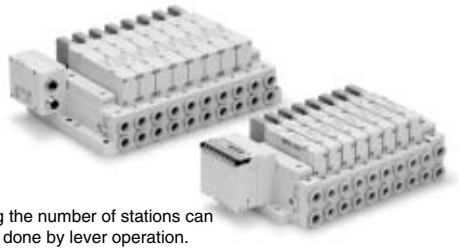
Valve Manifold Common Specifications

Series SV

Cassette base manifold



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

Manifold Specifications

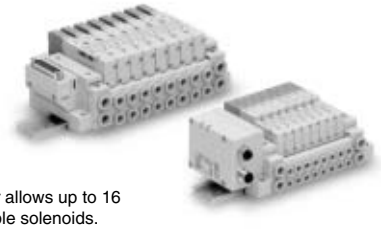
Applicable series		SV1000	SV2000
Manifold type		Stacking type cassette base manifold	
1 (P: SUP)/3, 5 (E: EXH) type		Common SUP, EXH	
Valve stations (maximum)		18 stations	20 stations
Max. number of solenoids		18 points	26 points
Port size	1(P), 3/5(E) port	C8, N9	C10, N11
	4(A), 2(B) port	C3, C4, C6 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 IEC529)
Series EX500 Decentralized serial wiring	IP67 *
Series EX250 Serial wiring with input/output onit	IP67
Series EX120 Dedicated output serial wiring	Dusttight (IP40)
For circular connector	IP67
D-sub connector	Dusttight (IP40)
Flat ribbon cable	Dusttight (IP40)

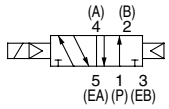
* Enclosure of a gateway unit and input manifold is IP65.

Series SV Solenoid Valve Specifications

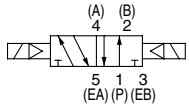
Made to Order Specifications
(For details, refer to page 1-2-108.)

JIS Symbol

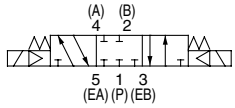
2 position single solenoid



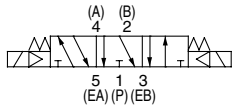
2 position double solenoid



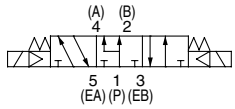
3 position closed center



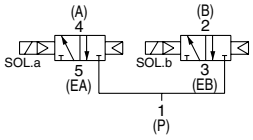
3 position exhaust center



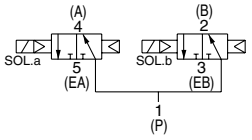
3 position pressure center



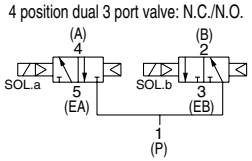
4 position dual 3 port valve: N.C./N.C.



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 1-7-4.)
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 IEC529)
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)

Weight

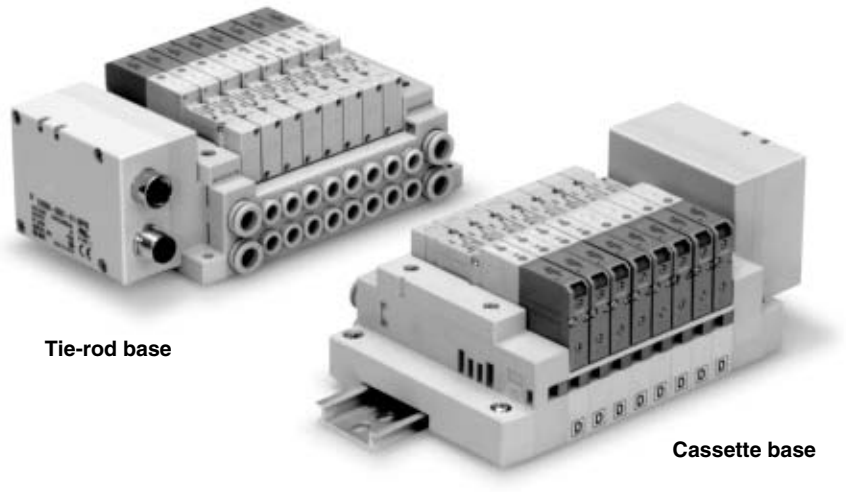
Series	Type of actuation	Weight (g)
SV1000	Single solenoid	66
	Double solenoid	71
	3 position	73
	4 position dual 3 port	71
SV2000	Single solenoid	74
	Double solenoid	78
	3 position	83
	4 position dual 3 port	78
SV3000	Single solenoid	99
	Double solenoid	102
	3 position	110
SV4000	Single solenoid	186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

Note) Weight of solenoid valve only.

Decentralized Serial Wiring

Series EX500

IP67 compliant



Tie-rod base

Cassette base

Applicable series	Cassette base manifold SV1000/SV2000
	Tie-rod base manifold SV1000/SV2000/SV3000/SV4000
	• Number of output points: 16 points • EX500 gateway unit communication specifications Remote I/O, DeviceNet, PROFIBUS-DP

Series EX500
Decentralized Serial Wiring
Series SV

How to Order

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 A1W D — 05 U

● **Cassette base**

SS5V 1 — W 16S A1W D — 05 U

Series

1	SV1000
2	SV2000

Enclosure
IP67 specifications

SI unit

A1W	For Remote I/O
A2W	For DeviceNet/ For ProfiBus-DP
0	Without SI unit

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	

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.

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.)

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)

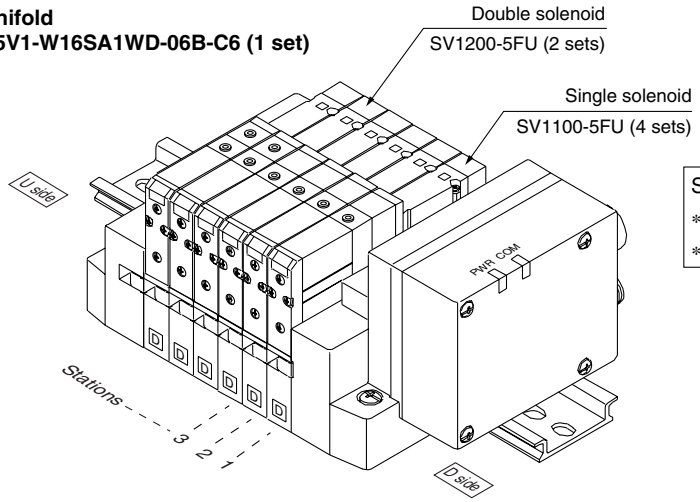
Symbol	A, B port	P, E port	Applicable series
N1	One-touch fitting for ø1/8"	One-touch fitting for ø5/16"	SV1000
N3	One-touch fitting for ø5/32"		
N7	One-touch fitting for ø1/4"		
N3	One-touch fitting for ø5/32"	One-touch fitting for ø3/8"	SV2000
N7	One-touch fitting for ø1/4"		
N9	One-touch fitting for 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 specifications (R, RS) are ø4 (metric), ø5/32" (inch) for SV1000/2000 and ø6 (metric) and ø1/4" (inch) for SV3000/4000.

How to Order Valve Manifold Assembly

Ordering example (SV1000)

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



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

How to Order Solenoid Valves

SV 1 1 0 0 — 5 F Note)

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

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

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

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

Pilot type

Nil	Internal pilot
R	External pilot

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

Back pressure check valve

Nil	None
K	Built-in

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

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

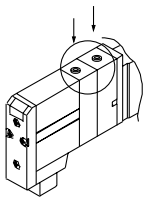
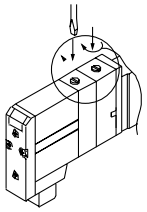
Rated voltage

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
	

Gateway (GW) unit

Specifications

Model	EX500-GAB1-X1	EX500-GDN1	EX500-GPR1
Applicable PLC/Communication protocol	Rockwell Automation, Inc. PLC	DeviceNet Release 2.0	PROFIBUS-DP
Communication speed	57.6 Kbit/sec, 115.2 Kbit/sec 230.4 Kbit/sec	125 Kbit/sec, 250 Kbit/sec 500 Kbit/sec	9.6/19.2/93.75/187.5/500 kbit/sec 1.5/3/6/12 Mbit/sec
Rated voltage	24 VDC		
Power supply voltage range	Input and control unit power supply: 24 VDC ±10% Solenoid valve power supply: 24 VDC +10%/–5% (Power drop warning at approx. 20 V)		
Current consumption	200 mA or less		
No. of input/output points	Maximum 64 inputs/64 outputs		
No. of input/output branches	4 branches (16 inputs/16 outputs per branch)		
Branch cable	8 core heavy duty cable		
Branch cable length	5 m or less (total extension 10 m or less)		
Communication connector	M12 connector (8 pins, Socket)		
Power connector	M12 connector (5 pins, Plug)		
Ambient operating temperature/humidity	+5 to +45°C/35 to 85% RH (No condensation)		
Enclosure	IP65		
Applicable standard	UL, CSA, CE		
Weight (g)	470		

∗ Communication cables and connectors are sold separately.
Refer to options on page 1-2-27.

How to Order

EX500 – G DN 1 [ ]

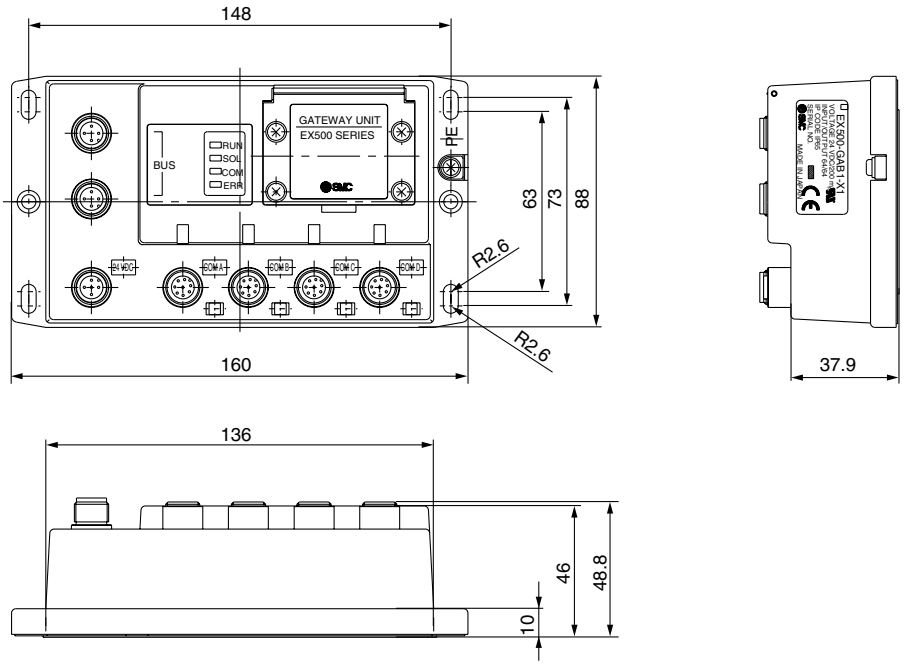
Communication protocol

DN	DeviceNet
PR	PROFIBUS-DP
AB	Remote I/O (RIO)

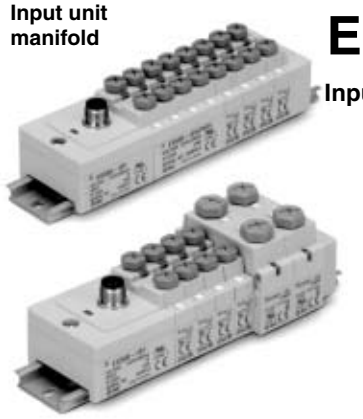
Applicable GW unit

Nil	DeviceNet PROFIBUS-DP
-X1	Remote I/O (RIO)

Dimensions



Input unit manifold



How to Order Input Manifold

EEX500 — IB1 — E 8 [ ]

Input unit specifications

Connector type

E	M8 connector
T	M12 connector
M	M8, M12 mixed

Stations

1	1 station
⋮	⋮
8	8 stations

Applicable GW unit

Nil	DeviceNet PROFIBUS-DP
-X1	Remote I/O (RIO)

How to Order Input Block

EX500 — IE 1 [ ]

Block type

1	M8 connector, PNP specifications
2	M8 connector, NPN specifications
3	M12 connector, PNP specifications
4	M12 connector, NPN specifications
5	8 points integrated type, M8 connector, PNP specifications
6	8 points integrated type, M8 connector, NPN specifications

Applicable GW unit

Nil	DeviceNet PROFIBUS-DP
-X1	Remote I/O (RIO)

Input Unit Specifications

Connection block	Current source type input block (PNP input block) or Current sink type input block (NPN input block)
Communication connector	M12 connector (8 pins, plug)
Number of connection blocks	Maximum 8 blocks
Block supply voltage	24 VDC
Block supply current	0.65 A maximum
Current consumption	100 mA or less (at rated voltage)
Short circuit protection	Operates at 1ATyp. (Power supply cut) GW unit reset by turning power OFF and back ON.
Enclosure	IP65
Weight (g) Note)	100 (Input block + End Block)

Note) Since the DIN rail weight is not included, confirm the DIN rail length to be used on page 1-2-25, and add the weight separately which is found in the DIN rail dimension table on page 1-2-97.

Input Block Specifications

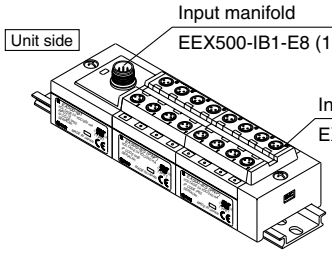
Sensor applicable	Current source type (PNP output) or Current sink type (NPN output)
Sensor connector	M8 connector (3 pins) or, M12 connector (4 pins)
Number of inputs	2 inputs/8 inputs (M8 only)
Rated voltage	24 VDC
Indication	Green LED
Insulation	None
Sensor supply current	Maximum 30 mA/Sensor
Enclosure	IP65
Weight (g)	[For M8: 20] [For M12: 40] [8 points integrated type, for M8: 55]

How to Order Input Unit Manifold [Ordering example]

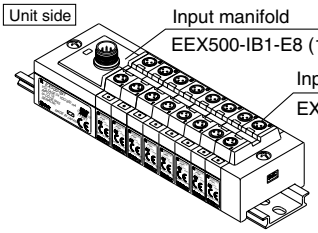
When ordering an input unit manifold, enter the Input manifold part no. + Input block part no. together.
The Input unit, End block and DIN rail are included in the input manifold. Refer to the indications below.

Block part no. entry
Unit side
↓
End block side

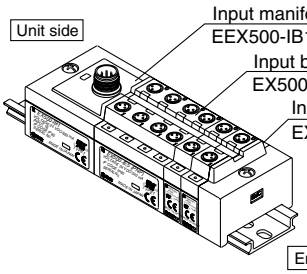
Example 1) M8 input block only



EEX500-IB1-E8 ····· 1 set
∗EX500-IE5 ····· 2 sets

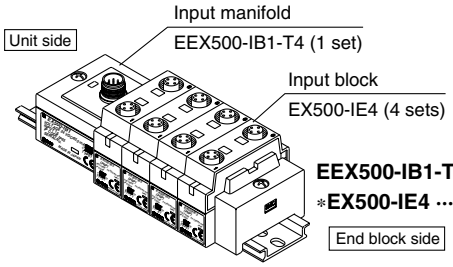


EEX500-IB1-E8 ····· 1 set
∗EX500-IE1 ····· 8 sets



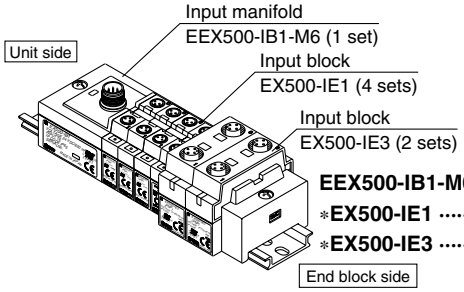
EEX500-IB1-E6 ····· 1 set
∗EX500-IE5 ····· 1 set
∗EX500-IE1 ····· 2 sets

Example 2) M12 input block only



EEX500-IB1-T4 ····· 1 set
∗EX500-IE4 ····· 4 sets

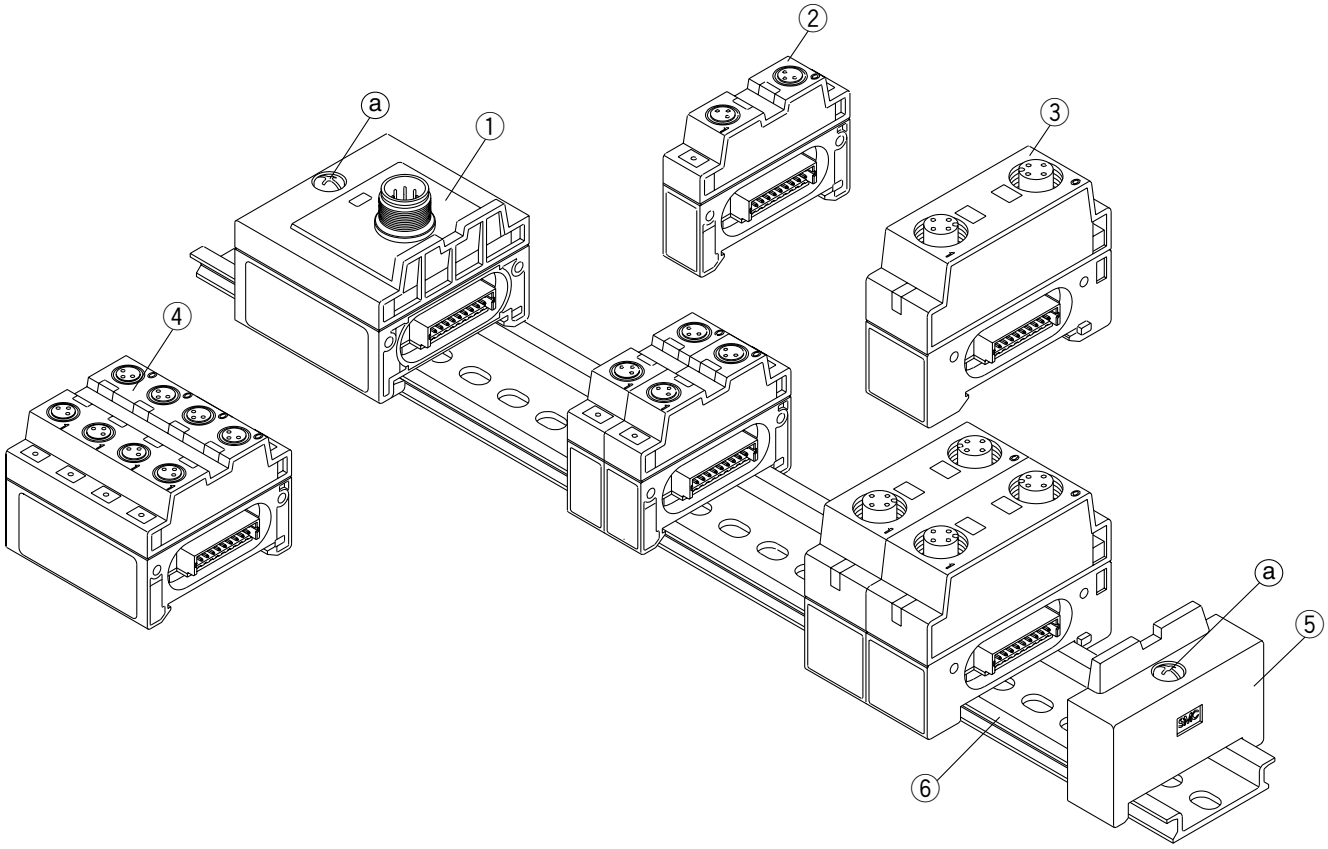
Example 3) M8 and M12 mixed



EEX500-IB1-M6 ····· 1 set
∗EX500-IE1 ····· 4 sets
∗EX500-IE3 ····· 2 sets

Note) • Since the 8 point integrated type input block is equivalent to the length of four stations on an M8 input block, pay attention to the number of stations on an input manifold.
• When an input block layout becomes complicated, indicate on the input unit manifold specification sheet.

Input Unit Manifold Exploded View



Component Parts

No.	Description	Part no.		Note
		For standard	For RIO	
①	Input unit	EX500-IB1	EX500-IB1-X1	
②	Input block (M8 connector)	EX500-IE□	EX500-IE□-X1	PNP specifications····□: 1, NPN specifications····□: 2
③	Input block (M12 connector)	EX500-IE□	EX500-IE□-X1	PNP specifications····□: 3, NPN specifications····□: 4
④	8 input block (M8 connector)	EX500-IE□	EX500-IE□-X1	PNP specifications····□: 5, NPN specifications····□: 6
⑤	End block	EX500-EB1		
⑥	DIN rail	VZ1000-11-1-□		□: Length (Refer to page 1-2-97.)

How to add input block stations

(1) Loosen the screws ⓐ (2 places) that hold the end block.

↓

(2) Separate the blocks at the locations where stations are to be added.

↓

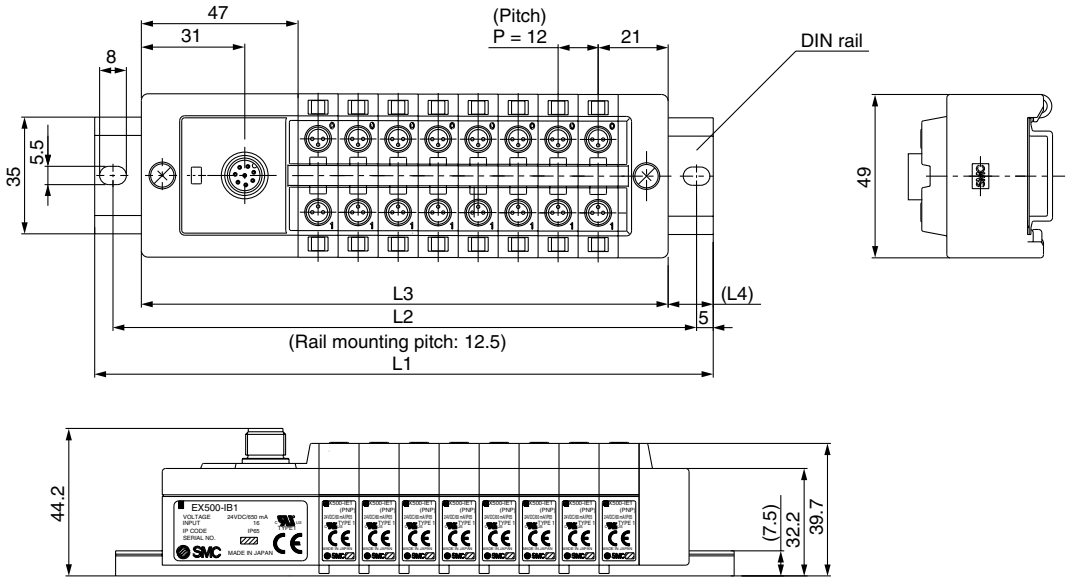
(3) Attach the additional blocks to the DIN rail, and connect the blocks so that they fit together securely.

↓

(4) While holding the blocks together so that there are no gaps between them, secure them to the DIN rail by tightening the screws ⓐ.
Note: Be sure to tighten the round head combination screw with the prescribed tightening torque. (0.6 N·m)

Input Unit Manifold Dimensions

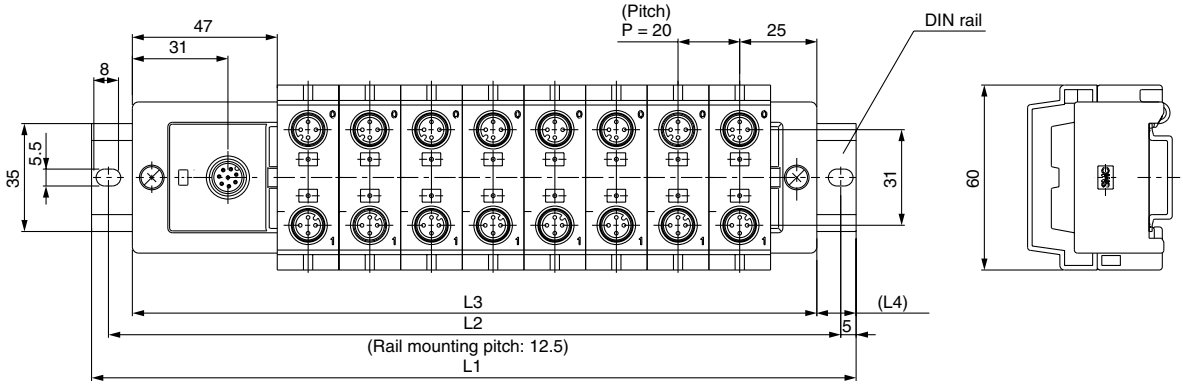
Input block (M8) only

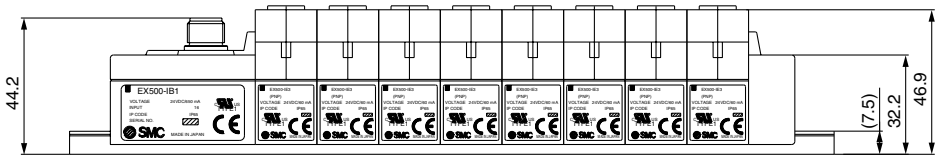


(mm)

Stations	1	2	3	4	5	6	7	8
Rail length L1	98	110.5	123	135.5	148	160.5	173	185.5
Mounting pitch L2	87.5	100	112.5	125	137.5	150	162.5	175
Manifold length L3	74	86	98	110	122	134	146	158
L4	12	12	12.5	12.5	13	13	13.5	13.5

Input block (M12) only





(mm)

Stations	1	2	3	4	5	6	7	8
Rail length L1	110.5	123	148	173	185.5	210.5	223	248
Mounting pitch L2	100	112.5	137.5	162.5	175	200	212.5	237.5
Manifold length L3	82	102	122	142	162	182	202	222
L4	12	12	12.5	12.5	13	13	13.5	13.5

For valve specifications, refer to page 1-2-15.

How to Order SI Unit

EX500 – S001 [ ]

Applicable GW unit

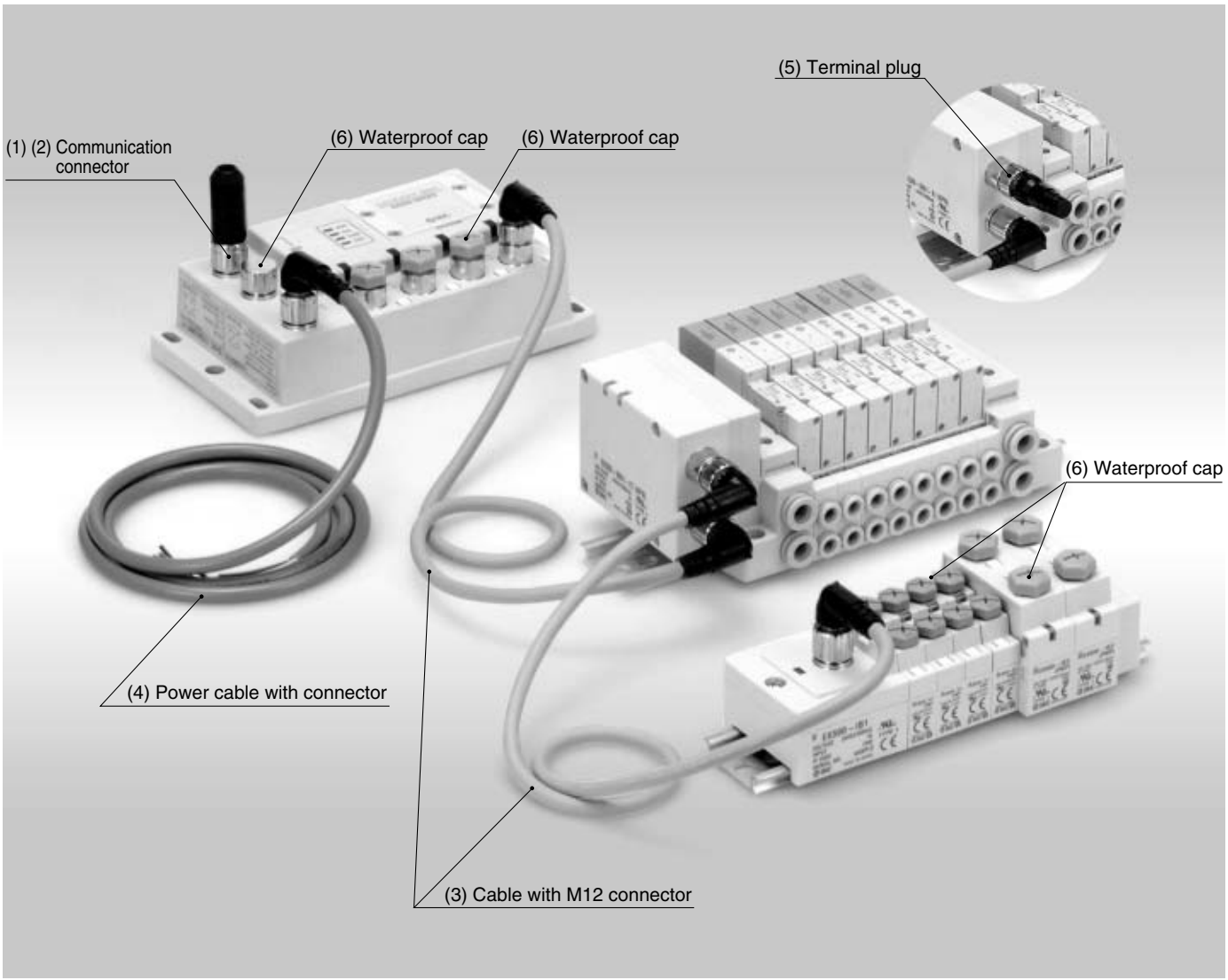
Nil	DeviceNet PROFIBUS-DP
-X1	Remote I/O (RIO)

Specifications

Connection block	Solenoid valve (Single, Double) Relay output module (1 output, 2 outputs)
Communication connector	M12 connector (8 pins, Plug, Socket)
Connection block stations	Double solenoid valve Relay output module (2 points): Maximum 8 stations Single solenoid valve Relay output module (1 point): Maximum 16 stations
Block supply voltage	24 VDC
Block supply current	0.65 A maximum
Current consumption	100 mA or less (at rated voltage)
Enclosure Note)	IP65
Weight (g)	115

Note) A single SI unit of Series EX500 has an enclosure compliant with IP65. The IP67 protection can be achieved when it is mounted on a manifold.

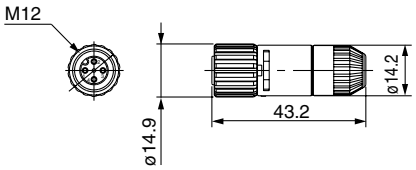
Option



Option

(1) **Communication connector (For RIO type GW unit)**

EX500 – AC000 – AB



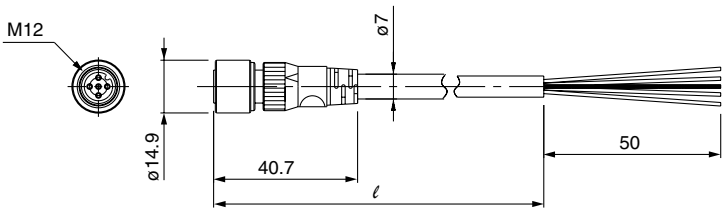
Applicable cable size
ø6 (ø5 to ø6)

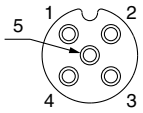
(2) **Communication connector cable (For DeviceNet type GW unit)**

EX500 – AC 050 – DN

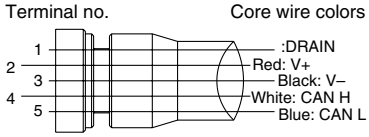
Cable length (ℓ)

010	1000 mm
050	5000 mm





Socket connector pin arrangement



Connections

(3) **Cable with M12 connector**

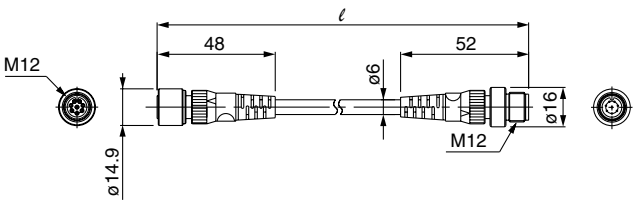
EX500 – AC 030 – SSPS

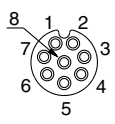
Cable length (ℓ)

003	300 mm
005	500 mm
010	1000 mm
030	3000 mm
050	5000 mm

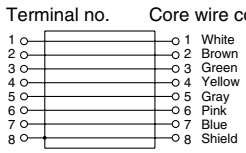
Connector specifications

SSPS	Socket side: Straight, Plug side: Straight
SAPA	Socket side: Angle, Plug side: Angle

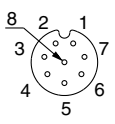




Socket connector pin arrangement

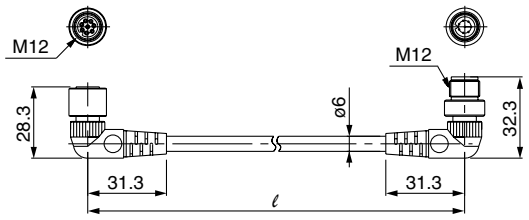


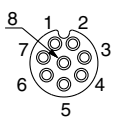
Connections



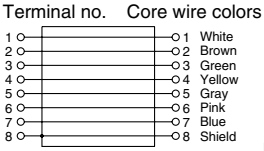
Plug connector pin arrangement

Straight connector type

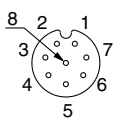




Socket connector pin arrangement



Connections



Plug connector pin arrangement

Angle connector type

Option

(4) Power cable with connector

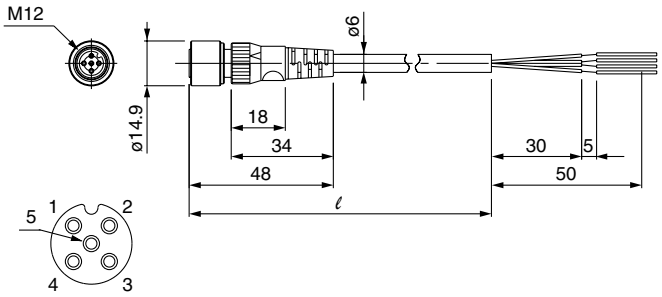
EX500 − AP 050 − S

Cable length (ℓ)

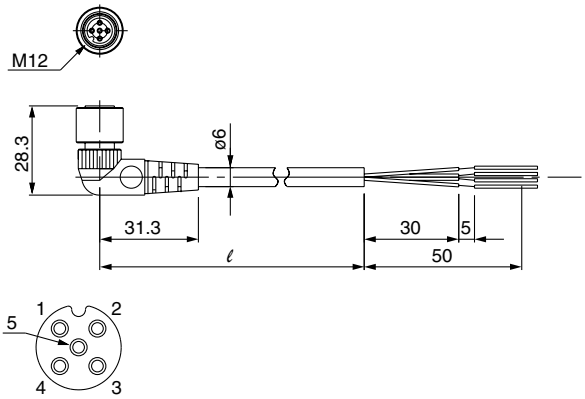
010	1000 mm
050	5000 mm

Connector specifications

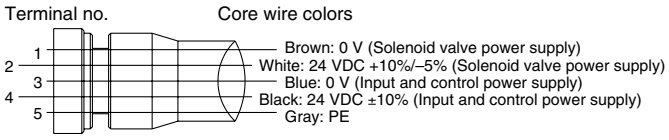
S	Straight
A	Angle



Socket connector pin arrangement

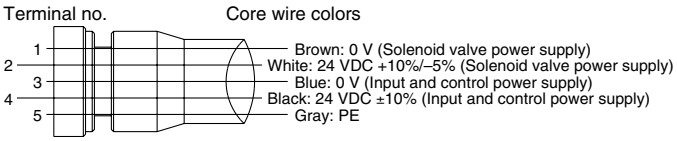


Socket connector pin arrangement



Connections

Straight connector type



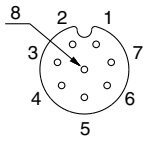
Connections

Angle connector type

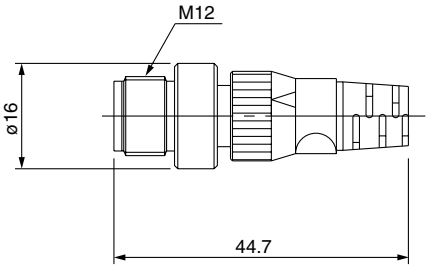
(5) Terminal plug

This is used where an input manifold (input unit/input block) is not being used.
(If a terminal plug is not used, the GW unit is COM LED will not light up.)

EX500 − AC000 − S



Plug connector pin arrangement



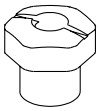
(6) Waterproof cap

Use this on ports that are not being used for a GW unit or input block.
Use of this waterproof cap maintains the integrity of the IP65 enclosure.
(Included with each input block.)
Note) Tighten the waterproof cap with the prescribed tightening torque. (For M8: 0.05 N·m, For M12: 0.1 N·m)

EX500 − AW

Connector type

ES	M8 connector (For socket)
TP	M12 connector (For plug)
TS	M12 connector (For socket)

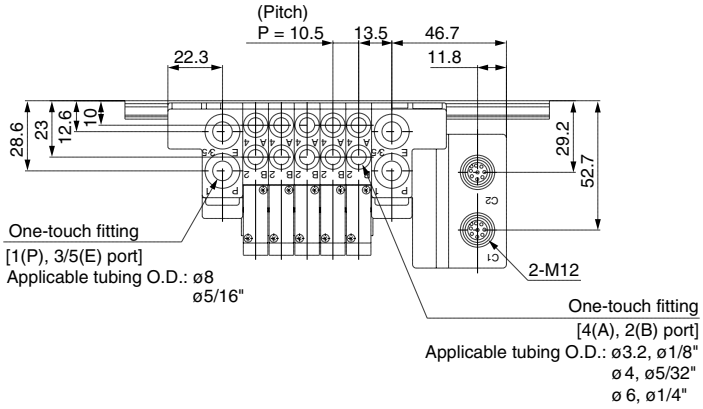


Waterproof cap

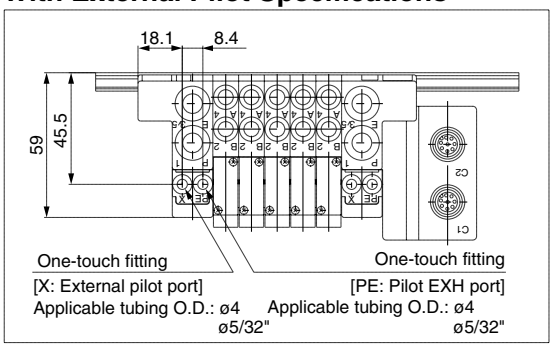
Dimensions: Series SV1000 for EX500 Decentralized Serial Wiring

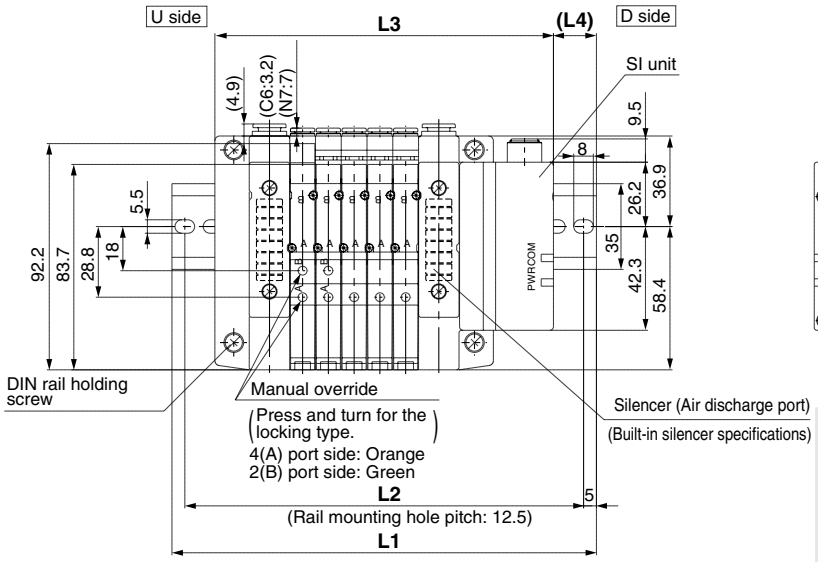
● Cassette base manifold: SS5V1-W16SA□WD-Stations U/D/B (S, R, RS)-C3, N1 / C4, N3 / C6, N7

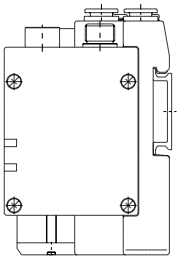
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

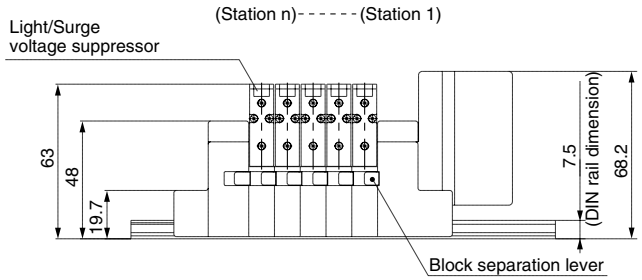


With External Pilot Specifications

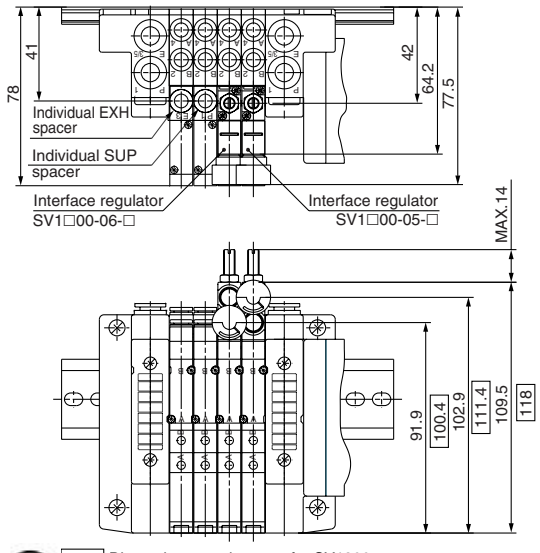








With option



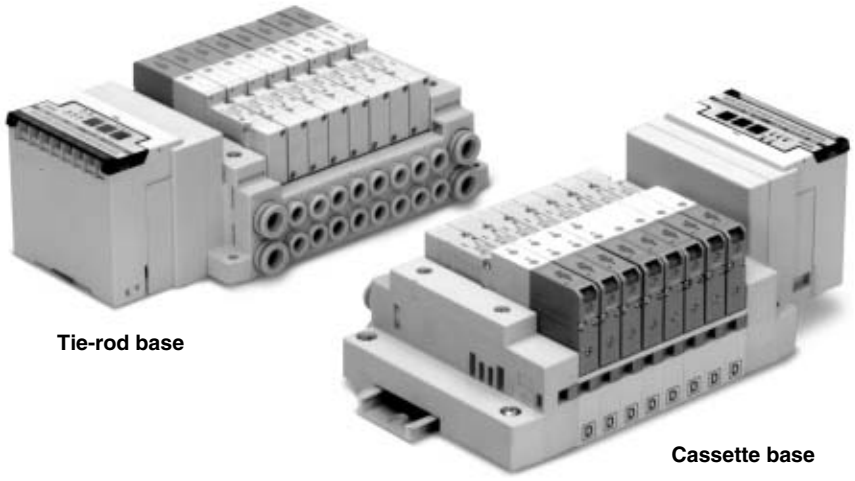
L Dimension

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

Dedicated Output Serial Wiring

Series EX120



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

Series EX120
Dedicated Output Serial Wiring
Series SV

How to Order

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 A D — 05 U □ — □ — □

● Cassette base

SS5V 1 — 16S3 A D — 05 U □ — □ — □

Series

1	SV1000
2	SV2000

SI unit

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

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

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

P, E port location

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

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 Part No.

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

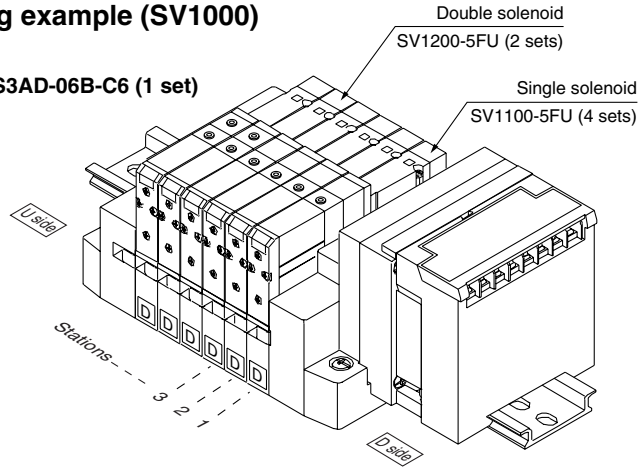
Symbol	Specifications	For SS5V□-□□S3
H	NKE Corp.: Uni-wire H System	EX120-SUH1
J1	SUNX Corp.: S-LINK System (16 output points)	EX120-SSL1
J2	SUNX Corp.: S-LINK System (8 output points)	EX120-SSL2
K	Fuji Electric Co.: T-LINK Mini System	EX120-SFU1
Q	DeviceNet, CompoBus/D (OMRON Corp.)	EX120-SDN1
R1	OMRON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

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

How to Order Valve Manifold Assembly

Ordering example (SV1000)

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



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

How to Order Solenoid Valves

SV 1 1 00 — 5 F Note)

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

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

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

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

Pilot type

Nil	Internal pilot
R	External pilot

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

Back pressure check valve

Nil	None
K	Built-in

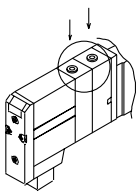
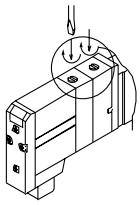
∗Built-in back pressure check valve type is applicable to Series SV1000 only.
∗Back pressure check valve is not available for 3 position closed center and 3 position pressure center.

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

Rated voltage

5	24 VDC

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

A, B port size (Metric)

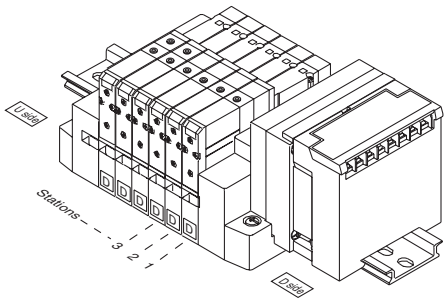
Symbol	A, B port	P, E port	Applicable series
C3	One-touch fitting for ø3.2	One-touch fitting for ø8	SV1000
C4	One-touch fitting for ø4		
C6	One-touch fitting for ø6		
C4	One-touch fitting for ø4	One-touch fitting for ø10	SV2000
C6	One-touch fitting for ø6		
C8	One-touch fitting for ø8		
C6	One-touch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

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

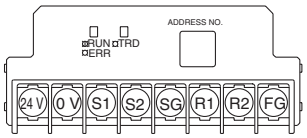


- Stations are counted from D side as the 1st.
- A maximum of 16 solenoids is possible (16 stations with single solenoids).

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

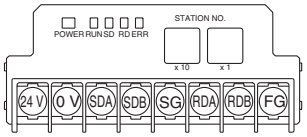
Name of terminal block, LED

Type A — Series EX300



LED	Description
TRD	ON during data reception
RUN/ERR	Blinks for normal data reception, ON for abnormal

Type B — Mitsubishi Electric Corporation MELSECNET/MINI-S3 Data Link System



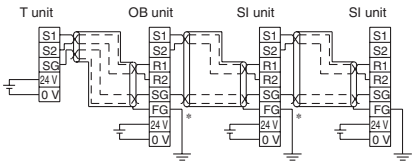
LED	Description
POWER	ON for power supply input
RUN	ON for normal data traffic with master unit
RD	ON during data reception
SD	ON during data transmission
ERR	ON for data reception error, OFF when normal

Note

- Connection to T unit PLC manufacturer's I/O card enables serial transmission.
  EX300-TMB1···· for Mitsubishi Electric Corporation
  EX300-TTA1···· for OMRON Corporation
  EX300-TFU1···· for Fuji Electric Co., Ltd.
  EX300-T001····· General purpose
  ∗ Each T unit has 32 control points.
- No. of output points, 16 points

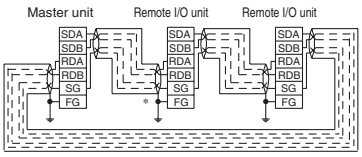
- MELSECNET/MINI-S3 Data Link System
  Master unit : AJ71PT32-S3
  AJ71T32-S3
  A1SJ71PT32-S3
- No. of output points, 16 points, No. of stations. occupied, 2 stations

Cable wiring



∗ Ground either the reception side or the transmission side of the shielding wire shield.

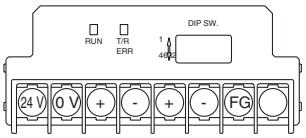
SI manifold solenoid valve



∗ Ground either the reception side or the transmission side of the shielding wire shield.

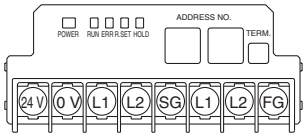
Name of terminal block, LED

Type C — OMRON Corporation SYSBUS Wire System



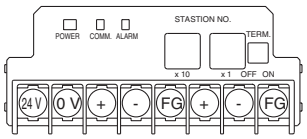
LED	Description
RUN	ON when transmission is normal and PLC is in operation mode
T/R ERR	Blinks when transmission is normal, ON when transmission is abnormal.

Type D — SHARP Corporation Satellite I/O Link System



LED	Description
POWER	ON when power supply is ON
RUN	ON when power is ON and slave unit operates normally
ERR	ON for abnormal slave unit switch setting, abnormal communication, master unit PLC stopped and defective slave unit
R.SET HOLD	ON for master unit control input

Type E — Matsushita Electric Works, Ltd. MEWNET-F System



LED	Description
POWER	ON when power supply is ON
COMM.	Blinks during data transmission/reception
ALARM	ON for unit abnormality, blinks for station no. setting error

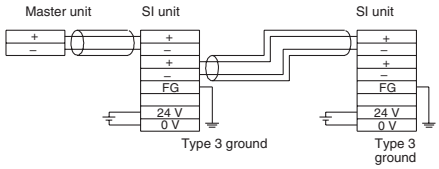
Note

- SYSBUS Wire System
  Master unit : Type C500-RM201
  Type C200H-RM201
- No. of output points, 16 points

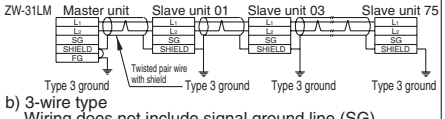
- Satellite I/O Link System
  JW-23LM, JW-23LMH
  Master unit : ZW-31LM
  JW-31LM, JW-31LMH
- No. of output points, 16 points

- MEWNET-F System
  Master unit : AFP3740, AFP3742
  AFP5740, AFP5742
- No. of output points, 16 points

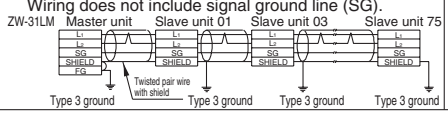
Cable wiring

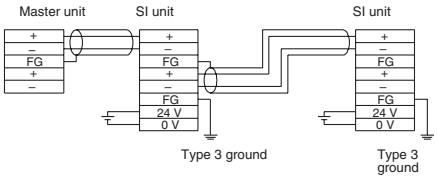


a) 2-wire type
Wiring does not include signal ground line (SG).



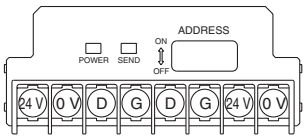
b) 3-wire type
Wiring does not include signal ground line (SG).





Type F1 — NKE Corporation Uni-wire System

Name of terminal block, LED

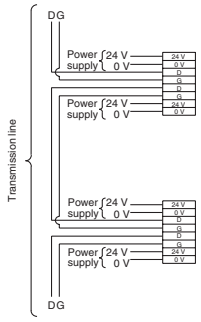


LED	Description
POWER	ON for power supply input (ON when normal, flickers when voltage drops)
SEND	Transmission indication: Blinks when normal, OFF or ON when abnormal

Note

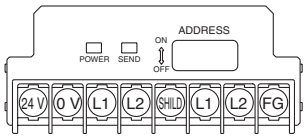
- Uni-wire System
  Send unit : SD-120
- No. of output points, 16 points

Cable wiring



Type G — Rockwell Automation, Inc. Allen Bradley Remote I/O (RIO) System

Name of terminal block, LED

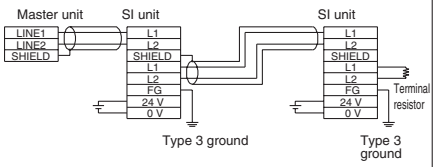


LED	Description
POWER	ON when power supply is ON
COM	ON when communication is normal Blinks when communication is initialized OFF for abnormal communication
ERROR	ON for abnormal communication

Note

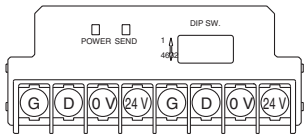
- Remote I/O (RIO) System
- No. of output points, 16 points

Cable wiring



Type J1, J2 — SUNX Corporation S-LINK System

Name of terminal block, LED



LED	Description
POWER	ON for power supply input
SEND	Transmission indication: Blinks when normal, Blinks slowly when abnormal

Note

- S-LINK System
  S-LINK controller: SL-CU1A
- No. of output points, 16 points (Type J1)
  No. of output points, 8 points (Type J2)

Cable wiring

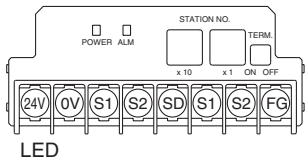
a) Type T branching multi-drop wiring (S-LINK System)

b) Crossover wiring (Sensor Link System)

The above is the example of using dedicated S-LINK flat ribbon cable SL-RCMI00.

Type K — Fuji Electric Co., Ltd. T-LINK Mini System

Name of terminal block, LED



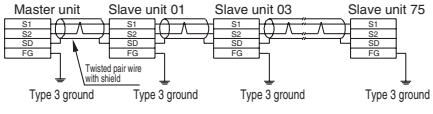
LED

LED	Description
POWER	ON for power supply input
ALM	ON for abnormal transmission or processor side power supply cut

Note

- T-LINK Mini System
  Master unit : FTM100B
  Converter : FRC100A-G02
  Repeater : FRC200A-C10
- No. of output points, 16 points

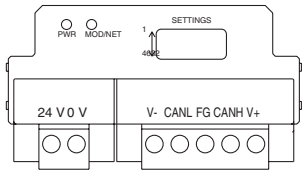
Cable wiring



Connect the shielding wire to the SD terminal. If the shielding wire is not connected to the SD terminal, normal transmission will be impossible even for short distances. Furthermore, do not ground the shielding wire (SD).

Type Q — DeviceNet

Name of terminal block, LED

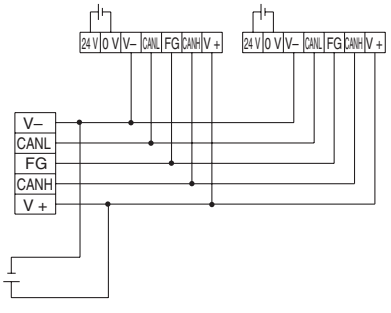


LED		Description
PWR		Green light ON for DeviceNet circuit power input
MOD/NET	OFF	When this unit is off line or circuit power is OFF
	Green blinks	When waiting for connection (On line)
	Green ON	When connection is established (On line)
	Red blinks	When connection time out occurs (recoverable communication abnormality)
	Red ON	For MAC ID duplication error, or BUSOFF error (major communication abnormality)

Note

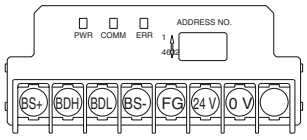
- DeviceNet
- OMRON Corporation: CompoBus/D System
  Master unit : Type C200HW-DRM21-V1
  Master unit : Type CS1W-DRM21
- No. of output points, 16 points

Cable wiring



Type R1, R2 — OMRON Corporation CompoBus/S

Name of terminal block, LED

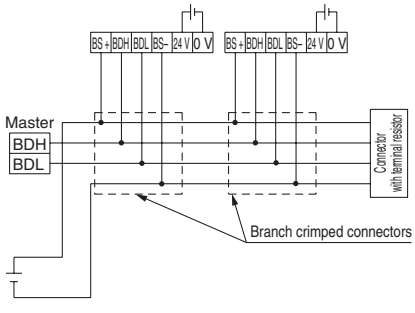


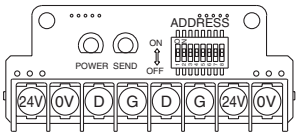
LED	Description
PWR	ON when communication power is supplied, OFF when power is OFF
COMM	ON for normal communication, OFF for abnormal communication or waiting
ERR	ON for abnormal communication, OFF for normal communication or waiting

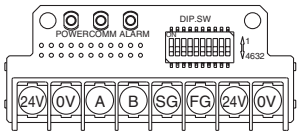
Note

- CompoBus/S System
  Master unit : Type C200HW-SRM21-V1
  Master unit : Type CQM1-SRM21-V1
  No. of output points, 16 points (Type SR1)
- No. of output points, 8 points (Type SR2)

Cable wiring



<table>
<tr><th></th><th>Type H
NKE Corporation
Uni-wire H System</th><th>Type U
JEMANET (JPCN-1)</th><th>Type V
Mitsubishi Electric Corporation
CC-LINK System</th></tr>
<tr><td>Name of terminal block, LED</td><td>


<table>
<tr><th>LED</th><th>Description</th></tr>
<tr><td>POWER</td><td>ON for power supply input
(ON when normal, flickers when voltage drops)</td></tr>
<tr><td>SEND</td><td>Transmission indication: Blinks when normal, OFF or ON when abnormal</td></tr>
</table>
</td><td>


<table>
<tr><th>LED</th><th>Description</th></tr>
<tr><td>POWER</td><td>ON for SI unit power supply input</td></tr>
<tr><td>COMM</td><td>On for normal communication</td></tr>
<tr><td>ALARM</td><td>ON for abnormal communication</td></tr>
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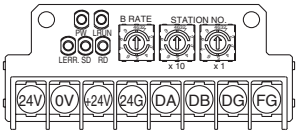
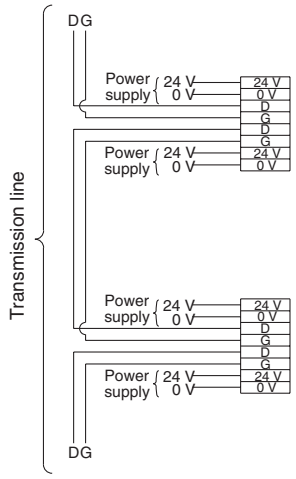
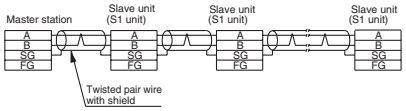
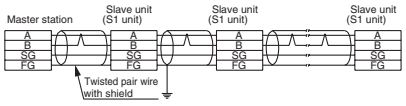


<table>
<tr><th>LED</th><th>Description</th></tr>
<tr><td>PW</td><td>ON when communication power is supplied, OFF when power is OFF</td></tr>
<tr><td>L RUN</td><td>ON when normal data is being received</td></tr>
<tr><td>SD</td><td>ON when data is transmitted</td></tr>
<tr><td>RD</td><td>ON when data is received</td></tr>
<tr><td>L ERR.</td><td>ON for transmission error/wrong setting, Blinks when station or transmission speed setting changes during operation</td></tr>
</table>
</td></tr>
<tr><td>Note</td><td>• Uni-wire H System
Send unit: SD-H2

• No. of output points, 16 points</td><td>• JEMANET (JPCN-1)
(Reference)
AJ71J92-S3 (Mitsubishi Electric Corporation)
A1SJ71J92-S3 (Mitsubishi Electric Corporation)
Type C200HW-JRM21 (OMRON Corporation)
NJ-JPCN-1 (Fuji Electric Co., Ltd.)
NP1L-JP1 (Fuji Electric Co., Ltd.)
No. of output points, 16 points</td><td>• CC-Link System
Master unit : AJ61BT11
Master unit : A1SJ61BT11
Master unit : AJ61QBT11
Master unit : A1SJ61QBT11

• No. of output points, 16 points</td></tr>
<tr><td>Cable wiring</td><td>


</td><td>a) 2-wire type


b) 3-wire type


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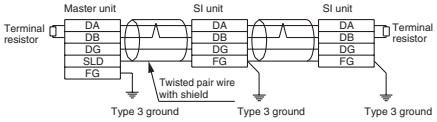
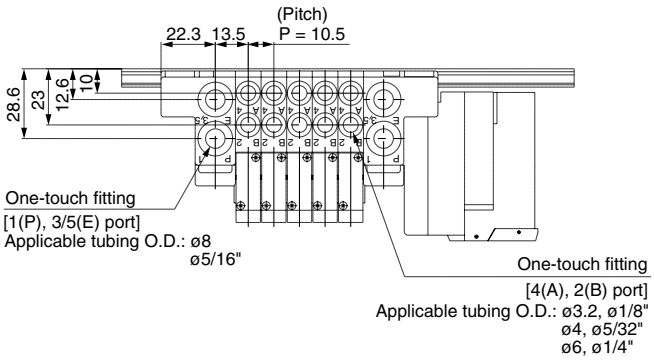


</td></tr>
</table>

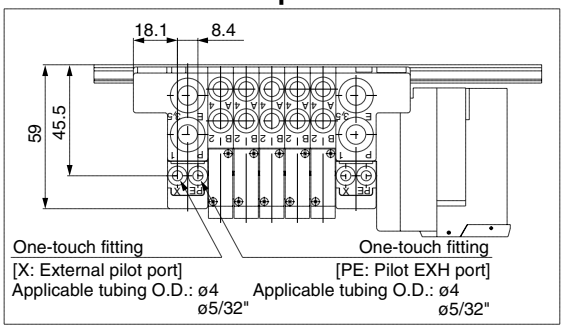
Dimensions: Series SV1000 for EX120 Dedicated Output Serial Wiring

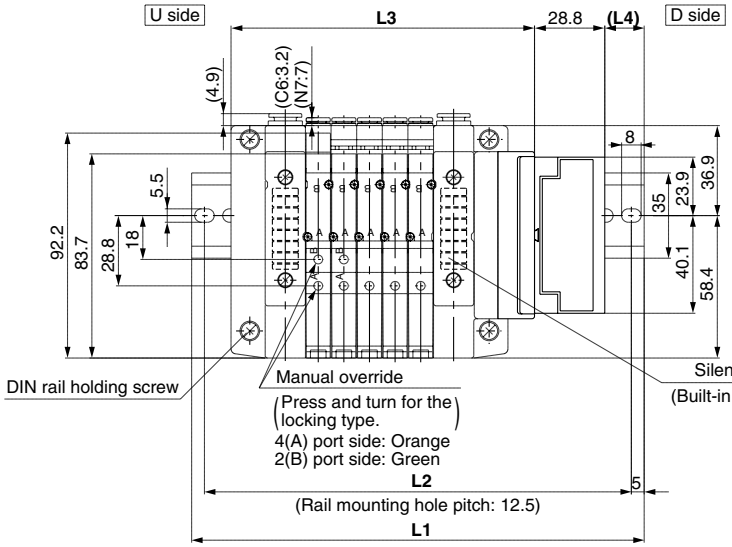
● Cassette base manifold: SS5V1-16S3□D-Stations U/D/B (S, R, RS)-C3, N1 / C4, N3 / C6, N7

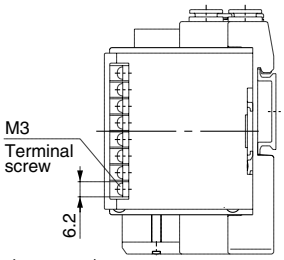
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.

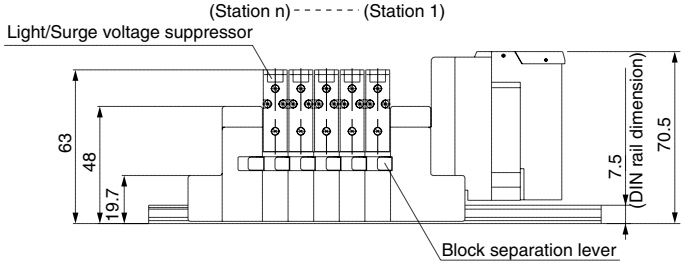


With External Pilot Specifications

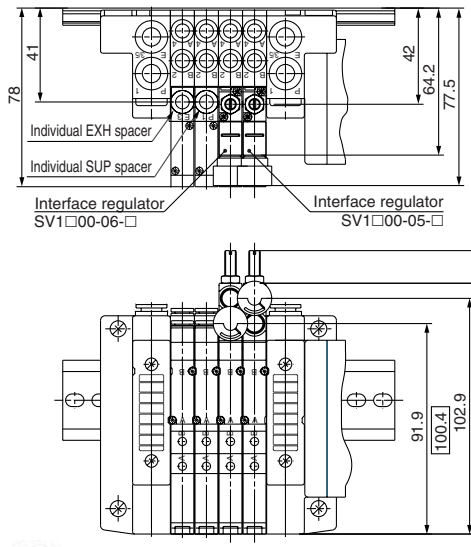








With option



L Dimension

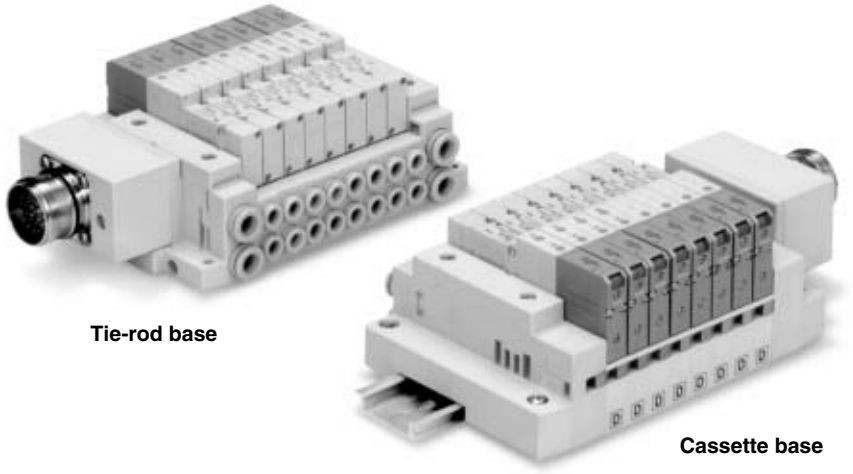
n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
L1	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

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

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

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.)

● **Tie-rod base**

SS5V 1 — W 10CD — 05 U

● **Cassette base**

SS5V 1 — W 16CD — 05 U

Mounting

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

Series

1	SV1000
2	SV2000

Enclosure
IP67 specifications

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.

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)

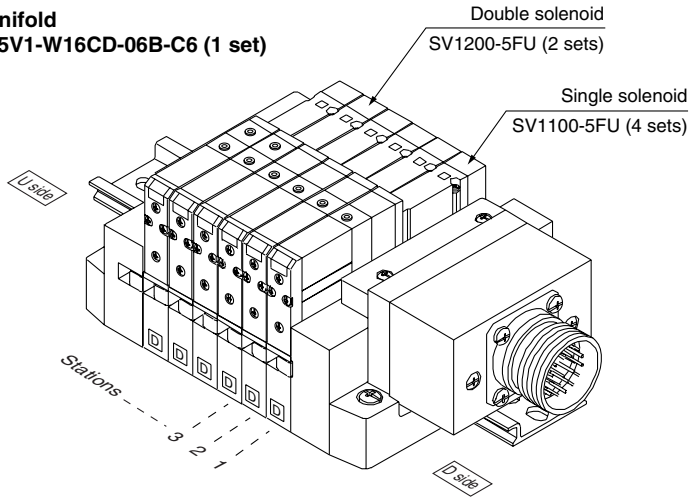
Symbol	Specifications	P, E port	Applicable series
N1	One-touch fitting for ø1/8"	One-touch fitting for ø5/16"	SV1000
N3	One-touch fitting for ø5/32"		
N7	One-touch fitting for ø1/4"		
N3	One-touch fitting for ø5/32"	One-touch fitting for ø3/8"	SV2000
N7	One-touch fitting for ø1/4"		
N9	One-touch fitting 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 Valve 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 00 — 5 F Note)

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

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

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

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

Pilot type

Nil	Internal pilot
R	External pilot

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

Back pressure check valve

Nil	None
K	Built-in

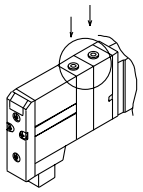
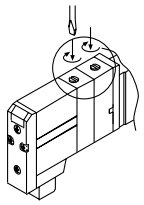
* Built-in back pressure check valve type is applicable to series SV1000 only.
* Back pressure check valve is not available for 3 position closed center and 3 position pressure center.

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

Rated voltage

5	24 VDC
6	12 VDC

Manual override

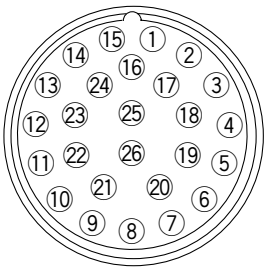
Nil: Non-locking push type	**D**: Push-turn locking slotted type
	

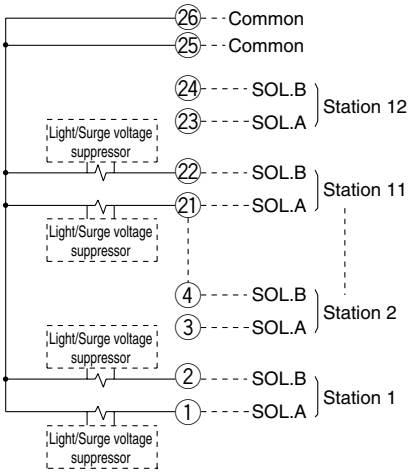
Light/Surge voltage suppressor

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

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.

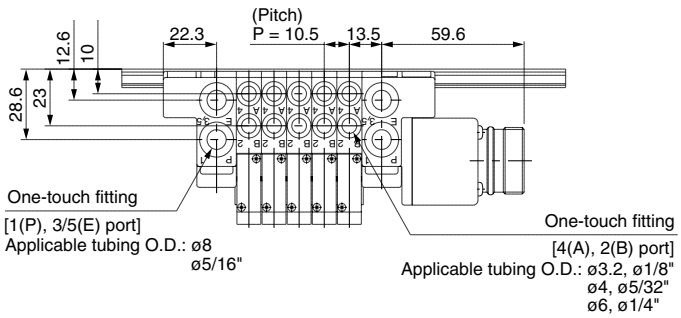
Usable No. of Solenoids

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

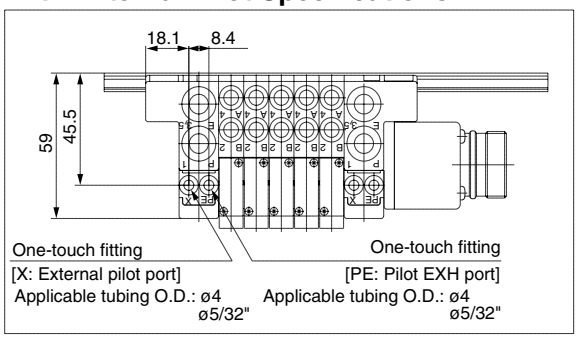
Dimensions: Series SV1000 for Circular Connector

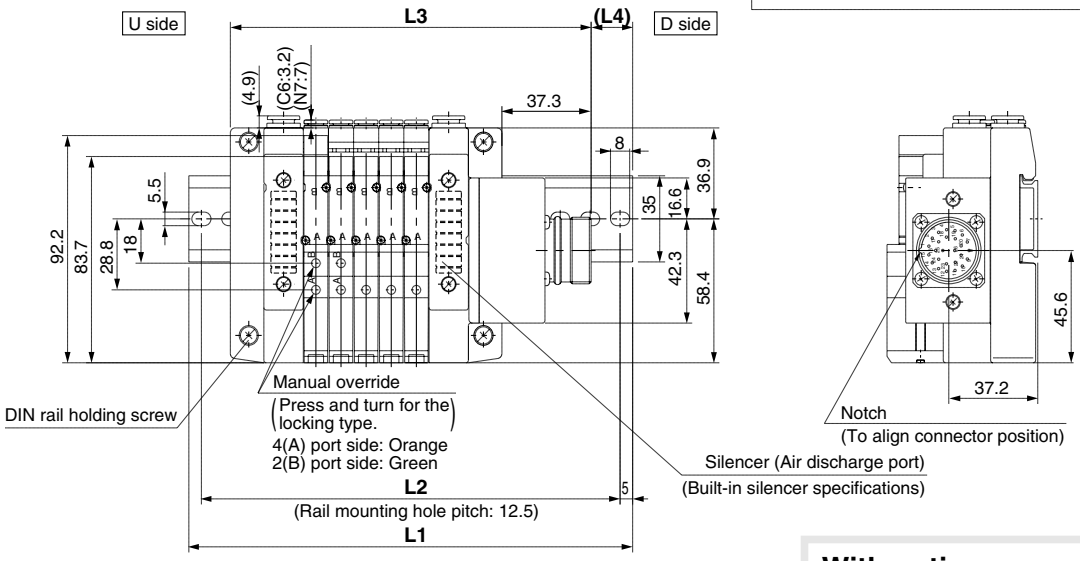
● Cassette base manifold: SS5V1-W16CD-[Stations] [U/D/B] (S, R, RS)-[C3, N1 / C4, N3 / C6, N7]

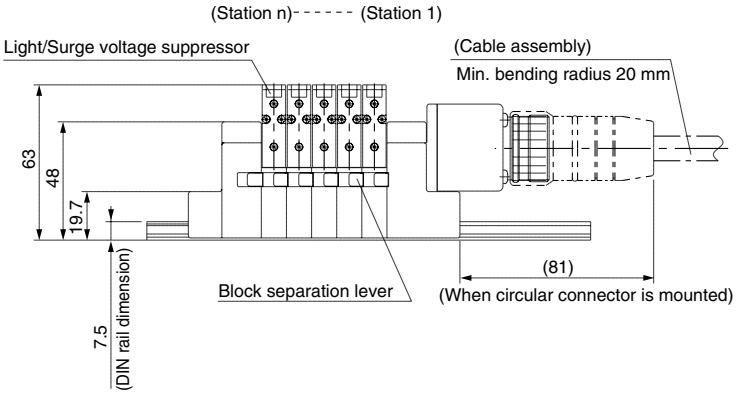
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



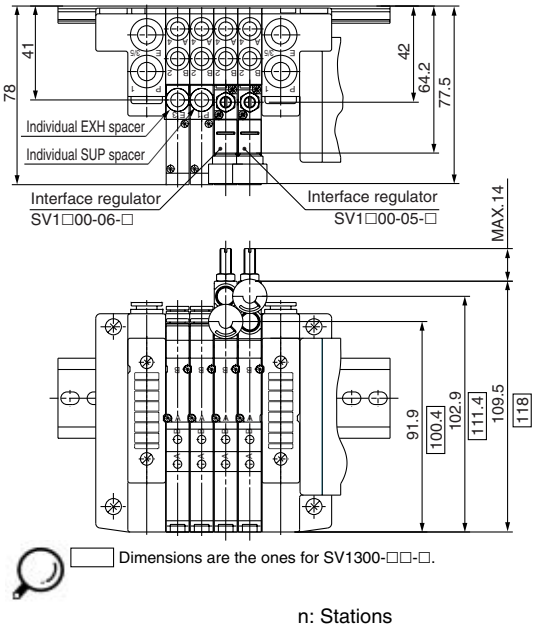
With External Pilot Specifications







With option



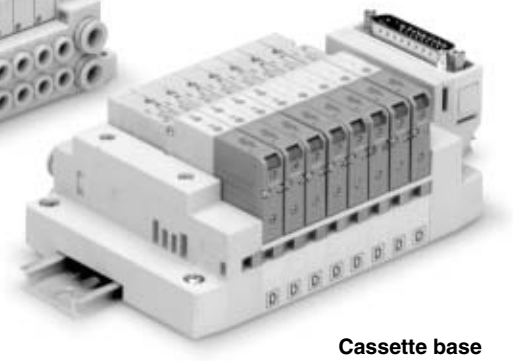
L Dimension

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

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

● **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

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 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
⋮	⋮	
D20	For 20 stations	

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

Connector entry direction

1	Upward
2	Lateral

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 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.)

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

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)

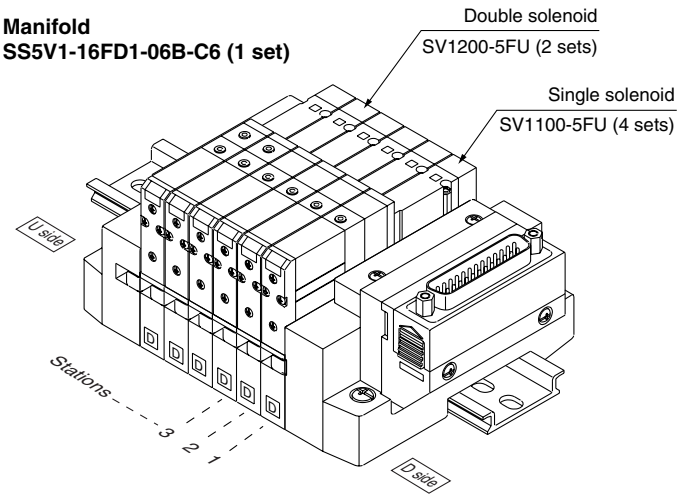
Symbol	A, B port	P, E port	Applicable series
N1	One-touch fitting for ø1/8"	One-touch fitting for ø5/16"	SV1000
N3	One-touch fitting for ø5/32"		
N7	One-touch fitting for ø1/4"		
N3	One-touch fitting for ø5/32"	One-touch fitting for ø3/8"	SV2000
N7	One-touch fitting for ø1/4"		
N9	One-touch fitting for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

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

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

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

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

Pilot type

Nil	Internal pilot
R	External pilot

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

Back pressure check valve

Nil	None
K	Built-in

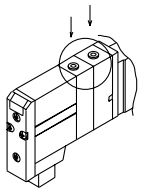
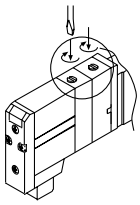
∗ Built-in back pressure check valve type is applicable to series SV1000 only.
∗ Back pressure check valve is not available for 3 position closed center and 3 position pressure center.

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

Rated voltage

5	24 VDC
6	12 VDC

Manual override

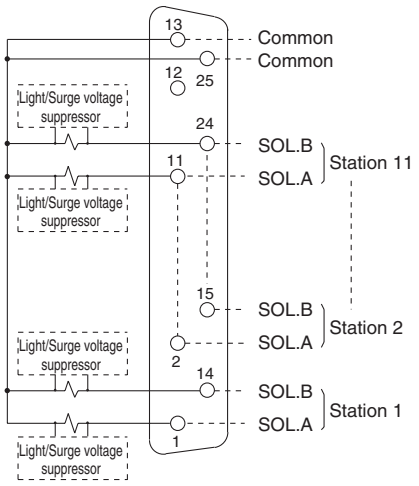
Nil: Non-locking push type	**D**: Push-turn locking slotted type
	

Light/Surge voltage suppressor

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

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.

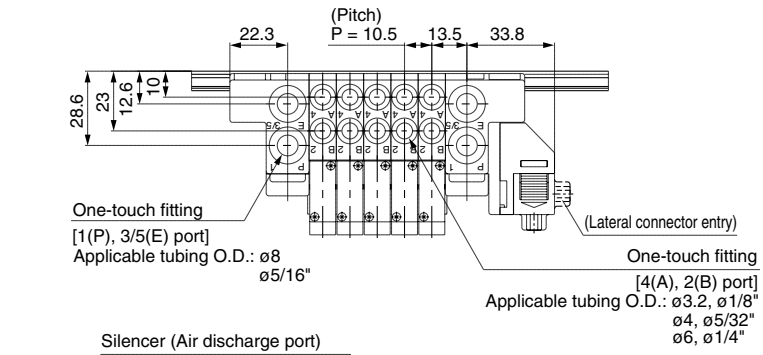
Usable No. of Solenoids

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

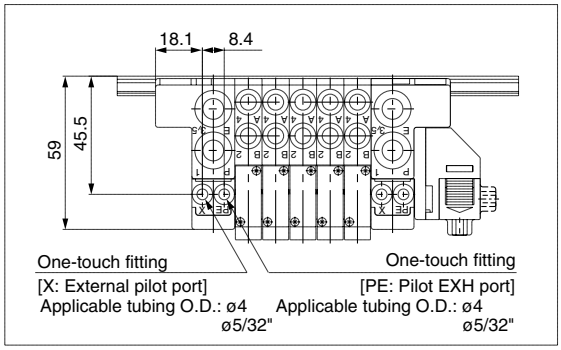
Dimensions: Series SV1000 for D-sub Connector

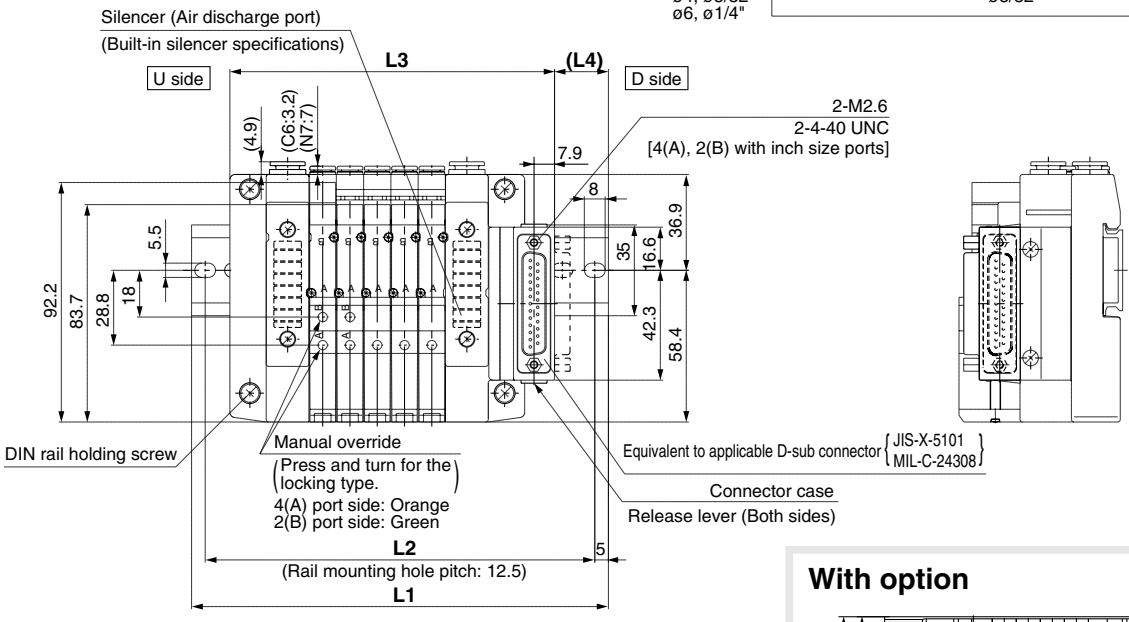
● Cassette base manifold: SS5V1-16FD$^{1}_{2}$- Stations $^{U}_{D}$ ^{B} (S, R, RS)- $^{C3, N1}_{C4, N3}$ $^{C6, N7}$

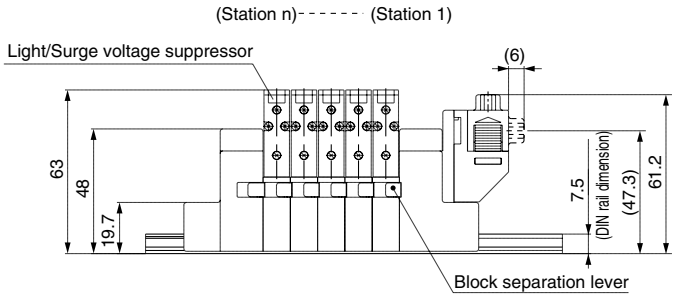
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



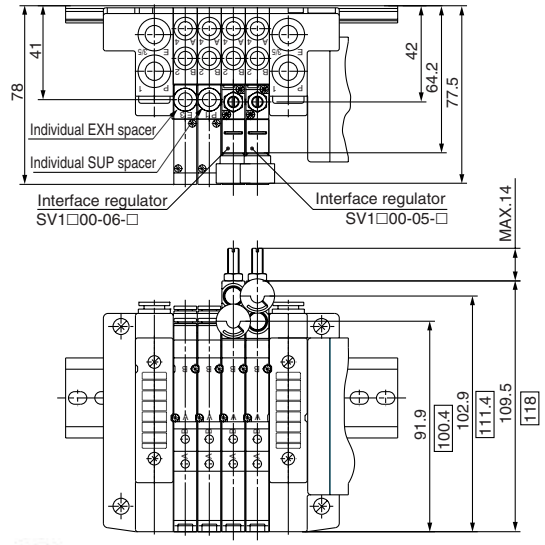
With External Pilot Specifications







With option



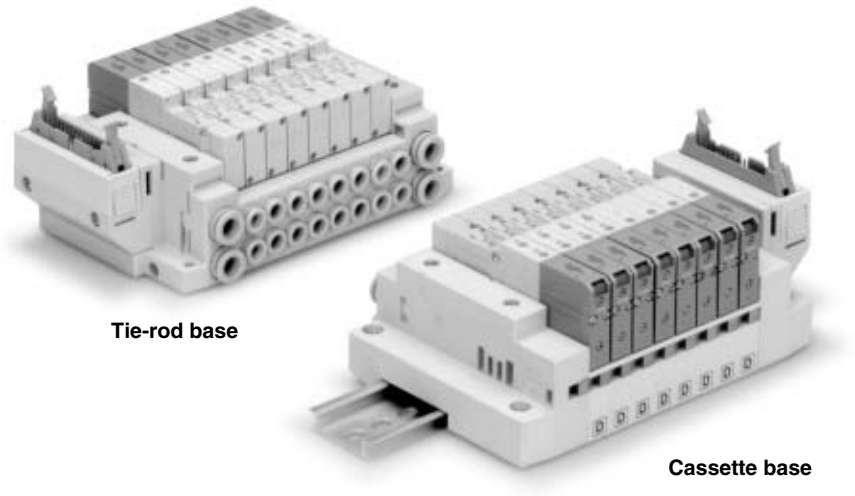
Dimensions are the ones for SV1300-□□-□.

L Dimension

n: Stations

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L1	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

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

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	

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

● **Tie-rod base**

SS5V 1 – 10 P D 1 – 05 U

● **Cassette base**

SS5V 1 – 16 P D 1 – 05 U

Series

1	SV1000
2	SV2000

Connector entry direction

1	Upward
2	Lateral

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

Mounting

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

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

DIN rail length specified

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

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

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	

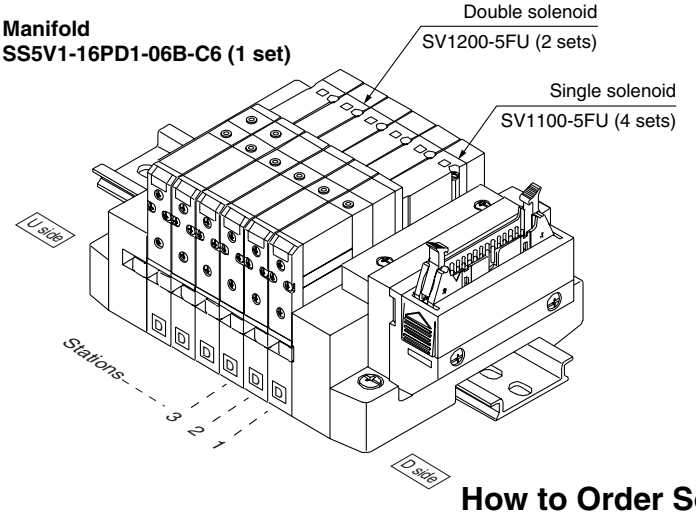
Note 1) Double wiring specifications: Single, double and 3 position solenoid valves can be used on all manifold stations. Use of a single solenoid will result in an unused control signal. If this is not desired, order with a specified layout.

Note 2) Specified layout: Indicate wiring specifications on a manifold specification sheet.

How to Order Valve Manifold Assembly

Ordering example (SV1000)

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 Solenoid Valves

SV 1 1 00 — 5 F — Note)

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

Series

1	SV1000
2	SV2000
3	SV3000
4	SV4000

Type of actuation

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

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

Pilot type

Nil	Internal pilot
R	External pilot

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

Back pressure check valve

Nil	None
K	Built-in

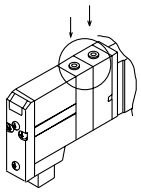
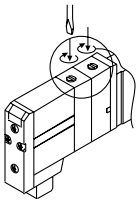
∗ Built-in back pressure check valve type is applicable to series SV1000 only.
∗ Back pressure check valve is not available for 3 position closed center and 3 position pressure center.

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

Rated voltage

5	24 VDC
6	12 VDC

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

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		

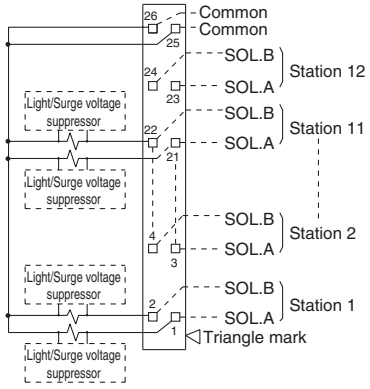
A, B port size (Inch)

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.

Manifold Electrical Wiring

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

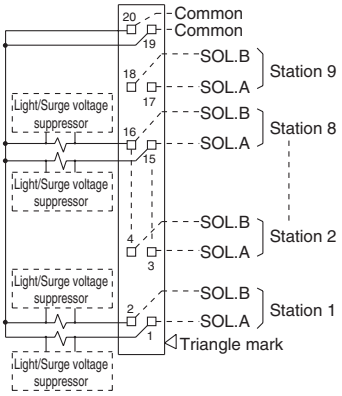


- This circuit has double wiring specifications for up to 12 stations. Since the usable number of solenoids differs depending on the manifold type, refer to the table below. In the case of single solenoids, connect to SOL. A. Furthermore, when wiring is specified on a manifold specification sheet, connections 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)

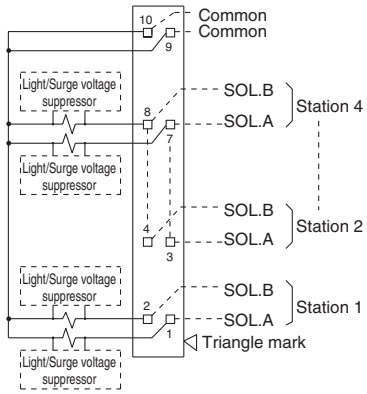


- This circuit has double wiring specifications for up to 9 stations. Since the usable number of solenoids differs depending on the manifold type, refer to the table below. In the case of single solenoids, connect to SOL. A. Furthermore, when wiring is specified on a manifold specification sheet, connections 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.

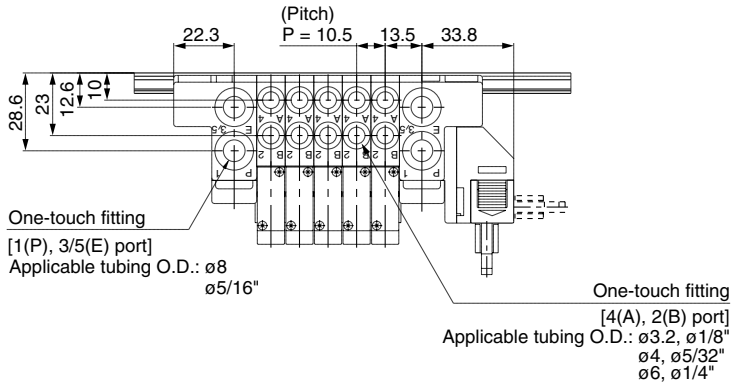
Usable No. of Solenoids

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

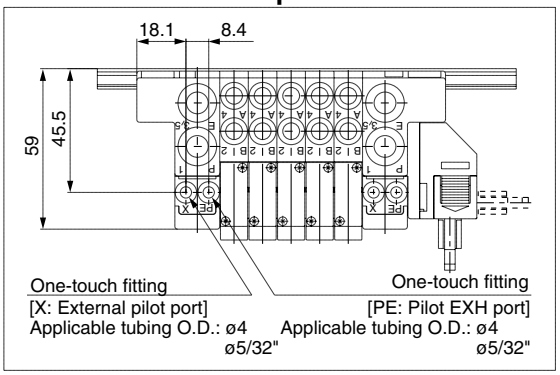
Dimensions: Series SV1000 for Flat Ribbon Cable

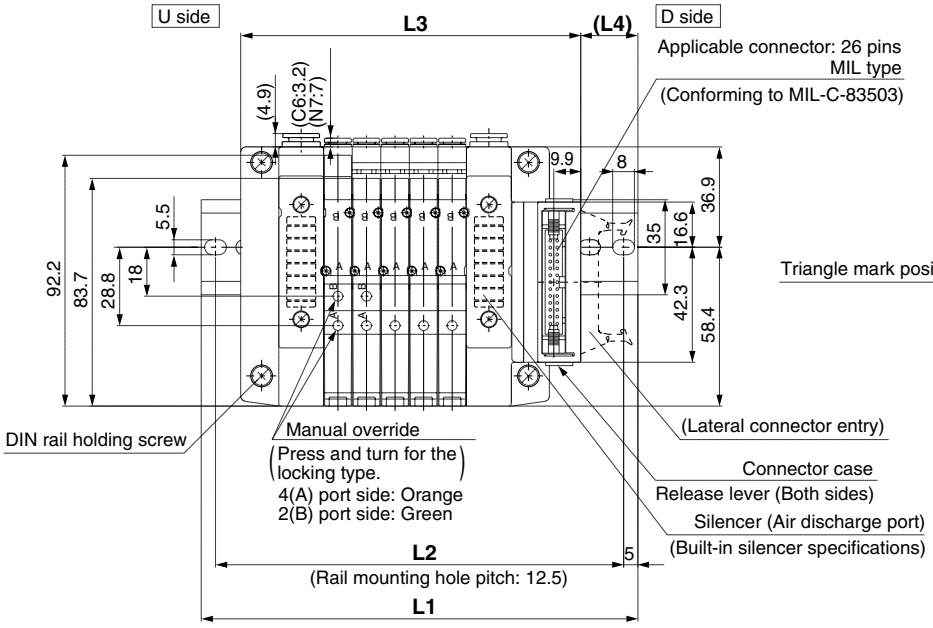
● Cassette base manifold: SS5V1-16 $^{P}_{PG}$ ^{PH} D_2^1 - Stations $^{U}_{D}$ ^{B} - (S, R, RS) - $^{C3, N1}_{C4, N3}$ $^{C6, N7}$

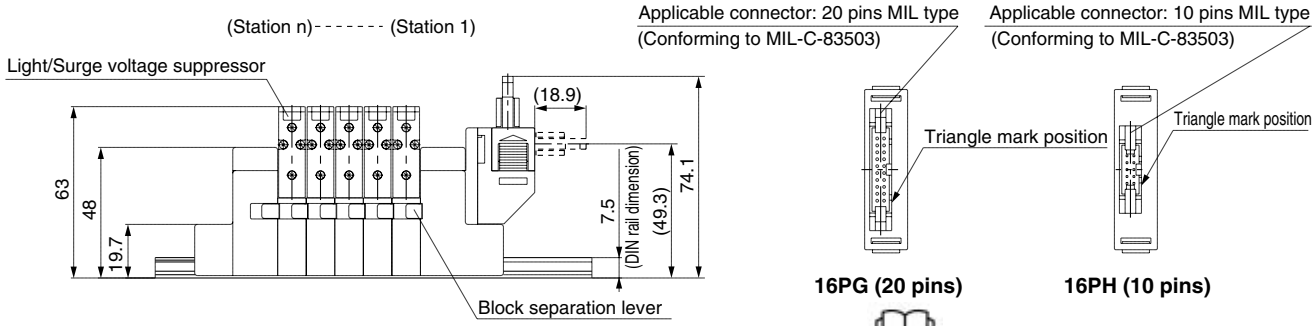
- When P, E port outlets are indicated on the U side or D side, the P, E ports on the opposite side are plugged.
- External pilot port positions and silencer discharge port positions are the same as P, E port outlet positions.



With External Pilot Specifications







Refer to page 1-2-69 (compliant for D-sub connector) for dimensions with interface regulator and individual SUP/EXH spacer.

L Dimension

n: Stations

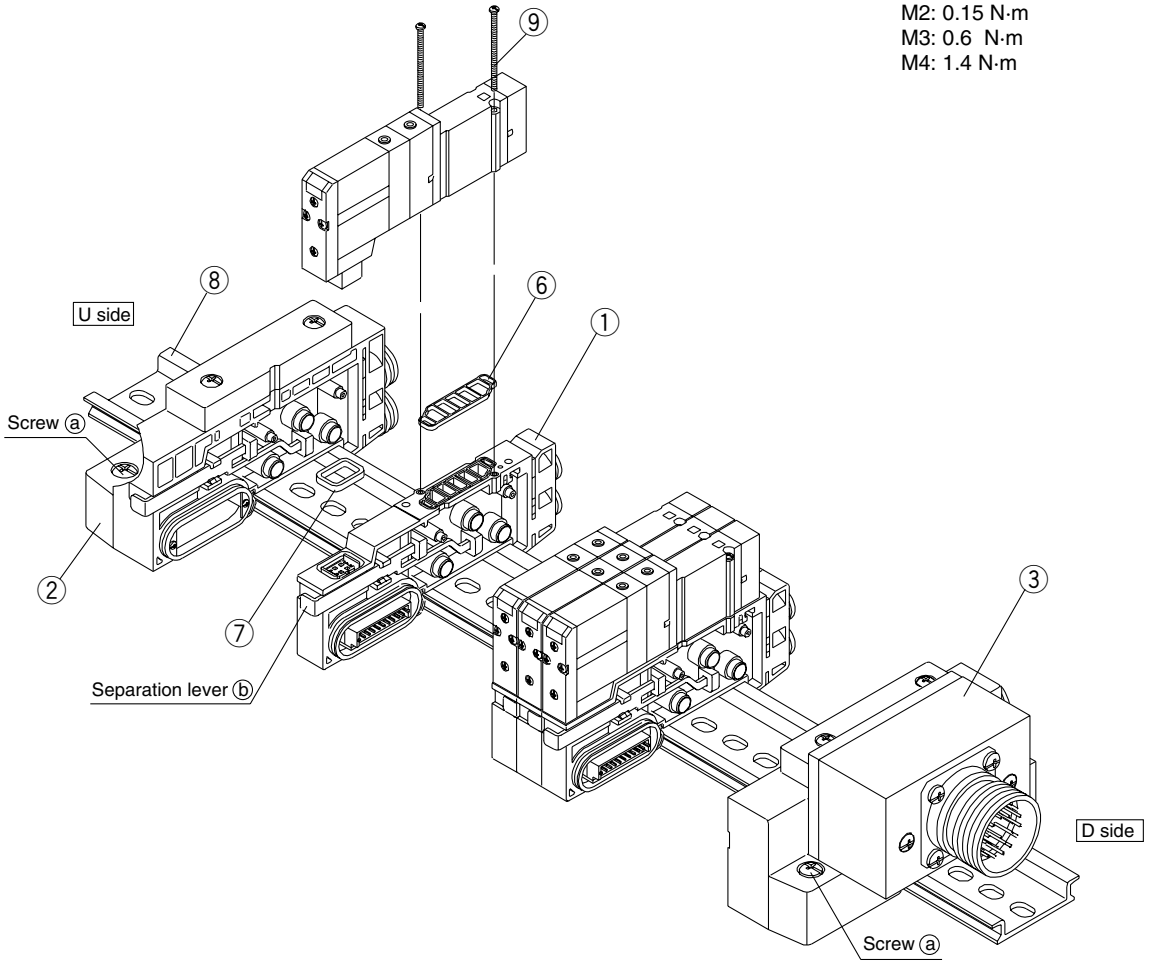
L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L1	135.5	135.5	148	160.5	173	185.5	198	198	210.5	223	235.5	248	260.5	260.5	273	285.5	298
L2	125	125	137.5	150	162.5	175	187.5	187.5	200	212.5	225	237.5	250	250	262.5	275	287.5
L3	93.5	104	114.5	125	135.5	146	156.5	167	177.5	188	198.5	209	219.5	230	240.5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

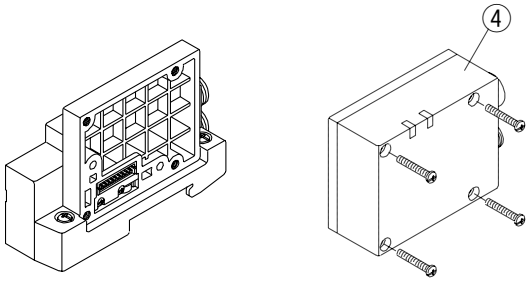
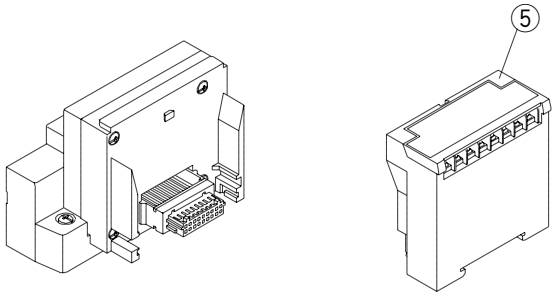
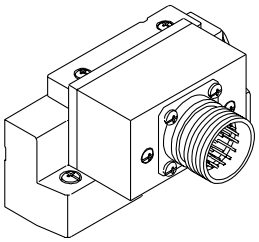
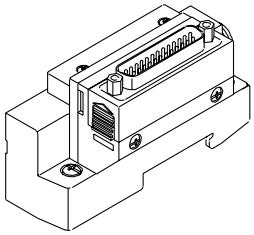
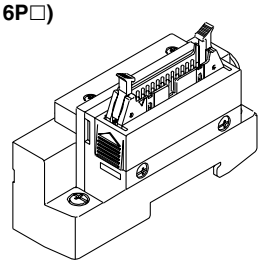
Type 16: Cassette Base Manifold Exploded View

⚠ Caution

Mounting Screw Tightening Torques

M2: 0.15 N·m
M3: 0.6 N·m
M4: 1.4 N·m



③ SUP/EXH block assembly	
EX500 (Type 16SA□W) 	**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** **SV□000−52U − 2 A□−□**

③ **SUP/EXH block assembly** **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)
38	For fX120 (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	Refer to page 1-2-26.		
⑤	Series EX120 SI unit	Refer to page 1-2-44.		
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 1-2-97.
⑨	Round head combination screw	SX3000-22-2 (M2 x 24)	SV2000-21-1 (M3 x 30)	

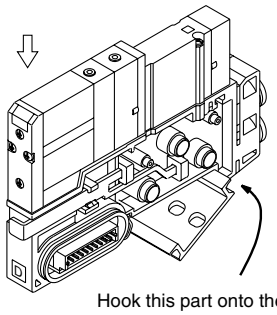
Type 16: Cassette Base Manifold

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.



Hook this part onto the DIN rail, and press down in the direction of the arrow.

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)

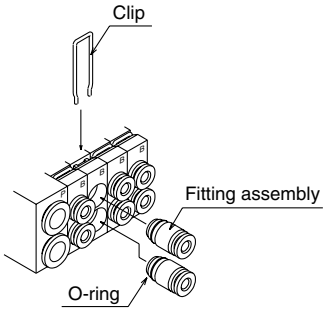
⚠ Caution

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

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 closed center and 3 position pressure center.

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

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

Rated voltage

5	24 VDC
6	12 VDC

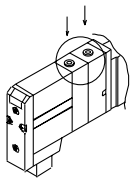
∗ Note that serial wiring manifolds (EX500, EX120) are only available with 24 VDC.

Light/Surge voltage suppressor

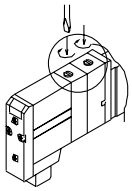
U	With light/surge voltage suppressor
R	With surge voltage suppressor

Manual override

Nil: Non-locking push type



D: Push-turn locking slotted type



Manifold block type

C	Cassette base type 16 with manifold block

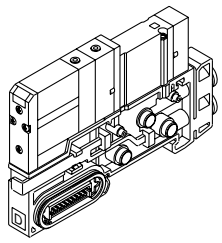
Manifold wiring specifications

Nil	Double wiring
S	Single wiring

A, B port size

Refer to A, B ports size tables on pages 1-2-20, 44, 46, and 76.

Example (SV1000)
SV1200-5FU-C-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

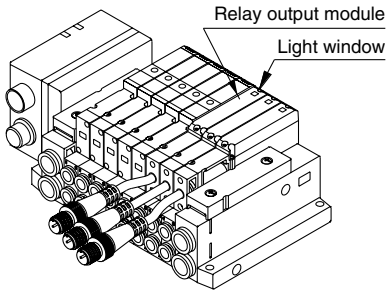
No. of output point

A	1 output
B	2 outputs

Rated voltage

5	24 VDC
6	12 VDC

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



Relay Output Module Specifications

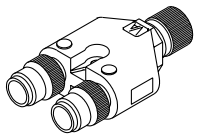
Item	Specifications			
No. of output points	1 output [connector with lead wire (M12)]		2 outputs [connector with lead wire (M12)]	
Output type	4 pins connector (M12) plug 1. — 2. Output A 3. — 4. Output A Contact type (“a” contact) Relay output module side pin arrangement		4 pins connector (M12) plug 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 (IEC529)			
Current consumption	20 mA or less			
Polarity	Non-polar			
weight (g)	48			

■ Y type connector

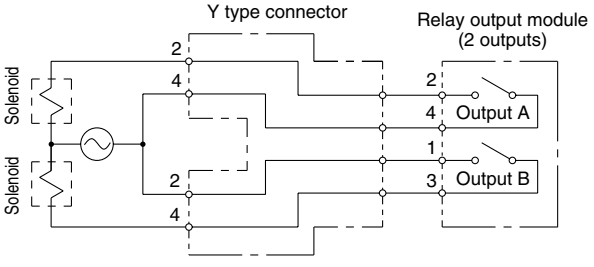
Used to branch a two output relay output module to two separate systems.

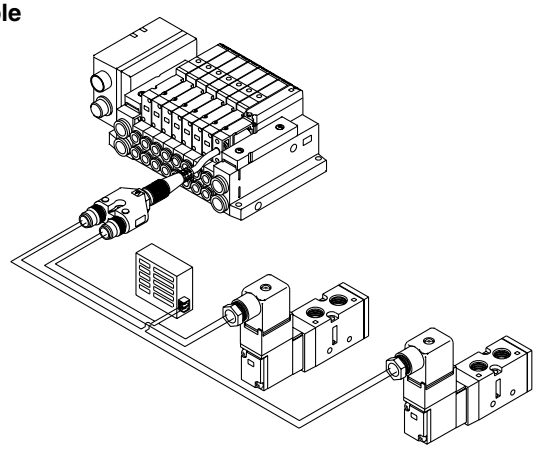
How to Order

EX500—ACY00 —S



Relay output module and Y type connector wiring example

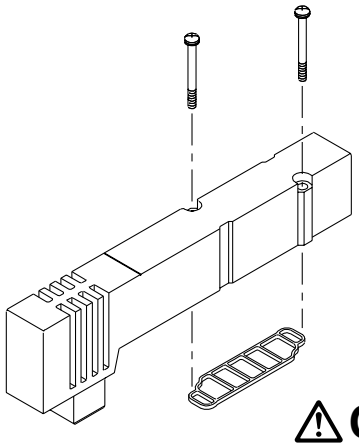




Manifold Option

■ Blanking plate assembly

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



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

⚠ Caution

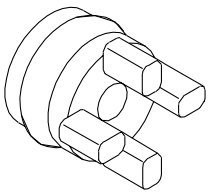
Mounting screw tightening torques

M2: 0.15 N·m
M3: 0.6 N·m
M4: 1.4 N·m

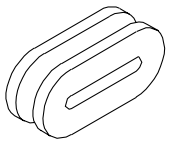
■ SUP/EXH block disk

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

[EXH block disk]
By installing an EXH block disk in a manifold valve's exhaust passage, the valve's exhaust can be separated so that it will not affect other valves. It can also be used on a manifold with mixed positive pressure and vacuum.
(Two pieces are required to block EXH on both sides. However, Series SV1000 and 2000 type 10 manifolds require only one piece.)



Cassette base type 16



Tie-rod base type 10

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

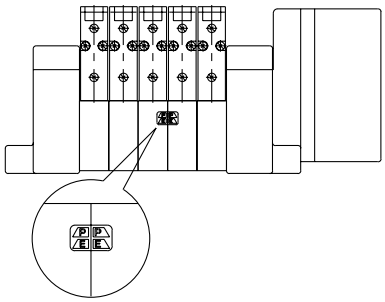
■ Label for block disk

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

SV1000 – 74 – 1A

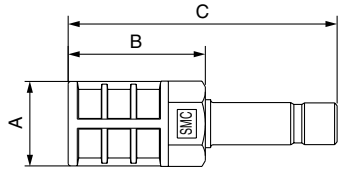
Label for SUP block disk	Label for EXH block disk	Label for SUP/EXH block disk
P P E	P E E	P P E E

∗ 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

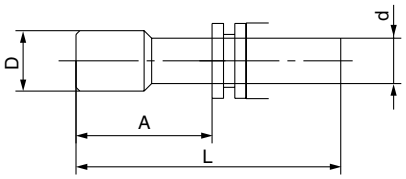
This silencer can be quickly mounted on the manifold's E (exhaust) port.



Series	Model	Effective area	A	B	C
SV1000 (For ø8)	AN203-KM8	14 mm²	ø16	26	51
SV2000 (For ø10)	AN200-KM10	26 m²	ø22	53.8	80.8
	AN300-KM10	30 mm²	ø25	70	97
SV3000 **SV4000** (For ø12)	AN300-KM12	41 mm²	ø25	70	98

■ Plug (White)

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



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

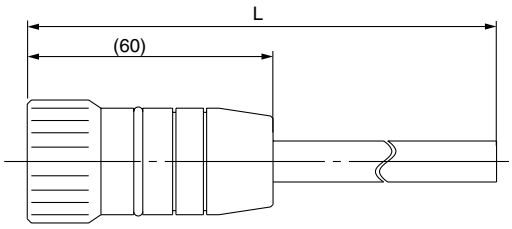
Manifold Option

■ Circular connector/Cable assembly (26 pins)

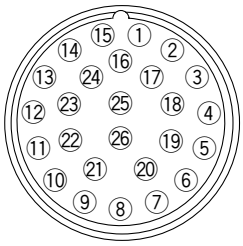
AXT100 – MC26 – □

Lead Wire Length

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



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



Circular Connector Cable Assembly Terminal No.

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

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

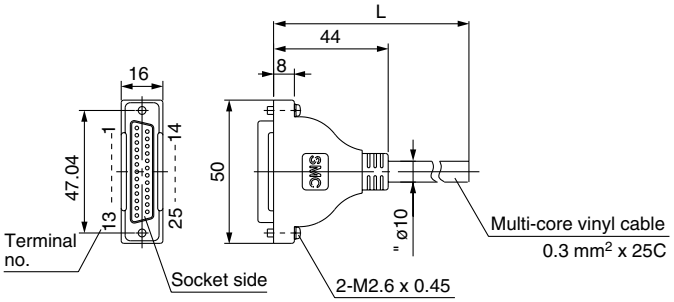
■ D-sub connector/Cable assembly (25 pins)

AXT100 – DS25 – □

Lead Wire Length

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

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



D-sub Connector Cable Assembly Terminal No.

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

Circular Connector, D-sub Connector Cable Assembly Electric Characteristics

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

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

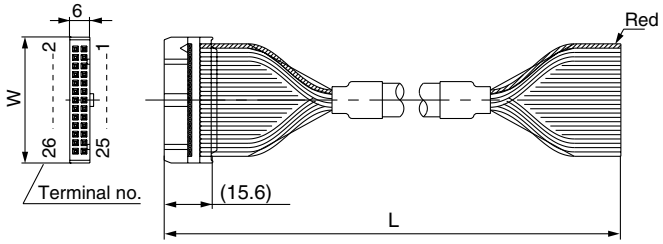
Manifold Option

■ 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.

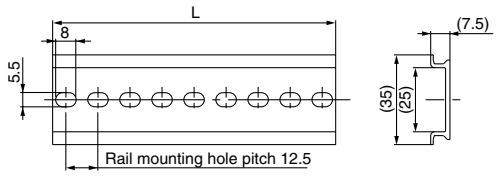


Connector manufacturers' example
- **Hirose Electric Co., Ltd.**
- **Sumitomo 3M Limited**
- **Fujitsu Limited**
- **Japan Aviation Electronics Industry, Ltd.**
- **J.S.T. Mfg. Co., Ltd.**

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

VZ1000 – 11 – 1 – □

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

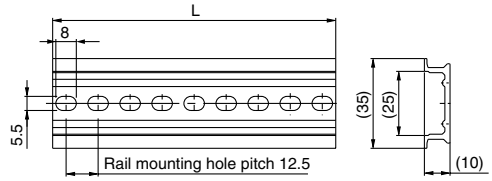


No.	0	1	2	3	4	5	6	7	8	9
L dimension	98	110.5	123	135.5	148	160.5	173	185.5	198	210.5
Weight (g)	17.6	19.9	22.1	24.4	26.6	28.9	31.1	33.4	35.6	37.9
No.	10	11	12	13	14	15	16	17	18	19
L dimension	223	235.5	248	260.5	273	285.5	298	310.5	323	335.5
Weight (g)	40.1	42.4	44.6	46.9	49.1	51.4	53.6	55.9	58.1	60.4
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
Weight (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
Weight (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
Weight (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	547	55	56	57	58	59
L dimension	723	735.5	748	760.5	731	785.5	798	810.5	823	835.5
Weight (g)	130.1	132.4	134.6	136.9	39.1	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
Weight (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								
Weight (g)	175.1	177.4								

■ SV3000 and 4000 DIN rail dimensions and weights

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
Weight (g)	24.8	28	31.1	34.3	37.4	40.6	43.8	46.9	50.1	53.3	56.4	59.6	62.7	65.9	69.1	72.2	75.4	78.6	81.7	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
Weight (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
Weight (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												
Weight (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 — P — 05

Applicable valve

0	For single, double
3	For 3 position

Option

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

Regulating port

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

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

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

Series SV2000/SV3000/SV4000

SV 2 000 — P — 00

Series

2	SV2000
3	SV3000
4	SV4000

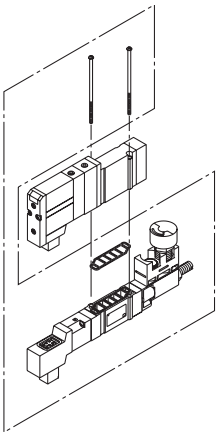
Option

00	With pressure gauge
M1	Without pressure gauge

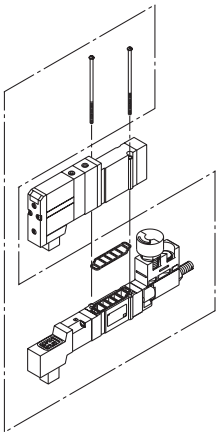
Regulating port

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

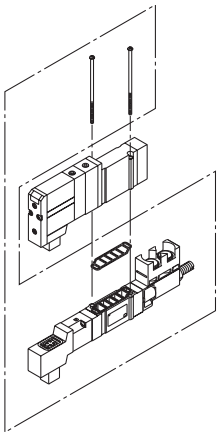
SV1000-□-05
(For mounting odd number stations)



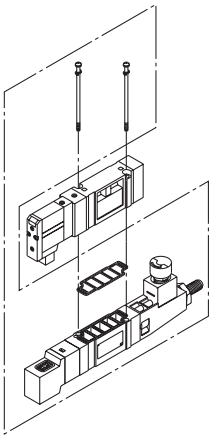
SV1000-□-06
(For mounting even number stations)



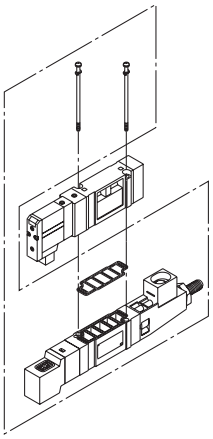
SV1000-□-M1



SV2000-□-00



SV2000-□-M1



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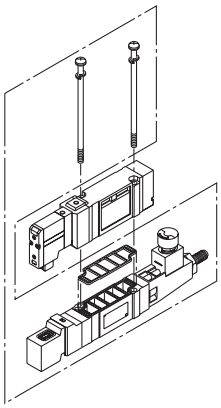
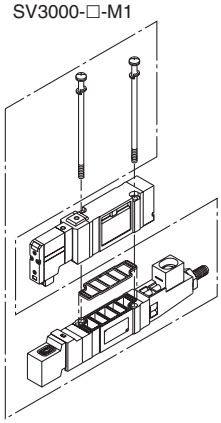


SV3000-□-M1



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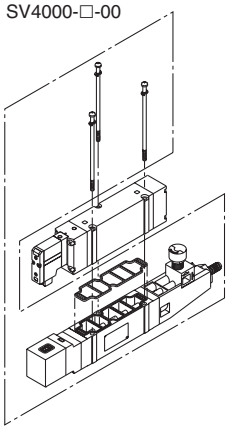
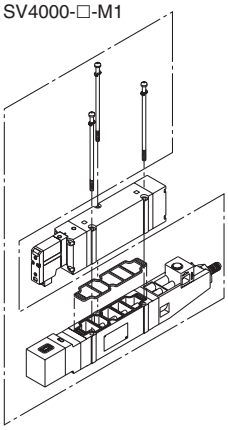
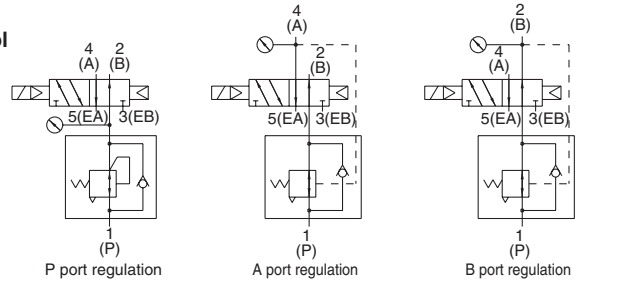


SV4000-□-M1



JIS Symbol



Accessory

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

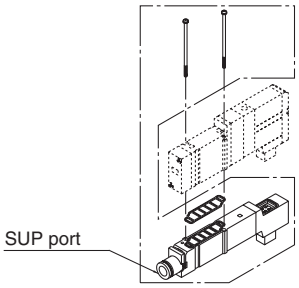
⚠ Caution

Mounting Screw Tightening Torques

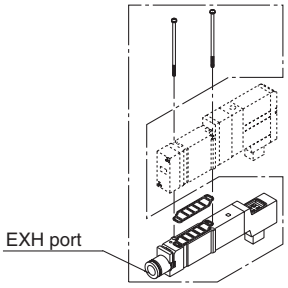
M2: 0.15 N·m
M3: 0.6 N·m
M4: 1.4 N·m

Manifold Option

■ Individual SUP spacer assembly



■ Individual EXH spacer assembly



How to order individual SUP/EXH spacer assembly

Series SV1000

SV1000 — 38 — 1A — C6

Port size

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

Series SV2000/SV3000/SV4000

SV 2 000 — 38 — 1 □ A

Series

2	SV2000
3	SV3000
4	SV4000

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	

Accessory

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