5 Port Solenoid Valve Plug-in Type

S0700 Series

Flow rate characteristics

C[dm³/(s·bar)]: **0.39**
b: **0.39**
Cv: **0.11**

Power consumption

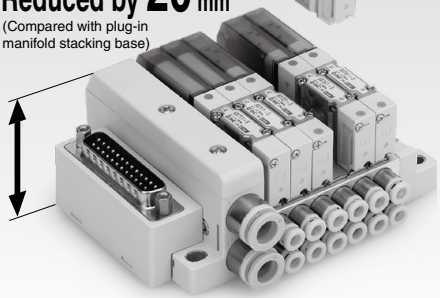
0.35 W

Possible to drive cylinders
Up to ø25
(At 300 mm/s)

Slim Compact Bar Base

Maintenance
Easy replacement only with two mounting screws

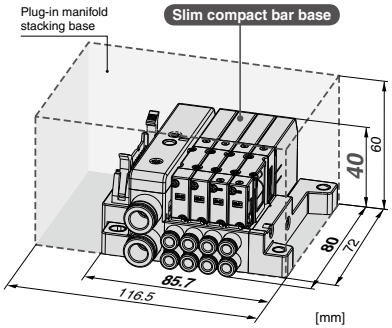
Height
Reduced by 20 mm
(Compared with plug-in manifold stacking base)



Installation volume **Installation area**

Approx. **45**%* reduction Approx. **18**%* reduction

*: 4-station manifold



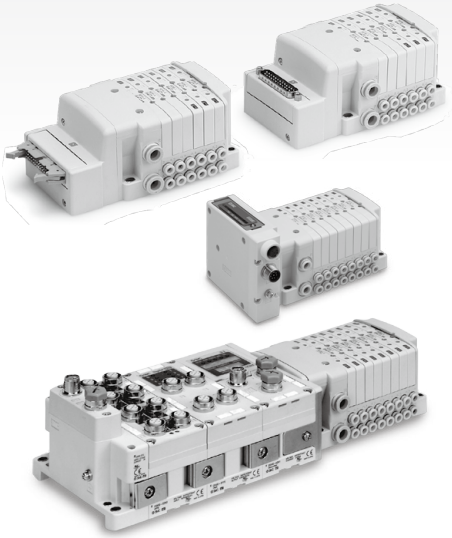
Plug-in Type Stacking Base

■ Fieldbus System (Serial Transmission) Compatible Protocols

DeviceNet, PROFINET, PROFIBUS, CANopen, CC-Link, EtherNet/IP, EtherCAT, AS-i, ETHERNET POWERLINK

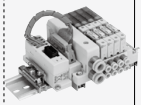
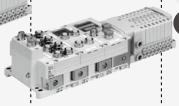
■ EtherNet/IP™ and PROFINET are compatible with wireless systems.

- D-sub connector
- Flat ribbon cable
- Terminal block box
- Lead wire
- Circular connector



Plug-in Manifold Variations

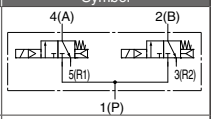
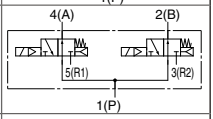
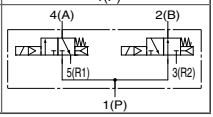
S Kit
Serial Transmission (Fieldbus System)

	EX180 For Output	EX260 For Output	EX250 For Input/Output	EX600 For Input/Output	EX500 Gateway-type	EX510 Gateway-type
Slim Compact Bar Base	Page 654	—	—	—	—	 Page 656
Plug-in Type Stacking Base	—	Page 676	Page 678	 Page 680	Page 684 Page 686	—

Applicable Network	EX180 For Output	EX260 For Output	EX250 For Input/Output	EX600 For Input/Output	EX500 Gateway-type	EX510 Gateway-type
DeviceNet	●	●	●	●	●	●
PROFINET		●		●		
PROFIBUS		●	●	●	●	●
CANopen			●			
CC-Link	●	●		●		●
EtherNet/IP		●	●	●	●	
EtherCAT		●		●		
AS-i			●			
ETHERNET POWERLINK		●				
EtherNet/IP™ compatible wireless base				●		
PROFINET compatible wireless base				●		

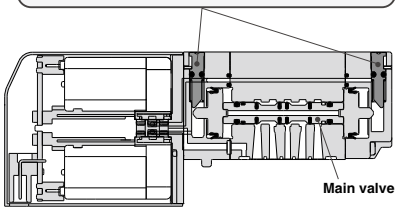
4-Position Dual 3-Port Valve

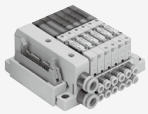
- Two 3-port valves in one body.
- Independently operating 3-port valve at each side of A and B.
- Number of stations occupied for 3-port valve halved.
- Available as 4-position 5-port valve.

A side	B side	Symbol
N.C.	N.C.	
N.O.	N.O.	
N.C.	N.O.	

Adopted Direct Manual.

Possible to switch the main valve reliably by direct manual override even when pressure is below the operating pressure range during maintenance.



	F Kit D-sub Connector	**P** Kit Flat Ribbon Cable	**T** Kit Terminal Block Box	**L** Kit Lead Wire	**M** Kit Circular Connector
	MIL Standard	MIL Standard •26 pins, 20 pins			
	 Page 660	 Page 664	—	—	—
	 Page 690	 Page 694	 Page 702	 Page 706	 Page 710

SJ
SY
SY
S0700
S0700

Optimum Actuation Size Chart of Air Cylinder

Applicable cylinder speed	Applicable cylinder						
	ø6	ø10	ø16	ø20	ø25	ø32	ø40
100 mm/s or less							
300 mm/s or less							

For horizontal operation. Refer to page 652 for calculation conditions.

5 Port Solenoid Valve Plug Lead Type *S0700 Series*

For details, refer to page 735.

•Valve width: 7.4 mm •Power consumption: 0.35 W

Body Ported

•Flow rate characteristics C[dm³/(s·bar)]: 0.6

•Possible to drive cylinders: •Weight: 39 g

Up to ø25 (300 mm/s)

Single unit

Manifold

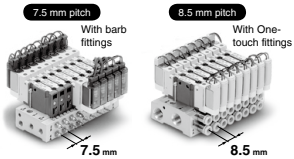
Base Mounted

•Flow rate characteristics C[dm³/(s·bar)]: 0.39

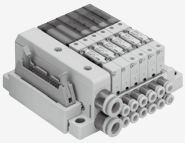
•Possible to drive cylinders: Up to ø25 (300 mm/s)

Single unit

Manifold



Variations/Options

			Slim Compact Bar Base	Plug-in Type Stacking Base
Base model			 Page 653	Page 675
Piping spec.	Port size	1(P), 3(R)	ø6, ø8, ø1/4", ø5/16"	
		4(A), 2(B)	ø2, ø3.2, ø4, ø1/8", ø5/32"	
Type of wiring	S Kit	**EX510**	●	—
		EX180	●	—
		EX500	—	●
		EX250	—	●
		EX260	—	●
		EX600	—	●
	F Kit	D-sub connector	●	●
	P Kit	Flat ribbon cable	●	●
	T Kit	Terminal block box	—	●
	L Kit	Lead wire	—	●
	M Kit	Circular connector	—	●
Options	Blanking plate		● **Page 718**	● **Page 718**
	External pilot [**-R**]		● **Page 718**	● **Page 718**
	Direct EXH outlet with built-in silencer [**-S**]		● **Page 718**	● **Page 718**
	Individual SUP/EXH spacer		—	● **Page 719**
	Individual SUP spacer		● **Page 719**	—
	Individual EXH spacer		● **Page 719**	—
	SUP block plate		—	● **Page 719**
	EXH block plate		—	● **Page 720**
	Back pressure check valve [**-B**]		—	● **Page 720**
	Blanking plate with output		● **Page 720**	● **Page 720**
	Port plug		● **Page 721**	● **Page 721**
	DIN rail mounting bracket		● **Page 721**	● **Page 721**
	Applicable to DIN rail mounting		● **Page 721**	● **Page 721**
	Blanking plug (For One-touch fitting) **KJP-02 KQ2P-23/04/06**		● **Page 722**	● **Page 722**
	Silencer (For EXH port)		● **Page 722**	● **Page 722**
	Name plate[**-N**] **SS0700-N**-Station (1 to Max. stations)		—	● **Page 722**
	Dual flow fitting		—	● **Page 723**
	SUP/EXH block		—	● **Page 723**
	Double check block (Separated) **VQ1000-FPG-□□**		● **Page 724**	● **Page 724**

S0700 Series
Valve Specifications

Valve Specifications

Model

Type		Type of actuation	Model	Flow rate characteristics						Response time [msec]*1	Weight [g]
				1→4/2 (P→A/B)			4/2→5/3 (A/B→R1/R2)				
				C[dm³/(s·bar)]	b	Cv	C[dm³/(s·bar)]	b	Cv		
Slim compact Bar base	2-position	Single	S0711	0.39	0.39	0.11	0.37	0.39	0.10	18 or less	36
		Double	S0721	0.39	0.39	0.11	0.37	0.39	0.10	10 or less	41
Page 653	4-pos.	Dual 3-port valve	S07$^{A}_{B}$1$^{}_{C}$	0.34	0.34	0.09	0.33	0.33	0.08	18 or less	41
Plug-in type Stacking base	2-position	Single	S0710	0.39	0.39	0.11	0.37	0.39	0.10	18 or less	30
		Double	S0720	0.39	0.39	0.11	0.37	0.39	0.10	10 or less	38
Page 675	4-pos.	Dual 3-port valve	S07$^{A}_{B}$0$^{}_{C}$	0.34	0.34	0.09	0.33	0.33	0.08	18 or less	38

*: Values for cylinder port fitting port size C6.
*1: Based on JIS B 8419-2010 (Supply pressure: 0.5 MPa, with indicator light and surge voltage suppressor, clean air. This will change depending on pressure and air quality.) The value when ON for the double type.

Specifications

Valve specifications	**Valve construction**	Rubber seal	
	Fluid	Air	
	Maximum operating pressure	0.7 MPa	
	Minimum operating pressure	0.2 MPa	
	Ambient and fluid temperature	–10 to 50°C*1	
	Maximum operating cycle	5 Hz	
	Pilot valve exhaust method	Slim compact Bar base	Plug-in type Stacking base
		Common exhaust*2	
	Pilot valve manual override	Push type	
	Lubrication	Not required	
	Impact/Vibration resistance*3	30/100 m/s²	
	Enclosure	IP40	
Electrical specifications	**Coil rated voltage**	24 VDC	
	Allowable voltage fluctuation	±10% of rated voltage	
	Coil insulation type	Class B or equivalent	
	Power consumption (Current) **24 VDC**	DC 0.35 W (15 mA)	

*1: Use dry air to prevent condensation when operating at low temperatures.
*2: Valves with the external pilot specifications have a pilot EXH with individual exhaust specifications.
*3: 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 deenergized states every once for each condition.
Vibration resistance: No malfunction occurred in a one-sweep test between 8.3 and 2000 Hz. Test was performed at both energized and de-energized states in the axial direction and at the right angles to the main valve and armature.

Manifold Specifications

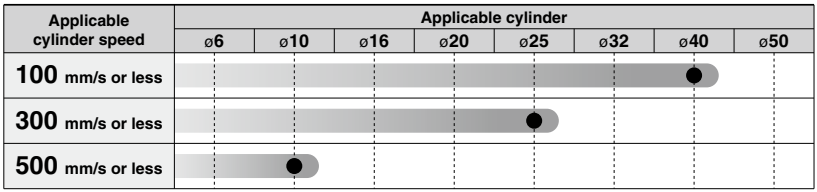
Manifold Specifications

Model

Base model		Piping specifications: Port size 1(P), 3(R)	Piping specifications: Port size 4(A), 2(B)	Type of connection	Applicable stations *1	5-station weight [g] *3	Addition per station [g] *3
Slim compact Bar base	SS0751-□□□□ Page 653	C6 (ø6) C8 (ø8) N7 (ø1/4") N9 (ø5/16") Option (Direct EXH outlet with built-in silencer)	C2 (ø2) C3 (ø3.2) C4 (ø4) N1 (ø1/8") N3 (ø5/32")	S kit: Serial transmission (EX510)	Max. 16 stations	270*2	19*5
				S kit: Serial transmission (EX180)	Max. 32 stations	230*2	17
				F kit: D-sub connector	Max. 24 stations	185	17
				P kit: Flat ribbon cable	Max. 24 stations	181	17
Plug-in type Stacking base	SS0750-□□□ Page 675	C6 (ø6) C8 (ø8) N7 (ø1/4") N9 (ø5/16") Option (Direct EXH outlet with built-in silencer)	C2 (ø2) C3 (ø3.2) C4 (ø4) N1 (ø1/8") N3 (ø5/32")	S kit: Serial transmission (EX500)	Max. 16 stations	260*2	20
				S kit: Serial transmission (EX250/260/600)	Max. 24 stations	260*2	20
				F kit: D-sub connector	Max. 24 stations	330	20
				P kit: Flat ribbon cable	Max. 24 stations	325	20
				T kit: Terminal block box	Max. 20 stations	660	20
				L kit: Lead wire	Max. 24 stations	455*4	20
				M kit: Circular connector	Max. 24 stations	390	20

*1: Maximum stations in the case of mixed single and double wiring (special wiring specifications)
*2: Differs depending on the serial unit type.
*3: Weight excluding valve. Refer to page 650 for valve weight.
*4: Weight with lead wire length 0.6 m
*5: Including DIN rail weight

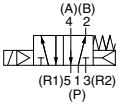
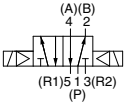
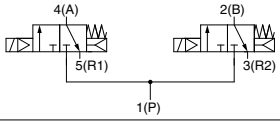
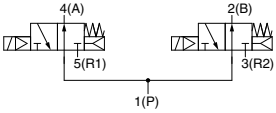
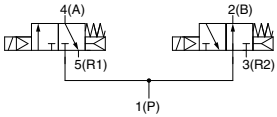
Cylinder Speed Chart



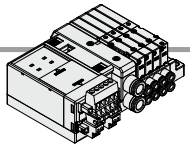
[Common conditions]
- Pressure: 0.5 MPa
- Piping length: 1 m
- Load ratio: 50%
- Stroke: 200 mm

∗: Use as a guide for selection.
Please confirm the actual conditions with SMC Model Selection Software.

Symbol

Model	Type of actuation	Symbol
S0710 **S0711**	2-position single	
S0720 **S0721**	2-position double	
S07A0 **S07A1**	4-position dual 3-port N.C. + N.C. (Exhaust center)	
S07B0 **S07B1**	4-position dual 3-port N.O. + N.O. (Pressure center)	
S07C0 **S07C1**	4-position dual 3-port N.C. + N.O.	

S *S0700 Series* Slim Compact Bar Base
Kit (Serial Transmission) EX180 (For Output) Serial Transmission System



How to Order Manifold

SS0751 – 08 C4 C8 SD V2 □ □ – □

Stations

Symbol	Stations
02	2 stations
⋮	⋮
32*1	32 stations

*1: The maximum number of stations will be different depending on the wiring specifications.

Cylinder port size

Symbol	Port size	
C2	With ø2 One-touch fitting	Metric
C3	With ø3.2 One-touch fitting	
C4	With ø4 One-touch fitting	
N1	With ø1/8" One-touch fitting	Inch
N3	With ø5/32" One-touch fitting	

P, R port size

Symbol	Port size	
C6	With ø6 One-touch fitting	Metric
C8	With ø8 One-touch fitting	
N7	With ø1/4" One-touch fitting	Inch
N9	With ø5/16" One-touch fitting	

*: If an inch size cylinder port is selected, select inch size piping connections for the P and R ports as well.

SI unit output polarity

Symbol	Specifications
Nil	Positive common
N	Negative common

Communication connector

Symbol	Specifications
Nil	T-branch type
A	Straight type

Option

Symbol	Specifications
Nil	None
D	With DIN rail (Rail length: Standard)
D0	Without DIN rail (With bracket)
D□	With DIN rail Designated length (□: Station)
K*1	Special wiring specifications (Except double wiring)
R*2	External pilot
S	Built-in silencer

*1: Indicate the wiring specifications for mixed single and double wirings.
*2: For details, refer to page 718.
*: When two or more options are specified, indicate them alphabetically.
Example) -KRS
*: **For manifold optional parts, refer to pages 718 to 724.**
*: **For manifold exploded view, refer to page 672.**

Refer to pages 786 to 788 and the Operation Manual for the details of the EX180 Integrated-type (For Output) Serial Transmission System. Please download the Operation Manual via our website, http://www.smcworld.com

SI Unit Part No.

Symbol	Component module/ Communication connector	Common specification	SI unit part no.	Output stations
V2	CC-Link (32 points)	NPN output (Positive common)	EX180-SMJ3	Max. 32*1
V2N	T-branch type	PNP output (Negative common)	EX180-SMJ5	
V2A	CC-Link (32 points)	NPN output (Positive common)	EX180-SMJ3A	
V2AN	Straight type	PNP output (Negative common)	EX180-SMJ5A	
Q2	DeviceNet (32 points)	NPN output (Positive common)	EX180-SDN3	Max. 32*1
Q2N	T-branch type	PNP output (Negative common)	EX180-SDN5	
Q2A	DeviceNet (32 points)	NPN output (Positive common)	EX180-SDN3A	
Q2AN	Straight type	PNP output (Negative common)	EX180-SDN5A	
Q3	DeviceNet (16 points)	NPN output (Positive common)	EX180-SDN4	Max. 16*1
Q3N	T-branch type	PNP output (Negative common)	EX180-SDN6	
Q3A	DeviceNet (16 points)	NPN output (Positive common)	EX180-SDN4A	
Q3AN	Straight type	PNP output (Negative common)	EX180-SDN6A	

*1: Single wiring

Kit type

0	Without SI unit
V2	CC-Link (32 points)
Q2	DeviceNet (32 points)
Q3	DeviceNet (16 points)

*: Please contact SMC for SI unit specifications.

*: The maximum number of stations is determined by the total number of solenoids.
For mixed single and double wirings, enter -K to the order code options.
*: For the S0700 series, SI unit models EX180-SDN1, EX180-SDN2, or EX180-SMJ1 cannot be selected as S kit (SDQ□, SDV2).

Type of actuation	Single	Double, Dual 3-port
Number of solenoids	1	2

How to Order Valves

S07 1 1 □ – 5

Type of actuation

Symbol	Specifications
1	2-position single
2	2-position double
A	4-position dual 3-port (N.C. + N.C.) [Exhaust center]
B	4-position dual 3-port (N.O. + N.O.) [Pressure center]
C	4-position dual 3-port (N.C. + N.O.)

*: For symbol, refer to page 652.

Function

Symbol	Specifications
Nil	Standard
R	External pilot*1

*1: Not compatible with dual 3-port valves. The 3(R) port is open to the atmosphere. (Cannot be used for applying pressure or vacuum)

Base mounted plug-in

Voltage: 24 VDC

How to Order Manifold Assembly

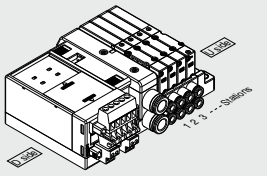
Example **Serial transmission kit**

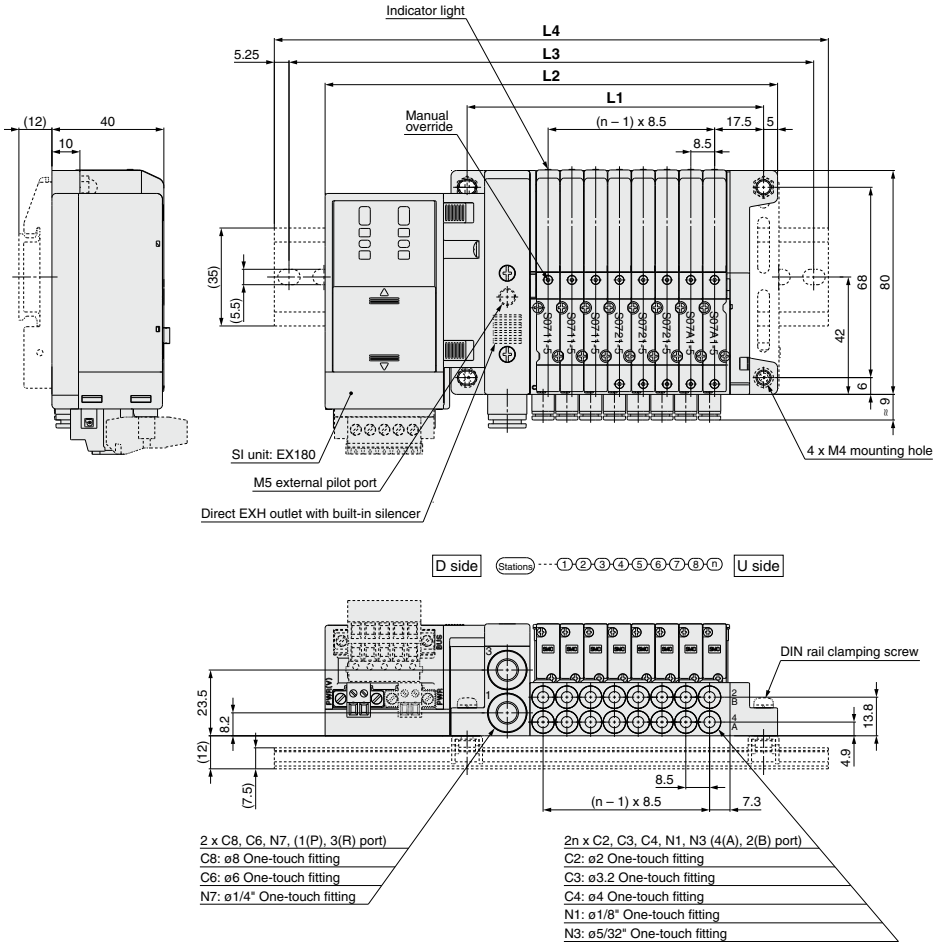
Specify the part numbers for valves and options together beneath the manifold base part number.

SS0751-08C4C8SDQ2 ··· 1 set – Manifold base part no.
* **S0711-5** ····· 3 sets – Valve part no. (Stations 1 to 3)
* **S0721-5** ····· 2 sets – Valve part no. (Stations 4 to 5)
* **S07A1-5** ····· 2 sets – Valve part no. (Stations 6 to 7)
* **SS0700-10A-3** ····· 1 set – Blanking plate part no. (Station 8)

Prefix the asterisk to the part numbers of the solenoid valve etc.

Write sequentially from the 1st station on the D side. When part numbers written collectively are complicated, specify on the manifold specification sheet.





∗: Dotted line indicates DIN rail mounting bracket (-D).

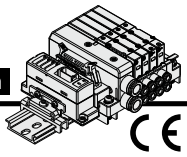
Dimensions

Formula L1 = 8.5n + 38, L2 = 8.5n + 93.7 n: Station (Maximum 32 stations)

L \ n	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
L1	55	63.5	72	80.5	89	97.5	106	114.5	123	131.5	140	148.5	157	165.5	174	182.5	191
L2	110.7	119.2	127.7	136.2	144.7	153.2	161.7	170.2	178.7	187.2	195.7	204.2	212.7	221.2	229.7	238.2	246.7
L3	137.5	150	150	162.5	175	175	187.5	200	200	212.5	225	225	237.5	250	250	262.5	275
L4	148	160.5	160.5	173	185.5	185.5	198	210.5	210.5	223	235.5	235.5	248	260.5	260.5	273	285.5

L \ n	19	20	21	22	23	24	25	26	27	28	29	30	31	32
L1	199.5	208	216.5	225	233.5	242	250.5	259	267.5	276	284.5	293	301.5	310
L2	255.2	263.7	272.2	280.7	289.2	297.7	306.2	314.7	323.2	331.7	340.2	348.7	357.2	365.7
L3	275	287.5	300	312.5	312.5	325	337.5	337.5	350	362.5	362.5	375	387.5	387.5
L4	285.5	298	310.5	323	323	335.5	348	348	360.5	373	373	385.5	398	398

S *S0700 Series* Slim Compact Bar Base Kit (Serial Transmission) EX510 Gateway-type Serial Transmission System



How to Order Manifold

SS0751 – 08 C4 C8 SB □ – □

Stations

Symbol	Stations
02	2 stations
⋮	⋮
16∗1	16 stations

∗1: The maximum number of stations will be different depending on the wiring specifications.

Cylinder port size

Symbol	Port size	
C2	With ø2 One-touch fitting	Metric
C3	With ø3.2 One-touch fitting	
C4	With ø4 One-touch fitting	
N1	With ø1/8" One-touch fitting	Inch
N3	With ø5/32" One-touch fitting	

Standard station	Max. number of stations for special wiring specifications	Max. number of solenoids
1 to 8 stations	16 stations	16

Type of actuation	Single	Double, Dual 3-port
Number of solenoids	1	2

P, R port size

Symbol	Port size	
C6	With ø6 One-touch fitting	Metric
C8	With ø8 One-touch fitting	
N7	With ø1/4" One-touch fitting	Inch
N9	With ø5/16" One-touch fitting	

∗: If an inch size cylinder port is selected, select inch size piping connections for the P and R ports as well.

S kit
EX510 serial wiring

∗: For SI unit part number, refer to page 673.

Option

Symbol	Specifications
Nil	None
K∗1	Special wiring specifications (Except double wiring)
R∗2	External pilot
S	Built-in silencer

∗1: Indicate the wiring specifications for mixed single and double wirings.
∗2: For details, refer to page 718.
∗: When two or more options are specified, indicate them alphabetically.
Example) -KRS
∗: **For manifold optional parts, refer to pages 718 to 724.**
∗: **For manifold exploded view, refer to page 672.**

SI unit output polarity

Symbol	Specifications
Nil	Positive common
N	Negative common

Refer to pages 878 to 906 and the Operation Manual for the details of the EX510 Gateway-type Serial Transmission System. Please download the Operation Manual via our website, http://www.smcworld.com

How to Order Valves

S07 1 1 □ – 5

Type of actuation

Symbol	Specifications
1	2-position single
2	2-position double
A	4-position dual 3-port (N.C. + N.C.) [Exhaust center]
B	4-position dual 3-port (N.O. + N.O.) [Pressure center]
C	4-position dual 3-port (N.C. + N.O.)

∗: For symbol, refer to page 652.

Voltage: 24 VDC

Function

Symbol	Specifications
Nil	Standard
R	External pilot∗1

∗1: Not compatible with dual 3-port valves.
The 3(R) port is open to the atmosphere.
(Cannot be used for applying pressure or vacuum)

Base mounted plug-in

How to Order Manifold Assembly

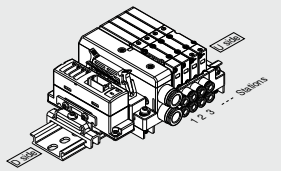
Example **Serial transmission kit**

Specify the part numbers for valves and options together beneath the manifold base part number.

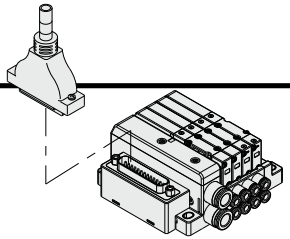
SS0751-08C4C8SB ··· 1 set – Manifold base part no.
∗ **S0711-5** ····· 3 sets – Valve part no. (Stations 1 to 3)
∗ **S0721-5** ····· 2 sets – Valve part no. (Stations 4 to 5)
∗ **S07A1-5**····· 2 sets – Valve part no. (Stations 6 to 7)
∗ **SS0700-10A-3**····· 1 set – Blanking plate part no. (Station 8)

Prefix the asterisk to the part numbers of the solenoid valve etc.

Write sequentially from the 1st station on the D side. When part numbers written collectively are complicated, specify on the manifold specification sheet.



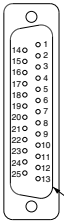
F *S0700 Series* Slim Compact Bar Base Kit (D-sub Connector)



- **The D-sub connector reduces installation labor for electrical connections.**
- **Using the D-sub connector (25P), conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.**

Electrical Wiring Specifications

D-sub connector



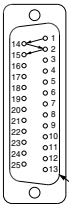
As the standard electrical wiring specifications, double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station for 12 stations or less, regardless of valve and option types.
Mixed single and double wiring is available as an option. For details, refer to Special Wiring Specifications (Option) below.

D-sub connector assembly wire color (AXT100-DS25-015/030/050)

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

*1: Mounting valve has no polarity. It can also be used as a negative common.

Special Wiring Specifications (Option) [-K]



Mixed single and double wiring are available as an option. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 24.

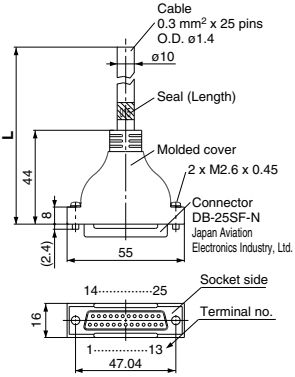
1. How to Order valves
Indicate an option symbol, -K, for the manifold part number and be sure to specify the mounting position and number of stations of the single and double wiring on the manifold specification sheet.

2. Wiring specifications
Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without skipping any terminal numbers.

Cable Assembly

AXT100-DS25-015/030/050

The D-sub connector cable assemblies can be ordered with manifolds. Refer to How to Order Manifold.



D-sub connector cable assembly

Wire Color by 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

D-sub Connector Cable Assembly (Option)

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

*: For other commercial connectors, use a 25-pin type with female connector conforming to MIL-C-24308.
*: Cannot be used for movable wiring.

Electrical Characteristics

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

*: The minimum bending inner radius of D-sub connector cable is 20 mm.

Connector manufacturers' example

- Fujitsu Limited
- Japan Aviation Electronics Industry, Limited.
- J.S.T. Mfg. Co., Ltd.
- HIROSE ELECTRIC CO., LTD.

How to Order Manifold

SS0751 − 08 C4 C8 FD1 − ☐

Stations

Symbol	Stations
02	2 stations
⋮	⋮
24∗1	24 stations

∗1: The maximum number of stations will be different depending on the wiring specifications.

Cylinder port size

Symbol	Port size	
C2	With ø2 One-touch fitting	Metric
C3	With ø3.2 One-touch fitting	
C4	With ø4 One-touch fitting	
N1	With ø1/8" One-touch fitting	Inch
N3	With ø5/32" One-touch fitting	

P, R port size

Symbol	Port size	
Nil	With ø8 One-touch fitting∗1	Metric
C6	With ø6 One-touch fitting	
C8	With ø8 One-touch fitting	
N7	With ø1/4" One-touch fitting	Inch
N9	With ø5/16" One-touch fitting	

∗1: The P, R port size is ø5/16" when the cylinder ports are inch sizes.

Option

Symbol	Specifications
Nil	None
D	With DIN rail (Rail length: Standard)
D0	Without DIN rail (With bracket)
D☐∗1	With DIN rail Designated length (☐: Station)
K∗2	Special wiring specifications (Except double wiring)
R∗3	External pilot
S	Built-in silencer

∗1: The available number of stations is larger than the number of manifold stations.
∗2: Indicate the wiring specifications for mixed single and double wirings.
∗3: For details, refer to page 718.
∗: When two or more options are specified, indicate them alphabetically. Example) -DKN
∗: **For manifold optional parts, refer to pages 718 to 724.**
∗: **For manifold exploded view, refer to page 672.**

Kit type/Cable length

Kit type	Symbol	Specifications	Standard station	Max. number of stations for special wiring specifications	Max. number of solenoids
F kit	**FD0**	D-sub connector (25P), without cable	2 to 12 stations	24 stations	24
	FD1	D-sub connector (25P), with 1.5 m cable			
	FD2	D-sub connector (25P), with 3.0 m cable			
	FD3	D-sub connector (25P), with 5.0 m cable			

∗: The maximum number of stations is determined by the total number of solenoids. For mixed single and double wirings, enter -K to the order code options.

Type of actuation	Single	Double, Dual 3-port
Number of solenoids	1	2

How to Order Valves

S07 1 1 ☐ − 5

Type of actuation

Symbol	Specifications
1	2-position single
2	2-position double
A	4-position dual 3-port (N.C. + N.C.) [Exhaust center]
B	4-position dual 3-port (N.O. + N.O.) [Pressure center]
C	4-position dual 3-port (N.C. + N.O.)

∗: For symbol, refer to page 652.

Base mounted plug-in

Voltage

Symbol	Specifications
5	24 VDC
6	12 VDC

Function

Symbol	Specifications
Nil	Standard
R	External pilot∗1

∗1: Not compatible with dual 3-port valves.

How to Order Manifold Assembly

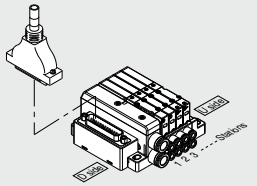
Example D-sub connector kit

Specify the part numbers for valves and options together beneath the manifold base part number.

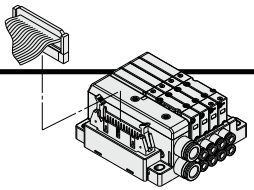
SS0751-08C4C8FD1 ··· 1 set – Manifold base part no.
∗ **SS0711-5** ····· 3 sets – Valve part no. (Stations 1 to 3)
∗ **SS0721-5** ····· 2 sets – Valve part no. (Stations 4 to 5)
∗ **S07A1-5**····· 2 sets – Valve part no. (Stations 6 to 7)
∗ **SS0700-10A-3**····· 1 set – Blanking plate part no. (Station 8)

Prefix the asterisk to the part numbers of the solenoid valve etc.

Write sequentially from the 1st station on the D side. When part numbers written collectively are complicated, specify on the manifold specification sheet.



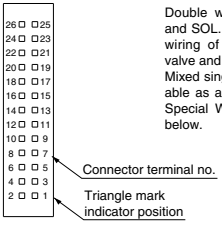
P *S0700 Series* Slim Compact Bar Base Kit (Flat Ribbon Cable)



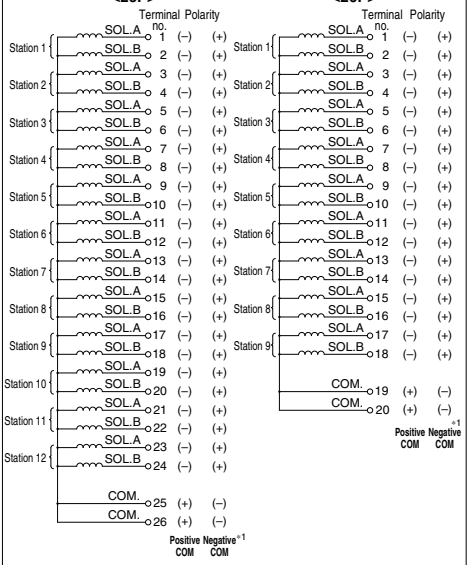
- **Flat ribbon cable connector reduces installation labor for electrical connection.**
- **Using the connector for flat ribbon cable (26P, 20P) conforming to MIL standard permits the use of connectors put on the market and gives a wide interchangeability.**

Electrical Wiring Specifications

Flat ribbon cable connector



Double wiring (connected to SOL. A and SOL. B) is adopted for the internal wiring of each station, regardless of valve and option types.
Mixed single and double wiring is available as an option. For details, refer to Special Wiring Specifications (Option) below.

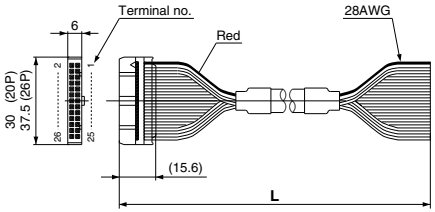


*1: Mounting valve has no polarity. It can also be used as a negative common.

Cable Assembly

AXT100-FC $\begin{matrix}20\\26\end{matrix}$ **-** $\begin{matrix}1\\2\\3\end{matrix}$

Type 26P flat ribbon cable connector assemblies can be ordered with manifolds. Refer to How to Order Manifold.



Flat Ribbon Cable Connector Assembly (Option)

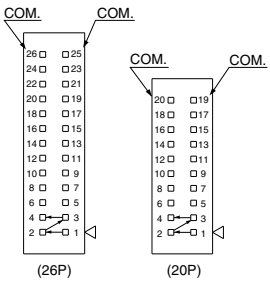
Cable length (**L**)	Assembly part no.	
	26P	20P
1.5 m	AXT100-FC26-1	AXT100-FC20-1
3 m	AXT100-FC26-2	AXT100-FC20-2
5 m	AXT100-FC26-3	AXT100-FC20-3

*: For other commercial connectors, use a 20- or 26-pin type with strain relief conforming to MIL-C-83503.
*: Cannot be used for movable wiring.

Connector manufacturers' example

- HIROSE ELECTRIC CO., LTD.
- 3M Japan Limited
- Fujitsu Limited
- Japan Aviation Electronics Industry, Limited.
- J.S.T. Mfg. Co., Ltd.
- Oki Electric Cable Co., Ltd.

Special Wiring Specifications (Option) [-K]



Mixed single and double wiring are available as an option. The maximum number of manifold stations is determined by the number of solenoids. Count one point for a single solenoid type and two points for a double solenoid type. The total number of solenoids (points) must not exceed 24 for 26P, 18 for 20P.

1. How to Order valves
Indicate an option symbol, -K, for the manifold part number and be sure to specify the mounting position and number of stations of the single and double wiring on the manifold specification sheet.

2. Wiring specifications
Connector terminal numbers are connected from solenoid station 1 on the A side in the order indicated by the arrows without skipping any terminal numbers.

How to Order Manifold

SS0751 – 08 C4 C8 PD1 – □

Stations

Symbol	Stations
02	2 stations
⋮	⋮
24	24 stations

∗: The maximum number of stations will be different depending on the wiring specifications.

Cylinder port size

Symbol	Port size	
C2	With ø2 One-touch fitting	Metric
C3	With ø3.2 One-touch fitting	
C4	With ø4 One-touch fitting	
N1	With ø1/8" One-touch fitting	Inch
N3	With ø5/32" One-touch fitting	

P, R port size

Symbol	Port size	
C6	With ø6 One-touch fitting	Metric
C8	With ø8 One-touch fitting	
N7	With ø1/4" One-touch fitting	Inch
N9	With ø5/16" One-touch fitting	

∗: If an inch size cylinder port is selected, select inch size piping connections for the P and R ports as well.

Option

Symbol	Specifications
Nil	None
D	With DIN rail (Rail length: Standard)
D0	Without DIN rail (With bracket)
D□∗1	With DIN rail Designated length (□: Station)
K∗2	Special wiring specifications (Except double wiring)
R∗3	External pilot
S	Built-in silencer

∗1: The available number of stations is larger than the number of manifold stations.
∗2: Indicate the wiring specifications for mixed single and double wirings.
∗3: For details, refer to page 718.
∗: When two or more options are specified, indicate them alphabetically. Example) -DKR
∗: **For manifold optional parts, refer to pages 718 to 724.**
∗: **For manifold exploded view, refer to page 672.**

Kit type/Cable length

Kit type	Symbol	Specifications	Standard station	Max. number of stations for special wiring specifications	Max. number of solenoids
P kit	**PD0**	Flat ribbon cable (26P), without cable	2 to 12 stations	24 stations	24
	PD1	Flat ribbon cable (26P), with 1.5 m cable			
	PD2	Flat ribbon cable (26P), with 3.0 m cable			
	PD3	Flat ribbon cable (26P), with 5.0 m cable			
	PDC	Flat ribbon cable (20P), without cable	2 to 9 stations	18 stations	18

∗: The maximum number of stations is determined by the total number of solenoids.
For mixed single and double wirings, enter -K to the order code options.

Type of actuation	Single	Double, Dual 3-port
Number of solenoids	1	2

How to Order Valves

S07 1 1 □ – 5

Type of actuation

Symbol	Specifications
1	2-position single
2	2-position double
A	4-position dual 3-port (N.C. + N.C.) [Exhaust center]
B	4-position dual 3-port (N.O. + N.O.) [Pressure center]
C	4-position dual 3-port (N.C. + N.O.)

∗: For symbol, refer to page 652.

Base mounted plug-in

Voltage

Symbol	Specifications
5	24 VDC
6	12 VDC

Function

Symbol	Specifications
Nil	Standard
R	External pilot∗1

∗1: Not compatible with dual 3-port valves.
The 3(R) port is open to the atmosphere.
(Cannot be used for applying pressure or vacuum)

How to Order Manifold Assembly

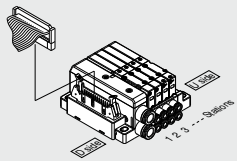
Example Flat ribbon cable kit

Specify the part numbers for valves and options together beneath the manifold base part number.

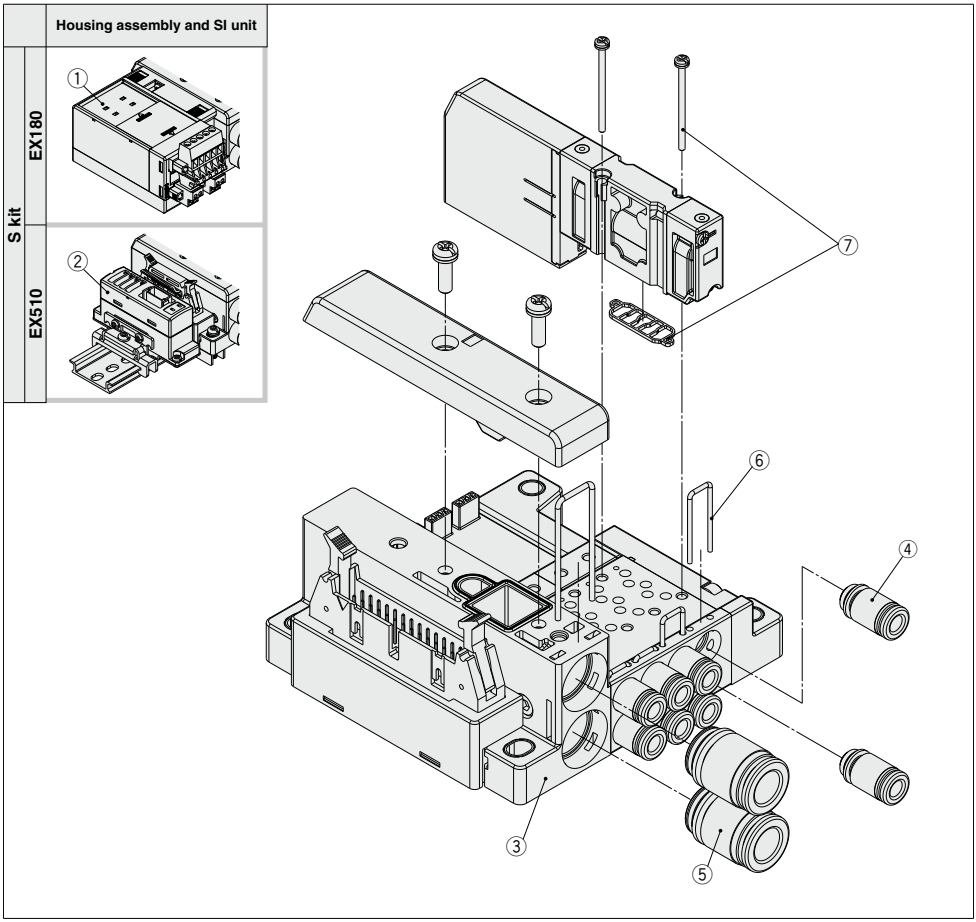
SS0751-08C4C8PD1 ··· 1 set – Manifold base part no.
∗ **SS0711-5** ····· **2 sets – Valve part no. (Stations 1 to 3)**
∗ **SS0721-5** ····· **4 sets – Valve part no. (Stations 4 to 5)**
∗ **S07A1-5**····· **1 set – Valve part no. (Stations 6 to 7)**
∗ **SS0700-10A-3** ····· **1 set – Blanking plate part no. (Station 8)**

Prefix the asterisk to the part numbers of the solenoid valve etc.

Write sequentially from the 1st station on the D side. When part numbers written collectively are complicated, specify on the manifold specification sheet.



S0700 Series Slim Compact Bar Base
Manifold Exploded View



∗: It is not possible to increase or decrease the number of stations or change the wiring kit on the slim compact bar base.
To change them, please change the entire base unit.

Manifold Assembly Part No.

No.	Description	Part no.	Note
①	**SI unit**	**EX180-SDN3**	DeviceNet™ 32 outputs NPN (positive common) T-branch type communication connector
		EX180-SDN3A	DeviceNet™ 32 outputs NPN (positive common) Straight type communication connector
		EX180-SDN4	DeviceNet™ 16 outputs NPN (positive common) T-branch type communication connector
		EX180-SDN4A	DeviceNet™ 16 outputs NPN (positive common) Straight type communication connector
		EX180-SMJ3	CC-Link 32 outputs NPN (positive common) T-branch type communication connector
		EX180-SMJ3A	CC-Link 32 outputs NPN (positive common) Straight type communication connector
		EX180-SDN5	DeviceNet™ 32 outputs PNP (negative common) T-branch type communication connector
		EX180-SDN5A	DeviceNet™ 32 outputs PNP (negative common) Straight type communication connector
		EX180-SDN6	DeviceNet™ 16 outputs PNP (negative common) T-branch type communication connector
		EX180-SDN6A	DeviceNet™ 16 outputs PNP (negative common) Straight type communication connector
		EX180-SMJ5	CC-Link 32 outputs PNP (negative common) T-branch type communication connector
		EX180-SMJ5A	CC-Link 32 outputs PNP (negative common) Straight type communication connector
②	**SI unit**	**EX510-S002A**	NPN (Positive common)
		EX510-S102A	PNP (Negative common)
③	**Base unit**	**SS0751-□□□□**	Refer to How to Order for each kit.

④ Fitting assembly part number for cylinder port

VVQ0000−50A−□

Port size

Symbol	Applicable tube
C2	Applicable tube ø2
C3	Applicable tube ø3
C4	Applicable tube ø4
N1	Applicable tube ø1/8"
N3	Applicable tube ø5/32"

∗: Purchasing order is available in units of 10 pieces.
∗: For One-touch fittings replacement, refer to Specific Product Precautions 2.

⑤ Fitting assembly part number for P, R port

VVQ1000−51A−□

Port size

Symbol	Applicable tube
C6	Applicable tube ø6
C8	Applicable tube ø8
N7	Applicable tube ø1/4"
N9	Applicable tube ø5/16"

∗: Purchasing order is available in units of 10 pieces.
∗: For One-touch fittings replacement, refer to Specific Product Precautions 2.

No.	Description	Part no.
⑥	**Clip**	**SS0700-80A-5**

∗: 1 set includes 10 pieces.

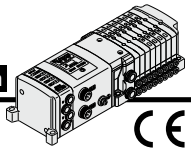
No.	Description	Part no.
⑦	**Gasket, Screw**	**S0700-GS-3**

∗: 1 set includes 10 pieces. (1 gasket, 2 screws)

Plug-in Type

S0700 Series Stacking Base Kit (Serial Transmission)

EX250 (For Input/Output) Serial Transmission System



How to Order Manifold

SS0750 – 08 C4 C8 SDQ N □ □ □ – B

❶ ❷ ❸ ❹ ❺ ❻ ❼ ❽ ❾

❶ Stations

Symbol	Stations
01	1 station
⋮	⋮
24*1	24 stations

*1: The maximum number of stations will be different depending on the wiring specifications.

❷ Cylinder port size

Symbol	Port size	
C2	With ø2 One-touch fitting	Metric
C3	With ø3.2 One-touch fitting	
C4	With ø4 One-touch fitting	
CM	Mixed sizes and with port plug*1	
N1	With ø1/8" One-touch fitting	Inch
N3	With ø5/32" One-touch fitting	
NM	Mixed sizes and with port plug*1	

*1: Specify "Mixed sizes and with port plug" on the manifold specification sheet.

❸ P, R port size

Symbol	Port size	
C6	With ø6 One-touch fitting	Metric
C8	With ø8 One-touch fitting	
N7	With ø1/4" One-touch fitting	Inch
N9	With ø5/16" One-touch fitting	

*: If an inch size cylinder port is selected, select inch size piping connections for the P and R ports as well.

❹ Kit type

Kit type		Symbol*1	Specifications	Standard station	Max. number of stations for special wiring specifications	Max. number of solenoids
S kit	For I/O serial transmission	SD0	Without SI unit	1 to 16 stations	24*2 stations	32
		SDQ	DeviceNet™			
		SDN	PROFIBUS DP			
		SDY	CANopen			
		SDZEN	EtherNet/IP™			
		SDTA	AS-Interface 31 slave, 8 in/8 out, 2 isolated common type	1 to 4 stations	8 stations	8
		SDTB	AS-Interface 31 slave, 4 in/4 out, 2 isolated common type	1 to 2 stations	4 stations	4
		SDTC	AS-Interface 31 slave, 8 in/8 out, 1 common type	1 to 4 stations	8 stations	8
		SDTD	AS-Interface 31 slave, 4 in/4 out, 1 common type	1 to 2 stations	4 stations	4

*1: For SI unit part number, refer to page 715.
*2: Up to 24 stations due to the structure of the manifold. Please note the maximum number of stations is 24 for single wiring, too.
*: The maximum number of stations is determined by the total number of solenoids. For mixed single and double wirings, enter -K to the order code options.

Type of actuation	Single	Double, Dual 3-port
Number of solenoids	1	2

❺ SI unit output polarity

SI unit common		EX250				
		DeviceNet™	PROFIBUS DP	AS-Interface	CANopen	EtherNet/IP™
Nil	Positive common	—	—	—	—	—
N	Negative common	○	○	○	○	○

*: Without SI unit (SD0), the symbol is nil.

❻ Input block (for I/O unit only)

Symbol	Specifications
Nil	SI unit/Input block: None (SD0)
0	Input block: None
1	Input block: 1 pc.
⋮	⋮
8	Input block: 8 pcs.

*: Without SI unit (SD0), the symbol is nil.

❼ Input block type (for I/O unit only)

Symbol	Specifications
Nil	Input block: None
1	M12 2 inputs
2	M12 4 inputs
3	M8 4 inputs (3 pins)

*: Without SI unit (SD0), the symbol is nil.

❽ Input block specification (for I/O unit only)

Symbol	Specifications
Nil	PNP sensor input or without input block
N	NPN sensor input

*: Without SI unit (SD0), the symbol is nil.

❾ Option

Symbol	Specifications
Nil	None
B*1	With back pressure check valve (All stations)
D*5	With DIN rail (Rail length: Standard)
D0*5	Without DIN rail (With bracket)
D□*2 *5	With DIN rail Designated length (□: Station)
K*3	Special wiring specifications (Except double wiring)
N	With name plate
R*4	External pilot
S	Built-in silencer

*1: When installing a back pressure check valve on the required station, enter the part number and specify the station position on the manifold specification sheet.
*2: The available number of stations is larger than the number of manifold stations.
*3: Indicate the wiring specifications for mixed single and double wirings.
*4: For details, refer to page 718.
*5: When the SD0 (Without SI unit) is specified, -D, -D□ cannot be selected.
*: When two or more options are specified, indicate them alphabetically. Example) -BKN
*: **For manifold optional parts, refer to pages 718 to 724.**
*: **For manifold exploded view, refer to page 714.**

Refer to pages 802 to 814 and the Operation Manual for the details of the EX250 Integrated-type (For Output) Serial Transmission System. Please download the Operation Manual via our website, http://www.smcworld.com

How to Order Valves

S07 1 0 □ – 5

Type of actuation

Symbol	Specifications
1	2-position single
2	2-position double
A	4-position dual 3-port (N.C. + N.C.) [Exhaust center]
B	4-position dual 3-port (N.O. + N.O.) [Pressure center]
C	4-position dual 3-port (N.C. + N.O.)

*: For symbol, refer to page 652.

Base mounted plug-in

Function

Symbol	Specifications
Nil	Standard
R	External pilot*1

*1: Not compatible with dual 3-port valves. The 3(R) port is open to the atmosphere. (Cannot be used for applying pressure or vacuum)

Voltage: 24 VDC

How to Order Manifold Assembly

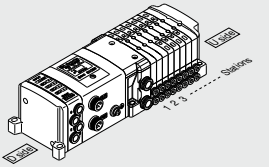
Example Serial transmission kit

Specify the part numbers for valves and options together beneath the manifold base part number.

SS0750-08C4C8SDQN13N··· 1 set – Manifold base part no.
* S0710-5 ····· 3 sets – Valve part no. (Stations 1 to 3)
* S0720-5 ····· 2 sets – Valve part no. (Stations 4 to 5)
* S07A0-5····· 2 sets – Valve part no. (Stations 6 to 7)
* SS0700-10A-1 ····· 1 set – Blanking plate part no. (Station 8)

Prefix the asterisk to the part numbers of the solenoid valve etc.

Write sequentially from the 1st station on the D side. When part numbers written collectively are complicated, specify on the manifold specification sheet.

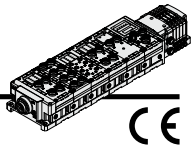


SMC

Plug-in Type

S *S0700 Series* Stacking Base Kit (Serial Transmission)

EX600 (For Input/Output) Serial Transmission System (Fieldbus System)



How to Order Manifold

SS0750 − 08 C4 SD6Q 2 N 1 − B

Stations

Symbol	Stations
01	1 station
⋮	⋮
24∗1	24 stations

∗1: Max. number of stations depends on the wiring specifications.

Cylinder port size

Symbol	Port size	
C2	With ø2 One-touch fitting	Metric
C3	With ø3.2 One-touch fitting	
C4	With ø4 One-touch fitting	
CM	Mixed sizes and with port plug∗1	
N1	With ø1/8" One-touch fitting	Inch
N3	With ø5/32" One-touch fitting	
NM	Mixed sizes and with port plug∗1	

∗1: Indicate the sizes on the manifold specification sheet in the case of CM and NM.

Kit type

Kit type	Symbol	Specifications	Standard station	Max. number of stations for special wiring specifications	Max. number of solenoids
S kit	**SD60**	Without SI unit	1 to 16 stations	24 stations∗1	32
	SD6Q	DeviceNet™			
	SD6N	PROFIBUS DP			
	SD6V	CC-Link			
	SD6F	PROFINET			
	SD6ZE	EtherNet/IP™ (1 port)			
	SD6EA	EtherNet/IP™ (2 ports)			
	SD6D	EtherCAT			
	SD6WE	EtherNet/IP™ compatible wireless base∗2			
	SD6WF	PROFINET compatible wireless base∗2			
	SD6WS	Wireless remote∗2			

∗1: Up to 24 stations due to the structure of the manifold. Please note the maximum number of stations is 24 for single wiring, too.
∗2: The wireless system is suitable for use only in a country where it is in accordance with the Radio Act and regulations of that country.
∗: Max. station number depends on the number of solenoid valve. Add the option symbol -K when the combination of single wiring and double wiring is specified.
• When Without SI unit is specified, valve plate to connect the manifold and SI unit is not mounted. Refer to page 732 for mounting method.
• I/O unit cannot be chosen without SI unit.
∗: For SI unit part number, refer to page 715.

Type of actuation	Single	Double, Dual 3-port
Number of solenoid valves	1	2

Option

Symbol	Specifications
Nil	None
B∗1	With back pressure check valve (All sta.)
D∗4	With DIN rail (Rail length: Standard)
D0∗4	With DIN rail bracket (Without rail)
D□∗2 ∗4	With DIN rail length specified (□: Sta.)
K∗3	Special wiring specifications (Except double wiring)
N	With name plate
R∗5	External pilot
S	Built-in silencer

∗1: When back pressure check valve is used only for specified station, specify back pressure check valve part number, and specify station number to which the valve is mounted on the manifold specification sheet.
∗2: Specified station number shall be longer than manifold station number.
∗3: When single wiring and double wiring are mixed, specify wiring type of each station with the manifold specification sheet.
∗4: When Without SI unit (SD60) is specified, -D, -D□ cannot be selected.
∗5: For details, refer to page 718.
∗: When two or more symbols are specified, indicate them alphabetically. Example) -BKN

I/O unit station number

Nil	None
1	1 station
⋮	⋮
9	9 stations

∗: Without SI unit, the symbol is nil.
∗: SI unit is not included in I/O unit station number.
∗: When I/O unit is selected, it is shipped separately, and assembled by customer. Refer to the attached operation manual for mounting method.

SI unit output polarity

Nil	Positive common
N	Negative common

∗: Without SI unit the symbol is nil.

End plate type

Nil	No end plate
2	M12 power supply connector, B-coded
3	7/8 inch power supply connector
4	M12 power supply connector IN/OUT, A-coded Pin arrangement 1
5	M12 power supply connector IN/OUT, A-coded Pin arrangement 2

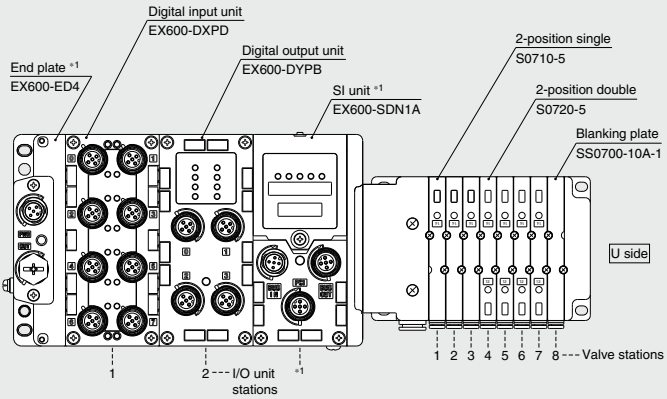
∗: Without SI Unit, the symbol is nil.
∗: The pin layout for “4” and “5” pin connector is different.

Refer to pages 815 to 843 and the Operation Manual for the details of the EX600 Integrated-type (For Output) Serial Transmission System. Please download the Operation Manual via our website, http://www.smcworld.com

How to Order Manifold Assembly (Example)

Example

Serial transmission kit



For the I/O unit part number mounted, refer to the **Web Catalog**.

- Digital input unit
- Digital output unit
- Digital I/O unit
- Analog input unit
- Analog output unit
- Analog I/O unit

Serial transmission kit

SS0750-08C4SD6Q4N2	**1 set**	**Manifold base part number**	Enter in order starting from the first station on the D side. If arrangement becomes complicated, specify on a manifold specification sheet.
***S0710-5**	**3 sets**	**Valve part number (Stations 1 to 3)**	
***S0720-5**	**4 sets**	**Valve part number (Stations 4 to 7)**	
***SS0700-10A-1**	**1 set**	**Blanking plate number (Station 8)**	
***EX600-DXPD**	**1 set**	**I/O unit part number (Station 1)**	Enter in order starting from the first station on the D side.
***EX600-DYPB**	**1 set**	**I/O unit part number (Station 2)**	

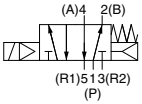
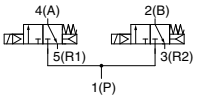
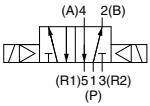
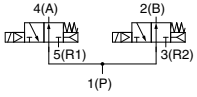
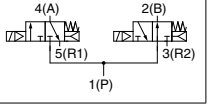
*1: Do not enter the SI unit part number and the end plate part number together.

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

How to Order Valves

S07 1 0 □ – 5

Type of actuation

1	2-position single 	**A**	4-position dual 3-port valve (N.C. + N.C.) [Exhaust center] 
2	2-position double 	**B**	4-position dual 3-port valve (N.O. + N.O.) [Pressure center] 
		C	4-position dual 3-port valve (N.C. + N.O.) 

Coil voltage

5	24 VDC

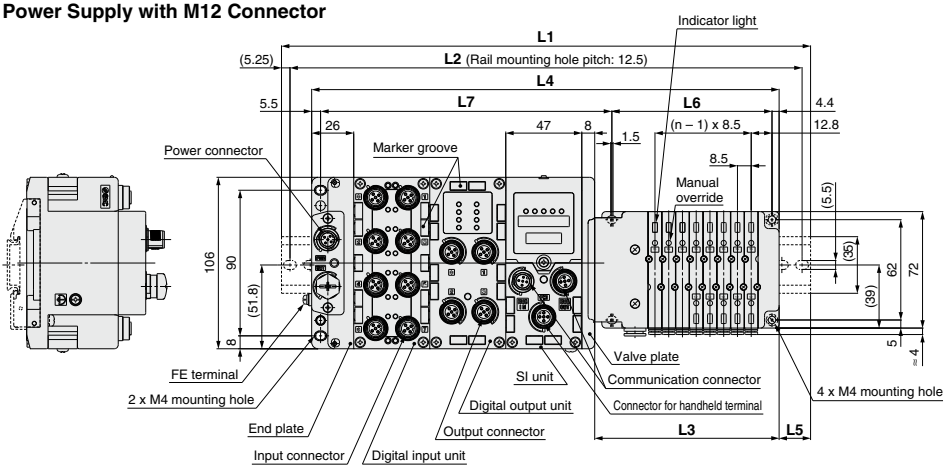
Function

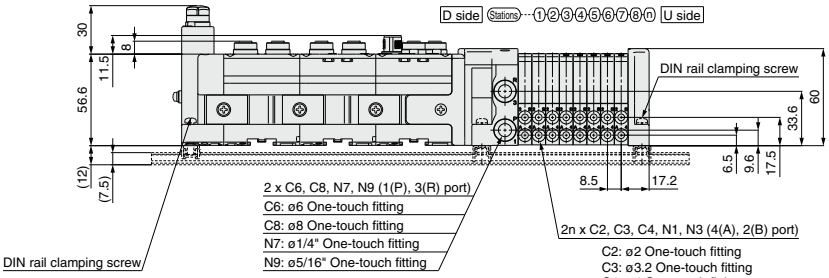
Symbol	Specifications
Nil	Standard
R	External pilot *1

*1: Not compatible with dual 3-port valves.

Base mounted plug-in

Power Supply with M12 Connector





L2 = L1 – 10.5
L3 = 8.5 x n1 + 46
L4 = L3 + 81 + 47 x n2
L5 = (L1 – L4)/2
L6 = 8.5 x n1 + 31
L7 = 47 x n2 + 86.1

L1: DIN Rail Overall Length

I/O unit stations (n2) \ Valve stations (n1)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0	173	185.5	185.5	198	210.5	210.5	223	235.5	235.5	248	260.5	260.5	273	285.5	285.5	298	310.5	310.5	323	335.5	335.5	348	360.5	373
1	223	223	235.5	248	248	260.5	273	273	285.5	298	298	310.5	323	323	335.5	348	360.5	360.5	373	385.5	385.5	398	410.5	410.5
2	260.5	273	285.5	285.5	298	310.5	310.5	323	335.5	348	348	360.5	373	373	385.5	398	398	410.5	423	423	435.5	448	448	460.5
3	310.5	323	335.5	335.5	348	360.5	360.5	373	385.5	385.5	398	410.5	410.5	423	435.5	435.5	448	460.5	460.5	473	485.5	485.5	498	510.5
4	360.5	373	373	385.5	398	398	410.5	423	423	435.5	448	448	460.5	473	473	485.5	498	498	510.5	523	535.5	535.5	548	560.5
5	410.5	410.5	423	435.5	435.5	448	460.5	460.5	473	485.5	485.5	498	510.5	523	523	535.5	548	548	560.5	573	573	585.5	598	598
6	448	460.5	473	473	485.5	498	510.5	510.5	523	535.5	535.5	548	560.5	560.5	573	585.5	585.5	598	610.5	610.5	623	635.5	635.5	648
7	498	510.5	523	523	535.5	548	548	560.5	573	573	585.5	598	598	610.5	623	623	635.5	648	648	660.5	673	673	685.5	698
8	548	560.5	560.5	573	585.5	585.5	598	610.5	610.5	623	635.5	635.5	648	660.5	660.5	673	685.5	698	698	710.5	723	723	735.5	748
9	598	598	610.5	623	623	635.5	648	648	660.5	673	685.5	685.5	698	710.5	710.5	723	735.5	735.5	748	760.5	760.5	773	785.5	785.5