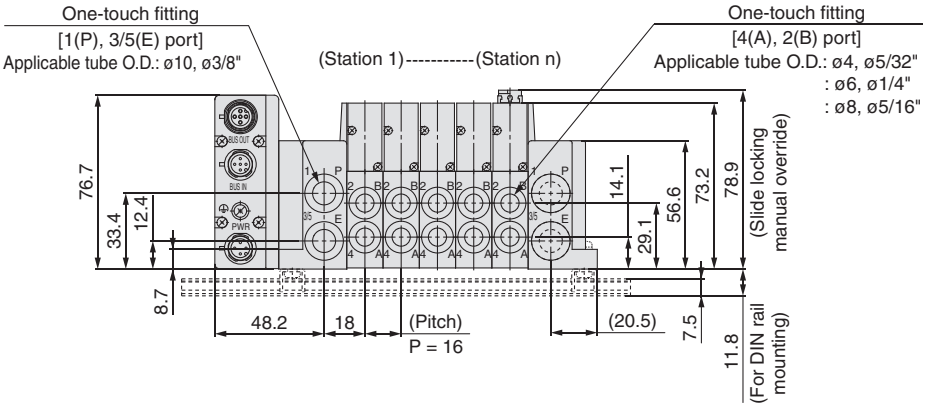
Dimensions: Type 10/For EX260/Series SY5000

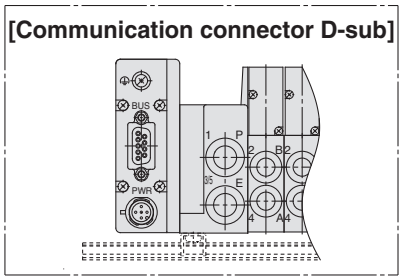
(mm)

SS5Y5-10S□□-Stations U/D/B (S, R) - C4, N3 / C6, N7 / C8, N9 (D)









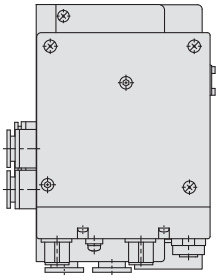
Note) These figures show the "SS5Y5-10SQA-05D-C8".

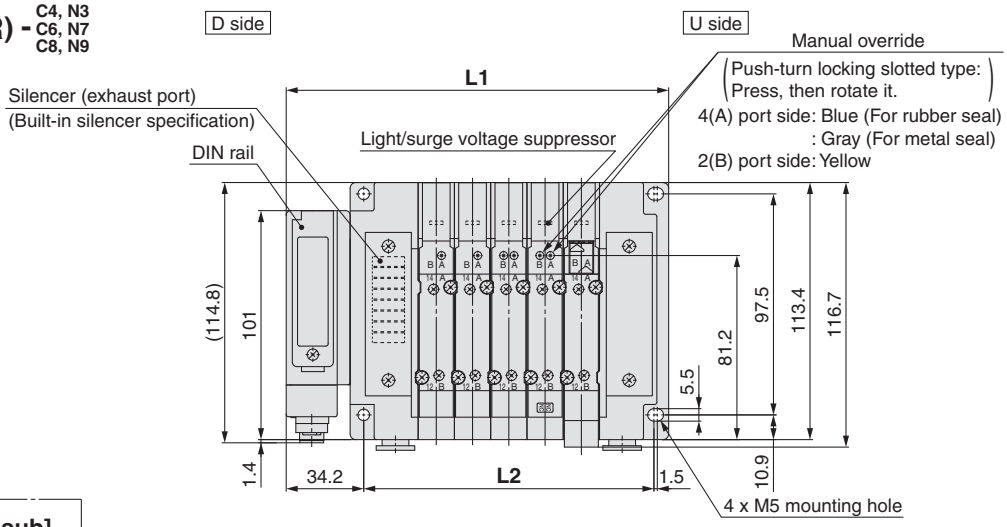
n: Station	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	120.7	136.7	152.7	168.7	184.7	200.7	216.7	232.7	248.7	264.7	280.7	296.7	312.7	328.7	344.7	360.7	376.7	392.7	408.7	424.7	440.7	456.7	472.7
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
L3	148	160.5	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373	385.5	410.5	423	435.5	448	473	485.5	498
L4	137.5	150	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5	375	400	412.5	425	437.5	462.5	475	487.5
L5	13.5	12	16.5	14.5	13	17.5	15.5	14	12	16.5	15	13	17.5	16	14	12.5	17	15	13.5	11.5	16	14.5	12.5

Dimensions: Type 11/For EX260/Series SY5000

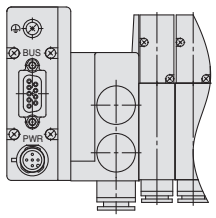
(mm)

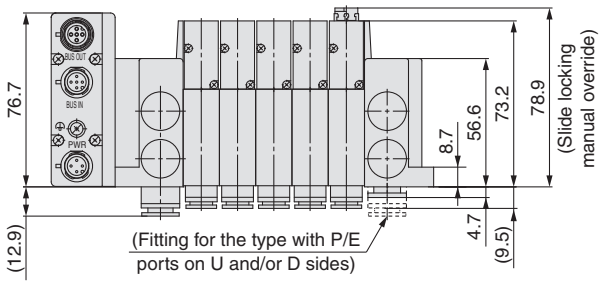
SS5Y5-11S□□-Stations U/D/B (S, R) - C4, N3 / C6, N7 / C8, N9



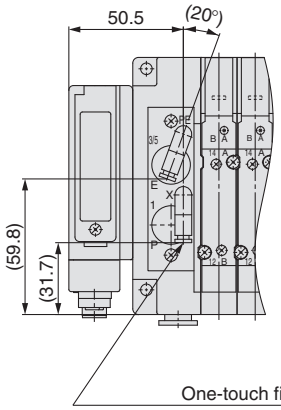


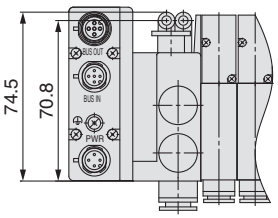
[Communication connector D-sub]

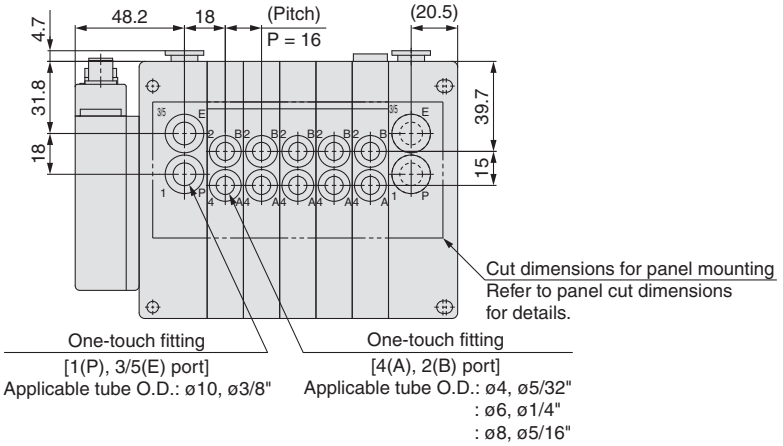




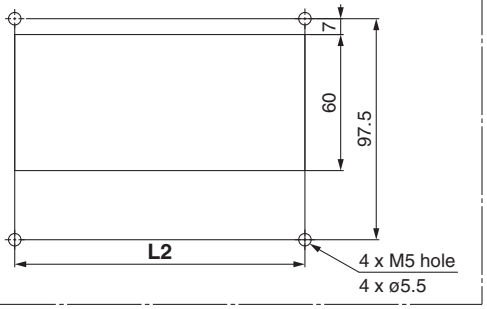
[External pilot]







Panel cut dimensions



Note) These figures show the "SS5Y5-11SQA-05D-C8".

n: Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	120.7	136.7	152.7	168.7	184.7	200.7	216.7	232.7	248.7	264.7	280.7	296.7	312.7	328.7	344.7	360.7	376.7	392.7	408.7	424.7	440.7	456.7	472.7
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432

Type 12
Top Ported

Plug-in Connector Connecting Base: For EX260 Integrated-type (For Output) Serial Transmission System

Series SY3000/5000

CE RoHS

How to Order Manifold

Refer to pages 15, 16 for Type 12/Top ported dimensions.

SS5Y 3 – 12S NA N – 05 U □ – □ □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

❶ Series

3	SY3000
5	SY5000

❷ SI unit specifications

Symbol	Protocol	Number of outputs	Communication connector
0	Without SI unit		
QA	DeviceNet™	32	M12
QB		16	
NA	PROFIBUS DP	32	M12
NB		16	
NC		32	D-sub Note)
ND		16	
VA	CC-Link	32	M12
VB		16	
DA	EtherCAT	32	M12
DB		16	
FA	PROFINET	32	M12
FB		16	
EA	EtherNet/IP™	32	M12
EB		16	

Note) IP40 for the D-sub applicable communication connector specification.
For SI unit part number, refer to page 1.
DIN rail and SI unit output polarity "N" cannot be selected for the product without SI unit.

❸ SI unit output polarity

Nil	Positive common
N	Negative common

Note 1) Ensure a match with the common specifications of the valve to be used.
Note 2) Without SI unit, the symbol is nil.

❹ Valve stations

In the case of the 32-output SI unit

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

In the case of the 16-output SI unit

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

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet.
(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
Note 3) Includes the number of blanking plate assemblies.
Note 4) For the model without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

❺ P, E port entry

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

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

❻ SUP/EXH block assembly

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

∗ For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)
∗ When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

❼ P, E port size (One-touch fittings)

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

∗ For N, sizes are in inches.

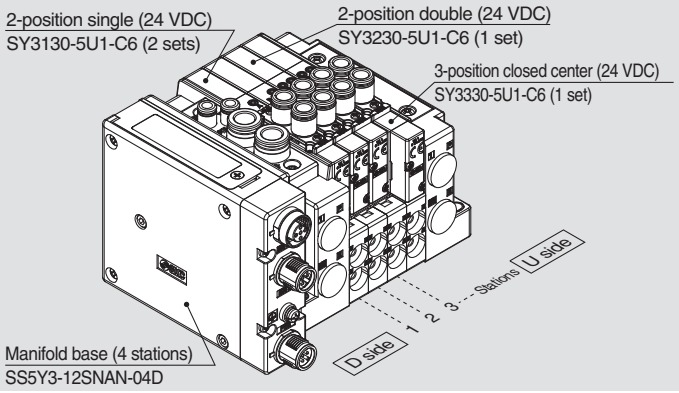
❽ Mounting

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

∗ When it is necessary to mount a DIN rail without an SI unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for part numbers of DIN rail.

How to Order Manifold Assembly

Example (SS5Y3-12SNAN-□)



SS5Y3-12SNAN-04D ····· **1 set (Type 12 4-station manifold base part no.)**
***SY3130-5U1-C6** ····· **2 sets (2-position single part no.)**
***SY3230-5U1-C6** ····· **1 set (2-position double part no.)**
***SY3330-5U1-C6** ····· **1 set (3-position closed center part no.)**
*** The asterisk denotes the symbol for assembly.**
*** Prefix it to the part nos. of the valve, etc.**

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

How to Order Valves (With two mounting screws)

Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for details on valve specifications.

SY 3 1 3 0 ❶ ❷ ❸ ❹ ❺ ❻ ❼ – 5 ❽ ❾ ❿ 1 – C6 ⓫ ⓬ – ⓭

• Top ported

❶ Series

3	SY3000
5	SY5000

❷ Type of actuation

1	2-position single
2	2-position double
3	3-position closed center
4	3-position exhaust center
5	3-position pressure center
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

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

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot type

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

* Only rubber seal type.
  Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to the SY3000/5000 series catalog (CAT. NAS11-103) for details. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.
* The built-in valve type back pressure check valve is not available for the 3-position type.

Refer to the SMC website or the SY3000/5000 series catalog (CAT.NAS11-103) for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.

❻ Pilot valve option

Nil	Standard (101 psi (0.7 MPa))
B	Quick response type (101 psi (0.7 MPa))
K*	High pressure type (145psi (1.0 MPa))

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

❼ Coil type

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

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

❽ Rated voltage

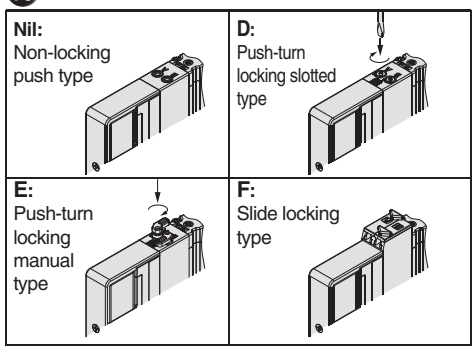
5	24 VDC

❾ Light/surge voltage suppressor and common specification

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

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

❿ Manual override



⓫ A, B port size

Thread piping

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

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

⓬ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

* Only Nil is available for M5.

⓭ Type of mounting screw

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

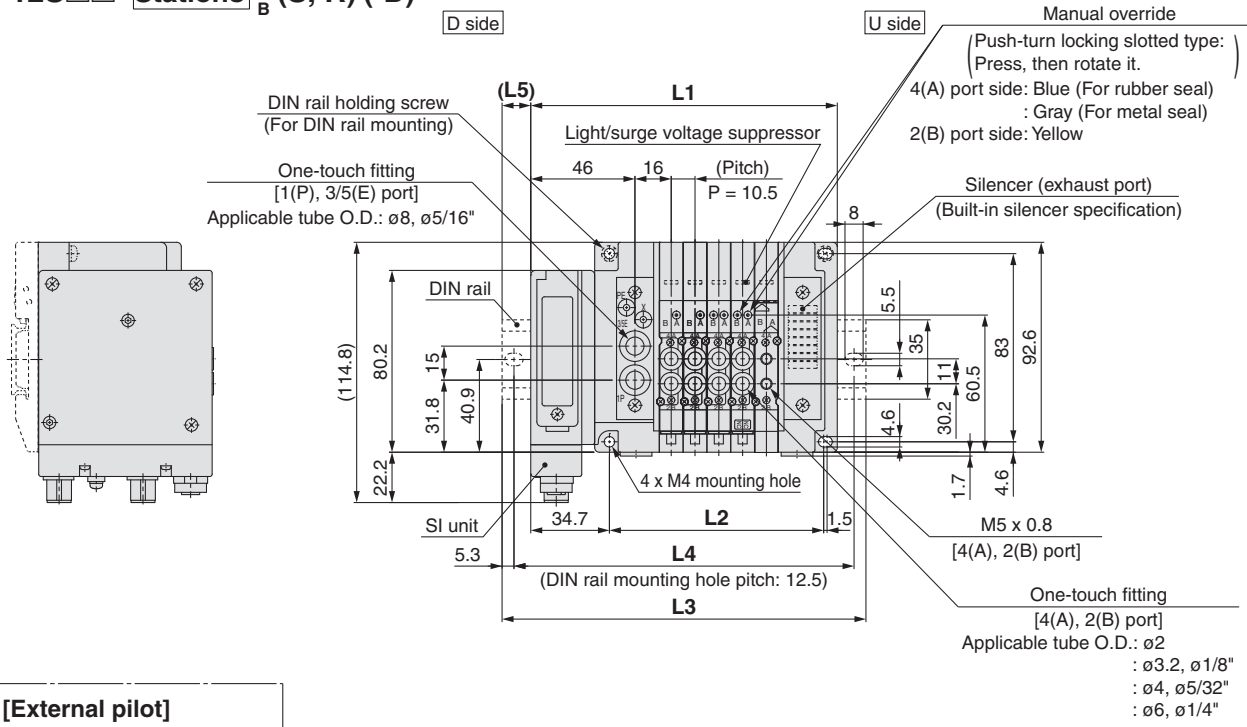
* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.
* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for part numbers of the base gasket and mounting screw.
* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.

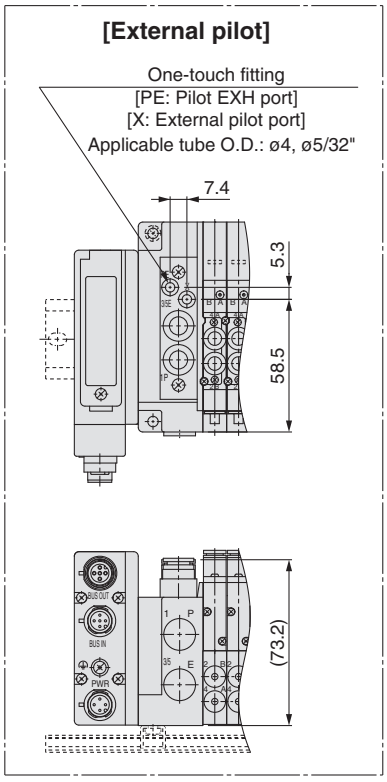
⚠ Protective class class Ⅲ(Mark: ⧼Ⅲ⧽)

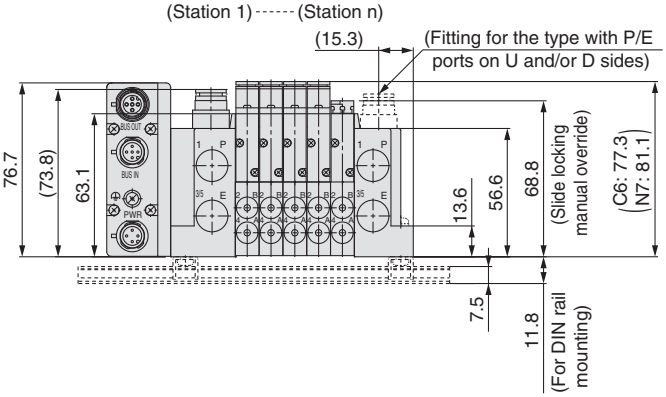
Dimensions: Type 12/For EX260/Series SY3000

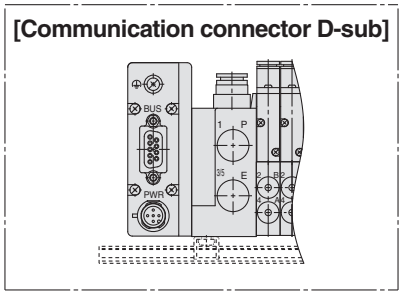
(mm)

SS5Y3-12S□□- Stations U/D/B (S, R) (-D)









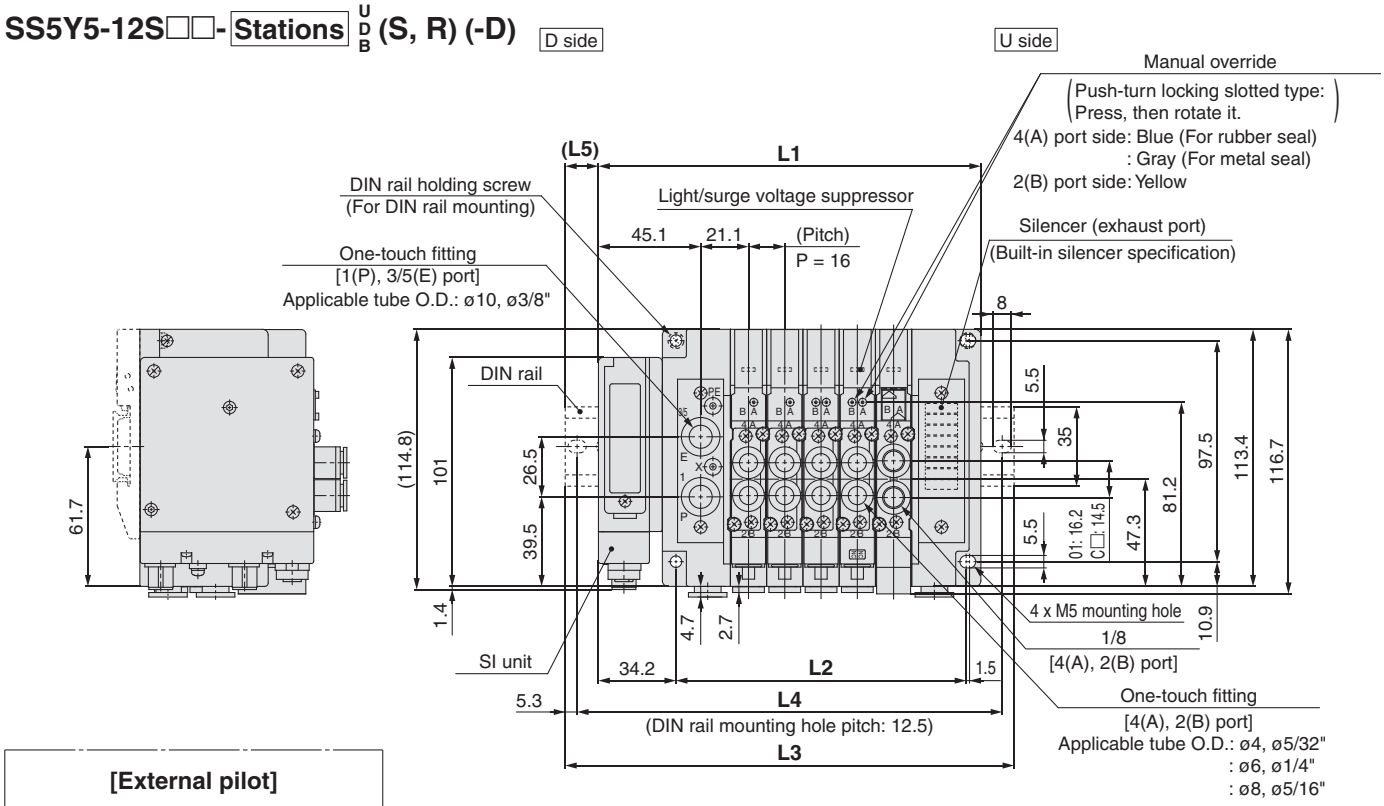
Note 1) These figures show the "SS5Y3-12SQA-05D".
Note 2) For built-in silencer type, a silencer is mounted on the opposite side of U or D side with P or E port.

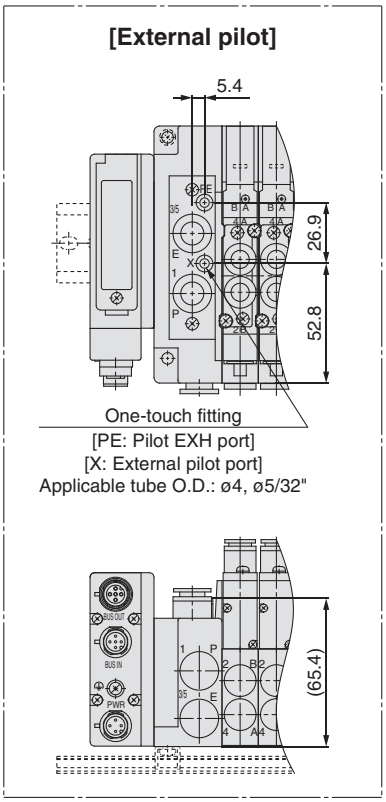
n:Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	103.7	114.2	124.7	135.2	145.7	156.2	166.7	177.2	187.7	198.2	208.7	219.2	229.7	240.2	250.7	261.2	271.7	282.2	292.7	303.2	313.7	324.2	334.7
L2	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252	262.5	273	283.5	294
L3	135.5	148	148	160.5	173	185.5	198	210.5	223	223	235.5	248	260.5	273	285.5	285.5	298	310.5	323	335.5	348	348	360.5
L4	125	137.5	137.5	150	162.5	175	187.5	200	212.5	212.5	225	237.5	250	262.5	275	275	287.5	300	312.5	325	337.5	337.5	350
L5	16	17	11.5	12.5	13.5	14.5	15.5	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13	14	15	16	17	12	13

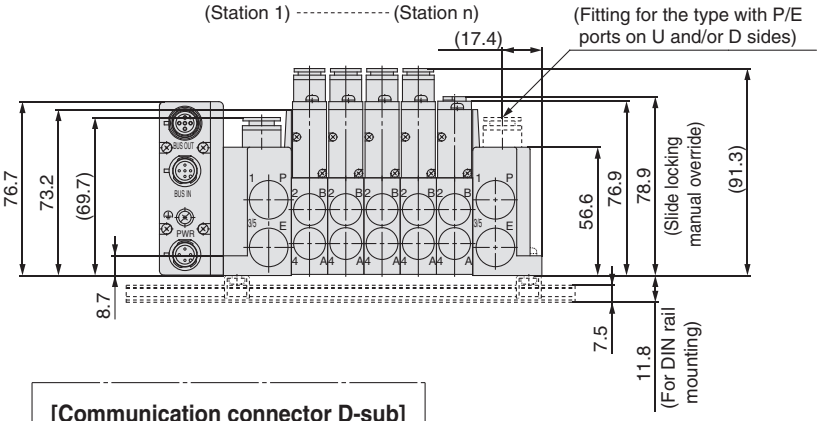
Dimensions: Type 12/For EX260/Series SY5000

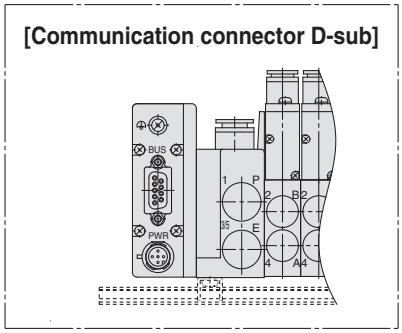
(mm)

SS5Y5-12S□□-Stations $\frac{U}{D}_{B}$ (S, R) (-D)









Note 1) These figures show the "SS5Y5-12SQA-05D".
Note 2) For built-in silencer type, a silencer is mounted on the opposite side of U or D side with P or E port.

n:Stations	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	120.7	136.7	152.7	168.7	184.7	200.7	216.7	232.7	248.7	264.7	280.7	296.7	312.7	328.7	344.7	360.7	376.7	392.7	408.7	424.7	440.7	456.7	472.7
L2	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368	384	400	416	432
L3	148	160.5	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	348	360.5	373	385.5	410.5	423	435.5	448	473	485.5	498
L4	137.5	150	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	337.5	350	362.5	375	400	412.5	425	437.5	462.5	475	487.5
L5	13.5	12	16.5	14.5	13	17.5	15.5	14	12	16.5	15	13	17.5	16	14	12.5	17	15	13.5	11.5	16	14.5	12.5

Type 10
Side Ported

Type 11
Bottom Ported

Plug-in Connector Connecting Base: Plug-in Mixed Mounting Type Manifold For EX260 Integrated-type (For Output) Serial Transmission System

Series SY3000/5000

CE RoHS

SY3000 can be mounted onto SY5000 size manifold.

How to Order Manifold

Refer to page 20 for Type 11/ Bottom ported dimensions.

SS5Y5 − M 10 S NA N − 05 U □ − C 8 6 □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿

Mixed Mounting Type

It is possible to mount SY3000 size valves on all stations. In this case, there is no need to fill in part ❽ in the order code. However, the manifold block width should be 12.5 mm.

❶ Type

10	Side ported
11	Bottom ported

❷ SI unit specifications

Symbol	Protocol	Number of outputs	Communication connector
0	Without SI unit		
QA	DeviceNet™	32	M12
QB		16	
NA	PROFIBUS DP	32	M12
NB		16	
NC		32	D-sub Note)
ND		16	
VA	CC-Link	32	M12
VB		16	
DA	EtherCAT	32	M12
DB		16	
FA	PROFINET	32	M12
FB		16	
EA	EtherNet/IP™	32	M12
EB		16	

Note) IP40 for the D-sub applicable communication connector specification. For SI unit part number, refer to page 1. DIN rail and SI unit output polarity "N" cannot be selected for the product without SI unit.

❸ SI unit output polarity

Nil	Positive common
N	Negative common

Note 1) Ensure a match with the common specifications of the valve to be used.
Note 2) Without SI unit, the symbol is nil.

❹ Valve stations

In the case of the 32-output SI unit

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

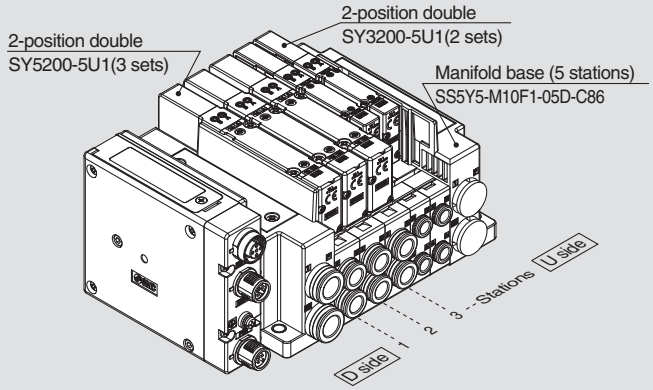
In the case of the 16-output SI unit

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

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet.
(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
Note 3) Includes the number of blanking plate assemblies.
Note 4) For the model without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

How to Order Manifold Assembly

Example (SS5Y5-M10SNAN-□)



SS5Y5-M10F1-05D-C86 ···1 set (Type 10 5-station manifold base part no.)
∗**SY5200-5U1** ·····3 sets (2-position double part no.)
∗**SY3200-5U1** ·····2 sets (2-position double part no.)
→∗The asterisk denotes the symbol for assembly.
∗Prefix it to the part nos. of the valve, etc.

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

Note) When mounting top ported valves, select from page 21. In this case, use caution as there is also output on the A and B port on base side.
Specify on a manifold specification sheet if plugs are required on the A and B port on base side.

❺ P, E port entry

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

❻ SUP/EXH block assembly

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

∗ 3/5(E) port is plugged for the built-in silencer type.
∗ When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

Refer to the page on the right for ❼, ❽, ❾

❿ Mounting and Option

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

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

DIN Rail Option

Nil	Standard length	
0	Without DIN rail (with bracket)	
3	For 3 stations	Specify a longer rail than the total length of specified stations. [The SY5000 valve is now at a mountable length (manifold block length of 16 mm).]
⋮	⋮	
24	For 24 stations	

∗ When it is necessary to mount a DIN rail without an SI unit, select D0 and calculate DIN rail length, referring to L3 in the dimensions on page 19.

❼ Fitting type

Symbol	A, B port
C	Metric size: Straight one-touch fitting
L	Metric size: Elbow one-touch fitting for upward Note)
B	Metric size: Elbow one-touch fitting for downward Note)
N	Inch size: Straight one-touch fitting
LN	Inch size: Elbow one-touch fitting for upward Note)
BN	Inch size: Elbow one-touch fitting for downward Note)
CM*	Straight port, mixed sizes
LM*	Elbow port, mixed sizes (Including upward and downward piping) Note)

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

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

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

∗ Elbow fittings: ø2, ø3.2 and ø1.8" are not available for the SY3000 series. ø2, ø3.2, ø1.8" and ø5/32" are not available for the SY5000 series.

❽ SY5000: A, B port size

(Metric)

Symbol	Port size
4	ø4 One-touch fitting
6	ø6 One-touch fitting
8	ø8 One-touch fitting
Nil	For all stations of SY3000

(Inch)

Symbol	Port size
3	ø5/32" One-touch fitting
7	ø1/4" One-touch fitting
9	ø5/16" One-touch fitting
Nil	For all stations of SY3000

∗ No symbol needs to be specified when fitting type "CM", "LM" is selected.

❾ SY3000: A, B port size

(Metric)

Symbol	Port size
2	ø2 One-touch fitting
3	ø3.2 One-touch fitting
4	ø4 One-touch fitting
6	ø6 One-touch fitting

(Inch)

Symbol	Port size
1	ø1/8" One-touch fitting
3	ø5/32" One-touch fitting
7	ø1/4" One-touch fitting

∗ No symbol needs to be specified when fitting type "CM", "LM" is selected.

How to Order Valves (With two mounting screws)

Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for details on valve specifications.

SY [3][1][0][0][ ][ ][ ][ ] – [5][ ][ ] **1** – [ ]

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫

❸ Base mounted

❶ Series

3	SY3000
5	SY5000

❷ Type of actuation

1	2-position single
2	2-position double
3	3-position closed center
4	3-position exhaust center
5	3-position pressure center
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

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

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot type

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

∗ Only rubber seal type.
Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for details. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.

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

❻ Pilot valve option

Nil	Standard (101 psi (0.7 MPa))
B	Quick response type (101 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

∗ Only metal seal type is available for the high pressure type.

❼ Coil type

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

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

∗ Note the specified energizing time when power saving circuit is selected.

❽ Rated voltage

5	24 VDC

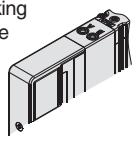
❾ Light/surge voltage suppressor and common specification

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

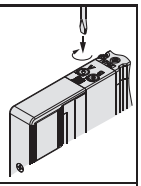
∗ Only "Z" and "NZ" types are available for the product with power saving circuit. Select a valve from R, U, S or Z when the SI unit output polarity is Nil (Positive common).
Select a valve from R, U, NS or NZ when the SI unit output polarity is N (Negative common).

❿ Manual override

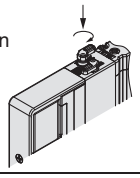
Nil: Non-locking push type



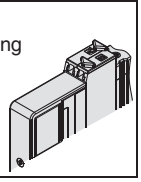
D: Push-turn locking slotted type



E: Push-turn locking manual type



F: Slide locking type



⓫ Type of mounting screw

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

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

∗ When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service.
Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for part numbers of the base gasket and mounting screw.

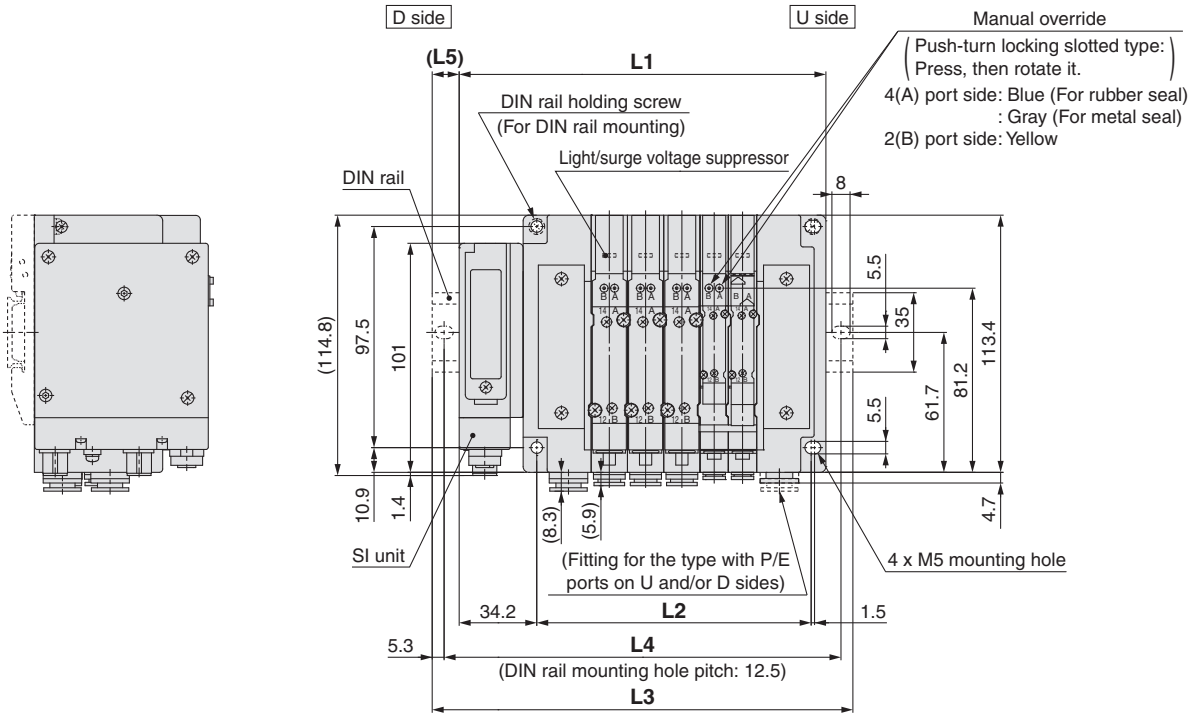
∗ "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly or double check spacer assembly with residual pressure release valve.

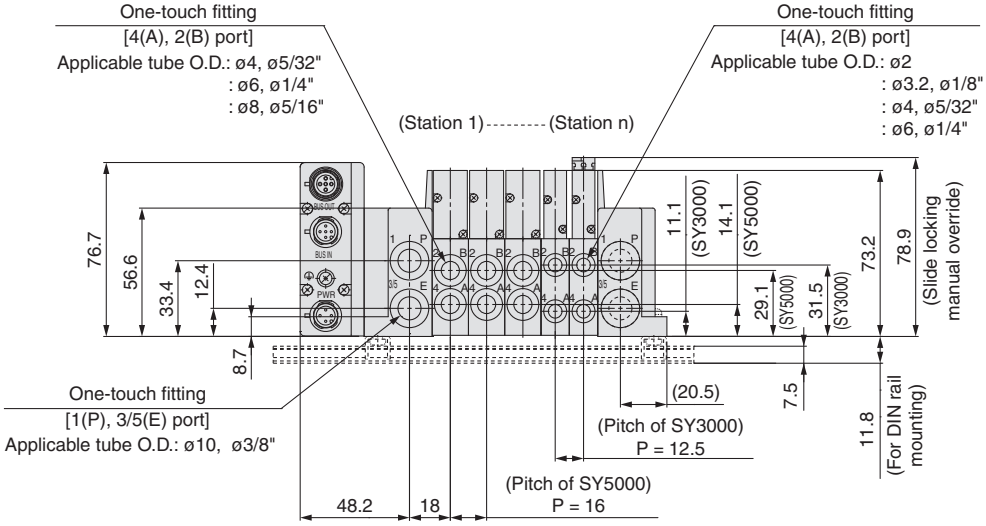
Refer to the SMC website or the SY3000/5000 series catalog (CAT.NAS11-103) for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.

Dimensions: Type 10/For EX260/Mixed Mounting Type

(mm)

SS5Y5-M10S□□-Stations U/D/B (-D)





Note 1) These figures show the "SS5Y5-M10SQA-05D-C86".
Note 2) Refer to page 10 for dimensions of D-sub communication connector, external pilot and built-in silencer.

EX260 Serial transmission Calculation of dimensions

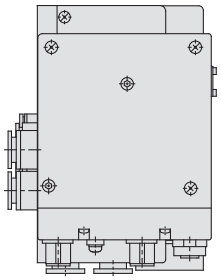
L1 = 12.5 x n1 + 16 x n2 + 88.7
L2 = 12.5 x n1 + 16 x n2 + 48
M = L1/12.5 + 1 Remove all numbers after the decimal
L3 = 12.5 x M + 23
L4 = L3 – 10.5
L5 = (L3 – L1)/2

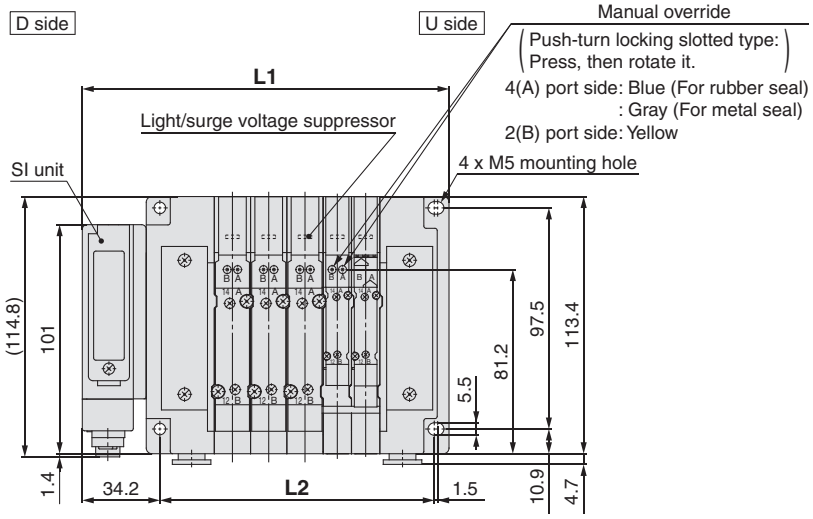
n1: SY3000 Valve stations
n2: SY5000 Valve stations

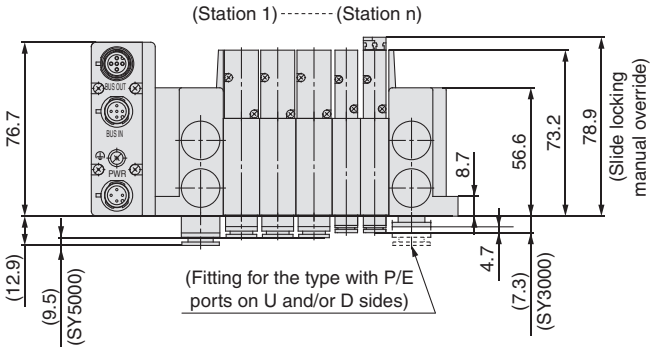
Dimensions: Type 11/For EX260/Mixed Mounting Type

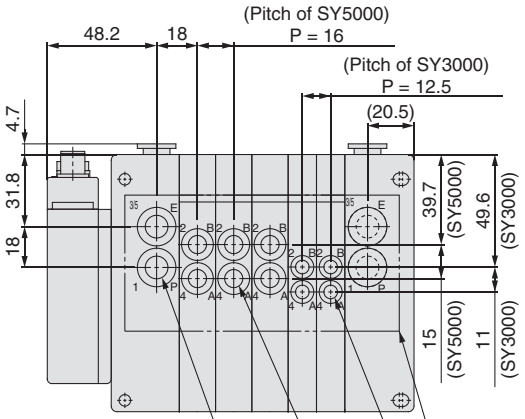
(mm)

SS5Y5-M11S□□- **Stations** U D B

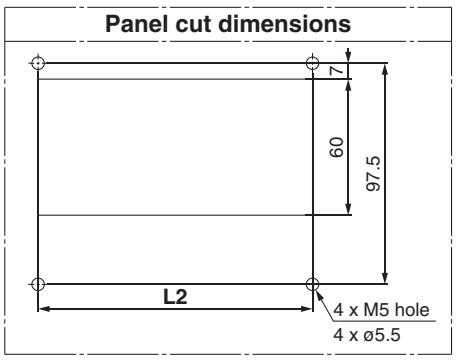








Panel cut dimensions



One-touch fitting
[1(P), 3/5(E) port]
Applicable tube O.D.: ø10, ø3/8"

Cut dimensions for panel mounting
Refer to panel cut dimensions for details.

One-touch fitting
[4(A), 2(B) port]
Applicable tube O.D.: ø4, ø5/32"
: ø6, ø1/4"
: ø8, ø5/16"

One-touch fitting
[4(A), 2(B) port]
Applicable tube O.D.: ø2
: ø3.2, ø1/8"
: ø4, ø5/32"
: ø6, ø1/4"

Note 1) These figures show the "SS5Y5-M11SQA-05D-C86".
Note 2) Refer to page 11 for dimensions of D-sub communication connector, external pilot and built-in silencer.

EX260 Serial transmission Calculation of dimensions

L1 = 12.5 x n1 + 16 x n2 + 88.7
L2 = 12.5 x n1 + 16 x n2 + 48

n1: SY3000 Valve stations
n2: SY5000 Valve stations

Type 12
Top Ported

Plug-in Connector Connecting Base: Plug-in Mixed MountingType Manifold For EX260 Integrated-type (For Output) Serial Transmission System

Series SY3000/5000

CE RoHS

SY3000 can be mounted onto SY5000 size manifold.

How to Order Manifold

Refer to page 23 for Type 12/ Top ported dimensions.

SS5Y5 − M 12S NA N − 05 U □ − □ □

❶ ❷ ❸ ❹ ❺ ❻ ❼

Mixed Mounting Type

It is possible to mount SY3000 size valves on all stations. However, the manifold block width should be 12.5 mm.

❶ SI unit specifications

Symbol	Protocol	Number of outputs	Communication connector
0	Without SI unit		
QA	DeviceNet™	32	M12
QB		16	
NA	PROFIBUS DP	32	M12
NB		16	
NC		32	D-sub Note)
ND		16	
VA	CC-Link	32	M12
VB		16	
DA	EtherCAT	32	M12
DB		16	
FA	PROFINET	32	M12
FB		16	
EA	EtherNet/IP™	32	M12
EB		16	

Note) IP40 for the D-sub applicable communication connector specification.
For SI unit part number, refer to page 1.
DIN rail and SI unit output polarity "N" cannot be selected for the product without SI unit.

❷ SI unit output polarity

Nil	Positive common
N	Negative common

Note 1) Ensure a match with the common specifications of the valve to be used.
Note 2) Without SI unit, the symbol is nil.

❸ Valve stations

In the case of the 32-output SI unit

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

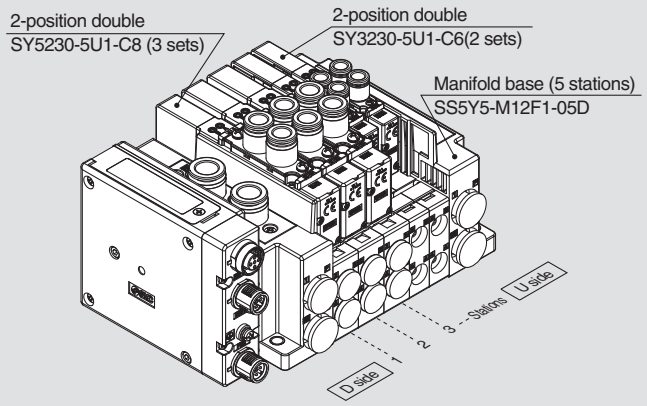
In the case of the 16-output SI unit

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

Note 1) Double wiring: 2-position single, double, 3-position and 4-position valves can be used on all manifold stations.
Use of a 2-position single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet.
(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
Note 3) Includes the number of blanking plate assemblies.
Note 4) For the model without the SI unit (S0), note the maximum number of solenoids of the SI unit that will be mounted. If the layout is specified, indicate it on the manifold specification sheet.

How to Order Manifold Assembly

Example (SS5Y5-M12SNAN-□)



SS5Y5-M12F1-05D·····1 set (Type M12 5-station manifold base part no.)
∗ SY5230-5U1-C8·····3 sets (2-position double part no.)
∗ SY3230-5U1-C6·····2 sets (2-position double part no.)
∗ The asterisk denotes the symbol for assembly.
∗ Prefix it to the part nos. of the valve, etc.

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

❹ P, E port entry

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

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

❺ SUP/EXH block assembly

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

∗ For built-in silencer type, P and E ports are available on U and D sides. 3/5(E) port is plugged. The silencer exhaust port is located on the opposite side of P, E port entry. (Example: When the P, E port entry is D side, the silencer exhaust port is U side.)
∗ When the built-in silencer type is used, keep the exhaust port from coming in direct contact with water or other liquids.

❻ P, E port size (One-touch fittings)

Nil	ø10
N	ø3/8"

∗ For N, sizes are in inches.

❼ Mounting

Nil	Direct mounting	
D	DIN rail mounting (With DIN rail)	
D0	DIN rail mounting (Without DIN rail)	
D3	For 3 stations	Specify a longer rail than the standard length. [The SY5000 valve is now at a mountable length (manifold block length of 16 mm).]
⋮	⋮	
D24	For 24 stations	

∗ When it is necessary to mount a DIN rail without an SI unit, select D0 and order DIN rail length separately, referring to L3 in the dimensions. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for part numbers of DIN rail.

SMC

How to Order Valves (With two mounting screws)

Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for details on valve specifications.

SY [3][1][3][0][ ][ ][ ][ ] – [5][ ][ ] 1 – [C6][ ] – [ ]

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾ ❿ ⓫ ⓬ ⓭

❸ Top ported

❶ Series

3	SY3000
5	SY5000

❷ Type of actuation

1	2-position single
2	2-position double
3	3-position closed center
4	3-position exhaust center
5	3-position pressure center
A*	4-position dual 3-port valve (N.C./N.C.)
B*	4-position dual 3-port valve (N.O./N.O.)
C*	4-position dual 3-port valve (N.C./N.O.)

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

❸ Seal type

0	Rubber seal
1	Metal seal

❹ Pilot type

Nil	Internal pilot
R	External pilot

❺ Back pressure check valve (Built-in valve type)

Nil	None
H	Built-in

* Only rubber seal type.
  Manifold installed type is available if the back pressure check valve is required for a valve with metal seal. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for details. However, it is not recommended to use the built-in valve type and the manifold installed type at the same time because it will reduce the flow.
* The built-in valve type back pressure check valve is not available for the 3-position type.

❻ Pilot valve option

Nil	Standard (101 psi (0.7 MPa))
B	Quick response type (101 psi (0.7 MPa))
K*	High pressure type (145 psi (1.0 MPa))

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

❼ Coil type

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

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

❽ Rated voltage

5	24 VDC

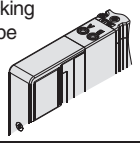
❾ Light/surge voltage suppressor and common specification

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

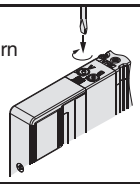
* Only "Z" and "NZ" types are available for the product with power saving circuit. Select a valve from R, U, S or Z when the SI unit output polarity is Nil (Positive common). Select a valve from R, U, NS or NZ when the SI unit output polarity is N (Negative common).

❿ Manual override

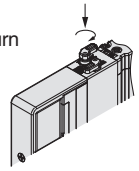
Nil: Non-locking push type



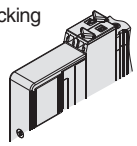
D: Push-turn locking slotted type



E: Push-turn locking manual type



F: Slide locking type



⓫ A, B port size

Thread piping

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

One-touch fitting (Metric)

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

One-touch fitting (Inch)

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

⓬ Thread type

Nil	Rc
F	G
N	NPT
T	NPTF

* Only Nil is available for M5.

⓭ Type of mounting screw

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

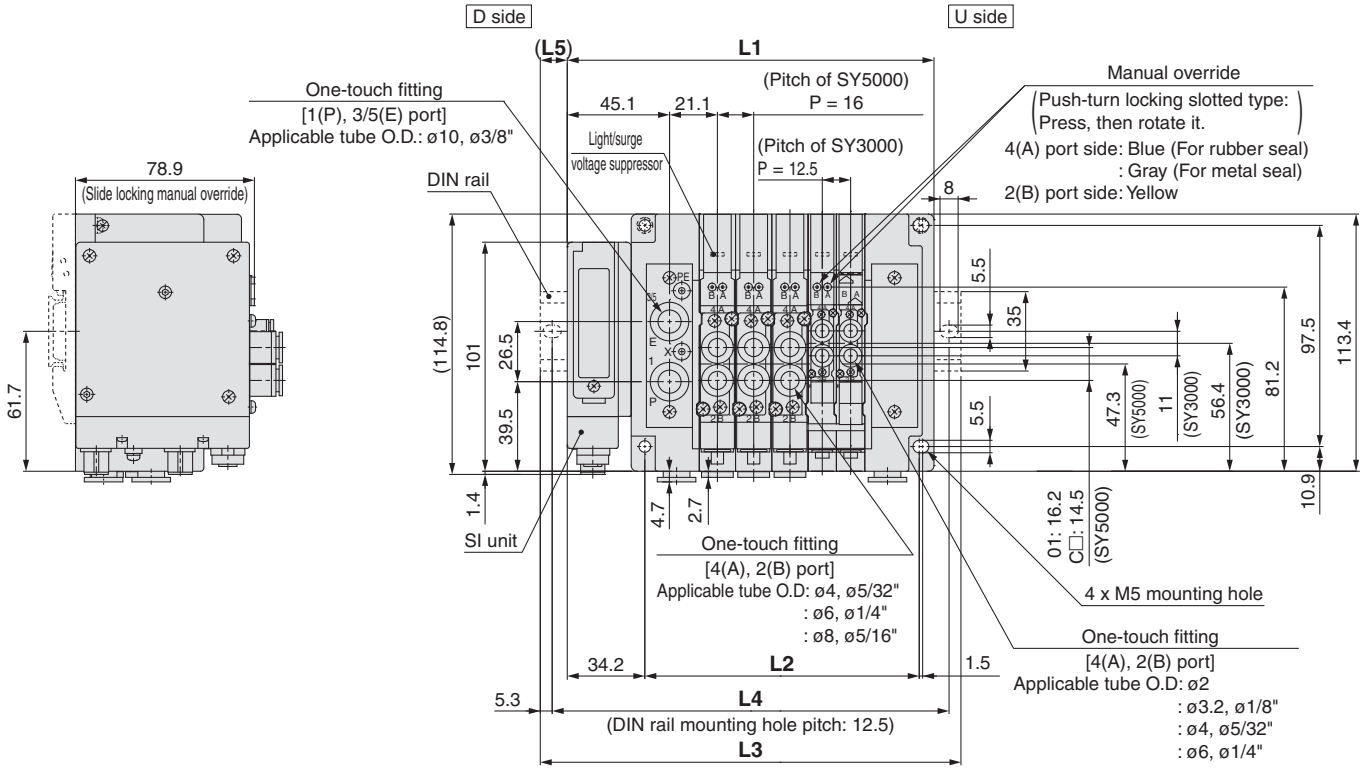
* For "K" and "H", the valve body cover has a drop prevention construction to stop the mounting screws from falling out when the valve is removed for maintenance etc.
* When ordering a valve individually, the base gasket is not included. Since the base gasket is attached to the manifold, please order the base gasket separately if it is needed for maintenance service. Refer to the SY3000/5000 series catalog (CAT.NAS11-103) for part numbers of base gasket and mounting screw.
* "B" and "H" cannot be selected for the individual SUP/EXH spacer assembly.

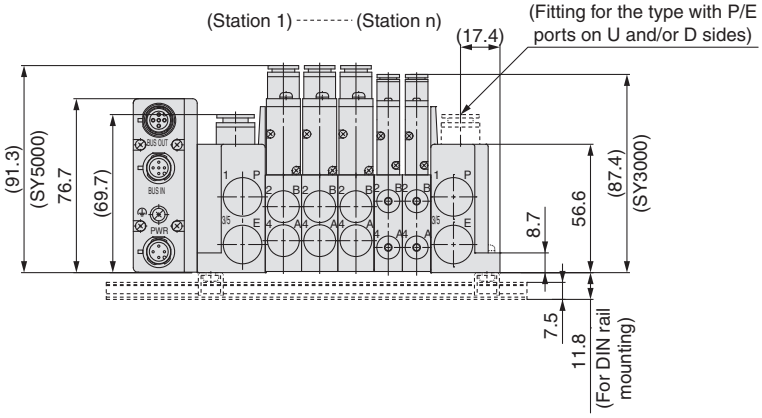
Refer to the SMC website or the SY3000/5000 series catalog (CAT.NAS11-103) for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.

Dimensions: Type 12/Mixed Mounting Type

(mm)

SS5Y5-M12S□□- Stations U/D/B(-D)





Note 1) These figures show the "SS5Y5-M12SQA-05D".
Note 2) Refer to page 16 for dimensions of D-sub communication connector, external pilot and built-in silencer.

EX260 Serial transmission Calculation of dimensions

L1 = 12.5 x n1 + 16 x n2 + 88.7
L2 = 12.5 x n1 + 16 x n2 + 48
M = L1/12.5 + 1 Remove all numbers after the decimal.
L3 = 12.5 x M + 23
L4 = L3 – 10.5
L5 = (L3 – L1)/2

n1: SY3000 Valve stations
n2: SY5000 Valve stations

Tie-rod Base:
For EX260 Integrated-type (For Output)
Serial Transmission System
Series SV

How to Order Manifold

SS5V 1 – W 10S1 NA N D – 05 U □ – □ – □

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

❷ Enclosure
IP67

∗Refer to Note 1) of the ❷ SI unit specifications.

❶ Series

1	SV1000
2	SV2000
3	SV3000

❷ SI unit specifications

Symbol	Protocol	Number of outputs	Communication connector
0	Without SI unit		
QA	DeviceNet™	32	M12
QB		16	
NA	PROFIBUS DP	32	M12
NB		16	
NC		32	D-sub Note 1)
ND		16	
VA	CC-Link	32	M12
VB		16	
DA	EtherCAT	32	M12
DB		16	
FA	PROFINET	32	M12
FB		16	
EA	EtherNet/IP™	32	M12
EB		16	

- DIN rail cannot be selected for the product without SI unit.

Note 1) IP40 for the D-sub applicable communication connector specification. (The manifold part number is "SS5V□-10S1NC/ND□D".)

Note 2) For SI unit part number, refer to page 1.

❸ SI unit output polarity

Nil	Positive common
N	Negative common

Note) Without SI unit, the symbol is nil.

❹ Valve stations

In the case of the 32-output SI unit

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

In the case of the 16-output SI unit

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

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

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

Note 3) Includes the number of blanking plate assemblies.

❺ P, E port entry

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

❻ SUP/EXH block assembly

Nil	Internal pilot
S Note)	Internal pilot, Built-in silencer
R	External pilot
RS Note)	External pilot, Built-in silencer

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

❽ Mounting

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

❼ A, B port size (Metric)

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

A, B port size (Inch)

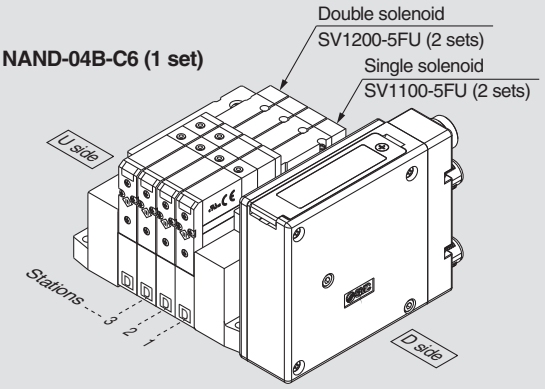
Symbol	A, B port	P, E port	Applicable series
N1	ø1/8" One-touch fitting	ø5/16" One-touch fitting	SV1000
N3	ø5/32" One-touch fitting		
N7	ø1/4" One-touch fitting		
N3	ø5/32" One-touch fitting	ø3/8" One-touch fitting	SV2000
N7	ø1/4" One-touch fitting		
N9	ø5/16" One-touch fitting		
N7	ø1/4" One-touch fitting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

∗ In the case of mixed specifications (M), indicate separately on the manifold specification sheet.
∗ The X and PE port size of External pilot type (R, RS) are ø4 (mm) or ø5/32" (inch) for the SV1000/2000 series, and ø6 (mm) or ø1/4" (inch) for the SV3000 series.

How to Order Manifold Assembly

Example (SV1000)

Manifold
SS5V1-W10S1NAND-04B-C6 (1 set)



SS5V1-W10S1NAND-04B-C6·····1 set (Manifold part no.)
∗SV1100-5FU·····2 sets (Single solenoid part no.)
∗SV1200-5FU·····2 sets (Double solenoid part no.)

How to Order Valves

SV 1 1 0 0 ❸ ❹ – 5 F ❻ ❼ – ❺ – ❽
Note)

❶ Series

1	SV1000
2	SV2000
3	SV3000

❷ Type of actuation

1	2-position single
2	2-position double
3	3-position closed center
4	3-position exhaust center
5	3-position pressure center
A	4-position dual 3-port valve: N.C./N.C.
B	4-position dual 3-port valve: N.O./N.O.
C	4-position dual 3-port valve: N.C./N.O.

∗ 4-position dual 3-port valves are applicable to the SV1000/2000 series only.

❸ Pilot type

Nil	Internal pilot
R	External pilot

∗ External pilot specification is not available for 4-position dual 3-port valves.

❹ Back pressure check valve

Nil	None
K	Built-in

∗ Built-in back pressure check valve type is applicable to the SV1000 series only.
∗ Back pressure check valve is not available for 3-position valve.
Note) Refer to Specific Product Precautions 2 in Best Pneumatics No. 1.

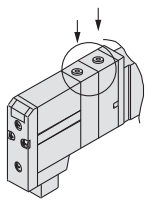
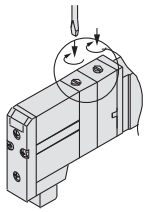
❺ Rated voltage

5	24 VDC

❻ Light/surge voltage suppressor

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

❼ Manual override

Nil: Non-locking push type	**D**: Push-turn locking slotted type
	

Note) Available with manifold block for station additions. Refer to Best Pneumatics No. 1.

❽ Made to Order

Nil	—
X90	Main valve fluororubber (Refer to page 448 in Best Pneumatics No. 1.)

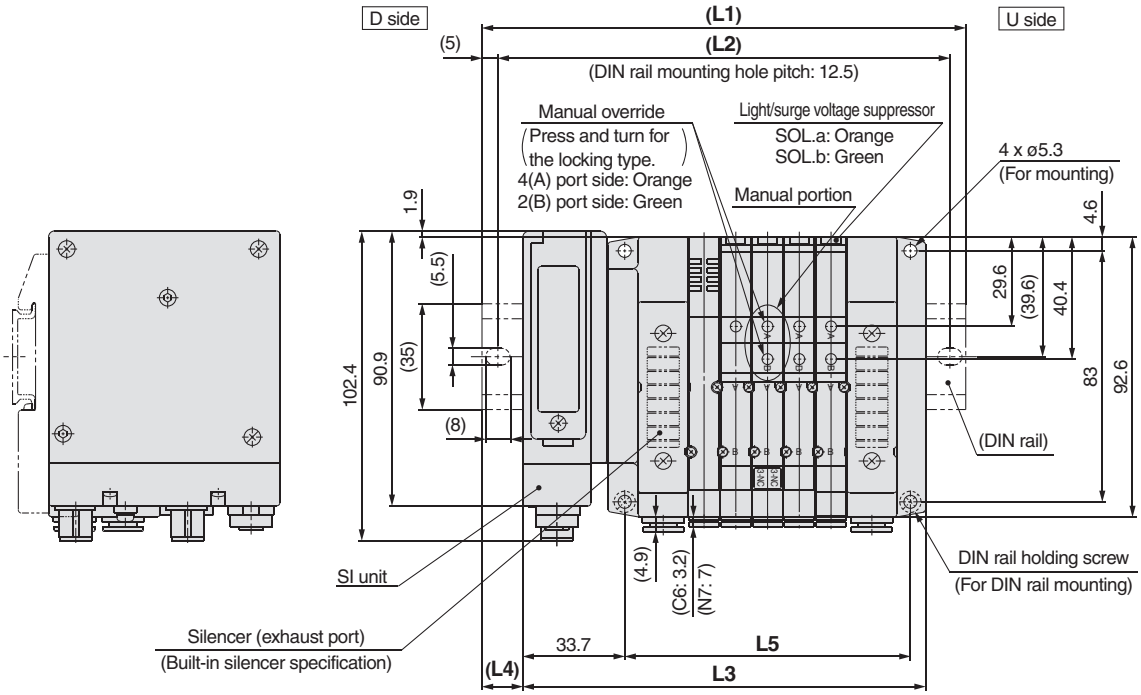
Refer to the SMC website or the SV series in Best Pneumatics No.1 for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.

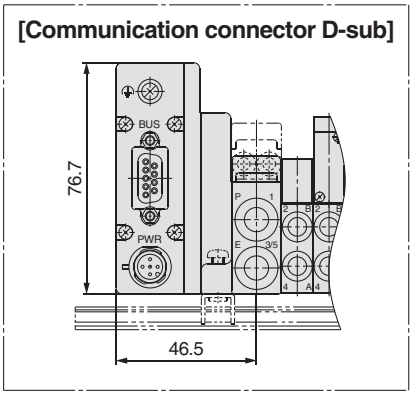
Dimensions: For EX260 Integrated-type (For Output) Serial Transmission System/Series SV1000

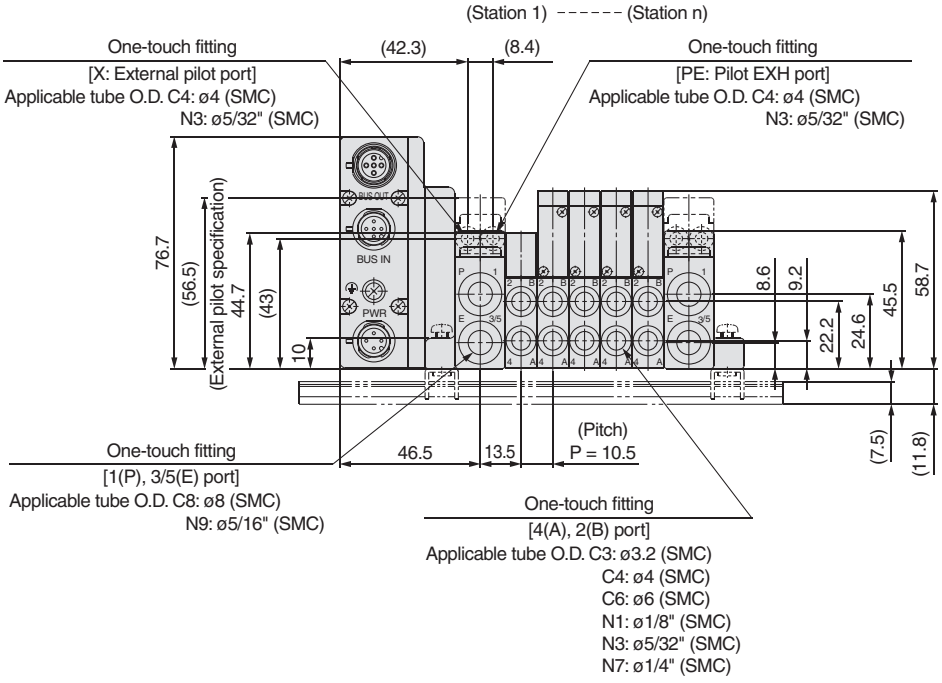
(mm)

● Tie-rod base manifold: SS5V1-W10S1□□D- Stations U/D/B (S, R, RS)- C3, N1 / C4, N3 / C6, N7 (-D)

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







L: DIN Rail Overall Length

n: Stations

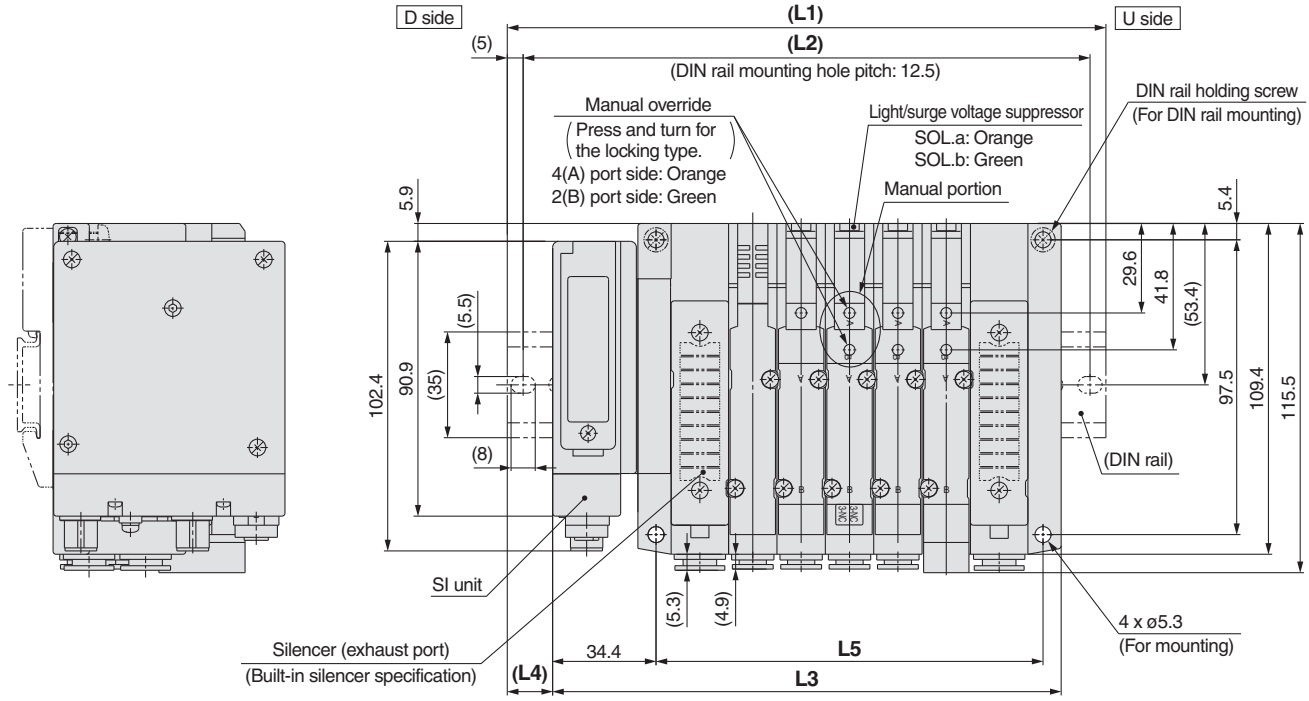
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	135.5	148	148	160.5	173	185.5	198	210.5	210.5	223	235.5	248	260.5	273	273	285.5	298	310.5	323
L2	125	137.5	137.5	150	162.5	175	187.5	200	200	212.5	225	237.5	250	262.5	262.5	275	287.5	300	312.5
L3	102.2	112.7	123.2	133.7	144.2	154.7	165.2	175.7	186.2	196.7	207.2	217.7	228.2	238.7	249.2	259.7	270.2	280.7	291.2
L4	16.5	17.5	12.5	13.5	14.5	15.5	16.5	17.5	12	13	14	15	16	17	12	13	14	15	16
L5	63	73.5	84	94.5	105	115.5	126	136.5	147	157.5	168	178.5	189	199.5	210	220.5	231	241.5	252

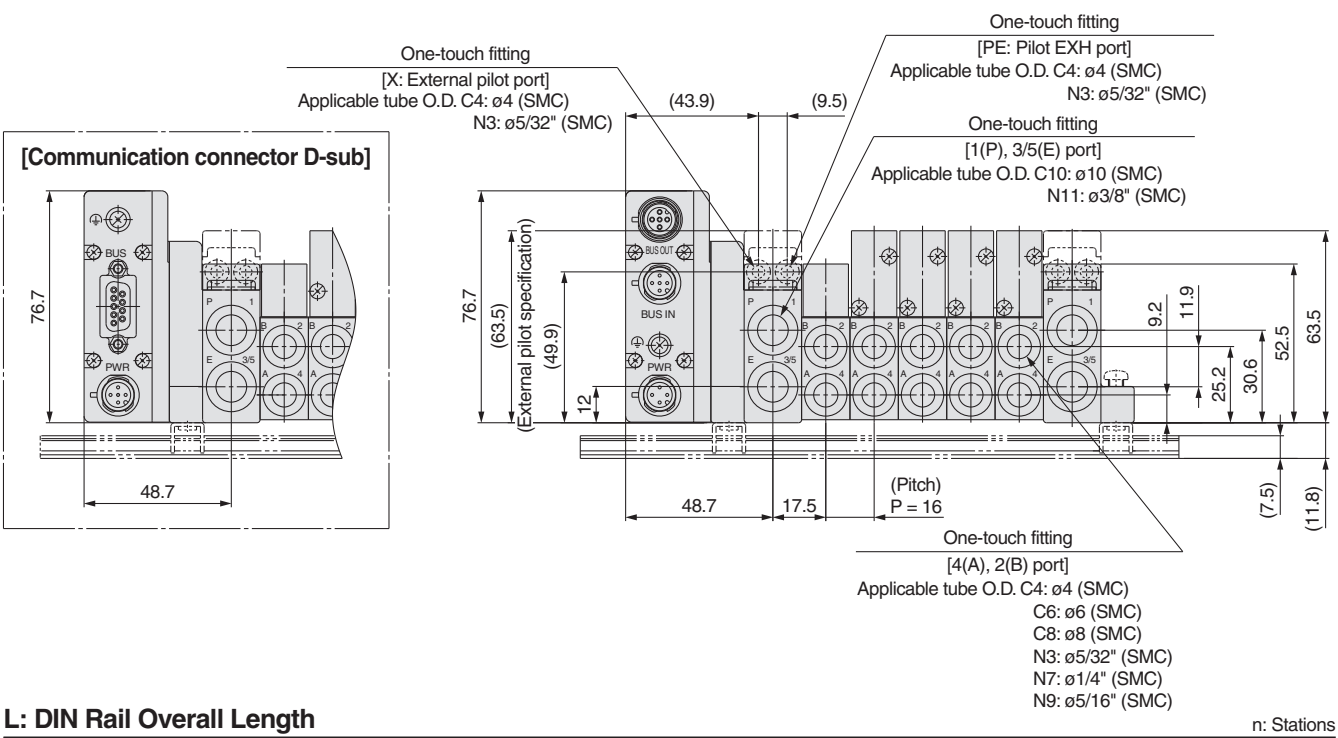
Dimensions: For EX260 Integrated-type (For Output) Serial Transmission System/Series SV2000

(mm)

● Tie-rod base manifold: SS5V2-W10S1□□D-[Stations] [U/D/B] (S, R, RS)- [C4, N3 / C6, N7 / C8, N9] (-D)

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





L: DIN Rail Overall Length

n: Stations

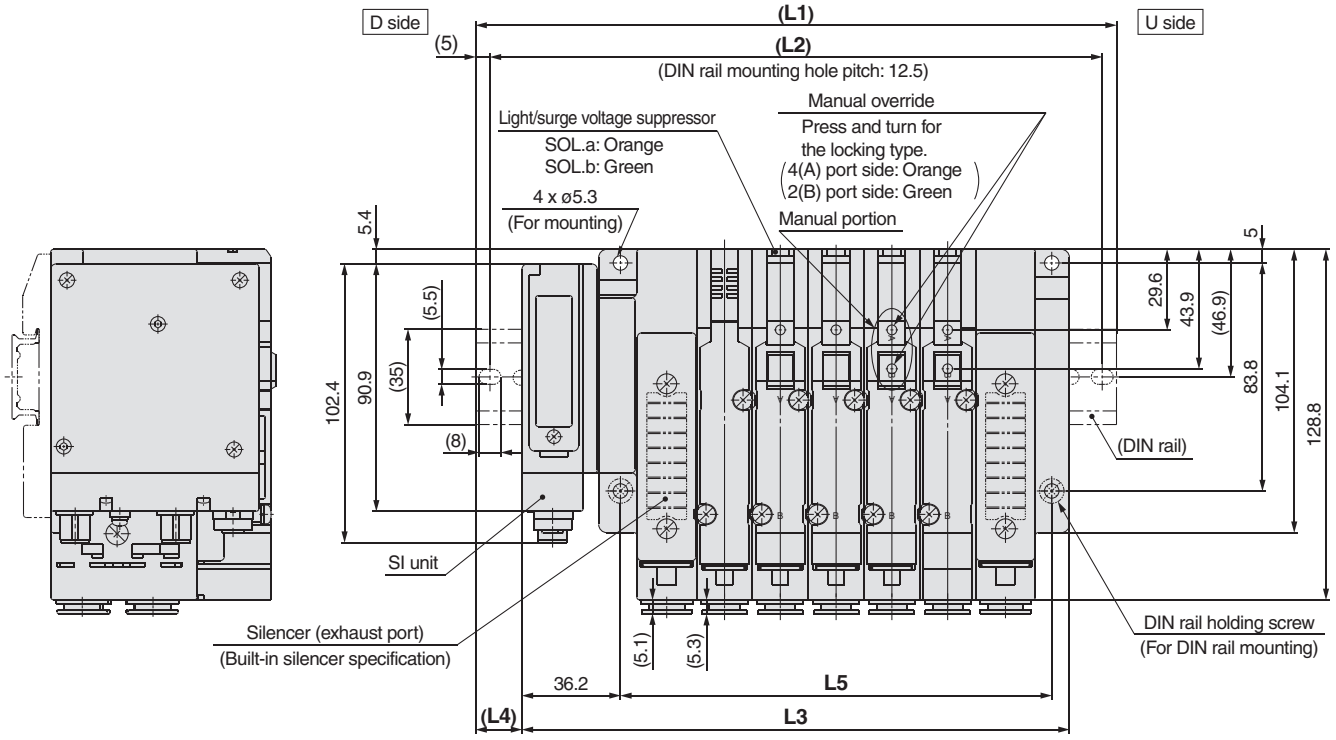
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	148	160.5	185.5	198	210.5	235.5	248	260.5	273	298	310.5	323	335.5	360.5	373	385.5	410.5	423	435.5
L2	137.5	150	175	187.5	200	225	237.5	250	262.5	287.5	300	312.5	325	350	362.5	375	400	412.5	425
L3	120.2	136.2	152.2	168.2	184.2	200.2	216.2	232.2	248.2	264.2	280.2	296.2	312.2	328.2	344.2	360.2	376.2	392.2	408.2
L4	14	12	16.5	15	13	17.5	16	14	12.5	17	15	13.5	11.5	16	14.5	12.5	17	15.5	13.5
L5	80	96	112	128	144	160	176	192	208	224	240	256	272	288	304	320	336	352	368

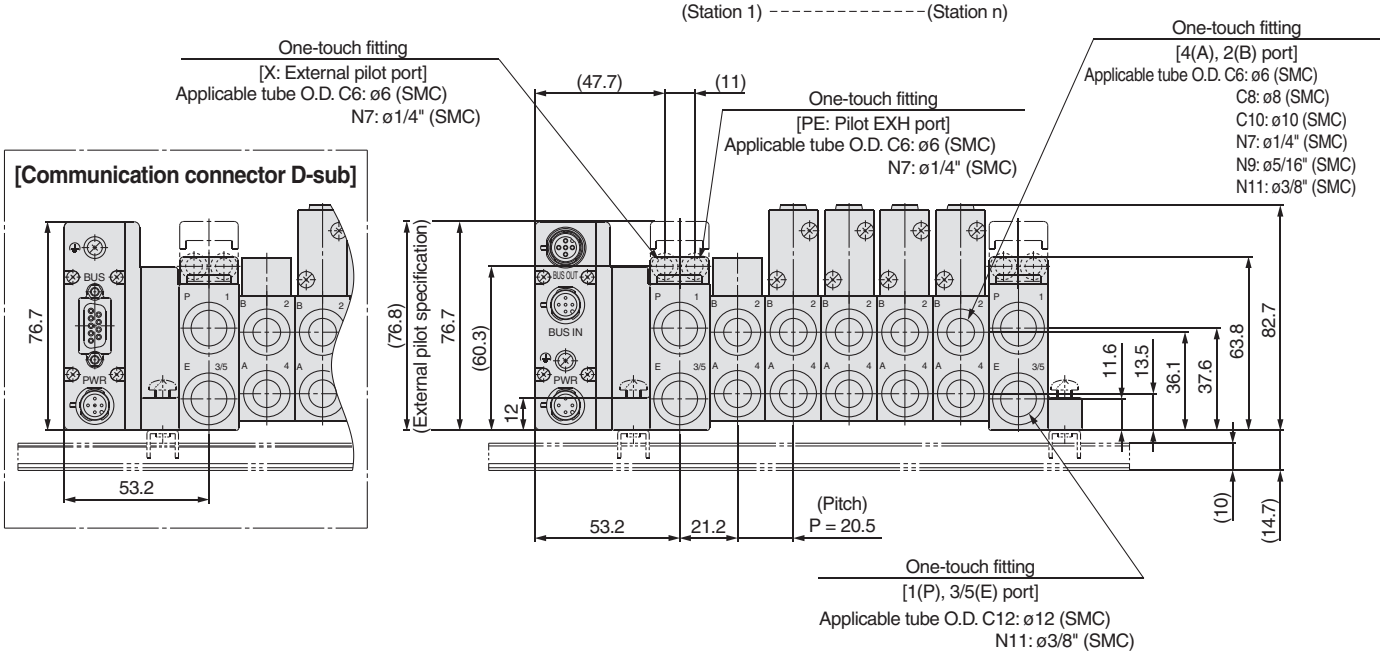
Dimensions: For EX260 Integrated-type (For Output) Serial Transmission System/Series SV3000

(mm)

● Tie-rod base manifold: SS5V3-W10S1□□D-Stations U/D/B (S, R, RS)- C6, N7 / C8, N9 / C10, N11 (-D)

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





L: DIN Rail Overall Length

n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
L1	173	185.5	210.5	235.5	248	273	298	310.5	335.5	348	373	398	410.5	435.5	460.5	473	498	523	535.5
L2	162.5	175	200	225	237.5	262.5	287.5	300	325	337.5	362.5	387.5	400	425	450	462.5	487.5	512.5	525
L3	139.7	160.2	180.7	201.2	221.7	242.2	262.7	283.2	303.7	324.2	344.7	365.2	385.7	406.2	426.7	447.2	467.7	488.2	508.7
L4	16.5	12.5	15	17	13	15.5	17.5	13.5	16	12	14	16.5	12.5	14.5	17	13	15	17.5	13.5
L5	97	117.5	138	158.5	179	199.5	220	240.5	261	281.5	302	322.5	343	363.5	384	404.5	425	445.5	466

Base Mounted

Plug-in Unit: For EX260 Integrated-type (For Output) Serial Transmission System

Series VQC1000

RoHS

How to Order Manifold

VV5QC 1 1 – 08 C6 SNA N – B ····· S Kit

❶ ❷ ❸ ❹ ❺ ❻ ❼

❶ Series

1	VQC1000

❷ Manifold model

1	Plug-in unit

❸ Stations

In the case of the 32-output SI unit

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

In the case of the 16-output SI unit

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

Note 1) Double wiring: single, double, 3-position and 4-position solenoid valves can be used on all manifold stations.
Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet.
(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
Note 3) Includes the number of blanking plate assemblies.

❹ Cylinder port size

C3	With ø3.2 One-touch fitting
C4	With ø4 One-touch fitting
C6	With ø6 One-touch fitting
M5	M5 thread
CM	Mixed sizes and with port plug
L3	Top ported elbow with ø3.2 One-touch fitting
L4	Top ported elbow with ø4 One-touch fitting
L6	Top ported elbow with ø6 One-touch fitting
L5	M5 thread
B3	Bottom ported elbow with ø3.2 One-touch fitting
B4	Bottom ported elbow with ø4 One-touch fitting
B6	Bottom ported elbow with ø6 One-touch fitting
B5	M5 thread
LM	Elbow port, mixed sizes
MM Note2)	Mixed size for different types of piping, option installed

Note 1) Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".
Note 2) When selecting the mixed size for different types of piping or dual flow fitting assembly, enter "MM" and give instructions in the manifold specification sheet.
Note 3) Symbols for inch sizes are as follows:
- N1: ø1/8"
- N3: ø5/32"
- N7: ø1/4"
- NM: Mixed

The top ported elbow is LN□ and the bottom ported elbow is BN□.

❻ SI unit output polarity

Nil	Positive common
N	Negative common

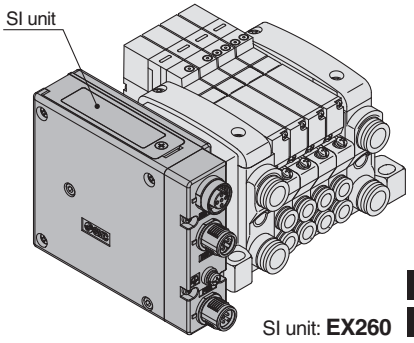
❼ Option

Nil	None
B	With back pressure check valve (All stations) Note 2)
D	With DIN rail (Rail length: Standard)
D□	With DIN rail (Rail length: Special) Note 3)
K	Special wiring spec. (Except double wiring) Note 4)
N	With name plate
R	External pilot Note 5)
S	Built-in silencer, Direct exhaust Note 6)

Note 1) When two or more symbols are specified, indicate them alphabetically.
Example: -BRS
Note 2) When the back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position on the manifold specification sheet.
Note 3) For special DIN rail length, indicate "D□".
(Enter the number of stations inside □.)
Example: -D08
In this case, stations will be mounted on a DIN rail for 8 stations regardless of the actual number of manifold stations.
The specified number of stations must be larger than the number of stations on the manifold.
Indicate "-D0" for the option without DIN rail.
Note 4) Specify wiring type of each station on the manifold specification sheet.
Note 5) For external pilot option, "-R", indicate the external pilot specification "R" for the applicable valves as well.
Note 6) Built-in silencer type does not satisfy IP67.
Note 7) When the "SD0" (Without SI unit) is specified, "-D", "-D□" cannot be selected.

❺ Kit type

S **Kit (Serial transmission kit (for Output))**



SI unit: **EX260**

IP40 specification
IP67 specification

Symbol	Protocol	Number of outputs	Communication connector
SD0	Without SI unit		
SQA	DeviceNet™	32	M12
SQB		16	
SNA	PROFIBUS DP	32	M12
SNB		16	
SNC		32	D-sub Note 1)
SND		16	
SVA	CC-Link	32	M12
SVB		16	
SDA	EtherCAT	32	M12
SDB		16	
SFA	PROFINET	32	M12
SFB		16	
SEA	EtherNet/IP™	32	M12
SEB		16	

Note 1) D-sub S kit: IP40 specification (IP67 specification for all other S kits)
Note 2) For SI unit part number, refer to page 1.

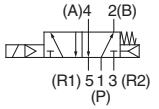
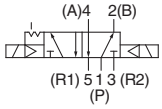
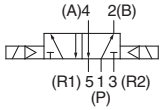
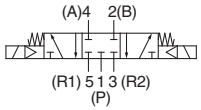
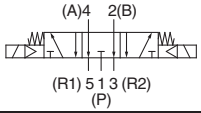
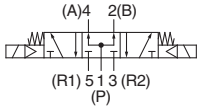
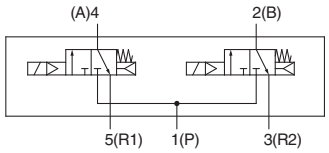
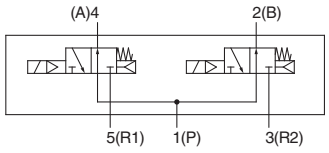
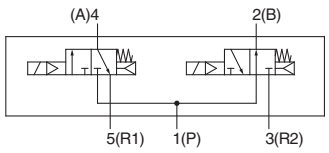
SMC

How to Order Valves

VQC 1 1 0 0 □ – 5 □ □ 1

Series VQC1000 ❶ ❷ ❸ ❹ ❺ ❻

❶ Type of actuation

1	2-position single 
2	2-position double (Metal) 
	2-position double (Rubber) 
3	3-position closed center 
4	3-position exhaust center 
5	3-position pressure center 
A Note)	4-position dual 3-port valve (A) 
B Note)	4-position dual 3-port valve (B) 
C Note)	4-position dual 3-port valve (C) 

Note) Only rubber seal type

❷ Seal type

0	Metal seal
1	Rubber seal

❸ Function

Nil	Standard (0.4 W)
B	Quick response type (0.95 W)
K Note 2)	High pressure type (145 psi (1.0 MPa), 0.95 W)
N Note 3)	Negative common
R Note 4)	External pilot

Note 1) When two or more symbols are specified, indicate them alphabetically. However, combination of "B" and "K" is not possible.
Note 2) Only metal seal type
Note 3) When negative common is specified for SI unit, select and mount the valve of negative common.
Note 4) Not applicable for dual 3-port valves

❹ Coil voltage

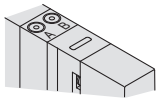
5	24 VDC

❺ Light/surge voltage suppressor

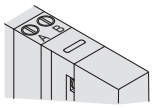
Nil	Yes

❻ Manual override

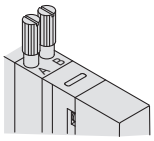
Nil: Non-locking push type (Tool required)



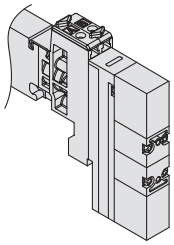
B: Locking type (Tool required)



C: Locking type (Manual)



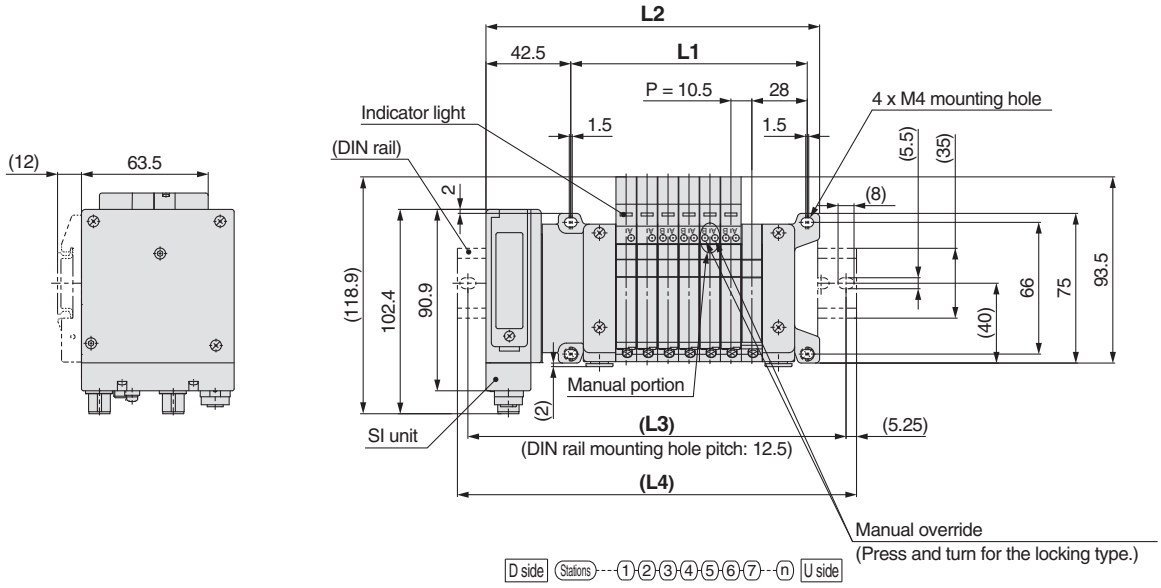
D: Slide locking type (Manual)

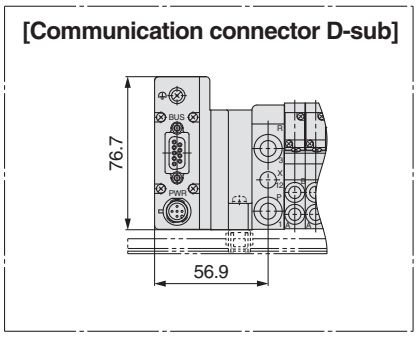


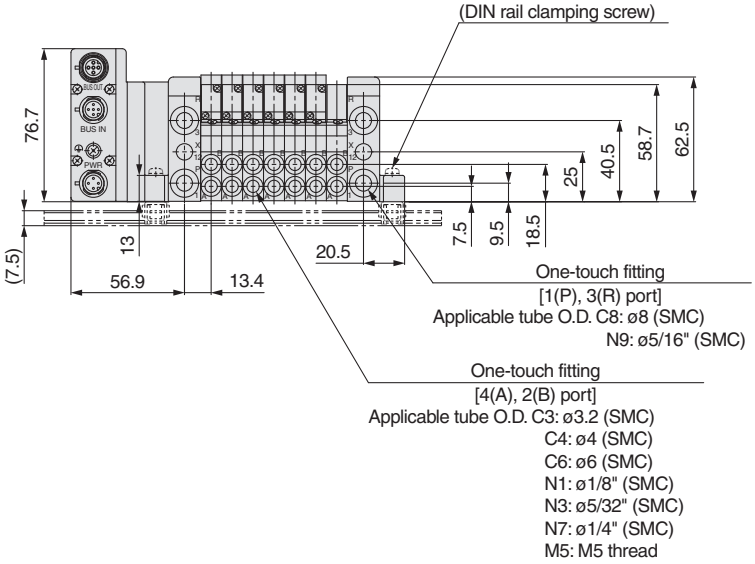
Refer to the SMC website or the VQC1000/2000 series catalog (CAT.NAS11-101) for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.

(mm)

VV5QC11
S Kit (Serial transmission kit: EX260)







n: Stations (Maximum 24 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	55.5	66	76.5	87	97.5	108	118.5	129	139.5	150	160.5	171	181.5	192	202.5	213	223.5	234	244.5	255	265.5	276	286.5	297
L2	104.2	114.7	125.2	135.7	146.2	156.7	167.2	177.7	188.2	198.7	209.2	219.7	230.2	240.7	251.2	261.7	272.2	282.7	293.2	303.7	314.2	324.7	335.2	345.7
L3	127	139.5	152	164.5	177	177	189.5	202	214.5	227	239.5	239.5	252	264.5	277	289.5	302	314.5	314.5	327	339.5	352	364.5	377
L4	137.5	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5	300	312.5	325	325	337.5	350	362.5	375	387.5

Plug-in Unit: For EX260 Integrated-type (For Output) Serial Transmission System

Series VQC2000

RoHS

How to Order Manifold

VV5QC 2 1 – 08 C6 SNA N – B ····· S Kit

❶ ❷ ❸ ❹ ❺ ❻ ❼

❶ Series

2	VQC2000

❷ Manifold model

1	Plug-in unit

❸ Stations

In the case of the 32-output SI unit

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

In the case of the 16-output SI unit

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

Note 1) Double wiring: single, double, 3-position and 4-position solenoid valves can be used on all manifold stations.
Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet.
(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
Note 3) Includes the number of blanking plate assemblies.

❹ Cylinder port size

C4	ø4 One-touch fitting
C6	ø6 One-touch fitting
C8	ø8 One-touch fitting
CM	Mixed sizes and with port plug
L4	Top ported elbow with ø4 One-touch fitting
L6	Top ported elbow with ø6 One-touch fitting
L8	Top ported elbow with ø8 One-touch fitting
B4	Bottom ported elbow with ø4 One-touch fitting
B6	Bottom ported elbow with ø6 One-touch fitting
B8	Bottom ported elbow with ø8 One-touch fitting
LM	Elbow port, mixed sizes
MM Note 2)	Mixed size for different types of piping, option installed

Note 1) Indicate the sizes on the manifold specification sheet in the case of "CM", "LM".
Note 2) When selecting the mixed size for different types of piping or dual flow fitting assembly, enter "MM" and give instructions in the manifold specification sheet.
Note 3) Symbols for inch sizes are as follows:
- N3: ø5/32"
- N7: ø1/4"
- N9: ø5/16"
- NM: Mixed

The top ported elbow is LN□ and the bottom ported elbow is BN□.

❻ SI unit output polarity

Nil	Positive common
N	Negative common

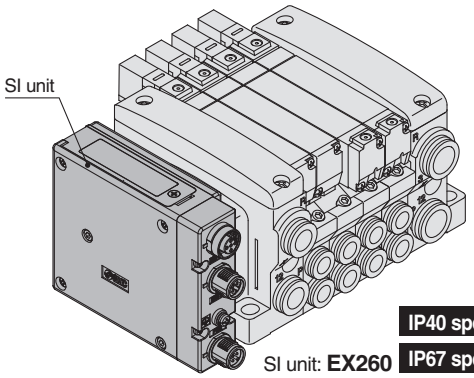
❼ Option

Nil	None
B	With back pressure check valve (All stations) Note 2)
D	With DIN rail (Rail length: Standard)
D□	With DIN rail (Rail length: Special) Note 3)
K	Special wiring spec. (Except double wiring) Note 4)
N	With name plate
R	External pilot Note 5)
S	Built-in silencer, Direct exhaust Note 6)
T	P and R ports included on both sides of the U side Note 7)

Note 1) When two or more symbols are specified, indicate them alphabetically.
Example: -BRS
Note 2) When the back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position on the manifold specification sheet.
Note 3) For special DIN rail length, indicate "D□".
(Enter the number of stations inside □.)
Example: -D08
In this case, stations will be mounted on a DIN rail for 8 stations regardless of the actual number of manifold stations.
The specified number of stations must be larger than the number of stations on the manifold.
Indicate "-D0" for the option without DIN rail.
Note 4) Specify wiring type of each station on the manifold specification sheet.
Note 5) For external pilot option, "-R", indicate the external pilot specification "R" for the applicable valves as well.
Note 6) Built-in silencer type does not satisfy IP67.
Note 7) 2 ports for SUP and EXH are included on both sides of U side (cylinder port and coil side) with ø12 One-touch fittings.
Note 8) When the "SD0" (Without SI unit) is specified, "-D", "-D□" cannot be selected.

❺ Kit type

S Kit (Serial transmission kit (for Output))



Symbol	Protocol	Number of outputs	Communication connector
SD0	Without SI unit		
SQA	DeviceNet™	32	M12
SQB		16	
SNA	PROFIBUS DP	32	M12
SNB		16	
SNC		32	D-sub Note 1)
SND		16	
SVA	CC-Link	32	M12
SVB		16	
SDA	EtherCAT	32	M12
SDB		16	
SFA	PROFINET	32	M12
SFB		16	
SEA	EtherNet/IP™	32	M12
SEB		16	

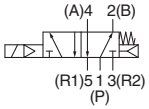
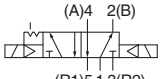
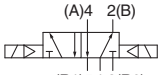
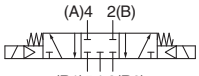
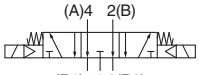
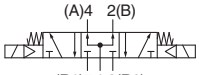
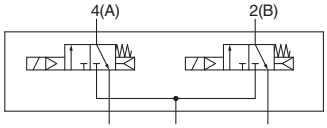
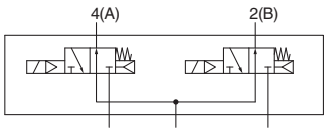
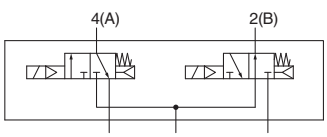
Note 1) D-sub S kit: IP40 specification (IP67 specification for all other S kits)
Note 2) For SI unit part number, refer to page 1.

How to Order Valves

VQC 2 1 0 0 □ – 5 □ □ 1

Series VQC2000 ❶ ❷ ❸ ❹ ❺ ❻

❶ Type of actuation

1	2-position single 
2	2-position double (Metal) 
	2-position double (Rubber) 
3	3-position closed center 
4	3-position exhaust center 
5	3-position pressure center 
A Note)	4-position dual 3-port valve (A) 
B Note)	4-position dual 3-port valve (B) 
C Note)	4-position dual 3-port valve (C) 

Note) Only rubber seal type

❷ Seal type

0	Metal seal
1	Rubber seal

❸ Function

Nil	Standard (0.4 W)
B	Quick response type (0.95 W)
K Note 2)	High pressure type (145 psi (1.0 MPa), 0.95 W)
N Note 3)	Negative common
R Note 4)	External pilot

Note 1) When two or more symbols are specified, indicate them alphabetically. However, combination of "B" and "K" is not possible.
Note 2) Only metal seal type
Note 3) When negative common is specified for SI unit, select and mount the valve of negative common.
Note 4) Not applicable for dual 3-port valves

❹ Coil voltage

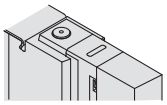
5	24 VDC

❺ Light/surge voltage suppressor

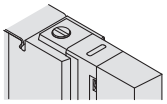
Nil	Yes

❻ Manual override

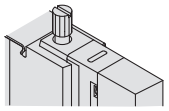
Nil: Non-locking push type (Tool required)



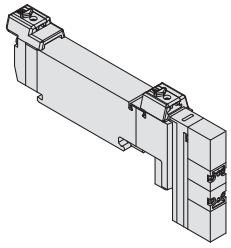
B: Locking type (Tool required)



C: Locking type (Manual)



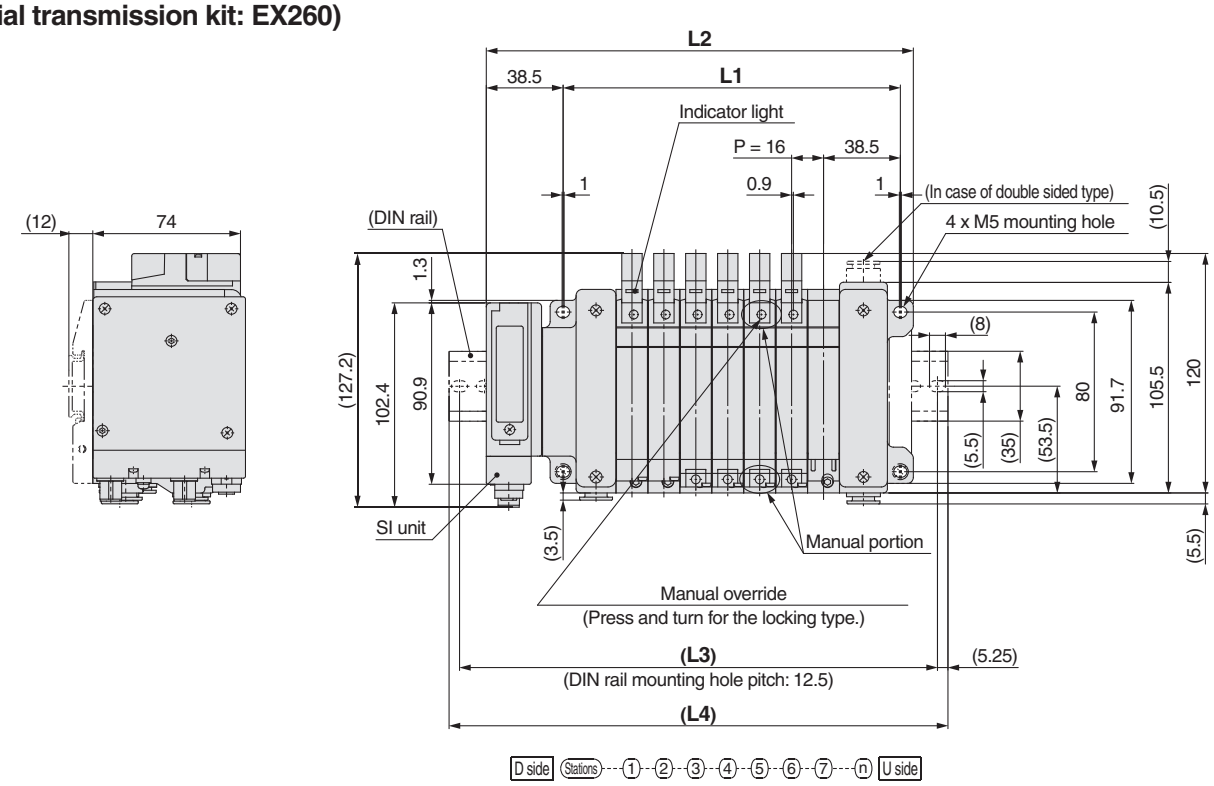
D: Slide locking type (Manual)

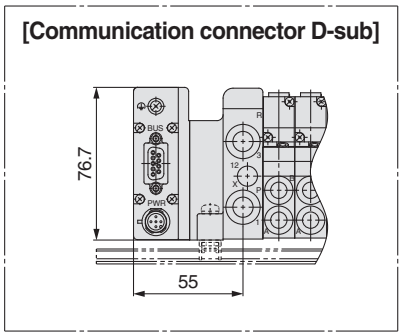


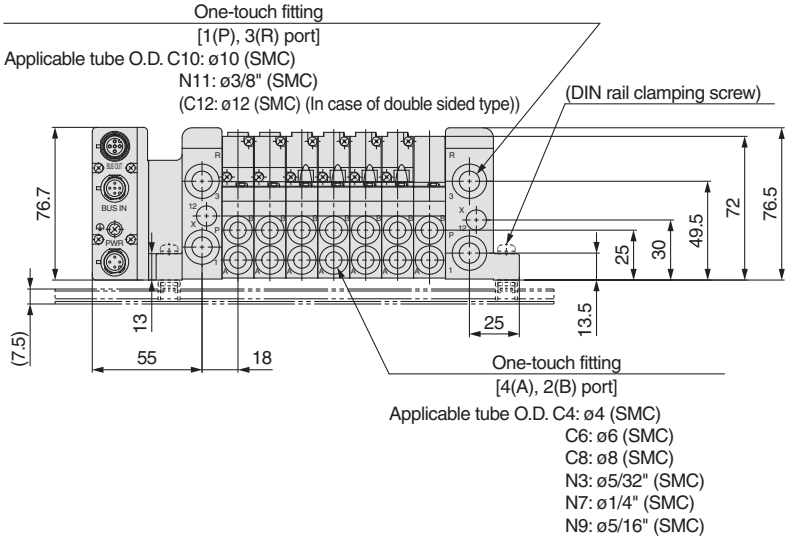
Refer to the SMC website or the VQC1000/2000 series catalog (CAT.NAS11-101) for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.

(mm)

VV5QC21
S Kit (Serial transmission kit: EX260)







n: Stations (Maximum 24 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
L1	73	89	105	121	137	153	169	185	201	217	233	249	265	281	297	313	329	345	361	377	393	409	425	441
L2	118	134	150	166	182	198	214	230	246	262	278	294	310	326	342	358	374	390	406	422	438	454	470	486
L3	139.5	164.5	177	189.5	202	227	239.5	252	277	289.5	302	314.5	339.5	352	364.5	389.5	402	414.5	427	452	464.5	477	489.5	514.5
L4	150	175	187.5	200	212.5	237.5	250	262.5	287.5	300	312.5	325	350	362.5	375	400	412.5	425	437.5	462.5	475	487.5	500	525

Base Mounted

Plug-in Unit: For EX260 Integrated-type (For Output) Serial Transmission System

Series VQC4000

RoHS

How to Order Manifold

VV5QC 4 1 – 16 03 ☐ SNA N – ☐ ····· S Kit

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽

❶ Series

4	VQC4000

❷ Manifold model

1	Plug-in unit

❹ Cylinder port size

C8	With ø8 One-touch fitting
C10	With ø10 One-touch fitting
C12	With ø12 One-touch fitting
02	Rc1/4
03	Rc3/8
B	Bottom ported Rc1/4
CM	Mixed

Note 1) Indicate the sizes on the manifold specification sheet in the case of "CM".
Note 2) Symbols for inch sizes are as follows:
<In the case of One-touch fittings>
- N7: ø1/4"
- N9: ø5/16"
- N11: ø3/8"
- NM: Mixed

❺ Thread type

Nil	Rc
F	G
T	NPT/NPTF

❸ Stations

In the case of the 32-output SI unit

Symbol	Stations	Note
01	1 station	Double wiring Note 1)
⋮	⋮	
12	12 stations	
01	1 station	Specified layout Note 2) (Available up to 24 solenoids)
⋮	⋮	
16	16 stations	

In the case of the 16-output SI unit

Symbol	Stations	Note
01	1 station	Double wiring Note 1)
⋮	⋮	
08	8 stations	
01	1 station	Specified layout Note 2) (Available up to 16 solenoids)
⋮	⋮	
16	16 stations	

Note 1) Double wiring: single, double, 3-position and 4-position solenoid valves can be used on all manifold stations.
Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet.
(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
Note 3) Includes the number of blanking plate assemblies.

❼ SI unit output polarity

Nil	Positive common
N	Negative common

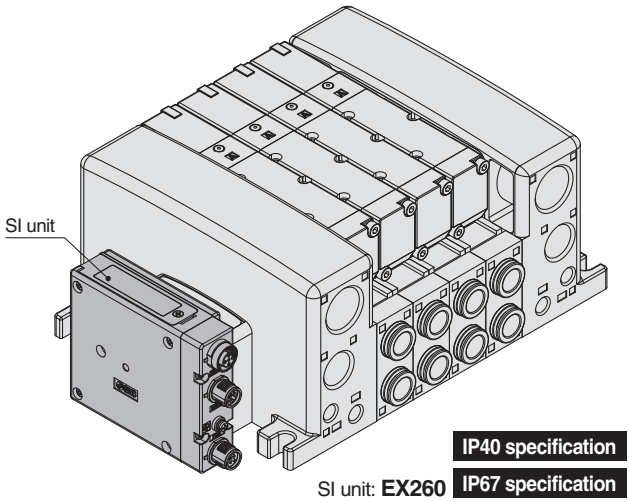
❽ Option

Nil	None
S	Built-in silencer, Direct exhaust Note 1)
K	Special wiring spec. (Except double wiring) Note 2)

Note 1) Built-in silencer type does not satisfy IP67.
Note 2) Specify wiring type of each station on the manifold specification sheet.

❻ Kit type

S **Kit (Serial transmission kit (for Output))**



IP40 specification
SI unit: **EX260** IP67 specification

Symbol	Protocol	Number of outputs	Communication connector
SD0A	Without SI unit		
SQA	DeviceNet™	32	M12
SQB		16	
SNA	PROFIBUS DP	32	M12
SNB		16	
SNC		32	D-sub Note 1)
SND		16	
SVA	CC-Link	32	M12
SVB		16	
SDA	EtherCAT	32	M12
SDB		16	
SFA	PROFINET	32	M12
SFB		16	
SEA	EtherNet/IP™	32	M12
SEB		16	

Note 1) D-sub S kit: IP40 specification (IP67 specification for all other S kits)
Note 2) For SI unit part number, refer to page 1.

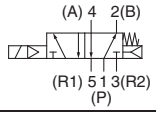
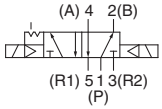
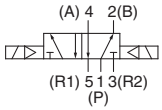
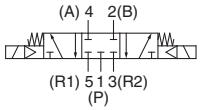
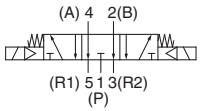
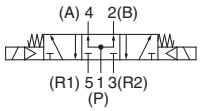
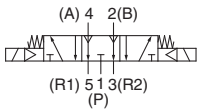
SMC

How to Order Valves

VQC 4 1 0 0 □ – 5 □ □

Series VQC4000 ❶ ❷ ❸ ❹ ❺ ❻

❶ Type of actuation

1	2-position single 
2	2-position double (Metal) 
	2-position double (Rubber) 
3	3-position closed center 
4	3-position exhaust center 
5	3-position pressure center 
6	3-position double check 

❷ Seal type

0	Metal seal
1	Rubber seal

❸ Function

Nil	Standard (1 W)
R	External pilot
Y Note 2)	Low wattage type (0.5 W)

Note 1) When two or more symbols are specified, indicate them alphabetically.

Note 2) Select "Y" when a valve is continuously energized for long periods of time.

❹ Coil voltage

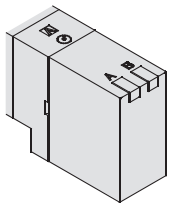
5	24 VDC

❺ Light/surge voltage suppressor

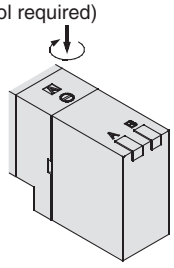
Nil	Yes
E	Without light, with surge voltage suppressor

❻ Manual override

Nil: Non-locking push type (Tool required)



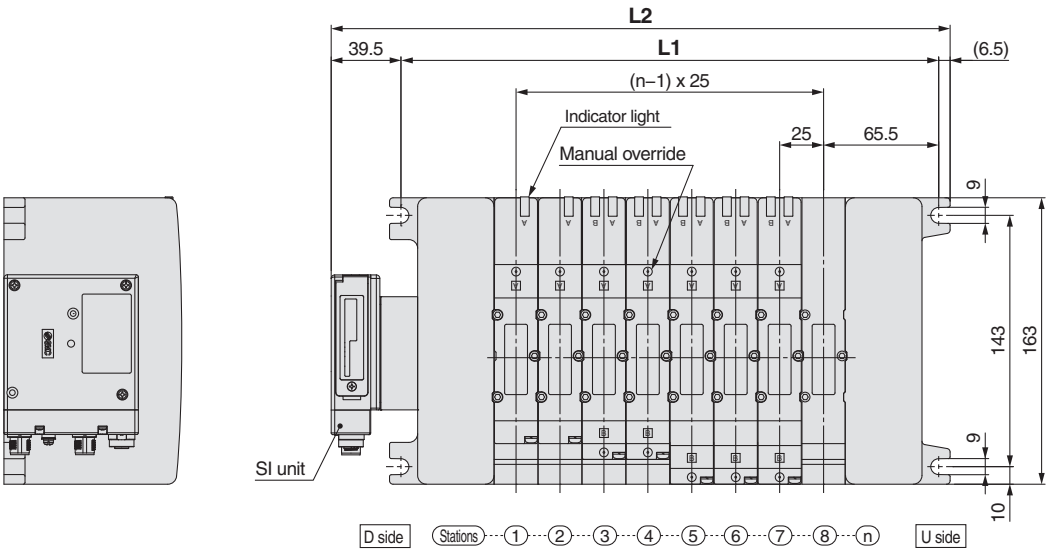
B: Locking type (Tool required)

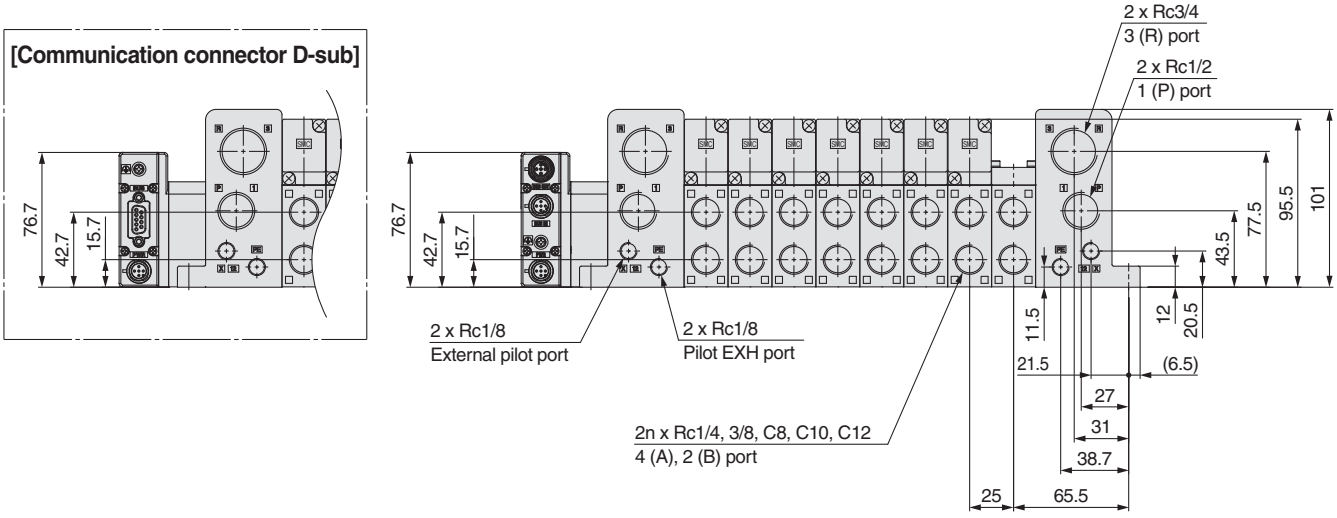


Refer to the SMC website or the VQC4000 series in Best Pneumatics No.1 for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.

(mm)

VV5QC41
S Kit (Serial transmission kit: EX260)





n: Stations (Maximum 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	131	156	181	206	231	256	281	306	331	356	381	406	431	456	481	506
L2	177	202	227	252	277	302	327	352	377	402	427	452	477	502	527	552

Plug-in Manifold Stacking Base S Kit (Serial Transmission): For EX260 Integrated-type (For Output) Serial Transmission System

Series S0700

CE RoHS

How to Order Manifold

SS0750 − 08 C4 C8 SNA N − B

❶ ❷ ❸ ❹ ❺ ❻

❶ Stations

In the case of the 32-output SI unit

Symbol	Stations	Note
01	1 station	Double wiring Note 1)
⋮	⋮	
16	16 stations	
01	1 station	Specified layout Note 2) (Available up to 32 solenoids)
⋮	⋮	
24	24 stations	

In the case of the 16-output SI unit

Symbol	Stations	Note
01	1 station	Double wiring Note 1)
⋮	⋮	
08	8 stations	
01	1 station	Specified layout Note 2) (Available up to 16 solenoids)
⋮	⋮	
16	16 stations	

Note 1) Double wiring: single, double, 3-position and 4-position solenoid valves can be used on all manifold stations.
Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.
Note 2) Specified layout: Indicate the wiring specifications on the manifold specification sheet.
(Note that 2-position double, 3-position and 4-position valves cannot be used where single wiring has been specified.)
Note 3) Includes the number of blanking plate assemblies.

❷ Cylinder port size

Symbol	Port size	
C2	With ø2 One-touch fitting	Metric
C3	With ø3.2 One-touch fitting	
C4	With ø4 One-touch fitting	
CM	Mixed sizes and with port plug Note)	
N1	With ø1/8" One-touch fitting	Inch
N3	With ø5/32" One-touch fitting	
NM	Mixed sizes and with port plug Note)	

Note) Indicate the sizes on the manifold specification sheet in the case of "CM", "NM".

❸ P, R port size

Symbol	Port size	
Nil	With ø8 One-touch fitting Note)	Metric
C6	With ø6 One-touch fitting	
C8	With ø8 One-touch fitting	
N7	With ø1/4" One-touch fitting	Inch
N9	With ø5/16" One-touch fitting	

Note) The cylinder port is ø5/16" when measured in inches.

❹ Kit type

Symbol	Protocol	Number of outputs	Communication connector
SD0	Without SI unit		
SQA	DeviceNet™	32	M12
SQB		16	
SNA	PROFIBUS DP	32	M12
SNB		16	
SNC		32	D-sub Note 1)
SND		16	
SVA	CC-Link	32	M12
SVB		16	
SDA	EtherCAT	32	M12
SDB		16	
SFA	PROFINET	32	M12
SFB		16	
SEA	EtherNet/IP™	32	M12
SEB		16	

Note 1) The maximum number of stations is determined by the total number of solenoids.
For mixed single and double wirings, enter "-K" to the order code options.
Note 2) For SI unit part number, refer to page 1.

Type of actuation	Single	Double, Dual 3-port
Number of solenoids	1	2

❺ SI unit output polarity

Nil	Positive common
N	Negative common

❻ Option

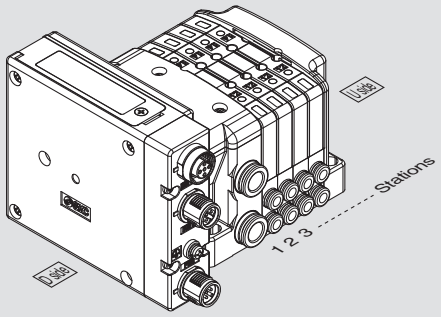
Symbol	Option
Nil	None
B Note 2)	With back pressure check valve (All stations)
D	With DIN rail (Rail length: Standard)
D0	Without DIN rail (With bracket)
D□ Note 3)	With DIN rail (Rail length specified, □: Stations)
K Note 4)	Special wiring specifications (Except double wiring)
N	With name plate
R Note 5)	External pilot
S	Built-in silencer

Note 1) When two or more options are specified, indicate them alphabetically.
Example) -BKN
Note 2) When the back pressure check valve is desired, and is to be installed only in certain manifold stations, specify the mounting position on the manifold specification sheet.
Note 3) The available number of stations is larger than the number of manifold stations.
Note 4) Indicate the wiring specifications for mixed single and double wirings.
Note 5) Refer to the S0700 series catalog (CAT.NAS11-88) for details.

* **Refer to the S0700 series catalog (CAT.NAS11-88) for manifold optional parts.**
* **Refer to the S0700 series catalog (CAT.NAS11-88) for manifold exploded view.**
* **When the "SD0" (Without SI unit) is specified, "-D", "-D□" cannot be selected.**

How to Order Manifold Assembly

Example (Serial transmission kit)



SS0750-04C4SNAN ···1 set – Manifold base part no.
∗S0720-5····· 4 sets – Valve part no. (Stations 1 to 4)
∗ Prefix the asterisk to the part nos. of the solenoid valve, etc.
Write sequentially from the 1st station on the D side.
When part nos. written collectively are complicated, specified on the manifold specification sheet.

• Specify the part numbers for valves and options together beneath the manifold base part number.

How to Order Valves

S07 1 0 □ – 5

Type of actuation

Symbol	Port size
1	2-position single
2	2-position double
A	4-position dual 3-port (N.C. + N.C.) [Exhaust center]
B	4-position dual 3-port (N.O. + N.O.) [Pressure center]
C	4-position dual 3-port (N.C. + N.O.)

Note) Refer to the S0700 series catalog (CAT.NAS11-88) for symbol.

Base mounted plug-in

Function

Symbol	Specification
Nil	Standard
R	External pilot Note)

Note) Not applicable for dual 3-port valves

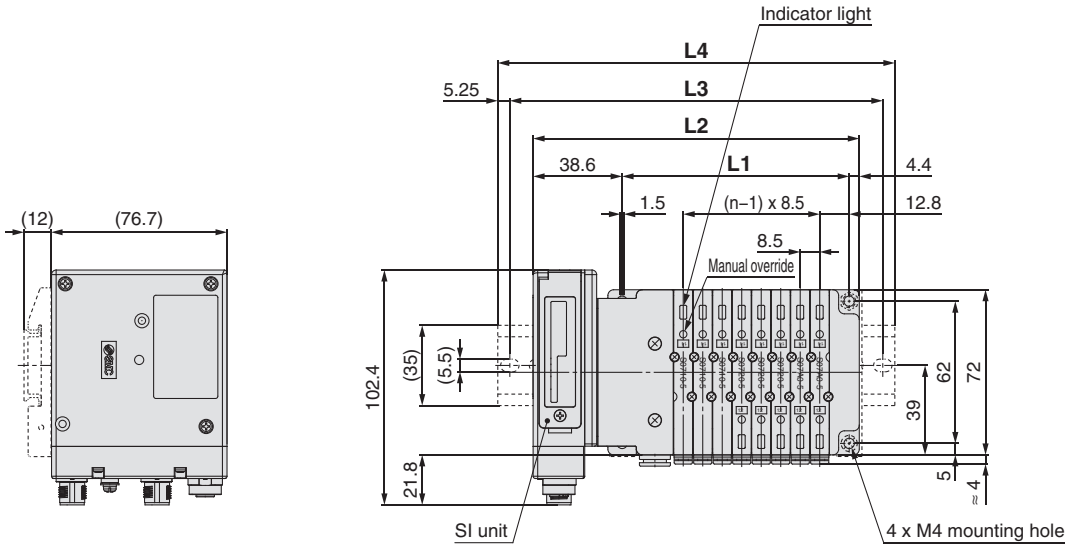
Voltage: 24 VDC

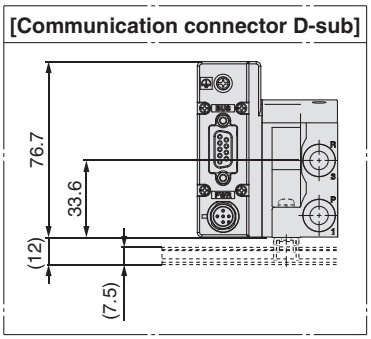
Refer to the SMC website or the S0700 series catalog (CAT.NAS11-88) for details on solenoid valve specifications, Common Precautions and Specific Product Precautions.

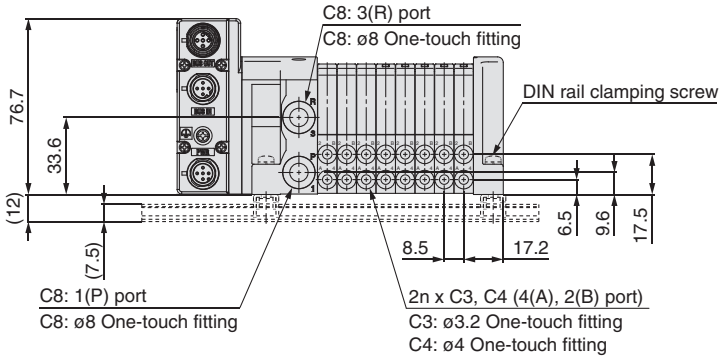
Dimensions

(mm)

SS0750
S Kit (Serial transmission kit: EX260)







Dimensions

Formula L1 = 8.5n + 31, L2 = 8.5n + 74 n: Station (Maximun 16 stations)

L \ n	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	39.5	48	56.5	65	73.5	82	90.5	99	107.5	116	124.5	133	141.5	150	158.5	167
L2	82.5	91	99.5	108	116.5	125	133.5	142	150.5	159	167.5	176	184.5	193	201.5	210
L3	112.5	112.5	125	137.5	137.5	150	162.5	162.5	175	187.5	187.5	200	212.5	212.5	225	237.5
L4	123	123	135.5	148	148	160.5	173	173	185.5	198	198	210.5	223	223	235.5	248

Series EX260
Specific Product Precautions 1

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" for 3/4/5 Port Solenoid Valve Precautions. The Operation Manual can be downloaded from the SMC website, http://www.smcworld.com

Design/Selection

⚠Warning

1. Use this product within the specification range.

Using beyond the specified specifications range can cause fire, malfunction, or damage to the system.

Check the specifications before operation.

2. When using for an interlock circuit:

- **Provide a multiple interlock system which is operated by another system (such as mechanical protection function).**
- **Perform an inspection to confirm that it is working properly.**

This may cause possible injury due to malfunction.

⚠Caution

1. When applicable to UL, use a Class 2 power supply unit conforming to UL1310 for direct current power supply.

2. Use this product within the specified voltage range.

Using beyond the specified voltage range is likely to cause the units and connecting devices to be damaged or to malfunction.

3. Do not install a unit in a place where it can be used as a foothold.

Applying any excessive load such as stepping on the unit by mistake or placing a foot on it, will cause it to break.

4. Keep the surrounding space free for maintenance.

When designing a system, take into consideration the amount of free space needed for performing maintenance.

5. Do not remove the name plate.

Improper maintenance or incorrect use of operation manual can cause failure and malfunction. Also, there is a risk of losing conformity with safety standards.

Mounting

⚠Caution

1. When handling and assembling units:

- **Do not apply excessive force to the unit when disassembling.**

  The connecting portions of the unit are firmly joined with seals.
- **When joining units, take care not to get fingers caught between units.**

  Injury can result.

2. Do not drop, bump, or apply excessive impact.

Otherwise, the unit can become damaged, malfunction, or fail to function.

3. Observe the tightening torque range.

Tightening outside of the allowable torque range will likely damage the screw.

IP67 cannot be guaranteed if the screws are not tightened to the specified torque.

Mounting

⚠Caution

4. When lifting a large size manifold solenoid valve unit, take care to avoid causing stress to the valve connection joint.

The connection parts of the unit may be damaged. Because the unit may be heavy, carrying and installation should be performed by more than one operator to avoid strain or injury.

5. When placing a manifold, mount it on a flat surface.

Torsion in the whole manifold can lead to trouble such as air leakage or defective insulation.

Wiring

⚠Caution

1. Check the grounding to maintain the safety of the reduced wiring system and for anti-noise performance.

Provide a specific grounding as close to the unit as possible to minimize the distance to grounding.

2. Avoid repeatedly bending or stretching the cable and applying a heavy object or force to it.

Wiring applying repeated bending and tensile stress to the cable can break the circuit.

3. Avoid miswiring.

If miswired, there is a danger of malfunction or damage to the reduced wiring system.

4. Do not wire while energizing the product.

There is a danger of malfunction or damage to the reduced wiring system or output device.

5. Avoid wiring the power line and high pressure line in parallel.

Noise or surge produced by signal line resulting from the power line or high pressure line could cause malfunction.Wiring of the reduced wiring system or output device and the power line or high pressure line should be separated from each other.

6. Check the wiring insulation.

Defective insulation (contact with other circuits, improper insulation between terminals, etc.) may cause damage to the reduced wiring system or output device due to excessive voltage and current.

7. When a reduced wiring system is installed in machinery/equipment, provide adequate protection against noise by using noise filters, etc.

Noise in signal lines may cause malfunction.

Series EX260
Specific Product Precautions 2

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" for 3/4/5 Port Solenoid Valve Precautions. The Operation Manual can be downloaded from the SMC website, http://www.smcworld.com

Wiring

⚠Caution

8. When connecting wires of output device, prevent water, solvent or oil from entering inside the connector section.

This can cause damage, equipment failure or malfunction.

9. Avoid wiring patterns in which excessive stress is applied to the connector.

This may cause malfunction or damage to the unit due to contact failure.

10. Select connectors that are ø16 or less if mounting manifolds directly using fieldwireable connectors for SI unit power supply wiring.

Using large diameter connectors causes interference with the mounting surface.

The following cables with connectors are recommended.

■ For EX260-SPR□/-SDN□/-SEC□/-SPN□/-SEN□

<Cable with connector>

- EX500-AP□□□-□
- PCA-1401804/-1401805/-1401806

■ For EX260-SMJ□

<Cable with connector>

- EX9-AC□□□-1
- PCA-1401807/-1401808/-1401809

Operating Environment

⚠Warning

1.Do not use in an atmosphere containing an inflammable gas or explosive gas.

Use in such an atmosphere is likely to cause a fire or explosion. This system is not explosion-proof.

⚠Caution

1. Select the proper type of enclosure according to the environment of operation.

IP67 is achieved when the following conditions are met.

1) Provide appropriate wiring between all units using electrical wiring cables, communication connectors and cables with M12 connectors.

2) Suitable mounting of each unit and manifold valve.

3) Be sure to mount a seal cap on any unused connectors.

If using in an environment that is exposed to water splashes, please take measures such as using a cover.

When the enclosure is IP40, do not use in an operating environment or atmosphere where it may come in contact with corrosive gas, chemical agents, seawater, water, or water vapor.

When connected to the EX260-SPR5/6/7/8, manifold enclosure is IP40.

Operating Environment

⚠Caution

2. Provide adequate protection when operating in locations such as the following.

Failure to do so may cause damage or malfunction.

The effect of countermeasures should be checked in individual equipment and machine.

1) Where noise is generated by static electricity, etc.

2) Where there is a strong electric field

3) Where there is a danger of exposure to radiation

4) When in close proximity to power lines or high voltage lines

3. Do not use in an environment where oil and chemicals are used.

Operating in environments with coolants, cleaning solvents, various oils or chemicals may cause adverse effects (damage, malfunction) to the unit even in a short period of time.

4. Do not use in an environment where the product could be exposed to corrosive gas or liquid.

This may damage the unit and cause it to malfunction.

5. Do not use in locations with sources of surge generation.

Installation of the unit in an area around the equipment (electromagnetic lifters, high frequency induction furnaces, welding machine, motors, etc.), which generates the large surge voltage could cause to deteriorate an internal circuitry element of the unit or result in damage. Implement countermeasures against the surge from the generating source, and avoid touching the lines with each other.

6. The product is CE marked, but not immune to lightning strikes. Take measures against lightning strikes in your system.

7. Keep dust, wire scraps and other extraneous material from getting inside the product.

This may cause malfunction or damage.

8. Mount the unit in such locations, where no vibration or shock is affected.

This may cause malfunction or damage.

9. Do not use in places where there are cyclic temperature changes.

In case that the cyclic temperature is beyond normal temperature changes, the internal unit is likely to be adversely effec-ted.

10. Do not use in direct sunlight.

Do not use in direct sunlight. It may cause malfunction or damage.

11. Use this product within the specified ambient temperature range.

This may cause malfunction.

12. Do not use in places where there is radiated heat around it.

Such a place is likely to cause malfunction.

Series EX260
Specific Product Precautions 3

Be sure to read before handling. Refer to back cover for Safety Instructions, "Handling Precautions for SMC Products" (M-E03-3) and "Operation Manual" for 3/4/5 Port Solenoid Valve Precautions. The Operation Manual can be downloaded from the SMC website, http://www.smcworld.com

Adjustment/Operation

⚠Warning

1. Do not perform operation or setting with wet hands.

There is a risk of electrical shock.

⚠Caution

1. Use a watchmakers' screwdriver with thin blade for the setting of each switch of the SI unit.
When setting the switch, do not touch other unrelated parts.

This may cause parts damage or malfunction due to a short circuit.

2. Provide adequate setting for the operating conditions.

Failure to do so could result in malfunction.
Refer to the operation manual for setting of the switches.

3. For details on programming and address setting, refer to the manual from the PLC manufacturer.

The content of programming related to protocol is designed by the manufacturer of the PLC used.

4. For the EX260-SPN□, the side of the SI unit may become hot.

It may cause burns.

Maintenance

⚠Warning

1. Do not disassemble, modify (including circuit board replacement) or repair this product.

Such actions are likely to cause injuries or breakage.

2. When an inspection is performed,
- **Turn off the power supply.**
- **Stop the air supply, exhaust the residual pressurein piping and verify that the air is released before performing maintenance work.**

Unexpected malfunction of system components and injury can result.

⚠Caution

1. When handling and replacing the unit:
- **Do not apply excessive force to the unit when disassembling.**

The connecting portions of the unit are firmly joined with seals.
- **When joining units, take care not to get fingers caught between units.**

Injury can result.

2. Perform periodic inspection.

Unexpected malfunction in the system composition devices is likely to occur due to malfunction of machinery or equipment.

3. After maintenance, make sure to perform an appropriate functionality inspection.

In cases of abnormality such as faulty operation, stop operation. Unexpected malfunction in the system composition devices is likely to occur.

4. Do not use benzene and thinner for cleaning units.

Damage to the surface or erasure of the display can result.
Wipe off any stains with a soft cloth.
If the stain is persistent, wipe off with a cloth soaked in a dilute solution of neutral detergent and wrung out tightly, and then finish with a dry cloth.

Other

⚠Caution

1. Refer to the catalog of each series for Common Precautions and Specific Product Precautions on manifold solenoid valves.

⚠ Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of **"Caution," "Warning"** or **"Danger."** They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC)*1), and other safety regulations.

⚠ Caution: **Caution** indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

⚠ Warning: **Warning** indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

⚠ Danger : **Danger** indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

*1) ISO 4414: Pneumatic fluid power – General rules relating to systems.
ISO 4413: Hydraulic fluid power – General rules relating to systems.
IEC 60204-1: Safety of machinery – Electrical equipment of machines.
(Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots - Safety.
etc.

⚠ Warning

1. The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.
Since the product specified here is used under various operating conditions, its compatibility with specific equipment must be decided by the person who designs the equipment or decides its specifications based on necessary analysis and test results. The expected performance and safety assurance of the equipment will be the responsibility of the person who has determined its compatibility with the product. This person should also continuously review all specifications of the product referring to its latest catalog information, with a view to giving due consideration to any possibility of equipment failure when configuring the equipment.

2. Only personnel with appropriate training should operate machinery and equipment.
The product specified here may become unsafe if handled incorrectly. The assembly, operation and maintenance of machines or equipment including our products must be performed by an operator who is appropriately trained and experienced.

3. Do not service or attempt to remove product and machinery/ equipment until safety is confirmed.
1. The inspection and maintenance of machinery/equipment should only be performed after measures to prevent falling or runaway of the driven objects have been confirmed.
2. When the product is to be removed, confirm that the safety measures as mentioned above are implemented and the power from any appropriate source is cut, and read and understand the specific product precautions of all relevant products carefully.
3. Before machinery/equipment is restarted, take measures to prevent unexpected operation and malfunction.

4. Contact SMC beforehand and take special consideration of safety measures if the product is to be used in any of the following conditions.
1. Conditions and environments outside of the given specifications, or use outdoors or in a place exposed to direct sunlight.
2. Installation on equipment in conjunction with atomic energy, railways, air navigation, space, shipping, vehicles, military, medical treatment, combustion and recreation, or equipment in contact with food and beverages, emergency stop circuits, clutch and brake circuits in press applications, safety equipment or other applications unsuitable for the standard specifications described in the product catalog.
3. An application which could have negative effects on people, property, or animals requiring special safety analysis.
4. Use in an interlock circuit, which requires the provision of double interlock for possible failure by using a mechanical protective function, and periodical checks to confirm proper operation.

⚠ Caution

1. The product is provided for use in manufacturing industries.
The product herein described is basically provided for peaceful use in manufacturing industries.
If considering using the product in other industries, consult SMC beforehand and exchange specifications or a contract if necessary.
If anything is unclear, contact your nearest sales branch.

Limited warranty and Disclaimer/ Compliance Requirements

The product used is subject to the following "Limited warranty and Disclaimer" and "Compliance Requirements".
Read and accept them before using the product.

Limited warranty and Disclaimer

1. The warranty period of the product is 1 year in service or 1.5 years after the product is delivered.*2)
Also, the product may have specified durability, running distance or replacement parts. Please consult your nearest sales branch.
2. For any failure or damage reported within the warranty period which is clearly our responsibility, a replacement product or necessary parts will be provided.
This limited warranty applies only to our product independently, and not to any other damage incurred due to the failure of the product.
3. Prior to using SMC products, please read and understand the warranty terms and disclaimers noted in the specified catalog for the particular products.

*2) **Vacuum pads are excluded from this 1 year warranty.**
A vacuum pad is a consumable part, so it is warranted for a year after it is delivered.
Also, even within the warranty period, the wear of a product due to the use of the vacuum pad or failure due to the deterioration of rubber material are not covered by the limited warranty.

Compliance Requirements

1. The use of SMC products with production equipment for the manufacture of weapons of mass destruction (WMD) or any other weapon is strictly prohibited.
2. The exports of SMC products or technology from one country to another are governed by the relevant security laws and regulations of the countries involved in the transaction. Prior to the shipment of a SMC product to another country, assure that all local rules governing that export are known and followed.

Revision history	
Edition B	● EtherNet/IP™ added to applicable Fieldbus protocols.
	QS

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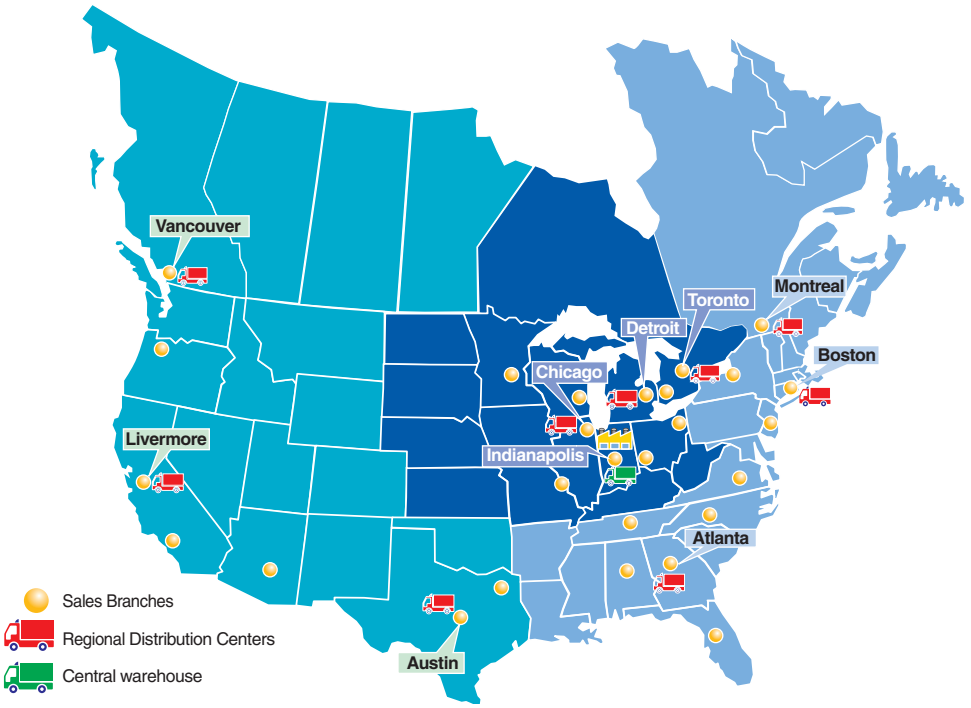

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